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Acceptance Criteria. Specified limits placed on characteristics of an item, process or service defined in codes, standards or other requirement documents.

Addendum. A document issued to contractors, prior to the bid opening, which changes/clarifies the specifications, drawings, or bidding documentation issued with the Invitation for Bid or Request for Proposal.

Administrative Action. A change in a RFP Standard which does not affect the technical intent.

Administrative Controls. Specific procedural items relating to administrative requirements governing plant operations that affect either the Operational Safety Requirements or the Final Safety Analysis Report accident analysis, which include organization and management, procedures, review and audit requirements, reporting and record keeping and reportable occurrences.

Administrative Procedure. A COEM document, approved by an Associate General Manager, which establishes or describes Engineering and Technology and/or Facilities Project Management (FPM) management and programmatic controls.

Affected Document. A document which is impacted by a design modification.

ALARA. An acronym, which has come to represent a stand-alone term, which is derived from the phrase As Low As Reasonably Achievable. This acronym represents the DOE-wide mandate to reduce personnel and environmental radiation exposures to the lowest levels commensurate with sound operating practices. ALARA encompasses both numerical exposure guidelines and conceptual radiation protection practices.

Alternative Building System. An installation or modification of an installation in a building intended primarily to reduce energy consumption or allow the use of renewable energy sources, or a primarily energy-saving Building System, including a renewable energy system, for consideration as part of the design.

Analysis. The detailed calculation methods (e.g., mathematical equations or computer programs) that are used in the calculation.

Aperture Card. A 35 millimeter film or microfilm image of a document, generally an engineering drawing, mounted on an industry-standard card. The film image can be viewed or printed.

Aperture Card Control Clerk. An individual responsible for the storage and control of aperture cards, equipment, and issuing copies of drawings from aperture cards for a specific building.

Applicable (as it applies to: DOE Order requirements, Rocky Flats Plant Standards, Federal, State, and local codes & regulations). DOE Orders, codes, etc., requirements mandated for use, implemented by COEM procedures, and appropriate to the specific type of structure, system, or component being specified, modified, or designed. Requirements must relate directly to the items to be designed or specified and must govern, affect, or influence the design method or requirements necessary to accomplish the final design.

Application and Certificate for Payment. A Rocky Flats form that is issued to a construction contractor as a standard submittal document to request payment for all or a portion of a construction project.

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Approval Authority. Management position identified to approve a document and its revisions after all required reviews have been completed and concurrences obtained. For the purpose of the COEM, the Approval Authority shall be the Associate General Manager (AGM) of Engineering and Technology or the AGM of Transition Management, or a designated Responsible Manager.

Approval Date. That date upon which the signature of the Approval Authority is obtained on a COEM document and after which that document may be used to control work.

Architectural-Engineering (A/E) Services. Contracted services from an established firm to produce acceptable engineering and/or architectural products or deliverables (calculations, analysis, drawings, specifications, and technical reviews or reports) to a fixed schedule or timeline.

Architect Engineering/Construction Management (AECM). An established firm subcontracted by EG&G RFP through an AECM agreement to produce engineering and/or architectural products or deliverables and provide construction management services to a fixed schedule or timeline.

AECM Make/Buy Team. A team of plant technical representatives and management vested with authority for the make/buy decision which establishes whether authorization project engineering design and construction management activities are performed by EG&G RFP or by AECM firms.

As-Built Condition. The physical configuration of a facility, system, or component.

As-Built Drawing. A Master Drawing that documents the project as As-Built Condition.

As-Read Nominal System Operating Point/Setpoint and Range. The ideal values for a system parameter as they are actually seen in the field. These values are usually prescribed in approved procedures or other design documents.

Assessment Bases. The method by which acceptance criteria are verified. This may be by testing, analysis, surveillance, or inspection.

Associate General Manager (AGM). For the purpose of the COEM, "AGM" shall refer to the Chief Executive Officer of either Engineering and Technology or of Transition Management.

Augmented Quality (AQ). Non-Safety Class items and services for which the contracting agent at Rocky Flats Environmental Technology Site (Site) has regulatory or design basis commitments, or which, for plant availability reasons, require special controls to ensure reliability. (This definition paraphrases the AQ definition presented in Procedure 1-50000-ADM-04.01.)

Authorization Basis. Those aspects of the facility design basis and operational requirements relied upon by DOE to authorize operation. These aspects are considered to be important to the safety of the facility operations. The authorization basis is described in documents such as the facility Safety Analysis Report and other safety analysis, Hazard Classification Documents, Technical Safety Requirements, DOE-issued safety evaluation reports, and facility-specific commitments made in order to comply with DOE rules, orders, or policies.

Authorization Project. A construction or disassembly project, authorized by Congress and assigned to a Project Manager.

Base Case. The situation against which an Alternative Building System is compared.

Baseline Change Proposal (BCP). A BCP consists of a completed BCP form accompanied by an impact assessment. The impact assessment shall be prepared in the form of a draft work package and should consider specific impacts to scope, cost, schedule (including milestones), other projects/work packages, programmatic needs, safety requirements, environment, and security.

Boundary Identification Package (BIP). A report that clarifies the boundaries identified in each Safety Evaluation Report for Buildings 707.

Building Support Engineer. Engineer or Engineer Technologist that is knowledgeable of the systems for a specific building. The Building Support Engineer may also act as Designer, Design Checker, Independent Verifier, or Responsible Engineering Manager when applicable.

Building System. A portion of the structure of the building or of any energy-using system in the Building.

Calculation. A document which confirms or substantiates Engineering design decisions based on equations, references, design inputs, assumptions, and conclusions.

Calculation Checker. A reviewer who ensures that a calculation is administratively and technically correct.

Calibration Category. Designator for each Instrument that defines whether the instrument requires calibration and prioritizes the calibration.

Calibration Tolerance. The maximum allowable error observed at any point of an instrument's calibrated Full-Scale Range.

Categorical Exclusion (CX). A category of actions (as defined in 40 CFR 1508.4 and listed in Subpart D of 10 CFR 1021) that do not individually or cumulatively have a significant effect on the human environment and for which neither an environmental assessment nor an environmental impact statement is required.

Central Engineering Manager (CEM). A discipline-specific manager within the Central Engineering Organization responsible for matrixing engineers under his branch. May also act as a technical design authority for specific projects.

CERCLA. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C., sec. 9601 *et seq.*) Any element, compound, mixture, solution, or substance designated by various regulations as a pollutant or contaminate falls under CERCLA. Reportable quantities are provided in CERCLA Table 302.4.

NOTE *Under CERCLA, there are four processes which lead to the development of the Final Action (FA). The processes are Remedial Investigation (RI), Feasibility Study (FS), Remedial Design (RD), and Remedial Action (RA).*

CERCLA Remedial Action. Responses to releases, or the threat of release that are taken instead of, or in addition to, removal actions; conducted to prevent release or minimize the impact of release of hazardous substances, pollutants, or contaminants in a manner where they do not migrate and pose a substantial danger to present or future public health or welfare of the environment.

CERCLA Removal Action. Any appropriate action taken to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release to the environment. CERCLA Removal Actions are conducted in accordance with the requirements of 40 CFR 300.415.

Certified Waste. Waste that has been confirmed (under an approved waste certification program) to comply with the waste acceptance criteria for a specific disposal site that is targeted for disposal (e.g., the Nevada Test Site or the Waste Isolation Pilot Plant.)

Clarifications. Modification of a document or drawing which does not require new or revised technical justifications or calculations, and does not alter the technical scope or the design basis.

The Clean Air Act Amendments of 1990 - Title V. Establishes a state-implemented operating permit program for all major sources of regulated air pollutants. The above reference statute has been implemented by the State of Colorado through revisions to Colorado Air Quality Control Commission Regulation Number 3 (Reg. 3).

NOTE *Under Reg. 3, major stationary sources of regulated air pollutants must submit an Air Operating Permit Application by January 1, 1996. This is a statutory requirement, and without it, the Site will not be able to legally operate.*

The Air Quality Branch (AQB) of the Waste Management Organization is programmatically responsible for air permitting and compliance oversight and therefore is tasked with developing the required Clean Air Act - Title V Air Operating Permit Application for the Site. This application must identify all operations at the Site that emit regulated air pollutants and must contain supporting information that includes process information, vent and stack information, raw material usage, chemical usage, characterization of air pollutant emissions, and emission control equipment. In addition, the application must specify compliance strategies that will be used to confirm emissions limitations.

It is essential that complete information regarding all current operations and future planned operations that have the potential to emit regulated air pollutants be collected. Failure to include complete information in the application may result in restraints on existing operations and/or prolonged delays of future projects.

Cognizant Design Engineer (CDE). The engineer responsible for development of Engineering Design Packages and providing technical input for Work Packages.

Cognizant Engineer (CE). The engineer responsible for providing appropriate information, knowledge, or expertise to package development. This could be a Design, Project, Procurement or Systems Engineer.

Cognizant Engineer Verifier. An Engineer assigned and responsible for verifying that the information contained in the disposition is correct.

Cognizant Engineering Manager (CEM). The individual responsible for ensuring that assigned NCRs are evaluated and dispositioned. The CEM is responsible for assigning a Cognizant Engineer to provide Engineering Operability Screens, root cause determinations, and Engineering dispositions. The CEM is also responsible for verifying and approving NCRs.

Cognizant Engineering Organization (CEO). The term that refers to the department responsible for providing engineering, design, and technical dispositions in accordance with the requirements for the area associated with the item under consideration.

CEO Engineer (Cognizant Engineer). An Engineer assigned and responsible for completing the NCR specific activities with the appropriate knowledge and understanding in the Engineering discipline(s) (mechanical, electrical, civil, chemical, etc.) directly related to the NCR disposition.

CEO NCR Coordinator. An individual assigned and responsible for coordinating distribution and tracking of the Engineering activities associated with the evaluation and dispositioning of Nonconformance Reports.

Cognizant Quality Organization (CQO) Engineer. A Quality Assurance Engineer assigned and responsible for validation, review of NCR dispositions, and closure review of the NCR.

CQO NCR Coordinator. An individual assigned and responsible for administrative processing of NCRs.

Cognizant Systems Engineer (CSE). The engineer who has particular knowledge of or expertise with a given system.

Compensatory Measures. Temporary actions planned and implemented to provide acceptable alternative means to meet the intent of the functional requirements as that afforded by the normal structure, system, or component (SSC) configuration and operation. When normal system operation has failed or is in jeopardy and Compensatory Measures are approved via an Engineering Operability Evaluation (EOE), implementation of Compensatory Measures is required to maintain the SSC status as CONDITIONALLY OPERABLE. Compensatory measures are not corrective actions (i.e., actions required to return the SSC to an OPERABLE status). Compensatory measures are implemented via existing work processes, e.g., CCCP for temporary modifications.

Component. A piece of equipment such as a vessel, pump, relay, or circuit breaker, which is combined with other components to form a system. Components typically are designated with an identification number, (e.g., tag no.).

Computer Aided Design/Computer Aided Engineering System (CAD/CAE). A computer system used to produce engineering designs and drawings. The standard systems for E&S are AutoCad and Computervision.

CAD/CAE Drawing. Any drawing that is produced through the use or aid of a software package that has a primary purpose of design or drafting of graphical information, including software operating on a Personal Computer (PC).

Conceptual Design Report (CDR). A summary report that identified the project scope; assures project feasibility and attainable technical performance levels; identifies and quantifies project risks; and develops a reliable cost estimate and a realistic performance schedule.

Conceptual Design Report (CDR) Review. Ensures that the baseline project description and justification are adequate for funding consideration. Signature approval on the Design Review Record (DRR) indicates agreement on scope ad concept of work to be submitted for funding consideration.

Conditionally Operable. Situation where a building SSC is degraded but can still perform its intended safety function with the implementation of compensatory measures. CONDITIONALLY OPERABLE systems SHALL be deemed in compliance with the Operational Safety Requirements (OSR) definition of OPERABLE, so long as the specified compensatory measures are maintained. [Note that once an SSC has been declared CONDITIONALLY OPERABLE, the identified compensatory measures are a mandatory prerequisite (i.e., the SSC is INOPERABLE until the compensatory measures have been implemented).]

Conduct of Engineering Manual (COEM). The manual, under controlled distribution, which is the collective repository for approved Engineering and Technology and/or Facilities Project Management controlled documents: policies, directives, and Level 2 administrative procedures.

Configuration Change Control. The process by which any changes to facilities are identified, controlled, reviewed, approved, implemented, and closed out.

Configuration Controlled Document. A document or drawing that may be of future interest by depicting or describing plant systems or facilities and is required to maintain safe and reliable plant operations.

Configuration Management. An integrated management program that establishes consistency among design basis requirements, physical configuration, and facility documentation and that maintains this consistency throughout the life of the facility as changes occur.

Construction Coordinator (CC). An EG&G representative who reports to the Area Construction Manager (ACM) and is responsible for proper and timely completion of assigned construction projects that are managed by Facilities Project Management (FPM).

Construction Engineer (CE). An EG&G field representative who reports to the Area Construction Manager (ACM) and is responsible for the day-to-day management and technical direction of construction projects that are managed by FPM.

Construction Management Weekly Summary Report. A form used to document the weekly accomplishments, problems, and planned activities for a specific construction project. Information on the CM weekly summary report should be compiled in part using information from the Daily Log Book.

Construction Notice (CN). A document which conveys a clarification to the construction contractor to resolve contradictions, interpretations, ambiguities, vagueness, or drawing errors in the final design.

Construction (Title III) Package. A compilation of documents consisting of approved vendor submittals, approved construction submittals, and as-built drawings.

Construction Project. A non-routine, complex scope of activities with firmly scheduled beginning and end point, specific performance requirements, specific budget, cognizant management, and planning/control elements. A project will result in discrete products and deliverables, and will involve multiple organizations and involves construction activities. The following are construction project definitions, Class A, B and C as defined by the DOE Memorandum DP-521:BCCB IMP and DOE Order 4700.1.

- Class A Projects
  Class A projects are capital funded projects and defined as having a Total Project Cost of $100M or more. They are also referred to as Major Systems Acquisitions (MSAs).

- Class B Projects
  Class B projects can be funded with either capital or expense dollars. When funded with capital monies, the Class B project Total Project Cost (TPC) ranges from $50M to $100M. When funded with expense dollars, the TPC is greater than $15M. The Class B project is also referred to as a Major Project (MP).

- Class C Projects
  Class C projects, also referred to as Other Projects, are similar to Class B in that they may be funded with either capital or expense dollars. Following are the types of Class C projects.

  1. Expense Project
     Expense projects are categorized as primarily maintenance and repair activities whose total estimated costs range between $0 and $15M. In general, these projects neither materially add to the value of the plant and equipment nor appreciably prolong its life, but merely keep it in an ordinary and efficient operating condition.

  2. Construction Line Item (CLI) Project
     CLIs are capital projects whose total estimated costs including design, procurement, construction, test and inspection exceeds $1.2M, but is less than $50M.

  3. Basic Capital Equipment (BCE) Project
     BCE projects are capital projects primarily involved with the acquisition or fabrication of equipment and whose total estimated costs including Engineering, procurement, freight, installation, and inspection exceeds $5K but is less than $1M.

  4. General Plant Project (GPP)
     GPPs are capital construction projects whose total estimated cost including design, procurement, construction, test and inspection does not exceed $1.2M.

  5. Major Item of Equipment (MIE)
     A MIE is a capital equipment project whose total estimated cost including design, procurement, construction, test and inspection exceeds $1M and is less than $50M.

Construction Specification. A construction contract document that defines the technical and general provisions of a construction contract.

Construction Transmittal. A form used by Construction Management to track submittals through the review process.

Contract Technical Representative (CTR). The individual assigned by management for each engineering service contract as the technical representative accountable for contracted work product acceptability, delivery dates, and costs. For staff augmentation, the CTR is responsible for providing supervision and technical direction, and approving timecards and invoices. The CTR is accountable for the actions and products of the contracted individuals, including their training and compliance to EG&G RFP policies and procedures.

Contracted Engineering Services. Fixed fee, cost plus fixed fee, master task or A-E contracts which include statements of work calling for the development of new or modified Site facilities that modify the technical basis configuration of existing facilities, systems, processes, safety related software, or site lands.

Contractor Davis-Bacon Committee. A committee that reviews construction activities for applicability to the provision of the Davis-Bacon Act, and makes recommendations to the Site management and DOE on findings. The committee consists of representatives from the following organizations:

(1) Area Maintenance (Chairman)
(2) Construction Management
(3) Labor Relations
(4) Maintenance Planning
(5) Central Planning

Control Design Feature. A designed or engineered condition that is relied upon for maintenance of FCE standards. Such features/conditions shall be considered system Category 1 for purposes of Design, Control, Configuration Management, and Quality Assurance. Transition Standards Identification Program (TSIP) terminology.

Controlled Document/Drawing. An active document that is maintained by a distributing organization, and is placed into formal distribution in a prescribed manner that ensures the document is maintained up-to-date, and is protected in such a way to ensure integrity of the information. This distribution shall be made in accordance with 1-48000-DM-001, Document Control Program.

Controlled Document List (CDL). A reference list that provides System Categories and controlled technical documents for new and previously evaluated systems, components, and structures.

CDL Software. Controlled computer software which may consist of floppy disks, tapes, Bernoulli Boxes, etc., and any hard drive and mainframe programs.

CDL Software/Mainframe Program Files. Controlled computer software/mainframe programs and corresponding hard copies.

Controlled Drawing Index. A building specific list of drawings and weekly updates, issued as controlled documents to building aperture card custodians. These indexes control the Aperture Cards in accordance with COEM-AMN-101.

Corrective Action. Measures taken to rectify conditions adverse to quality, and where necessary, to preclude repetition. Corrective Actions are categorized as follows:

[A] Immediate Corrective Action - Measures to promptly halt and/or stabilize a condition adverse to quality.

[B] Remedial Corrective Action - Measures taken to correct existing programmatic, implementation, or documentation deficiencies created by a condition adverse to quality.

[D] Preventive Corrective Action - Measures taken to prevent future occurrences of a condition adverse to quality.

Cost Plus Award Fee (CPAF) Self-Assessment. An internal evaluation of performance against the Performance Evaluation Plan (PEP) criteria that is defined by the DOE Cost Plus Award Fee (CPAF) process. This evaluation is performed by each AGM organization to document accomplishments as well as deficiencies and corrective actions for activities specified by PEP criteria. In addition, a performance summary and evaluation against plantwide performance indicators is included.

Covered Work. Work that is considered to be construction type work and cannot be assigned to Contractor or Sub-Contractor's maintenance forces.

Credited. A function (assumed to exist in the accident analysis or supporting document) that prevents, detects, or mitigates a postulated accident.

Daily Log Book. A log used to document the daily specific conditions that affect construction projects. Such conditions are weather, project progress, delays, problems, meetings, equipment, work force (crafts), and other information.

Davis-Bacon Determination. A decision made by DOE that a work order is or is not covered under the provisions of the Davis-Bacon Act.

Davis-Bacon Disposition. A decision made by the Contractor Davis-Bacon Committee that a work order is noncovered work based on the DOE pre-approved list of tasks.

Davis-Bacon Recommendation. A recommendation made by the Contractor Davis-Bacon Committee to the DOE Davis-Bacon Committee that a work order is covered under the provisions of the Davis-Bacon Act.

Deactivation. The process of placing a building, portion of a building, structure, system, or component (as used in the rest of this paragraph, "building") in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program in a manner that is protective of workers, the public, and the environment. Actions during deactivation could include the removal of fuel, draining, and/or de-energizing of nonessential systems, removal of stored radiological and hazardous materials and related actions. As the bridge between operations and decommissioning, based upon Decommissioning Operations Plans or the Decommissioning Program Plan, deactivation can accomplish operations-like activities such as final process runs, and also decontamination activities aimed at placing the building in a safe and stable condition. Deactivation does **NOT** include decontamination necessary for the dismantlement and demolition phase of decommissioning, for example, removal of contamination remaining in fixed structures and equipment after deactivation. Deactivation does **NOT** include removal of contaminated systems, system components, or equipment except for the purpose of accountability of Special Nuclear Material (SNM) and nuclear safety. It also does **NOT** include removal of contamination except as incidental to other deactivation or for the purposes of accountability of SNM and nuclear safety.

Debris. Solid materials that have been manufactured or processed (excluding treatment residuals), natural geological material that exceeds a predetermined size (e.g, a 9.5 mm sieve size, such as gravel, cobbles,, and boulders), or an inseparable mixture of such material with soil, liquid, sludge, or other solid waste materials.

Decommissioning. Decommissioning means, for those buildings, portions of buildings, structures, systems or components (as used in the rest of this paragraph, "building") in which deactivation occurs, all activities that occur after the deactivation. It includes surveillance, maintenance, decontamination and/or dismantlement for the purpose of retiring the building from service with adequate regard for the health and safety of workers and the public and protection of the environment. For those buildings in which no deactivation occurs, the term includes characterization surveillance, maintenance, decontamination and/or dismantlement for the purpose of retiring the building from service with adequate regard for the health and safety of workers to the public and protection of the environment. The ultimate goal of decommissioning is unrestricted use or, if unrestricted use is not feasible, restricted use of the buildings.

Decontamination. Decontamination means the removal or reduction of radioactive or hazardous contamination from facilities, equipment or soils by washing, heating, chemical or electrochemical action, mechanical cleaning or other techniques to achieve a cleaner stated objective or end condition.

Decontamination and Decommissioning. Decontamination and Decommissioning (D&D) encompasses an overall process from planning to demolition and cleanup—deactivation, decommissioning, dismantlement, and demolition.

Deficiency. Identifies deviations or degradations from technical or administrative requirements; a condition that does not meet design requirements or could result in a failure of equipment or process system; a procedural error, or a programmatic omission that may result in equipment failure, personal injury, or environmental degradation.

Delinquency List. A report created from the Standards Index which identifies those Standards which have not been reviewed or revised during a 3 year period.

Department of Energy (DOE) Key Decisions. DOE Order 4700.1, Project Management System, establishes five discreet, predefined decision points for the approval and control of projects. These Key Decision (KD) points require formal submittal and approval prior to proceeding with the next KD phase of a project. The KD points are defined as follows:

- **KD-0.** Approval to proceed with engineering studies, alternative evaluations, or conceptual development (Conceptual Design Report, Design Criteria, A/E selection).
- **KD-1.** Approval to proceed with Title I (Preliminary) design. Initial technical, cost, and schedule baselines are based on the Conceptual Design Report. KD-1 directs the implementation of a change control system for changes affecting the project baselines.
- **KD-2.** Approval to proceed with Title II (Definitive) design. Project baselines are updated to reflect completion of Title I (preliminary) design. KD-2 includes approval to proceed with long-lead procurement, as applicable.
- **KD-3.** Approval to proceed with procurement, construction, and installation.
- **KD-4.** Approval to operate facility. Beneficial Occupancy or a Project Acceptance and Transfer (PA&T) constitute KD-4 on smaller projects (General Plant Projects, Expense, and Basic Capital Equipment).

Departmental Procedure. A controlled set of instructions, approved by a Director of an Engineering and Technology (E&T) or Facilities Project Management (FPM) Department, which establishes or describes E&T and/or FPM management and programmatic controls of a routine or continuing nature which govern the work performed by personnel within that Department. Departmental procedures are, by definition, Level 3 or Level 4 documents, generally augment the requirements of a higher level procedure by providing more detailed instructions for personnel within the Department, may implement requirements (e.g., DOE Orders or RFP Policy) directly, with no upper tier procedure, and may, but are not required to, reside in a Departmental manual as defined in COEM-AMN-115, but do not reside in the COEM.

Design Action and Documents Requirements (DADR). A document created and approved at the beginning of a design modification project that details what specific Engineering action must take place and what documents must be generated to correctly complete the Engineering project. Each Design Modification Package (DMP) must have its own DADR.

Design Basis. The collection of design requirements (for example, flow rates, seismic strengths, delta pressures, control parameters, program sequence, load carrying capability, response time, fire suppression and detection capabilities, shielding, criticality spacing, and corrosion resistance) as specified in codes, standards, authorization basis (as applicable), and other requirements documents for Site SSCs and land.

Design Change. Changes to an approved design that increase project technical scope or alter design basis requirements.

Design Checker. An Engineer, preferably a Professional Engineer (PE), assigned to check the technical and administrative accuracy of a design within that Engineer's specific discipline. The Design Checker **SHALL** not be an Engineer who has provided input to the design.

Design Clarification. A design clarification is a field change order to resolve contradictions, ambiguities, vagueness, or drawing errors in the final design. Clarifications do **NOT** affect an operating system; do **NOT** potentially impact the health or safety of workers, do **NOT** potentially impact the safety or quality of the finished product, and do **NOT** change the scope of design tests or specifications. This **SHALL** in no way invalidate any data in the current design.

Design Criteria. The Design Criteria translates the requirements from the Operational Requirements Document into design parameters. It contains technical data and other project information developed during project identification and planning, conceptual design, and preliminary design phases. Project design criteria are consolidated into documents that reflect specific stages of development during the conduct of a project.

Design Engineer (DE). The Engineer responsible primarily for the technical content within a document. This technical responsibility shall be limited to an Engineer's particular discipline. The DE may also be required to submit administrative documents and technical information to support a Project Engineer.

Design Engineering Manager (DEM). A supervisor who assigns and coordinates the activities of Engineers, usually within a specific discipline.

Design Input. Those criteria, parameters, bases, or other design requirements upon which detailed design is based.

Design Modification. Any new installation, revision, or alteration to the Rocky Flats Plant facilities, systems, and/or components that alter the technical design basis of the plant as described in building Final Safety Analysis Reports (FSARs), Operational Safety Requirements (OSRs), and other design documents.

Design Modification Package. A compilation of defined Engineering documents required to document any new installation, revision, or alteration to the Rocky Flats Plant facilities, systems, and/or components that alter the technical design basis of the plant as described in building Final Safety Analysis Reports (FSARs), Operational Safety Requirements (OSRs), and other design documents.

Design Output. Documents, such as drawings, specifications, and other documents, which define technical requirements of structures, systems, components, and computer programs.

Design Output Documents. The documents generated as part of the design process (for example, drawings, calculations, and specifications).

Design Process. Technical and management processes that commence with identification of design input and that lead to and include the issuance of design output documents.

Design Review. The formal review of an existing or proposed design for the purpose of detection and remedy of design deficiencies which could affect fitness for use and environmental aspects of the product, process, or service and/or identification of potential improvements of performance, safety, and economic aspects.

Design Review Record (DRR). An Engineering document used to verify that the appropriate organizations have reviewed and approved the design outputs of the project.

Directive. A COEM document, issued by the Director, Deputy Director or Program Manager. A Directive guides or directs specified activities or work performed by E&SS and/or Project Management (PM) personnel where those activities or work are not currently or adequately guided or directed by existing controlled documentation. Directives do not require a signed record of performance and do not address activities or work covered by an existing procedure, and may be for one-time use or effective for a short period of time, i.e., while a procedure is being written or revised.

Discipline Concurrence. Acquisition of concurrence signatures on a COEM document to represent that discipline requirements have been satisfied. The minimum required concurrence signatures for COEM documents shall be those of the Directors of:

- Electrical Engineering
- Environmental and Process Engineering
- Facilities Project Management (required for FPM-initiated documents only)
- Plant Facilities Engineering
- Plant Systems Engineering
- Quality Assurance

Dismantlement. Dismantlement means the demolition and removal of any building or structure or a part thereof during decommissioning.

Disposition. A documented resolution that describes, in detail, the appropriate actions necessary to correct and/or control the nonconformance. The disposition includes written engineering evaluations, instructions, and acceptance criteria to be included as part of the Responsible Manager's action plan to correct or control the nonconformance.

Document History File (DHF). Documentation of document development which consists of, at a minimum, the DMR, if applicable, draft document, document review sheets, approval/concurrence signature pages, all applicable review checklists, and all associated change notices, if applicable.

Document Writer. The individual assigned to draft a new or revised COEM document, as assigned by the Manager, Engineering Standards (ES).

Drawing. A graphical documentation, in either manual or electronic form, of the physical or diagrammatic configuration of a SSC.

Drawing Interference Report (DIR). A report identifying all Interim Drawings affecting a specific Master Drawing, to whom issued, and the reason for the change.

Effective Date. The calendar date, specified by the Manager, ES, and the affected Responsible Manager, upon which the document is authorized for use and compliance becomes mandatory.

Energy Secretary Acquisition Advisory Board (ESAAB). The purpose of the ESAAB is to assist the Acquisition Executive in the decision making process for major system acquisitions and selected major projects. The ESAAB performs the Level 0 Baseline Change Control Board function and provides disposition for changes that are $50 million and greater and/or 6 months and greater schedule changes.

Engineering Analysis. An engineering evaluation of an existing, proposed, or postulated condition. An engineering analysis by itself **may** not be used to directly conduct any changes, tests, or experiments; however, it **may** provide the basis for an Unreviewed Safety Question Determination (USQD). An engineering analysis **may** be used to document, justify, or support project activities such as, but not limited to:

- Safety Analysis Report parameter change.
- Possible approaches for operating strategy.
- Testing results.
- Engineering feasibility or approach for SSC modification.
- Engineering decisions made during the development of a modification.
- Disposition of Nonconformance Reports.
- Documentation of walkdowns.
- Operability determination.

Engineering Change Request (ECR). A document used to request, process, and approve changes to Final Designs issued by a previously released E&T document.

Engineering Designer/Drafter (DD). The person responsible for design and/or drafting work on engineering drawings.

Engineering Drawing Index. A building specific report of drawings produced from the Engineering database. Each Building Aperture Card Viewing Area will have a Controlled index of the applicable building drawings.

Engineering Drawing Report (EDR). A hardcopy report of all drawings in the EDS database.

Engineering Drawing System (EDS). A database containing all drawings issued final by Engineering and which can be searched by sorts on various fields (i.e., building number, key word, etc.).

Engineering Job Folder. A folder kept by the Design Engineer which contains Engineering documentation for the design modification project.

Engineering Information Documents. Documents (sketches, vendor drawings, product catalog sheets, technical reports, copies from vendor manuals, work location drawings, etc.) relevant to a facility, system, or component, and are not stored separately in a document control center. They shall only be used as an integral part of a controlled document (design packages, work packages, procurement packages, specifications, etc.). Sketches are project-specific and cannot impact Master Drawings.

Engineering NCR Tracking System. The Tracking System used by Engineering to status the NCR through the Engineering evaluation and disposition process.

Engineering Order (EO). A standard form required for release and transmittal of design, procurement, construction, and other documents.

Engineering Operability Evaluation (EOE). A technical evaluation performed by Engineering and Technology (E&T) personnel to assess whether a building SSC is either OPERABLE, CONDITIONALLY OPERABLE, or INOPERABLE. The term also applies to the documentation for the assessment.

Engineering Parameter. Any alarm point, automatic action point, numerical acceptance criteria, operating range, operating limit or tolerance range, developed for use in procedures or otherwise by this procedure.

Engineering Reviewer (ER). An individual assigned to verify that all data in the design document are correct (cannot be the document preparer).

Engineering Service Contract. The term used for any technical services contracted by the E&T organization, including but not limited to A/E, staff augmentation, studies and analysis, and consultant services. The scope of work may include any activity related to E&T responsibilities, i.e. development of new facilities or modifications to the technical basis configuration of existing facilities, systems, processes, safety related software, or site lands.

Engineering Standard. An Engineering document that contains unique Site engineering requirements for SSCs, either mandated by regulatory agencies or self-imposed, to ensure consistent, high quality engineering work products. The standards provide reference to applicable industry codes, standards, or engineering data that **SHALL** be followed at the Site. The Engineering standard augments but does **NOT** substitute for project construction specifications and work packages nor for procedures, instructions, or job aids as defined in the Site Documents Requirements Manual (SDRM).

Engineering Transmittal/Receipt Form. A form used to transmit new and revised aperture cards and the weekly update to the drawing index from ED to the Building Aperture Card Viewing Areas.

Environmental Assessment (EA). A Document (defined in 40 CFR 1508.9 for projects that fit into one of the categories listed in 10 CFR 1021) that assesses whether a proposed action is a 'major Federal action significantly affecting the quality of the human environment'. An EA serves as the basis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

Environmental Impact Statement (EIS). A document (defined in 40 CFR 1580.11) required by NEPA for major projects that have the potential for adverse impact to the human environment. An EIS provides information for decisions on the positive and negative effects of the proposed action or project, and provides an evaluation of alternatives (including the consequences of no action). An EIS is prepared in accordance with requirements of Section 102(2)(C) of NEPA and the Council on Environmental Quality (CEQ) Regulations, and 10 CFR 1021.

EO Coordinator. The person in Engineering Documentation (ED) assigned to process, document, and release all Engineering Orders (EOs) with accompanying documents for reproduction and distribution.

Equipment Specification. The portion of a procurement contract that identifies the technical requirements for equipment to be purchased, e.g., design pressures, temperature, flow, environmental conditions, drift characteristics, operating speed, seismic requirements, etc.

Equipment Specification Review. An evaluation activity which ensures that all characteristics of items listed in a formal specification document will satisfy the mandatory operational requirements and design codes and standards. Specifications shall be processed in the same manner as a regular/routine design modification package.

Equivalent Item. A part or component that is an equivalent to the item being replaced as established by performance of an Item Equivalency Determination.

Facility Control Envelope (FCE). The type of control envelope which provides the AUTHORIZATION CONTROLS for a facility. The FCE identifies the necessary and sufficient controls including interim restrictions to operation, for the maintenance of the current authorization basis of the facility. Transition Standards Identification Program (TSIP) terminology.

Field-Verified Interim Drawing. A drawing that has been marked to indicate the project's As-Built conditions that differ from those shown on the drawing. All markings are to be legible and reproducible.

Final Design. Approved design output documents and approved changes thereto. An E&T document issued for plantwide distribution under a Final Engineering Order in accordance with COEM-DES-253, Engineering Orders (EOs).

Final Design (Title II) Review. An evaluation which ensures that the Design Modification Package is complete. This includes final checked design drawings, construction specifications (including special provisions and technical provisions), and procurement specifications (if they have not been previously reviewed).

Final Safety Analysis Report (FSAR). A document prepared to systematically identify the hazards of a nuclear facility, to describe and analyze the adequacy of the measures taken to eliminate, control, or mitigate identified hazards, and to analyze and evaluate potential accidents and the associated risks. The FSAR is the principal reference used for developing Safety Evaluations (SEs) to determine that the nuclear facilities can be operated without any undue risk to the plant, public, or environment. For the purposes of performing SEs at Rocky Flats Plant, the FSAR includes supporting reference documents (for example, applicable safety or criticality analyses).

Finding. A statement of fact regarding nonconformance with established policy, procedures, instructions, specifications, or other applicable documents.

Finding of No Significant Impact (FONSI). A document (defined in 40 CFR 1508.13) prepared to record a DOE decision that the environmental impacts of a proposed action or project addressed by an EA will not have a significant impact on the human environment and that an EIS is not required for the proposed action/project.

Full-Scale Range. The region between the limits within which a parameter is measured, received, or transmitted. It is expressed by stating the lower and upper limit values.

Functional Classification. A component or part defined as being either safety related (SR) or non-safety related (NSR) based upon the following:

Non-Safety Related (NSR). The component or part is NOT required to assure a Category 1, 2, or 3 system performs its intended function(s). All components and parts within Category 4 systems shall be classified as NSR.

Safety Related (SR). The component or part is required to assure a Category 1, 2, or 3 system performs its intended function(s).

Functional Requirements. A qualitative statement of required system function(s) and manner in which the function(s) is (are) performed.

Functional Requirements Matrix. A matrix which identifies functional requirements, acceptance criteria, assessment bases, and OSR or other governing requirements.

General Conditions/Provisions. Division 1 of a construction specification containing the qualitative requirements for a project.

Government Estimate (GE). An estimate used to determine the viability of competitive bids received in connection with fixed-price construction contracts. A GE serves as a control in evaluating a cost estimate prepared by a Cost Plus Fixed Fee (CPFF) contractor.

Government Furnished Equipment (GFE). Material and equipment purchased by the government and furnished to a Construction Subcontractor.

Graded Approach. The process of basing the application of administrative and managerial controls applied to an item or activity according to the intended use of the results. Graded Approach establishes the degree of confidence needed in the quality of the results, the value added by the increase in quality, and the risk posed by the item or activity to health, safety, and the environment.

Hazard. A source of danger (i.e, material, energy source, or operation) with the potential to cause illness, injury, or death to personnel, damage to a facility or to the environment (without regard for the likelihood or credibility of accident scenarios or consequence mitigation).

Hazards Analysis. An analysis that can be used to identify the credited hazards analysis functions of a facility or system.

Hazardous Waste. Waste defined as hazardous under RCRA requirements as stated in 40 CFR 261, which specifies hazardous characteristics and provides a listing of specific hazardous wastes. The radionuclides of source material, special nuclear material, and byproduct material (as defined in the Atomic Energy Act [AEA]) are specifically excluded from the classification of hazardous waste.

Implementing Organization. The organization responsible for actions required by a Design Modification Package (DMP) after it has been issued.

Improvement Item. An action that will result in more efficient performance or in exceeding requirements. (May be associated with an observation.)

Independent Verification. The act of rechecking the design output from an individual or a group which is performed by any technically competent individual(s) or group(s), other than the preparer, but who may be from the same organization. This verification may be performed by the originator's supervisor, provided the supervisor did not specify a singular design approach or rule out certain design considerations and did not establish the design inputs used in the design; or provided that the supervisor is the only individual in the organization competent to perform the verification. Cursory supervisory reviews do not meet the intent of this requirement.

Independent Verifier. An engineer, preferably a Professional Engineer (PE), and is other than those engineers that performed the work. The Independent Verifier is responsible for examining the design document or process prior to approval or concurrence which includes determining that sound engineering/scientific principles and appropriate standards were used and that the design work, including changes, incorporated applicable requirements and design bases. This individual may be from the same organization.

In-Process Documents. Drawings or documents which have been released for construction, but which have not been formally revised per COEM-DES-251 to reflect as-built conditions or ECR changes. Current and accurate in-process drawings/documents are maintained in the IWCP work package as required and also in the Project Engineer or Design Engineer files.

Inoperable. A condition where a structure, system, or component is no longer able to perform its intended safety function in the required manner (i.e., neither OPERABLE nor CONDITIONALLY OPERABLE).

Instrument Loop. A group of instruments, connected electrically or pneumatically, to provide indication, control, alarming, or trending of a single parameter.

Instrument Range. For the purposes of this procedure, *Instrument Range* will be referred to as *Full-Scale Range*.

Instrumentation. Any device or group of devices used to derive a qualitative or quantitative value from a Process System, HVAC System, or Regulatory System. This shall include, but not be limited to, devices used to measure, alarm, sense, control, analyze, record, indicate, and perform Process/Heating, Ventilation, and Air Conditioning (HVAC)/Regulatory functions. Instrumentation and Controls Engineering shall define those devices that constitute Process/HVAC/Regulatory instrumentation, and are subject to this directive. This definition shall not include maintenance and test equipment (M&TE).

Interagency Agreement (IAG). The Federal Facility Agreement and Consent Order for the Site, which is a regulatory agreement that has been signed by the DOE RFFO, the U.S. Environmental Protection Agency Region VIII, and the State of Colorado Department of Health. This document was negotiated and signed to implement the provisions of CERCLA Sec. VIII-91-03 and RCRA 3008(h)-VIII-91-07 (EPA Region VIII), and other related environmental regulations as specified.

Interface Discipline Engineer. The engineer that provides technical design interface input, as needed, to the Design Engineer for his/her discipline.

Interface Discipline Review. An evaluation which is performed outside of the originating Engineer's discipline to verify that other discipline information is correct.

Interference Report. A document created from the SDDC drawing database which lists those drawings and jobs currently in progress (not in closure) that could potentially impact the document(s)/job(s) requested by an individual performing design activities.

Interim Drawing. A drawing affecting one or more controlled drawing with its drawing number identifying one controlled drawing. This drawing is utilized to indicate proposed changes and can be a reproduced or hand-drawn version. A composite affecting multiple controlled drawings can be prepared and will have its four-digit drawing number begin with a 'K'. A list of the affected controlled drawings is to be shown on the composite drawing.

Interim Measures/Interim Remedial Action (IM/IRA). A combined RCRA interim corrective action and/or CERCLA interim response action, generally of short term, that may be taken to abate or respond to potential threats to human health, the environment, or potential exposures to hazardous waste.

Internal Review. A review to check for correct procedure format and content, as well as administrative requirements, to ensure consistency with governing documents.

Item. An all inclusive term used in place of any of the following: appurtenance, assembly, component, equipments, material, module, part, structure, subassembly, subsystem, system, or unit.

Justification for Continued Operation (JCO). A technical evaluation performed by E&T personnel to assess the safety significance of continued operation "outside" of conditions defined by the Operational Safety Requirements (OSRs). JCOs are required only when two conditions exist:

(1) an out-of-tolerance condition exists and

(2) continued operation of affected system(s), beyond that allowed by specified remedial actions, is desired.

Remedial actions must be implemented during the time period of JCO preparation and DOE approval. Remedial actions shall not be terminated until DOE approval of the JCO is received, or as otherwise directed by DOE.

Justification of Mission Need. The document required for Department of Energy (DOE) approval for expenditure of DOE funds for projects anticipated to be designated as Major System Acquisitions (MSAs) or Major Projects (MPs). The document reflects the determination and identification of DOE mission need(s).

Keyword Dictionary. A list of the keywords used on drawings for performing searches of the databases.

Key Personnel/Project Team. Members of the dedicated, core project team. These individuals direct others and request support within their areas of responsibility in support of project objectives. They attend and participate in the regularly scheduled project team meetings. The Project Team usually includes individuals having different disciplinary and experience backgrounds who bring their diverse abilities together to oversee, manage and support the common project effort.

Landlord. The major subcontractor representative responsible for the building or area for which the design package is applicable. This signature does **NOT** constitute technical acceptance of the design but rather the Landlord is cognizant of the design.

Lead Engineer. The individual within E&T assigned responsibility for the preparation of an EOE. This individual may be from Design Engineering, Nuclear Safety Engineering, or Systems Engineering.

Library Action Request Form (LARF). The form by which additions, deletions and changes to Library Parts used on the standard CAD/CAE systems are requested.

Library Part. Specially created CAD/CAE system files comprised of graphical and non-graphical entities. These are inserted into CAD/CAE drawings to provide graphical representation of standard components, symbols, formats, etc. Upon insertion into a CAD/CAE drawing a Library Part shall have varying levels of editability depending on text requirements, how part was inserted (nfig, part), non-graphical entities, etc.

Life-Cycle Costing (LCC). A method of economic evaluation that sums the discounted dollar costs of initial investment (less salvage value), replacements, operations (including energy usage), and maintenance and repair of a building or Building System over the study period. LCC analyses shall comply with 10 CFR 436, Federal Energy Planning and Management Programs," as amended, per the guidelines set forth in the NBS Handbook 135, "Federal Energy Management Programs."

Like for Like. A part or component which is the same as the part being replaced.

Limiting Condition for Operation. Limiting Conditions for Operations (LCOs) are the lowest functional capability or performance level of safety-related structures, systems, component, and their support systems required for normal safe operation of the facility. This subsection for the TSR **SHALL** contain the limits on functional capability or performance level. When a LCO is not met, the contractor **SHALL** take remedial actions defined by the TSRs until the condition can be met. The LCO **SHALL** describe the action to be taken in case of exceedance of the LCO. In cases of exceedance of an LCO, the contractor **SHALL** notify DOE in accordance with DOE 5000.3A, review the matter, and record the results of the review including the cause of the condition and the basis for any corrective actions taken to preclude reoccurrence.

Line Item Projects (LI). Projects which are specifically reviewed and approved by Congress. Projects with a total estimated cost greater than $1.2 million are categorized as Line Item Projects.

Loop Accuracy. This defines the accuracy of an instrument loop as a whole.

Low-Level Waste (LLW). Waste that contains radioactivity and is not classified a high-level waste, transuranic waste, spent nuclear fuel, or 11e(2) byproduct material as defined by DOE Order 5820.2A.

Maintenance Manager (MM). Maintenance and Plant Support Managers directing maintenance activities including Area Maintenance Managers, Electronics Maintenance Managers, Plant Service Managers, and Logistics Managers.

Maintenance and Operating (M&O) Contractor. EG&G Rocky Flats, Inc., as the M&O, is charged with the safe and environmentally sound operation and maintenance of the Rocky Flats Plant (RFP).

Major Project (MP). A Construction Line Item with a total project cost including pre-decisional, engineering, procurement, and installation, between $50M and $100M. Additional requirements which are not covered in the scope of COEM-PMG-301 will be provided by DOE on a case by case basis for MP. These requirements shall be detailed in the Project Plan and in the Project Management Plan. DOE Order 4240.1K, Designation of Major System Acquisitions and Major Projects, lists specific DOE projects designated in these categories.

Major System Acquisition (MSA). A Construction Line Item with a total project cost including pre-decisional, engineering, procurement, and installation, exceeding $100M. Additional requirements which are not covered in the scope of COEM-PMG-301 will be provided by DOE on a case by case basis for MSA. DOE Order 4240.1K, Designation of Major System Acquisitions and Major Projects, lists specific DOE projects designated in these categories. A Major System Acquisition project as a unique funding source may not follow the traditional definitions of capital and expense funding.

Management Control System (MCS). The MCS is a business oriented methodology designed to provide a consistent company-wide approach to the development and maintenance of capital and operating expense performance baselines (scope, schedule and cost) for planning prioritizing, budgeting, managing, controlling and reporting to EG&G Rocky Flats (RF) Management and DOE on work within the cognizance of EG&G RF.

Master Interim Drawing Systems (MIDS). A database used to assign, record, and track Interim Drawing numbers. The DIR is generated from this database.

Master Task Subcontract (MTS). A contracting mechanism used to perform work containing terms and conditions and labor rates as negotiated under the fixed terms and conditions of a general contract, with specific scope of work awarded through task orders thereafter. A subcontract that allows for the placement of funded task orders with a specific statement of work. Task orders are generally executed on a rotational basis to those subcontractors who have a Master Task Subcontract with EG&G.

May. Permission is granted, rather than constituted as a requirement, and is identified as "may."

Minor Change. Technical changes to approved design documents that are within the boundaries defined by the original design basis documents.

Mixed Waste. Waste containing both radioactive components (as defined by the AEA) and hazardous components (as defined by the RCRA and 40 CFR 261). The hazardous component of mixed wastes are subject to regulation under RCRA, as amended by the Federal Facilities Compliance Act, while radiological components are regulated under the AEA. Inconsistencies are addressed in DOE Order 5400.3.

Modification. Any change, addition, or alteration to an SSC (for example, flow rates, seismic strengths, delta pressures, control parameters, program sequence, load carry capacity, response time, fire suppression/detection capabilities, shielding, criticality spacing, corrosion resistance). Use of a like for like or equivalent item is **NOT** a modification.

Modify. Synonymous with the term change and includes all new construction to facilities or technical basis changes to existing facilities, systems, processes, safety related software or site lands at Rocky Flats (Site definition for Configuration Change Control).

Natural Phenomena Hazard Performance Category. A classification using a graded approach in which SSCs in a category are designated to similar levels of protection—meet the same performance goal—during natural phenomena events. Natural phenomena events include earthquakes, wind, hurricanes, tornadoes, floods, precipitation (rain or snow), volcanic eruptions, lightning strikes, or extreme cold or heat.

National Pollutant Discharge Elimination System (NPDES) Permit. A permit issued by the EPA (at the Site) for a discharge which is either in compliance with authorized discharge levels or which includes a schedule which will bring the point source into compliance with authorized discharge levels.

National Environmental Policy Act (NEPA). (42 U.S.C. 4321 et seq.) Requires that federal agencies prepare certain types of documents to inform decision-makers of the environmental and other consequences of alternative courses of action, including no action, before selecting a course of action.

New Interim Drawing Request (MIDR). A form used to request and obtain New, Interim, and Background Drawings.

NEPA Document. An EA, FONSI, EIS, Record of Decision (ROD), Notice of Intent (NOI), CX, or other document prepared pursuant to a requirement of NEPA and/or the attendant CEQ regulations.

Net Savings (NS) - Net Benefit. Time adjusted savings (or benefit) less time adjusted differential costs taken over the study period, for an alternative Building System relative to the base case.

Nonconformance. A deficiency in characteristic, documentation, or procedure that renders the quality of an item unacceptable or indeterminate. A deficiency which is identified in System Categories 1 or 2 structures, systems and components (SSC) that do not meet original documented Engineering installation, material, or drawing specifications. System Category 3 SSC deficiencies may be considered NCRs when required by other site policies and procedures, when requested by Operations personnel, or to resolve identified safety risks.

Nonconformance (Procurement). A deficiency of a newly procured item which cannot be resolved through the vendor and which is identified prior to installation in an operating or functional system and which does not meet procurement specifications or purchase order requirements. Procured items are those which have been or will be delivered to the plant site by purchase order administered through the Purchasing department and are inspected for acceptability by Receiving, Certification, and Inspection.

Nonconformance Report (NCR). The document (SCMP Identification Form for Maintenance deficiencies or Procurement Nonconformance Report Form for procurement deficiencies) on which a deficiency is recorded and determined to be an NCR in accordance with 2-D49-COEM-AMN-139. Documentation includes engineering evaluation, disposition, root cause and recurrence control associated with the deficiency resolution.

NCR Engineering Signature Matrix. A signature matrix to define the responsibilities for Engineering signoff on the NCR.

NCR Review Board. A decision-making panel convened by the Cognizant Quality Organization (CQO) Engineer, made up of subject matter experts and reviewing organizations, when comments relative to a proposed disposition need further discussion or when comments cannot be resolved and concurrence is being withheld by one or more reviewing organizations. The Material Review Board (MRB) is one example of a CQO's NCR Review Board.

NCR Status Tag. A tag that is placed on or near the nonconforming item to ensure that plant personnel are informed of the existence of a nonconforming condition. The tag also prompts personnel to verify any use restrictions associated with the nonconforming item with building operations.

Noncovered Work. Work that is considered a maintenance activity that may be assigned to Contractor or Sub-Contractor's maintenance forces.

Non-Graphical Entity. Entities used in the creation of Library Parts that do not form a portion of the part graphics. These entities (i.e. connect node, text node) generally have intelligence associated with them.

Non-Safety Class (NSC). Any system, component or part which is not required to assure a System Category 1 or 2 systems performs its vital safety function(s) and is not classified as AQ.

Notice of Intent (NOI). 1. For the NEPA process, a notification (as described in 40 CFR 1508.22) that announces the intent to prepare an EIS for a proposed project or action. 2. A written notice to the appropriate pollution control authority of any intent to replace, modify, or upgrade air pollution control or spill control equipment and/or facilities.

Observation. An opinion regarding a deficient condition not covered by a specific requirement; may also describe a procedure, practice, or specification that can be improved; may be informational in nature; and/or may reflect one or more of the following:

[1] If the condition is not corrected in a timely manner, it may develop into a finding or condition adverse to quality, or

[2] Plans and/or procedures currently meet/satisfy requirements; however, improvements can be made to the activity. (An Improvement Item may be associated with an Observation.)

Operable. A condition where a structure, system, or component can perform the intended function in the required manner upon demand.

Operability Screen. Evaluation performed to determine if a nonconformance potentially impacts the capability of the system or component to perform its intended function, or exposes operating personnel to potential safety hazards.

Operating Range. The range of values that the operating system is expected to display on the indicating instrumentation.

Operation Codes. Codes to be placed within the OPER CODE section of the time card. They are used to provide detailed data on specific engineering activities.

Operational Requirements Document (ORD). A detailed question and answer list of items completed by the User prior to the start of definitive design that provide the level of detail adequate for establishing the technical design basis for the project.

Operational Safety Requirement (OSR). Those requirements which define the conditions, safe boundaries, and bases thereof, and management or administrative controls required to ensure the safe operation of a facility. OSRs include Safety Limits, LCOs, Surveillance Requirements, Design Features, and Administrative Controls.

Originator. The individual requesting development of a new COEM document, or the individual initiating a revision or change.

Other Functions. Those functions which are deemed necessary to ensure personnel safety, and the safety of the environment, but which are not Vital Safety Functions. Also, this category includes other system functions which are necessary for a system to achieve its design purpose.

Out-of-Tolerance. A condition that exists upon failure to meet an LCO or Surveillance Requirement (SR) specification when the associated remedial action has been initiated, as defined within the OSR. Also, a condition that exists upon failure to implement specified compensatory measures for a SSC that has been declared CONDITIONALLY OPERABLE, and associated remedial actions have been initiated as defined within the OSR.

Overdue Drawing Report (ODR). A report generated by ED to list the drawings that have been checked out longer than 90 days as shown in the EDS.

Parallel Review. External review conducted concurrently by various groups to determine if the proposed procedure or revision adequately addresses concerns of the respective groups.

Parent System. The largest grouping of equipment and components that perform given functions. A parent system may then be able to be broken down into a series of subsystems by identification of the subsystem boundaries. All components and parts belong to a parent system. They may or may not belong to a subsystem.

Part. Items from which a component is assembled (e.g., resistors, capacitors, wires, connectors, transistors, O–rings, springs, bearings, gaskets, bolting, seals, etc.).

Performance Area. Defined segment (program, function, element, or activity) of a specific organization.

Performance Criteria. Focused or specific components of an organizational function, element, activity, or program that, in aggregate, serve to measure how well the organizational (Performance Area) Performance Objective is achieved.

Performance Objective. A broadly-stated expectation of a function, element, activity, or program that when achieved, signifies highly desired organizational performance (excellence) in the stated Performance Area.

Permit to Install (PTI). A permit issued by the State allowing the grantee to construct, erect, locate, or affix any source of particulate matter, dust, fumes, gas, mist, smoke, or odorous substances, alone or in any combination, and waste water discharges including any sewage, industrial waste or other waste as defined by the State codes.

Permit to Operate (PTO). A permit issued by the State allowing operation of a source of particulate matter, dust, fumes, gas, mist, smoke, or odorous substances, alone or in combination. PTOs apply to air emissions only; waste water discharges are covered by NPDES permits issued by the EPA.

Photography Request. A form used to request media services to take photographs of a construction project in order to document the progress of that project.

Pilot Procedure. A level 2 or 3 administrative procedure approved by the Chief Engineer or Deputy Director of affected organization to test a prototype/new way of performing certain tasks and/or processes over a specified period or task duration.

Plant Change Control Board (PCCB). The PCCB is a site review board that has been established to administer change control for the plant technical, schedule and budget baselines in the Management Control System. The board is chaired by DOE with equal numbers of contractors and DOE members. It is the responsibility of the board to review and decide on approval or disapproval of proposed changes to plant baselines. The PCCB interacts with DOE Construction Engineering Division who provides the primary change review for construction projects.

PCCB Membership, consistent with the following PCCB structure, will be designated in writing by name, for their respective areas, by the General Managers of DOE-RFO, EG&G and WSI.

DOE:
- Associate Manager, Operations
- Associate Manager, Environmental Management
- Associate Manager, Technical Support
- Associate Manager, Administration
- PCCB Chairman (appointed by DOE-RFO Manager)
- Secretariat (Non-voting)

EG&G:
- Associate General Manager, Environmental Restoration and Waste Management
- Associate General Manager, Non-Plutonium Operations
- Associate General Manager, Plutonium Production
- Associate General Manager, Plutonium Recovery
- Associate General Manager, Administration & Planning

WSI: Representative

Ad. Hoc: Specific RFO, EG&G, WSI, and LATO areas may be requested by the PCCB Chairman to furnish Ad Hoc non-voting members to support PCCB activities on an as-needed basis.

Policy. A written document that sets forth the corporate position for a programmatic area or topic, and assigns management responsibility and authority for implementation. It does not contain procedural instruction.

Predecisional Project Plan (PPP). A Predecisional Project Plan is required for Construction Line Item (CLI) projects for approval of Key Decision 0 (KD-0) to proceed with conceptual design and other predecisional activities, including Design Criteria, A/E selection, Environmental Assessments, etc.

Preliminary Design (Title I) Review. An evaluation to ensure that preliminary design work is progressing in accordance with the design criteria and other design inputs. Items evaluated include preliminary design drawings, layouts, outline construction specifications, procurement specifications, and any other pertinent Engineering data.

Preliminary Project Management Plant (PPMP). A PPMP is required for KD-0 approval for Line Item Projects by DOE HQ. The PPMP governs the expense funded activities that are initiated early in the Project Life Cycle. The PPMP has the same sections as the PMP/WP and identifies scope, schedule, budget, and methods of accomplishment for pre-decisional activities (Conceptual Design Report, Design Criteria). The PPMP does not address activities after KD-1 approval. The PPMP is prepared in accordance with COEM-PMG-323, Preparation of Project Management Plan/Work Package, and should integrate and roll up into the PMP/WP that is prepared later.

Preliminary Safety Analysis Report (PSAR). A document produced early in the engineering phase of a project which systematically identifies safety design criteria; analyzes potential hazards of the operation of a facility and proposes measures for their elimination, control, or minimization; and evaluates the potential risk of operation.

Preventive Maintenance Technical Information (PMTI). Preventive Maintenance Technical Information Package is an Engineering technical package prepared in accordance with the Conduct of Engineering Manual documenting the preventive maintenance requirements of equipment and/or systems with supporting vendor information and references. This is a controlled document maintained by Engineering Documentation.

Pre-Walkdown Review. Pre-Walkdown planning stage where the goals of the Walkdown are established. This phase includes determining the activities that require system/components support; review documentation to determine the status of the system/components; and review of drawings to determine location and identification of systems/components. Also, an EWP number is assigned to the Engineering Walkdown Package

Procedure Qualification Record (PQR). A PQR is a record of the welding data used to weld test coupons, the variables recorded during the welding of the test coupons, and the test results of the tested specimens. Recorded variables normally fall within a small range of the actual variables that will be used in production welding.

Procurement Process Levels. The Site graded procurement process which applies controls consistent with risks and consequences of failure in order to assure that items perform their intended function. The desired controls **may** consist of supplier Quality Assurance (QA) programs, source inspections, verification of item characteristics after receipt, post installation testing, or any combination of these.

- PL1 - - Approved Supplier. Applicable to items whose failure effects demand that high technical standards and quality controls be placed on their purchase. The supplier of these items must have a Site-approved QA program which maintains the controls required to ensure that items will perform their intended function.

- PL2 - - Unapproved or Not Fully Approved Supplier. Applicable to items whose failure effects demand that high technical standards and quality controls be placed on their purchase. However, the supplier of these items does not have a Site-approved QA program which maintains necessary controls, therefore, controls **SHALL** be implemented by the Site in order to ensure that items will perform their intended function.

- PL3 - - Items Not Requiring Technical or Quality Control During Purchase. Applicable to items whose failure effects are insignificant, and technical and quality controls, beyond assuring receipt of the specified item, are **NOT** required.

Program. An organized set of activities directed toward a common purpose or goal undertaken in support of an assigned mission area. It is characterized by a strategy for accomplishing definite objectives that identify the means of accomplishment, lead organization, and manpower, materials, and facility requirements.

Program Baseline Change Control Board (BCCB). The BCCB is chaired by the appropriate Program Secretarial Office. Membership of the Level I board will be at the discretion of the board Chairperson. The Level I board provides disposition for changes that are less than $50 million and/or less that 6 months schedule change. The BCCB is an advisory, not a voting board. A BCCB Chairperson, at their discretion, may provide disposition of a requested change without conducting a board meeting.

Program Chief Engineer (PCE). An Engineering manager assigned by the Plant Chief Engineer to act for him in all matters involving technical authority.

Project. A nonroutine, complex scope of activities with firmly scheduled beginning and end points, specific performance requirements, established costs, and cognizant management, planning, and control elements. A project will result in discreet products and deliverables, may involve multiple organizations, and may be capital or expense funded. Facilities projects at Rocky Flats include all new construction and modifications to existing facilities, and acquisition of new construction and modifications to existing facilities, and acquisition of new Pequipment under the capital equipment program. Routine maintenance and service contracts are not generally classified as projects.

Project Baselines. The established cost, schedule, and technical requirements to serve as the base and standard for progress measurement during the performance of a project; the established plan against which the status of resources and the progress of a project can be measured. For Class A and B projects, baselines are derived from the approved Conceptual Design Reports (CDRs), and are defined in the Congressionally approved Project Data Sheets (PDS).(Schedule 44 or 45). These documents are prepared in accordance with DOE 4700.1. (Note: The latest Congressionally approved Project Data Sheet is considered the official baseline of a project.) For Class C projects, the baselines are established by the DOE/RFO approved Project Management Plans (PMP) for the projects. Pre-decisional activities and costs are baselined by the Pre-decisional Project Plan prepared by FPM and approved by RFO/Construction Engineering Director (CED). Pre-decisional baseline changes may be controlled per this procedure as requested by CED. (For definitions of Class A, B, and C projects, see definition for Construction Projects.)

Scope Change
Scope is defined as the technical content of a work package which must have an associated budget, time phased with a schedule for work performance. The Plant Change Control Board (PCCB) has defined a scope change as any change proposed

for one or more of the following reasons:

- Any change in programmatic purpose;
- Any significant change in operational capacity. Operational capacity may be expressed in terms of productive capacity, number of people housed, square footage, storage capacity, or other appropriate measures of output;
- Change in the technical or nontechnical features of the facility affecting the end purpose of the project. For example, reduction in laboratory or other space to keep project costs within allowable funding limits;
- Substantial increase in one functional area and a corresponding decrease in another, e.g., decrease in laboratory space and an increase in office space;
- Building in additional capacity for the express purpose of providing for future expansion when such expansion was not planned. Examples are increases in utility, power, or other service capability; or,
- Any change in the location of a construction project other than minor site orientation.

Budget Change

Budget is defined as the amount of labor and non-labor resources, quantified in dollars, required to accomplish a given scope of work during a specified time frame. A construction project budget is defined as its approved total estimated cost. The PCCB has defined budget changes as a change in the total resources required, expressed in dollars, which has been proposed for one or more of the following reasons:

- Accommodate changes in work scope (including work termination) which may require additional budget or deletion of budget;
- Schedule perturbations not related to contractor performance;
- Creation of a new project.

Schedule Change

A schedule is a time-phased, logical network of activities. Each activity has an associated work scope, duration and budget. A schedule change is defined as any change of network logic or activity duration which has an impact on milestones or the final completion of the work scope and may be proposed for one or more of the following reasons:

- Significant work delays due to unplanned safety, health or environmental requirements;
- Resource availability due to customer requested changes in work priority;
- Work deferral due to funding availability.

DOE Headquarters Directed Change - A change imposed by DOE on a project(s), with direction to implement, which affects one or more of the project's baselines. Examples of directed changes include, but are not limited to:

- Changes to approved budgets, or funding; and
- Changes resulting from DOE policy directives and regulatory or statutory requirements.

Project Design Hours Estimate (PDHE). The formal labor hour estimate for project activities that outlines project design estimates of work required to complete a designated phase of the project. The PDHE provides an estimate from each design discipline.

Project Engineer (PE). The Engineer responsible for the overall technical and administrative aspects of an Engineering activity. This includes coordinating all Design Engineering (DE) design efforts and overall package assembly.

Project File Index/Records Checklist. A sheet that lists/identifies documents to be maintained in the project file. This sheet is placed at the beginning of the project file and is updated by the Project Manager (PM) as new information is placed in it.

Project Manager (PM). One who directs the technical, administrative, and clerical personnel on a specific program.

Project Management Organization. The organization on Site tasked with the Project Management responsibility for construction projects. Other organizations may be tasked on a case-by-case basis with project management responsibilities for dedicated programs, such as Major System Acquisitions (MSAs), under a special charter approved by the Site President.

Project Management Plan (PMP). A document that summarizes the plans, organization, management systems, and budget that will be utilized in the accomplishment of a project. The size and content of this plan will be graded as to the scope, complexity, and cost of the subject project.

Project Management Plan/Work Package (PMP/WP). An internal Site defining document that establishes cost, schedule, and scope baselines for a specific project. The PMP/WP is developed in the planning phase of a project. It defines scope, methods of execution, responsibility assignments, project work breakdown structure and associated budget, schedules, major milestones, project organization structure, and reporting requirements.

Project Material List (PML). The bill of materials required to complete the construction/installation documented in the construction Design Modification Package (DMP). Engineering-requisitioned items shall be so noted. The PML does not include miscellaneous construction materials such as nuts, bolts, screws, washers, gaskets, clips or hooks, or expendable supplies such as tape, plastic or gloves.

Project Plan. A document which is described in 4700.1, Attachment II-2, Page II-49 which applies only to Major Projects and Major System Acquisitions. A Project Plan describes the project and establishes project baselines against which overall progress of the project and the effectiveness of its management shall be measured (no more than 25 pages in length). The Plan guides project execution and clearly sets forth the essential elements of the project. It describes mission need and objectives, technical plan, risk assessment, and management approach. It emphasizes scope, cost, schedule and focuses on technical objectives, performance, and the test planning for the project. It is a key part of Executive decision-making.

Project Risk. A qualitative or quantitative expression of possible loss to the project or by the project in terms of consequence severity and probability of occurrence.

Project Team (PT). The team of engineers, estimators, and health and safety, nuclear safety, procurement, and quality representatives assigned responsibility for the engineering activities associated with a project. The PT includes subcontracted Architect-Engineering engineers, as appropriate.

Proposed Action Memorandum (PAM). An accelerated response action defined and approved in the amended Rocky Flats Environmental Technology Site Interagency Agreement. It is appropriate when providing for expeditious actions which 1) mitigate a threat or potential threat to public health or the environment, 2) can be implemented within six months, 3) and are considered appropriate by the EPA, CDPHE, and DOE. The PAM shall contain a brief summary of the data for the site; an explanation of the proposed action; waste management considerations; a brief explanation of how the

proposed action is consistent with any long-term remedial action objectives; and an implementation schedule and completion date for the proposed action. If appropriate, the PAM shall also contain a brief summary of risks which the Accelerated Response Actions is intended to mitigate, and/or proposed performance standards. All ARARs specifically related to the proposed action shall also be addressed (Ref. RFETS IAG).

Quality. The degree to which an item or process meets or exceeds the user's expectation. (See also Site Quality Assurance Manual.)

Quality Assurance (QA). The planned and systematic actions necessary to provide confidence that items are designed and constructed in accordance with applicable standards.

Quality Control (QC). The examination of services provided and work done together with management and documentation necessary to demonstrate that these services and work meet contractual and regulatory requirements. (Adopted from ASCE Manual #73).

Quality Verification Plan (QVP). A set of inspection criteria and hold points established by Facilities Quality Engineering (FQE) based on the design modification package content and design requirements in the DIRA.

Radioactive Waste. Solid, liquid, or gaseous material that contains radionuclides regulated under the Atomic Energy Act (and attendant DOE Orders and federal regulations), and of negligible economic value considering cost of recovery and/or value of the radioactive substance.

Real Property. Land and/or improvements including interests therein.

Remedial Action. The mandatory response when a LCO cannot be met. Remedial actions are specified by the building-specific OSRs and may include maximum duration for facility operation in an out-of-tolerance condition before it is required to terminate operations.

Repair. The restoration process of a nonconforming characteristic to a condition such that the item will function reliably and safely, although it may not conform to its original specified requirements.

Requirement. Mandatory actions that address regulatory, safety, emergency, quality, legal, financial, and technical aspects of activities or facilities.

RCRA. The Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C., sec. 6901 *et seq.*).

RCRA Closure. A process established by the RCRA, and described in 40 CFR 264/265 Subpart G, which requires the owners or operators of hazardous waste treatment, storage, and/or disposal (T/S/D) facilities to provide written and approved closure plans for the Hazardous Waste Management Units (HWMU) under their purview. This plan addresses the manner in which a facility is closed in order to minimize the need for further maintenance and controls, and to minimize or eliminate (to the extent required) the release or threat of release of contamination to the environment. The requirements of the closure plan must be implemented when the T/S/D facility ceases operations at the HWMU of record.

Resource Coordinator (RC). A person from the Engineering Procurement Support (EPS) group assigned to coordinate for a given E&T directorate the planning and tracking of work to be performed, to provide interface with Procurement, and to initiate and manage various engineering service contracts to the extent determined by the given Director.

Responsible Engineering Manager. The Manager of the Engineering group responsible for creating or revising those Standards associated with the disciplines or designs of the groups' activities or outputs.

Responsible Manager. Functional title referring to Manager of the organization responsible for the document.

Resumption. The event associated with the restarting of a building's normal mission-related operations.

Revision Bar. Black vertical line in the right margin used to identify technical differences between a current draft or revision and the previous revision. Revision bars may be used for editorial changes at the Procedure Writer's discretion. Revision bars are not used when the revision is designated as a total rewrite in the Scope Section.

Rework. The process by which an item or product is made to conform to original specified requirements by completion, re-machining, reassembling, or other corrective means.

Risk Assessment. The process of identifying hazards, potential failures, and concerns along with their possible consequences, causes, probabilities of occurrence, controls, and mitigators. Also, Risk Assessments are major sections in the Justification of Mission Need and in the Project Plan, which ate required for Major System Acquisitions (MSAs) and Major Projects (MPs).

Risk Management. The process of risk identification, assessment, response (i.e., elimination, control, mitigation, tolerance), documentation, and tracking of the effectiveness of the actions resulting from these determinations.

Rocky Flats Office (RFO). The Department of Energy (DOE) Rocky Flats Office (RFO) maintains oversight control of the RFP.

Rocky Flats Plant Standard. An Engineering document which contains design criteria for items repeatedly installed or used at Rocky Flats Plant. Plant Standards set forth requirements for design, construction, modification, operations, or decommissioning at RFP to ensure consistent application of lessons learned and establish uniformity within the facility. Deviations from requirements shall be technically justified.

Record of Decision (ROD) for Project Actions with an (EIS). A document prepared in accordance with 40 CFR 1505.2 that provides a concise public record of the decisions on a proposed project or action for which an EIS was prepared. The ROD identifies the alternatives considered in reaching the decision, the environmentally preferable alternative(s), factors balanced in making the decision, whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why they were not.

Record of Decision (ROD) for Remediation. A document containing a concise public record of the decisions by DOE and concurrence by EPA and the public on a proposed remedial activity. It includes evaluation of alternatives, the selection of the most feasible alternative, factors considered in the selection process, mitigative measures, and monitoring requirements.

Root Cause Determination. An evaluation to determine the most basic reason(s) or casual factor(s) for the nonconforming condition, which if corrected or eliminated will prevent recurrence of that condition.

Safe Design. Design which eliminates or minimizes recognizable hazards and provides optimum protection for the health and safety of employees, the public, and the environment. Safe design has priority over any other design criteria, specifications, operating parameters, and design objectives.

Safety Analysis Report (SAR). A report which documents the adequacy of safety analysis for a nuclear facility to ensure that the facility can be constructed, operated, maintained, shut down, and decommissioned safely and in compliance with applicable laws and regulations.

Safety Analysis Report for Packaging (SARP). A document that provides the administrative requirements and procedures associated with the review and approval for designing, implementing, and testing of specific packages for transporting fissile materials.

Safety Assessment (SA). A brief, factual, and objective document which determines if activities involve hazards (other than those standard to industry) that require elimination, control or mitigation, thereby establishing the need for a safety analysis report. At the Site, a Hazard Assessment may serve the function of a SA for specific projects.

Safety Class (SC). Any system, component, or part that is required to assure that a System Category 1 or 2 system performs its vital safety function or whose failure could adversely affect a vital safety function.

Safety Evaluation (SE). An evaluation performed by a certified individual to determine if a potential Unreviewed Safety Question (USQ) is contained in the item under evaluation. It is synonymous with potential USQ Determination.

Safety Evaluation Report. A report produced by the application of Resumption Procedure RFP-OVP-005, Preparation of Safety Evaluation Reports for Vital Safety Systems for Buildings 559 and 707, which documented a systematic evaluation of each system to identify credited functional requirements necessary for system performance. The capability of the system to perform credited functions is defined in terms of acceptance criteria and conformance to those identified acceptance criteria by objective evidence.

Safety Evaluation Screen (SES). An initial screening of a proposed activity/document by a certified evaluator to determine the need for additional Nuclear Safety Evaluation (i.e., determine if there is a need to conduct a Safety Evaluation/Unreviewed Safety Question Determination). This screening is conducted to determine if the proposed activity/document involves any one or more of the following:
(1) changes to the facility as described in the Final Safety Analysis Report (FSAR) or other design basis documents; (2) changes to procedures as described in the FSAR; and (3) tests or experiments not described in the FSAR.

Safety Function. Those functions credited within the FSAR Chapter 8 accident analysis, and supporting safety analyses, that are relied upon to detect or mitigate the consequences of an accident. For Buildings 559 and 707, these functions are defined by the building-specific Controlled Document List (CDL).

Salvage Value. The residual value, net of any disposal costs, of any Building System removed or replaced during the study period, or remaining after the study period, or recovered through the resale or reuse at the end of the study period.

Scope. The work content and products of a PROJECT or component of a project. Scope is fully described by naming all ACTIVITIES performed, the RESOURCES consumed, and the end products which result including QUALITY standards. A statement of scope **Should** be introduced by a brief background to the project, or component, and the general OBJECTIVE(S).

Scrap. Action taken when the item is to be rejected or returned to the supplier as being unacceptable for its intended purpose. For procurement NCRs, the nonconforming item is returned to the vendor or delivered to Property Utilization and Disposal. For other NCRs where the nonconforming item or the function performed by the item is no longer needed, the item is removed from service.

Self-Evaluation. A documented internal review of specific predetermined organizational elements by responsible managers and supervisors that evaluates compliance with government rules and regulations; company policies, procedures, standards, requirements and commitments; and applicable best-industry practices. Specific organizational elements include, but are not limited to, work areas and equipment; procedures, standards, and work practices; and personnel and management controls/decisions with respect to activities, programs, systems, facilities, and resources specific to the organization.

Self-Evaluation Checklist. A Form that translates the Self-Evaluation Plan into a checklist(s) for performing self-evaluation, including documentation of evidence examined and results.

Setpoint. An input variable which sets the desired value of the controlling variable. The input may be manually set, automatically set, or programmed. It is expressed in the same units as the controlled variable.

SHALL. Requirements that Kaiser-Hill considers mandatory are identified as "**SHALL** " or "**SHALL** not."

Should. A *recommendation* that is based on standards and good safety practices and that is identified as "**Should**" or "**Should** not."

Site Design Authority (SDA). The organization responsible for establishing the design requirements and ensuring that design output documents appropriately and accurately reflect the design basis. It also ensures that design control and ultimate technical adequacy of the engineering design process is maintained whether the process is conducted fully, in-house, partially contracted to outside organizations, or fully contracted to outside organizations.

Sketch. A drawing developed by an engineer which **may** be used only when limited circumstances exist and when no controlled documents are available. Restrictions for using sketches include:

- For clarification during construction, decommissioning, or temporary modification and used in conjunction with a controlled document.
- When information on the sketch has no future value for operational or design purposes.

Staff Augmentation Services. Contracted services for personnel to augment the current EG&G staff, with the company providing the service having no obligated product or deliverable other than to provide qualified individuals and the hours worked.

Standards. Specific actions or prescribed activities applicable to the responsibilities of the Site for the management and/or operation of the Site which are either mandated by an agency having regulatory authority over the Site or are self-imposed. Under the Compliance Management Program, the term standards includes commitments and requirements.

- Commitments. Recurring/periodic obligations communicated in writing to agencies having regulatory authority over the Site and recurring/periodic obligations adopted or self-imposed in standing orders, plant policies, and selected procedures.

- Requirements. Specific actions or performance prescribed in applicable legal regulations issued by Federal, State, and local agencies having regulatory authority over the Site.

Standards History File. A file maintained by the Standards Coordinator which includes current and previous issues of each Plant Standard and comment/comment resolution data for new and revised Standards.

Standards Index. A document listing maintained on the VAX mainframe computer which identifies the document number, title and revision of all current plant Standards.

Study Period. The length of the period covered by the economic evaluation.

Subcontract Administrator (SA). A person from the Procurement organization assigned to negotiate and administer the on-going performance of subcontracts. The SA is the only individual with the authority to legally bind EG&G to subcontracts and subsequent modifications, and provide formal interface between EG&G and the subcontractor.

Subject Matter Expert (SME). Functional title for designated individual with demonstrated technical expertise and knowledge in a specific functional area. The SME is identified on the DMR.

Surplus Facility. Any DOE facility or site (including equipment) that has no identified or planned programmatic use and is contaminated with radioactivity to levels that require controlled access.

System. A group of components that together perform a function.

System Category. The classification method used for determining the level of standards and quality assurance that apply to real property SSCs, based on the safety significance of the SSCs. There are three system categories at the Site.

NOTE *Old System Category 1 and System Category 2 were combined into the new System Category 1 & 2 because the requirements applicable to both were the same.*

- System Category 1 & 2. Those engineered safety features credited or designated in an approved Authorization Basis document which have been

determined to be essential to assuring public safety or worker nuclear safety related to immediate fatalities or serious injuries. This includes those SSCs that are credited for the detection or mitigation of the nuclear consequences of credible, postulated accidents as defined in the Authorization Basis or supporting analysis or those SSCs required for nuclear criticality safety.

For design activities where DOE Order 6430.1A, General Design Criteria applies, those SSCs that meet the Safety Class criteria in Section 1300-3 of DOE Order 6430.1A.

Those existing SSCs whose failure could reasonably inhibit or prevent System Category 1 & 2 SSCs from performing their intended Vital Safety Function, including failures due to natural phenomena hazards, such as earthquakes and wind.

- System Category 3. SSCs that do not meet the requirements of System Category 1 & 2, but:
  - Are relied upon for worker protection from radiological or toxicological hazards; or,
  - Are required for protection of Special Nuclear Material or classified material; or,
  - Are required for site response in an emergency; or,
  - Are designated as Facility Support Systems in an approved Authorization Basis/Agreement document; or,
  - Provide automatic fire suppression or detection capability.

  System Category 3 SSCs include, but are not limited to:
  - Breathing air systems.
  - Systems containing more than 30% by volume of class A chemicals [National Fire Protection Association Hazard Classification 3 and 4] as defined in Rocky Flats Plant Standard SP-220, Standard for Piping Material Specification or containing chemicals of the type, and in the quantities listed in 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals.
  - Site Life Safety/Disaster Warning System (excluding Criticality Alarm Annunciation which is System Category 1 & 2).
  - Systems which contain pesticides, carcinogens, beryllium, or toxic chemicals in sufficient quantities to be controlled by the following Health and Safety Practices (HSP) Manual Procedures:
    - HSP 13.01, Control of Pesticides
    - HSP 13.03, Carcinogen Control
    - 1-15310-HSP-13.04, Beryllium Protection
    - HSP 13.05, Toxic Chemical Control
  - Systems providing for containment or shielding of radioactive material or contamination.

  System Category SSCs are typically covered in ACRs if an approved Authorization Basis/Agreements exists.

- System Category 4. SSCs that do not meet the requirements of System Category 1 & 2 or System Category 3.

System Engineer (SE). An Engineer responsible for any given system within a facility.

System Evaluation Report (SER). A report which produces a basis for the evaluation of each SSC to identify credited functional requirements necessary for system performance. The capability of the system to perform credited functions is defined in terms of acceptance criteria. The SER shall contain as a minimum the following:

1. System Description
2. System Boundaries and Interfaces
3. Functional Requirements
4. References

Systems Operation (SO) Testing. A specific list of criteria developed by Engineering to test the operability of equipment or a system associated with a construction project.

Technical Baseline Document (TBD). The collection of recorded information which defines the configuration of structures, systems, components and site land, including drawings, specifications, calculations, calibration requirements, etc., in various documentation media.

Technical Basis. A justification for the acceptability or suitability of an engineering methodology.

Technical Basis Documentation. The collection of recorded information which defines the configuration basis of Site facilities, systems, processes and site land, including manuals, drawings, training programs, procedures, specifications, calculations, etc., in various documentation media.

Technical Basis Configuration Documentation (TBCD). The collection of recorded information which defines the configuration basis of Rocky Flats facilities, systems, processes and site land, including manuals, drawings, training programs, procedures, specifications, calculations, etc., in various documentation media.

Technical Concern. A statement of any deficiency considered to have the potential for creating an INOPERABLE system. Operating situations where required safety functions/actions are in apparent conflict qualify as TECHNICAL CONCERNS. Only the Operations Manager or his designee may designate a condition as a technical concern.

Technical Justification.
1) Documented information prepared to substantiate an Engineering technical decision, supported by qualified evidence (e.g., calculations, test results, industry or plant standards, manuals, FSAR/OSR, documented experimental evidence, documented operating/industry experience).

2) A statement explaining the basis for a "Repair" or "Use-As-Is" disposition in Engineering terminology which incorporates applicable Engineering principles, supporting calculations, objective evidence, standards, codes or specifications. This may include comments to the effect that the item sizing calculations show that it can perform the needed function but with a reduced design safety factor or that the item still complies with applicable codes and standards.

Technical Provisions. Divisions 2-16 of a construction specification setting forth the overall requirements for the performance of a construction contract.

Technical Safety Requirements (TSRs). Those requirements that define the conditions, safe boundaries, and the management or administrative controls necessary to ensure the safe operation of a nuclear facility and to reduce the potential risk to the public and facility workers from uncontrolled releases of radioactive materials or from radiation exposure due to inadvertent criticality. A TSR consists of operating limits, surveillance

requirements, administrative controls, use and application instructions, and the bases thereof.

Temporary Facility Transfer. The transfer of individual pieces of equipment, portions of a system, or a complete system from the Construction Contractor to EG&G for checkout and Systems Operation (SO) testing for preliminary operations, and from EG&G back to the contractor after testing. A Temporary Facility Transfer Form shall be utilized to achieve the transfer.

Temporary Modification. A change to SSCs which is minor in scope and of limited duration. Temporary Modifications (TMs) may be performed on any system. Typical TMs include: temporary electrical jumpers or lifted leads, setpoint changes, and temporary piping changes or valve alignments. Temporary Modification tagging and tracking requirements are controlled in accordance with 1-31000-COOP-006, Operating Area Log and Records. In addition, COOP-006 provides the controls for long term TMs implemented by design packages and exclusions for short term TMs not normally implemented by design packages.

Terminate Operations. Those actions required to achieve a timely and safe shutdown of affected operations. Actions are taken per written procedures up to and including the safe shutdown of operations in the entire building, as defined within the OSR.

Title I (Preliminary) Design. The design effort that extends the Conceptual Design Report and the Design Criteria to determine the requirements and criteria which will govern the Title II (Definitive) design. Tasks include preparation of preliminary planning and engineering studies, preliminary drawings and outline specification, life-cycle cost analysis, preliminary cost estimates, and scheduling for project completion. Preliminary design provides identification of long lead procurement items and analysis of risks associated with continued project development.

Title II (Definitive) Design. Title II design continues the development of the project based on approved Title I (preliminary) design. Definitive design includes any revisions required of the Title I effort; preparation of final working drawings, specifications, bidding documents, cost estimates, and coordination with all parties which might affect the project; development of firm construction and procurement schedules; and assistance in analyzing proposals or bids.

Title III (Construction Services). Those activities required to ensure that the project is constructed in accordance with approved plans and specifications and that the quality of materials and workmanship is consistent with the requirements of a project.

Total Life Cycle Cost (TLCC). The total discounted dollar cost of owning, operating and maintaining a Building System over the study period.

Uncharacterized Waste. Wastes generated by emergency incidents (e.g., spills), newly generated waste streams which require sampling, and newly identified backlog waste that requires evaluations.

Unreviewed Safety Question (USQ) Determination. A written evaluation that documents whether a proposed change, test, or experiment shall be deemed to involve an Unreviewed Safety Question (USQ) Determination, based on a positive answer to either of the following statements:

(1) The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety evaluated previously by safety analyses shall be significantly increased.

(2) The possibility of an accident or malfunction of different type than any evaluated previously by safety analyses shall be created that could result in significant safety consequences.

Use-As-Is. A disposition permitted for a nonconforming item when it can be established that the item is satisfactory for its intended use and will not result in any adverse condition and the nonconformance will not affect the functional capabilities of the item (performance, maintainability, fit, and safety).

Validation. Process of document evaluation to determine user compatibility, and to determine if the document requirements can be correctly and effectively performed. Validation also verifies the inter-organizational interfaces described in the document.

VAX/CDL. The title of a Searchmate database appearing on the unclassified VAX/LAN System.

Verification. The act of rechecking the design output from an individual or group which is performed by other than the preparer, but who **may** be from the same organization. This verification **may** be performed by the originator's supervisor provided that the supervisor did not specify a singular design approach, rule out certain design considerations, or establish the design inputs used in the design and provided that the supervisor is the only individual in the organization competent to perform the verification. Cursory supervisory reviews do not meet the intent of this requirement.

Violation. Condition where an LCO is not met and the REMEDIAL ACTION is not taken or initiation of the REMEDIAL ACTION has extended past the specified time interval, as defined within the OSR.

Vital Safety Functions. Those functions described within the Final Safety Analysis Report (FSAR) or System Evaluation Report (SER), Accident Analysis, and supporting analyses that are relied upon to detect or mitigate the radiological consequences of a credible accident, including criticality. (For Category criteria, see System Category.)

Vital Safety System. Those systems or portions of systems that are relied on to accomplish Vital Safety Functions (Category 1).

VSS Installed Instrumentation Database. Database developed and maintained by each Systems Engineering Building Instrumentation Coordinator and other assigned personnel to provide a comprehensive summary reference for all VSS installed instrumentation for each building. As a minimum, this database shall contain the following information for each VSS instrument:

- Instrument number
- Instrument description
- Instrument location
- Instrument parent system
- Calibration frequency
- Calibrated range
- Prescribed VSS parameter operating range/setpoint
- Calibration tolerance
- Rocky Flats Plant Calibration Recall number ("RF" number)
- Applicable VSS procedures
- Calibration Category

Walkdown Data. Any field condition or item that is documented in the Engineering Walkdown. This will include the information that is described within the goal of the walkdown and any Deficiency identified on the system and/or component that is the subject of the walkdown.

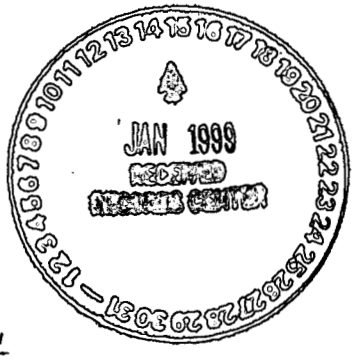
Work Package. Corrective, predictive, or preventive maintenance or modification work directive package containing the essential integrated components (authorizations, tasks instructions, procedures, BOM, PMT instructions, and drawings) to accomplish the required work with the appropriate technical and ACRs and testing to perform the work safely and correctly. Work Packages **Should** be prepared and used to provide appropriate work direction to ensure that maintenance is performed safely and efficiently.

Rocky Flats Environmental Technology Site

1-W56-COEM-AMN-101

REVISION 0

SITE DESIGN DOCUMENT CONTROL



APPROVED BY: _____ / Robert G. Card / 3/28/97

President, Kaiser-Hill Company, LLC | Print Name | Date

Responsible Organization: Engineering Integration & Technical Services Effective Date: 3/28/97

CONCURRENCE BY THE FOLLOWING COMPANIES ARE DOCUMENTED IN THE PROCEDURE HISTORY FILE:

DynCorp of Colorado, Inc.
Kaiser-Hill Company
Rocky Mountain Remediation Services
Safe Sites of Colorado

USE CATEGORY 4

ORC review not required.

The following are incorporated into this revision:
96-DMR-000490

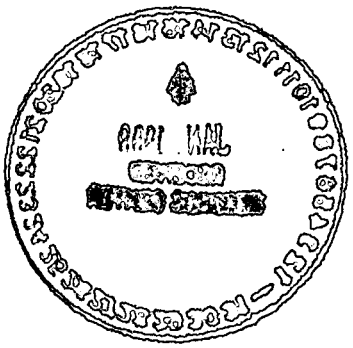
Reviewed for Classification/UCNI
By _____
Date 1/28/97

This Level 1 procedure supersedes COEM Level 2 procedures AMN-101, AMN-103, AMN-105, AMN-107 and DES-253

Periodic review frequency: 4 years from the effective date

ADMIN RECORD

CONTROLLED COPY



LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1-31	03/28/97		

The following DMRs for change are active for this procedure:

None

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1. PURPOSE

This procedure describes the methods and responsibilities for processing design documents that require controlled distribution through Building 130 Site Design Document Control (SDDC).

2. SCOPE

The Rocky Flats Environmental Technology Site (Site) Integrating Management Contractor (IMC) owns 1-W56-COEM-AMN-101, Site Design Document Control. The Site IMC is responsible for implementing this procedure and for ensuring all Site organizations, their contractors or subcontractors are in compliance with this procedure.

This procedure applies to all design documents (for example, calculations, drawings, new design, construction, or disassembly packages) developed, processed, revised, or used by Site organizations, their contractors or subcontractors.

The requirements for preparation, identification, distribution, and storage of controlled documents are addressed in 1-V41-RM-001, Records Management Guidance for Records Sources.

This procedure does not apply to control of classified documents established in the Security Manual, Chapter 6, Identification, Protection, and Control of Classified, Unclassified, and Sensitive Information.

Access control, aperture card processing and control, archiving, and general document processing and control are addressed by internal SDDC procedures.

3. OVERVIEW

The Conduct of Engineering Manual and Site procedures require that individuals use the latest revision of design documents when performing activities associated with specific tasks. This procedure provides the controlled distribution process used to ensure that the latest revision is identifiable and readily available.

3. OVERVIEW (continued)

Controlled documents are uniquely identified with a stamp affixed to the first page of the document. The following table provides the list of controlled document stamps, their meaning, and availability for use:

NOTE *Documents that do not have a document control stamp on the first page should be considered an Information Only copy. Controlled electronic copies issued by SDDC are considered Information Only.*

Stamp	Meaning	Availability for Use
Controlled	Revisions to the document will automatically be issued to the copy holder.	Available to use for applicable site activities.
Information Only	Revisions to the document will not be sent to copy holders.	Documents must be verified as the latest revision prior to use.

Table 1, Controlled Document Stamps

The status of controlled drawings addressed in this procedure fall into one of four categories:

NOTE *In the past "Inactive" has been used to mean VOID or CANCELED. Each drawing currently statused as "Inactive" should be reviewed for applicability. Additionally, some inactive drawings are of such poor quality that they cannot and will not be reactivated.*

Category	Application
CANCELED	Dropped from the drawing system due to cancellation of the job for which it was created (identified in the title block of the drawing) or logged into Engineering Drawing System but never used (i.e., interim).
VOID	A drawing depicting equipment, piping, electrical, etc. items that are being totally removed from service.
SUPERSEDED	Replaced by another drawing other than a revision to the same drawing (identified in the title block of the drawing).
ACTIVE	The latest issued revision of the drawing.

Table 2, Controlled Drawing Status Categories

3. OVERVIEW (continued)

The following flow diagrams provide an overview for processing a new drawing, revising an existing drawing, and engineering interface for processing a design package.

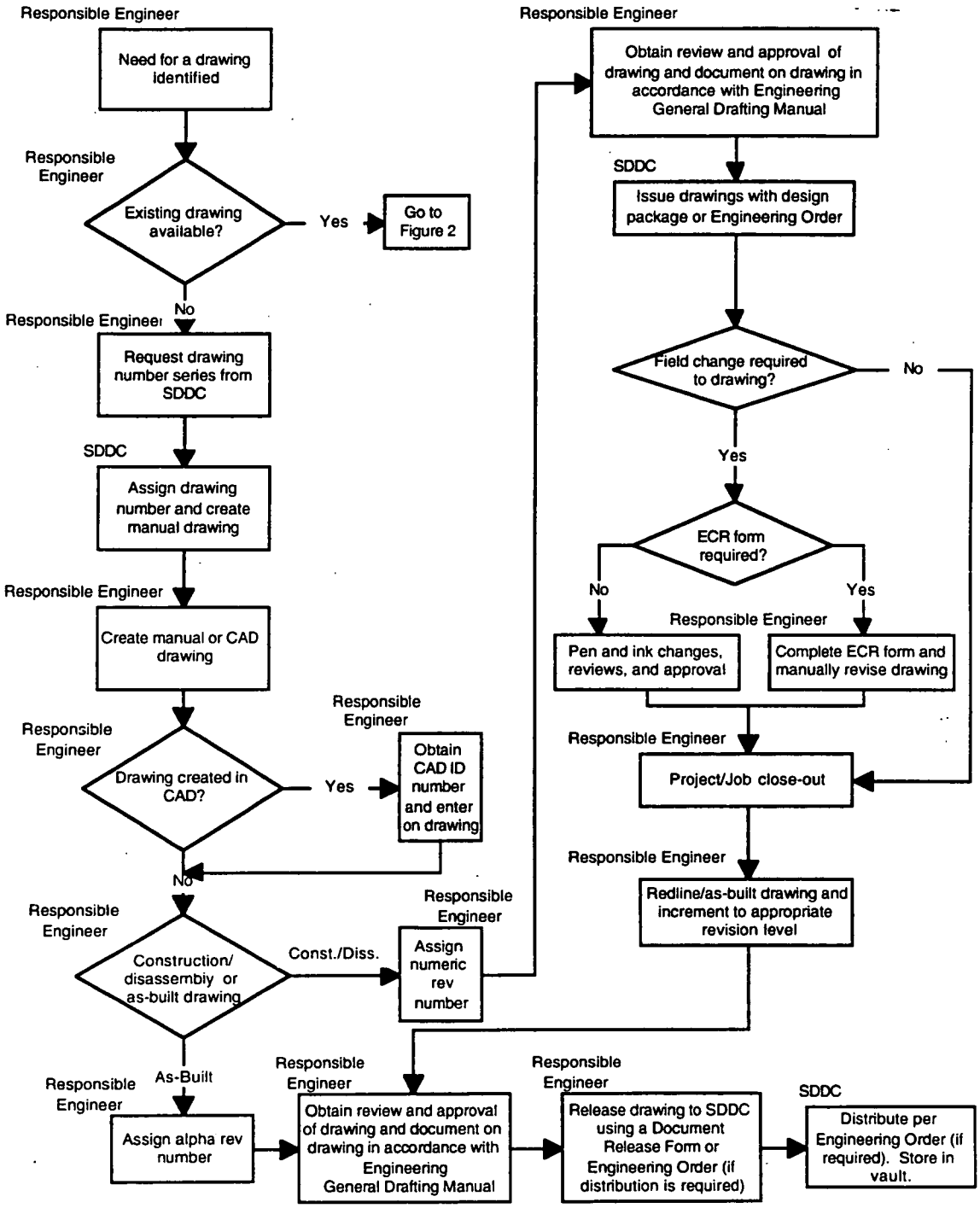

Figure 1, New Drawing Process

3. OVERVIEW (continued)

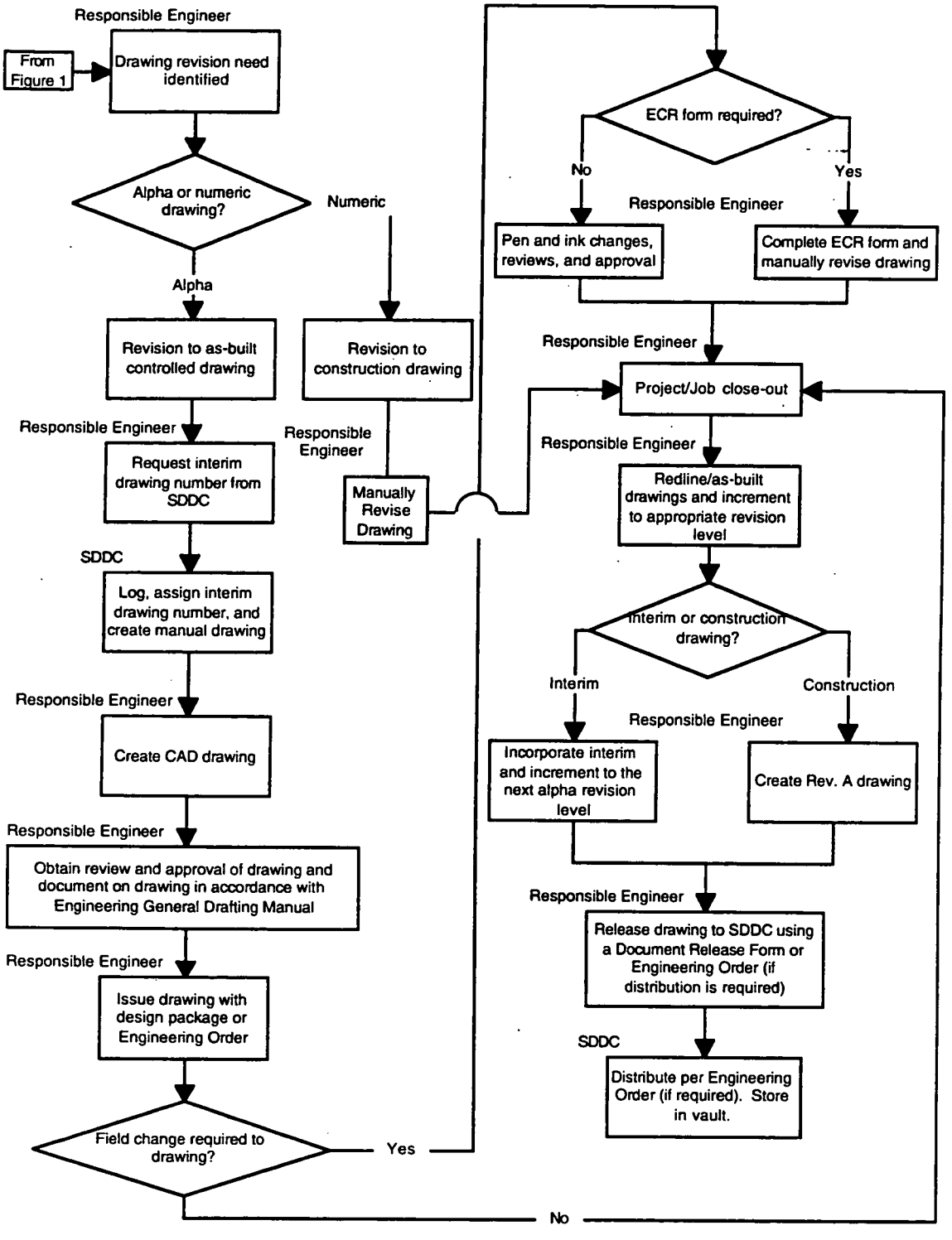

Figure 2, Drawing Revision Process

3. OVERVIEW (continued)

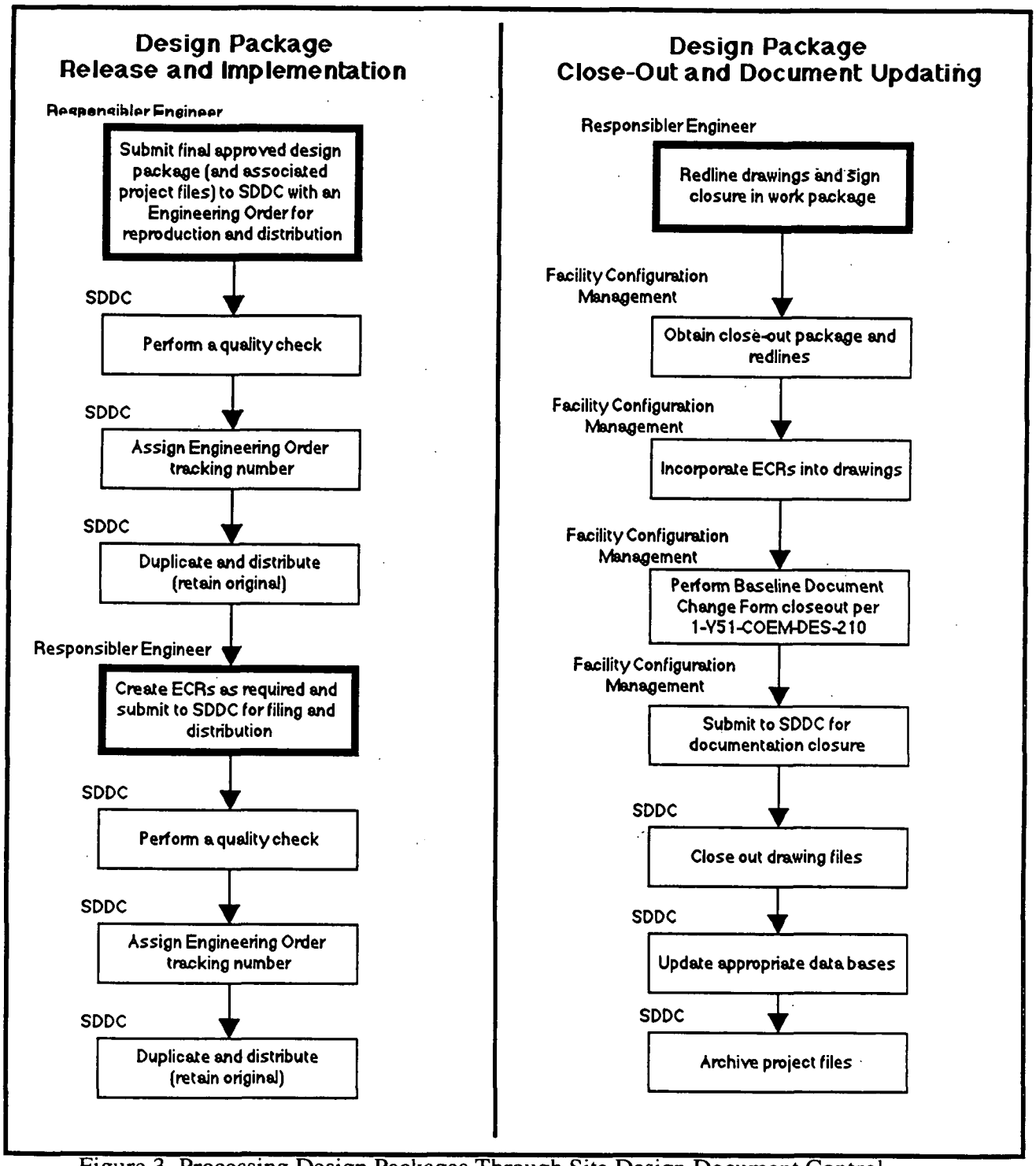

Figure 3, Processing Design Packages Through Site Design Document Control

4. DEFINITIONS

Controlled Distribution. The process which ensures the distribution of the latest issue of a controlled document to specified recipients and requires a receipt acknowledgment by the recipient.

Controlled Distribution Lists. Lists which identify the custodians of particular controlled documents who routinely receive copies of revisions.

Controlled Document. An active design document (for example, design package, drawing, calculation, System Evaluation Report) or COEM procedure maintained current by the organization with programmatic responsibility and made available for centralized control, distribution and disposition in accordance with applicable standards.

Controlled Document Custodian. A recipient of a controlled document.

Controlled Drawing Index. A building specific list of drawings updates issued as controlled documents to building aperture card custodians.

Information Only Copy. Copy of any document that is used for information only and cannot be used to perform work.

Receipt Acknowledgment. Evidence, by signature and date (electronic/FAX signatures are acceptable), that controlled documents have been received by a controlled document custodian, properly inserted into the appropriate file or manual, and the superseded or voided document has been physically removed and destroyed.

Receipt Status Report. A report generated by Site Design Document Control which lists the receipt status and/or the delinquency status by Controlled Document Custodians.

See COEM Glossary for additional applicable definitions.

5. RESPONSIBILITIES

5.1 Building 130 Site Design Document Control

Maintains control and performs distribution of controlled documents generated through the implementation of the Conduct of Engineering Manual in accordance with the requirements in this procedure.

Maintains the controlled document distribution lists.

5.2 Facilities Configuration Management

Converts drawings to as-built drawings within 90 days of job completion notification.

5.3 Responsible Engineer

Ensures that the review and approval of completed drawings is conducted in accordance with established Conduct of Engineering Manual procedures.

Maintains responsibility for drawings obtained from SDDC.

6. INSTRUCTIONS

6.1 Document Distribution and Control

Two types of distribution are available through SDDC:

- One-time Distribution is used for distribution of a design document for a specific activity such as design document review.

- Controlled Distribution is used to ensure that the Document Custodian receives the latest revision of the document (for example, floor plan books, utility drawings) when it is released . The following provides the methods for requesting SDDC controlled document distribution.

NOTE *For jobs that cannot be left for next day delivery, special arrangements may be made with SDDC. These types of jobs cannot exceed 600 images due to Site implementation of restrictions imposed by DOE Order 1340.1A, Management of Public Communications, Publications , and Specific, Technical and Engineering Publications.*

6.1.1 One-time Distribution

Distribution Requestor

[1] **IF** distribution of the document is required,
THEN complete an Engineering Order (EO) (Appendix 1).

[A] Verify that the document to be distributed is complete and reproducible.

[B] Release the document with the EO to SDDC.

[2] **IF** the drawing does **NOT** require distribution,
THEN release the document using a Document Release Form (DRF) (Appendix 5).

6.1.1 One-time Distribution (continued)

Site Design Document Control

[3] **IF** a DRF is used,
THEN duplicate and distribute per releaser's instructions.

Engineering Orders Coordinator

[4] **IF** an EO is used,
THEN verify the EO is completed correctly and the attached documents are complete and reproducible.

[5] **IF** the EO or attached documents are deficient,
THEN return the entire EO to the originator for correction.

[6] Assign an EO number and update the EO tracking database.

6.1.2 Controlled Distribution

Distribution Requestor

[1] Complete the Controlled Distribution Request (Appendix 2).

[2] Submit the Controlled Distribution Request to SDDC for processing.

Site Design Document Control

[3] Prepare a Transmittal/Receipt Form (Appendix 3).

[4] Duplicate or coordinate duplication of controlled distribution documents in accordance with the applicable controlled document distribution list.

[5] Distribute copies and file original.

6.1.3 Establishing or Modifying Controlled Distribution

Distribution Requestor

[1] Complete the Controlled Distribution Request (Appendix 2) and indicate the modification requested.

[2] Submit the Controlled Distribution Request to SDDC for processing.

6.2 Maintaining Controlled Distribution Copies

6.2.1 Receipt Acknowledgment

Document Custodian

[1] Upon receipt of a controlled distribution document, drawing, electronic media, or aperture card:

[A] Verify attachments to the transmittal agree with transmittal form.

[B] Update manuals, files or other storage methods.

[C] Discard superseded, voided, or canceled document, drawing or aperture card.

[D] Sign and date the transmittal form and return it to SDDC within 10 working days of the transmittal date.

6.3 Requesting Information Copies from Site Design Document Control

Requestor

[1] Complete a Reproduction Request (Appendix 4).

[2] Submit the Reproduction Request to SDDC.

6.4. Drawing Control and Distribution

6.4.1 Initiating and Processing a New Drawing

NOTE 1 *SDDC generates a new Engineering Drawing Report quarterly for Site use.*

NOTE 2 *A copy of an existing drawing may be utilized as the basis of a new drawing but must be requested using an Interim Drawing Report. Proposed changes shown on the drawing cannot impact the original drawing; an Interim drawing is required for that purpose.*

Responsible Engineer

[1] Determine the need for a new or revised drawing by searching Engineering Drawing System (EDS), Master Interim Drawing System (MIDS), and other quarterly reports.

[2] **IF** an existing drawing is available,
THEN go to Section 6.4.2.

[3] Request a drawing series from SDDC and provide the following information:

- Building number
- Project title
- Project number
- Initiator's name
- Responsible Manager's name

Site Design Document Control

[4] Assign the five digit series number and record the information provided in the drawing number log.

6.4.1 Initiating and Processing a New Drawing (continued)

NOTE *Computer Aided Drafting (CAD) is the preferred method for creating new drawings.*

Responsible Engineer

[5] Create the drawing and assign sub numbers based on discipline in accordance with the Engineering General Drafting Manual.

[6] **IF** CAD was used to generate the drawing,
THEN include the CAD identification number on the drawing as specified in the Engineering General Drafting Manual.

[7] **IF** the drawing is to be a removal drawing,
THEN designate it as a removal drawing as specified in the Engineering General Drafting Manual.

[8] **IF** the drawing is to be used for construction,
THEN:

[A] Enter Revision 0 in the revision box of the title block.

[B] Obtain the necessary checks, reviews and approval in accordance with the Engineering General Drafting Manual.

[C] Release the drawing in the design package per 1-V51-COEM-DES-210.

[9] **IF** the drawing is to be used for a task that requires no work (for example, creating an as-built drawing),
THEN:

[A] Enter Revision A in the revision box of the title block.

[B] Obtain the necessary checks, reviews and approval in accordance with the Engineering General Drafting Manual.

6.4.1 Initiating and Processing a New Drawing (continued)

[C] Complete a DRF (Appendix 5).

[D] Release the drawing with the DRF to SDDC.

6.4.2 Initiating and Processing Revisions to Existing Alpha Revision Drawings (Interim Drawings)

NOTE *Once an Interim Drawing has been canceled by SDDC, it cannot be reactivated. A new Interim Drawing must be requested.*

Responsible Engineer

[1] Complete a Master/Interim Drawing Request (Appendix 6).

[2] Submit the Master/Interim Drawing Request to SDDC.

[3] **IF** the drawing is a construction drawing,
THEN go to Step 6.4.2[9].

Site Design Document Control

[4] Verify the Master/Interim Drawing Request is complete.

[5] Provide the interim drawing number suffix to the Responsible Engineer.

[6] Print the Drawing Interference Report for the drawing (Sample- Appendix 7).

[7] Create a manual interim drawing.

[8] Provide the completed Drawing Interference Report, a copy of the Master/Interim Drawing Request, and the manual interim drawing to the Responsible Engineer.

Responsible Engineer

[9] Create the interim/construction drawing using CAD.

6.4.2 Initiating and Processing Revisions to Existing Alpha Revision Drawings (Interim Drawings) (continued)

[10] **IF** the drawing is an interim drawing,
THEN enter the number assigned by SDDC on the Master/Interim Drawing Request into the Revision box in the title block.

[11] Obtain the necessary checks, reviews and approval in accordance with the Engineering General Drafting Manual.

[12] **IF** the interim/construction drawing is part of a design package,
THEN release the drawing in the design package per 1-V51-COEM-DES-210.

[13] **IF** the interim/construction drawing is not part of the design package,
THEN release the drawing using a DRF (Appendix 5).

6.4.3 Changing a Drawing

The method for changing a drawing which has been released to the field by SDDC is delineated in 1-V51-COEM-DES-210 as an Engineering Change Request (ECR).

6.4.4 Close-out and Drawing As-built

This step details the process for developing an as-built drawing once the completed design package redline drawings have been submitted to SDDC in accordance with 1-V51-COEM-DES-210.

Facilities Configuration Management

[1] Update drawings by incorporating redlines and ECRs into the original drawings.

[2] Increment the revision of the drawing to an alpha revision level.

[3] **IF** the drawing requires distribution,
THEN release the drawing to SDDC using an EO.

6.4.4 Close-out and Drawing As-built (continued)

[4] **IF** the drawing does not require distribution,
THEN release the drawing to SDDC using a DRF.

Site Design Document Control

[5] **IF** the drawing is submitted using an EO,
THEN copy and distribute the drawing in accordance with Step 6.1.1.

[6] Distribute controlled copies of the drawing in accordance with Section 6.1.2.

[7] Retain the manual original drawing in the vault and archive the CAD drawing.

6.4.5 Drawings Voided As A Result of Design Package Implementation

This step only applies to drawings voided as a result of physical removal of all systems, structures, and components included on the drawing as the result of the implementation of a design package. Equipment abandoned in place does not constitute physical removal.

Responsible Engineer

[1] **IF**, as a result of implementation of a design package, **ALL** systems, structures, and components identified on a drawing are removed,
THEN void the drawing as follows:

[A] Include the drawing and associated interims on the Baseline Document Change Form (BDCF) required by 1-V51-COEM-DES-210.

[B] Enter "To be VOIDED" in Column 5 of the BDCF.

[C] **DO NOT** revise drawings that are to be voided. SDDC will automatically void the drawing during the Project Completion Redline Update task in 1-V51-COEM-DES-210.

6.4.5 Drawings Voided As A Result of Design Package Implementation (continued)

NOTE *The following are performed concurrently with the Project Completion Redline Update task required in 1-V51-COEM-DES-210.*

Site Design Document Control

[2] Change the status of drawings and associated interims identified as "VOID" on the BDCF to read "VOID" in the EDS and MIDS.

[3] Stamp "VOID" on aperture cards and all associated drawing aperture cards to be voided.

[4] Ensure latest revision of voided drawings have been microfilmed and destroy original drawings.

6.4.6 Drawing Cancellation (Other)

This step provides instruction for canceled drawings that are found where all systems, structures and components have been physically removed. This step is provided in the event of a design package oversight or to resolve a previous deficiency.

Responsible Engineering Manager

[1] Submit a memo to SDDC identifying the drawing to be canceled. The memo should include a statement that all systems, structure, and components included in the drawing have been physically removed.

Site Design Document Control

[2] Process the drawing for cancellation according to Steps 6.4.5[2] through Step 6.4.5[4].

6.4.7 Drawing Cancellation Resulting From Project Cancellation

This section applies only to drawings used in canceled projects.

Responsible Engineer

[1] **IF** a project has been canceled prior to completion,
THEN notify SDDC to cancel all outstanding interim drawings, revisions, or new drawings created for the project.

[2] **IF** work had been accomplished on a canceled project,
THEN the parent drawing must be redlined to reflect the as-built/field conditions and submitted to SDDC in accordance with Section 6.4.2.

NOTE *Canceling drawings for canceled projects is considered an administrative (non-technical) change and can be processed internally by SDDC.*

Site Design Document Control

[3] Cancel all drawings from canceled projects including:

- Unchanged drawings
- Revisions to existing drawings
- New drawings
- Numbers issued for new drawings and never used

[4] Microfilm and destroy canceled drawings and update the MIDS and the EDS to reflect appropriate drawing status.

7. RECORDS

7.1 Non-Permanent Records

All Appendix Forms used in accordance with this procedure

7.2 Permanent Records

None generated by this procedure.

8. REFERENCES

Engineering General Drafting Manual

Security Manual

1-V41-RM-001, Records Management Guidance for Records Sources

APPENDIX 1
Page 1 of 3

ENGINEERING ORDER

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 1 (1W56-COEM-AMN-101)

Engineering Order

Instructions provided on back of form.

Section 1: Document Identification

1. Type of Package (Check One)	2. Type of Funding (Check One)	3. Work Performed By (Check One)
☐ Review	☐ Authorization	☐ Maintenance ☐ On-site Contractor
☐ Final	☐ Work Order (WCF)	☐ Other Contractor
☐ Other:	☐ Other:	☐ Other:

4. Document Type (Check One)

☐ Conceptual Design Report (CDR) ☐ Design/Purchase Specification ☐ Statement of Work (SOW)
☐ Design Criteria (DC) ☐ Contract Modification/Addenda ☐ Other:
☐ Design Package (DES-210) ☐ Engineering Change Request (ECR)

Section 2: Distribution and Content

5. Distribution (Defined by Responsible Engineer)

Name/Organization (Use Continuation Sheets as required)	Bldg.	Dwgs B or D	# of Copies
Facilities Configuration Management	130	B	1
DOE Safety Health Assessment (Final Only)	460	B	2
DOE Engineering (Final Only)	460	B	1
Additional Dist (Attach EO Cont. Sheet)			
Total Copies Required			

6. Package Contents

Attached documents are as listed on the Document Index or as listed below. (Use Continuation Sheets as necessary.)

7. Review For Classification/UCNI

By: Date:

8. # Total Pages Attached | 9. # of Drawings Attached

10. Comments and Special Instructions

Section 3: Comment Return ☐ N/A

11. To (Print Name)

11A. Building | 11B. Room | 11C. By (Date)

Section 4: Tabletop Review Meeting ☐ N/A

12. Date | 12A. Time ☐ AM ☐ PM

12B. Building | 12C. Room

Section 5: Tracking Information

13. Project/WCF Number	14. Building	15. Title		
16. ECR Number	17. Initiator (Print Name)	17A. Initiator (Signature)	17B. Date	17C. Ext./Pager
18. Additional/Related Job #	19. EO Coord (Print Name)	19A. EO Coord (Signature)	19B. Date	19C. Ext./Pager
20. EO Number	21. Reference EO Number	22. EO Distribution Date	23. SDDC Charge Number	

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SAMPLE

APPENDIX 1
Page 2 of 3

ENGINEERING ORDER
FORM COMPLETION INSTRUCTIONS

Block	Instructions
Note 1: Enter N/A in any block that is not used. Note 2: Requestor completes all blocks unless noted otherwise. Note 3: Use the Engineering Order continuation Sheet if more room is required.	
Section 1: DOCUMENT IDENTIFICATION	
1-4	Check one box in each block. If the Other box is checked, then enter the official title of the document, activity, or organization.
Section 2: DISTRIBUTION AND CONTENT	
5	Enter the name and organization of recipient*. Enter the recipients location. Enter B (for 1/2 size drawings) or D (for full size drawings). Enter the number of copies. Enter the total number of copies on attached EO continuation (if applicable). Enter the total number of copies.
6	Enter the list of attached documents or enter "see attached" if the list of documents is included in an attached document index.
7	Obtain classification review. A classification review is not required if the document being distributed has been reviewed by a derivative classifier.
8 - 9	Enter the total number of pages and drawings attached to the EO.
10	Provide any comments or special instructions.
Section 3: COMMENT RETURN	If comments are not required to be returned, then check the N/A box.
11-11C	Enter Name, Building, Room and Date if comments are required to be returned.
Section 4: TABLETOP REVIEW MEETING	If a tabletop review meeting is not required, then check the N/A box.
12-12C	Enter the date, time, building and room for the tabletop review meeting.
Section 5: TRACKING INFORMATION	
13 - 15	Enter the Authorization Project/WCF Number, affected building number and Project #.
16	Enter ECR number.
17-17C	Initiator - print name, sign, date and provide extension and pager number indicating authorization for SDDC to release the document to the field for use.
18	Enter additional or related job number(s).
19-19C	EO Coordinator - print name, sign, date and provide extension and pager number.
20	EO Coordinator - enter EO number.
21	Enter cross reference to other EOs.
22	EO Coordinator - enter date of distribution
23	Enter the change number ED personnel will use to issue EO if other than the WCF or Project number.

*RECOMMENDED DISTRIBUTION

Mandatory Round Table participants: Planning, Program Quality Coordinator, job supervisor, Waste Management Program Department, Criticality Engineering for jobs involving systems containing fissile material or CDL hardware systems, the User/Program Representative, EQS on System Category 1&2 or Radiological Category 3 jobs, Maintenance or the Construction Contractor on project actions and the LE, Industrial Hygiene, Occupational Safety, Radiological Protection, as applicable.

Use the source document procedure to determine recipient requirements.

APPENDIX 1
Page 3 of 3

ENGINEERING ORDER CONTINUATION SHEET

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 1A (1-W56-COEM-AMN-101)

Engineering Order (continued)

Instructions:
1. Complete the listing of documents and drawings included in this Engineering Order.
2. For large transmittals, use additional EO (continued) sheets or use a drawing index/drawing title page to list individual drawings.

Section 1: Document Identification

1. Job Number	2. EO Number	3. Page of

Section 2: Additional Distribution

4. Name/Organization	5. Building	6. Number of Copies

SAMPLE

Section 3: Additional Attachments

7. Document Type	8. Document Number	9. Document Title

(5/96)

APPENDIX 2
Page 1 of 1

CONTROLLED DISTRIBUTION REQUEST

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 2 (1-W56-COEM-AMN-101)

Controlled Distribution Request

Submit to:

Building 130 Site Design Document Control

Section 1: Requestor Information

1. Requestor's Name (Print)	2. Department	3. Location	4. Ext./Pager
5. Social Security Number/Employee No.	6. Charge Number	7. Funding Source Company:	
8. Requestors Company	9. Supervisor/Manager Name (Print/Sign & Date)		

Section 2: Requested Action and Justification

10. Request Type ☐ Addition to Controlled Distribution ☐ Deletion from Controlled Distribution ☐ Change of Custodian	11. Date Needed
12. Justification	

Section 3: Document Information

13. Document Number	14. Document Title

SAMPLE

Section 4: Authentication

15. Requestor's Signature	16. Date

(11/96)

APPENDIX 3
Page 1 of 1

TRANSMITTAL/RECEIPT

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 3 (1-W56-COEM-AMN-101)

Transmittal/Receipt

Section 1: Transmittal Identification	
1. Transmittal Number	2. Page of
3. Controlled Copy Number	4. Date

Section 2: Custodian Identification (correct information as necessary)	
5. Custodian's Name	6. Department
7. Social Security Number/Employee Number	8. Location

Section 3: Controlled Document Information

9. Document Title

10. Distribution Description

- ☐ Complete set per Table of Contents
- ☐ Aperture cards (see attached index)
- ☐ New or revised documents
- ☐ Weekly Drawing Report update
- ☐ Controlled Drawing Index (quarterly)
- ☐ Other:

Section 4: Instructions

11. Required Action

☐ Remove and destroy ☐ Remove and return ☐ Insert ☐ Other:

12. Additional Instructions and Comments

SAMPLE

Section 5: Receipt Acknowledgement

As the assigned copy holder for the controlled documents identified above, you are responsible for maintaining them up-to-date. Receipt acknowledgement is due within 10 working days.

Return this form to Building 130 Site Design Document Control

I acknowledge receipt of the controlled documents listed above, and have dispositioned the superseded, voided, or canceled documents as instructed.

13. Custodian's Signature	14. Date

(11/96)

APPENDIX 4
Page 1 of 1

REPRODUCTION REQUEST

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 4 (1-W56-COEM-AMN-101)

Reproduction Request

Section 1: Requestor Identification

1. Requestor Name (Print)	1A. Employee No.	2. Requestors Company	
3. Department	4. Building	5. Extention	6. Pager

Section 2: Request

7. Request Type ☐ Original Design File ☐ RFETS Standard ☐ Other (calc, SER), etc.): ☐ Reproduction ☐ Original Document

Section 3: Cost and Schedule

8. Project / WCF Number	9. Charge Number (a minimum or 1/2 hour will be charged)	10. Funding Source Company:	
11. Request Date	12. Request Time	13. Need Date	14. Need Time

Note: 8 1/2 x 11 copies will be produced in accordance with DOE Order 1340.1A

A = 8 1/2 x 11; B = 11 x 17; C = 17 x 22; D = 22 x 34; O = Any other size; SUB (Substitute size) = size desired if requested size is not available.

15. Document/Drawing Requested	16. # Originals or Cards	17. # of Copies	18. Size of Copies	19. Sub Size	20. Other Comments

SAMPLE

Section 4: SDDC Processing Information

21. Customer Order Completed By	22. Completion Date	23. Completion Time
24. Date Customer Notified of Completion	25. Time Customer Notified of Completion	

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APPENDIX 5
Page 1 of 1

DOCUMENT RELEASE FORM

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 5 (1-W56-COEM-AMN-101)

Document Release Form

Submit to:

Building 130 Site Design Document Control

Section 1: Submital Information

1.Submitted By (Print name)	2. Location	3. Ext.
4. Social Security Number/Employee Number	5. Requestors Company	6. Releasing Organization Department
7. Charge Number	8. Funding Source Company:	

Section 2: Document Information

9. Document Number	10. Document Title

SAMPLE

Section 3: For SDDC Processing Only

11. Received By	12. Date Received	13. Time Received
14. Comments		

(11/96)

APPENDIX 6
Page 1 of 1

MASTER/INTERIM DRAWING REQUEST

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 6 (1-W56-COEM-AMN-101)

Master/Interim Drawing Request

Section 1: Requestor and Project Identification			
1. Requestor's Name	2. Employee No.	3. Extention/Pager	4. Date
5. Requestors Company	6. Type of Drawing Requested ☐ Interim ☐ Master ☐ Background ☐ Composite ☐ Other (describe in Block 18)		
7. Project/WCF Number	8. Charge Number	9. Funding Source Company:	
10. General Description of Change	11. Need for Change	12. Building 13. Room/Mod	

Note: If existing drawings are not in CAD/CAE format, an evaluation should be performed to determine the viability of redrawing them in CAD/CAE format.

Section 2: Drawing Identification

14. Check for Composite	15. EXISTING Master Drawing Number	16. Rev	17. NEW DRAWING NUMBER Background Interim Drawing
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:
☐	_____ - _____ CADD ID #:		_____ - _____ - ___ CADD ID #:

18. Comments	19. Entered By	20. Date

Section 3: Approval for Release of Controlled Drawings

21. Manager Engineering Survey/CAD Approval (Signature)	22. Date

(11/96)

SAMPLE

APPENDIX 7
Page 1 of 1

DRAWING INTERFERENCE REPORT

DRAWING INTERFERENCE REPORT

FOR MASTER DRAWING / 03107-010J

MASTER DRAWING NUMBER: 03107 - 010J - M

INTERIM DRAWING	PROJ/ WCF	PROJ/MWO OR WCF /	STATUS	ORIGINATOR	DATE ENTERED	DESCRIPTION OF CHANGE/ NEED FOR CHANGE	BUILDING
031707-010J-01N A	P	309300	DESIGN	PYKKONEN	05/24/90	ADDITION OF BLDG 707B PU STORAGE FACILITY ADDITIONS	707
03107-010J-01P A	P	315151	CONST	HAVERTY	03/08/91	SEC UPGRADES I & E	707
03107-010J-02N A	P	900090-D8	UNKNOWN	ST. JOHN	09/25/90	ADD CONDUITS & CABLE FOR ALARM SYSTEM' AUDIT ITEM	707
031707-010J-02P A	W	TP024474		WAGNER	11/20/91	ADD NEW GB0 CONTROL PANELS SHOW LOCATION OF GBO CONTROL PANEL	707
031707-010J-03N A	P	662261		TICHOTA	10/17/90	ADD CONDUIT & CABLE SAME	707

Page 1 of 2	DOCUMENT CHANGE FORM (DCF)	(7) DCF #: Rev 1, Chg 1

(1) DCF Orginator: Carol Christian Carol Christian 7/2/98
Print Sign Date

Organization: Design Engineering

Phone/Pager/Location: 2141/NA/130

(2) Responsible Manager: Howard L Saunders H. Saunders 7/2/98
Print Sign Date

Organization: Design Engineering

Phone/Pager/Location: 5419/5108/130

(3) Assigned SME: Carol Christian Carol Christian 7/2/98
Print Sign Date

Phone/Pager/Location: 2141/NA/130

(4) Preparation, Review, and Approval of System Evaluation Reports
Document Title

1-W59-COEM-AMN-161, Rev 1
Existing Document Number and Revision

Same
New Document Number and Revision (*if Applicable*)

(5) **Type of Document**

☐ Policy ☐ Directive ☐ Manual ☐ Technical Standard

☒ Procedure ☐ Instruction ☐ Job Aid ☐ Other

(6) **Type of Modification**

☐ New ○ One Time Use Only ☐ Revision ☐ Cancellation

☐ Change ○ Editorial ○ Intent ☒ Non-Intent

(8) Prescreen/SES/USQD Number: Not Required

Independent Safety Review: Not Required

(9) Effective Date: 7/2/98 Expiration Date:

(10) Item	(11) Page	(12) Step	(13) Proposed Modification
1	2-30		Reprinted because of text roll due to multiple page changes
2	3		Revised LEOP
2-3	5-6		Revised TOC
4	7	2.	Deleted "to comply with environmental permits"
5	9	2.1	Deleted reference to a Safety Evaluation Screen for nonintent changes
6	9	2.2	Changed Operations Review Committee to Independent Safety Review in 2.2 title and changed ORC to ISR in text
7	11	2.6	Changed to read "Appendix 2"
8	14	4.1	Changed Modification Request (DMR) to SER Change Form
9	15	4.4	Changed ORC to ISR
10	16	4.4	Added reference to AMN-101

See attached

(14) Item	Justification
	Changes were necessary: • To bring AMN-161 in line with Site Documents that have been revised since AMN-161 was issued • To clarify steps in processing a nonintent change

(15) Reviewing Organization	(16) Name of Reviewer	(17) Date	(15) Reviewing Organization	(16) Name of Reviewer	(17) Date
NA					

Approval Authority: HOWARD SAUNDERS Howard Saunders 7/2/98
Print Sign Date

PADC-97-00114

Controlled Copy

Page 1 of 3	DCF (continuation sheet)	DCF#: Rev1, CHG1

(4) Document Title	(5) Existing Document Number and Revision
Preparation, Review, and approval of System Evaluation Reports	1-W59-COEM-AMN-161, Rev 1

(10) Item	(11) Page	(12) Step	(13) Proposed Modification
1	2		Move LOEP to pg. 3
2	2		Add: "This page intentionally left blank."
3	3		Move pg. 1 of TOC to pg. 6
4	3		Add LOEP, update
5	4		Move pg. 2 of TOC to pg. 7
6	4		Add: "This page intentionally left blank."
7	5		Move to pg. 7
8	5/7	2	Delete: "to comply with environmental permits"
9	5/7	2	Delete: "SC4 all other SSCs"
10	6		Move to pg. 8
11	7		Move to pg. 9
12	7/9		Delete reference to SES for Non-Intent Changes
13	7/9		Delete: "Operations Review Committee review considerations", Add: "Independent Safety Review considerations"
14	7/9	2.2	Delete: "ORC", Add: "ISR"
15	8		Move to pg. 10
16	9		Move to pg. 11
17	9/11	2.6	Change: "Appendix 3" to "Appendix 4"
18	10		Move to pg. 12
19	11		Move to pg. 13
20	12		Move to pg. 14
21	12/14	4.1	Change: "Document Modification request (DMR)" to: "SER Change Form"
22	13		Move to pg. 15
23	13/15	4.4	Change: "ORC", to: "ISR"
24	14		Move to pg. 16
25	14/16	4.4	Add: "(see 1-W56-COEM-AMN-101, Site Design Document Control, Form 5)"
26	15		Move to pg. 16
27	15/17	4.9	Change: "DMR" to "SER"

Item	Justification

Page 2 of 3	DCF (continuation sheet)	DCF#: Rev. CHG 1

④ Preparation, Review, and approval of System Evaluation Reports Document Title	⑤ 1-WSS-COEM-ANN-161, Rev1 Existing Document Number and Revision

⑩ Item	⑪ Page	⑫ Step	⑬ Proposed Modification
28	16		Delete: "This page intentionally left blank.", move all text up one pg.
29	17		Move to pg. 18
30	17/18	5.2	Clarify the required steps for a non-intent change
31	18		Move to pg. 19
32	18/19	5.2 [2] [A-D]	Clarify
33	18/19	5.2 [2] [A]	Add: "[E] Obtain Responsible Manager (RM) or Subject Matter Expert (SME) and Building Engineering Interim Approval Authority signatures on the check list. (the RM may also be the Building Engineering Approval Authority)"
34	19		Move to pg. 20
35	19/20	5.2.2 [2]	Change reference from DMR and required steps to SER Change Form, Appendix 5.
36	19/20	5.2.2 [3]	Use acronyms for Responsible Manager (RM) and Subject Matter Expert (SME)
37	19/20	5.2.2 [4]	Clarify
38	19/20	5.2.2 [5]	Clarify
39	20		Move to pg. 21
40	20/21	5.2.3 [2-4]	Same as items 35-37 above
41	21		Move to pg. 22
42	21/22	5.2.3 [6]	Add step: "[C] If the change passes USQD process, then continue to step [6]"
43	21/22	5.2.3 [6]	Reword and add bulletized list
[redacted]	21/22	5.2.3 [7]	Reword for clarification
45	21/22	5.2.3 [8-10]	Delete
46	22		Move text forward to pg. 23
47	23	5.3 [20]	Move step [20] to pg. 24
48	23	5.3 [20]	Remove: "Safety Evaluation Screen", replace with: "USQD Review"

Item	⑭ Justification

Page 3 of 3	DCF (continuation sheet)	DCF#: Rev1, CH6.1

(4) Preparation Review and approval of System Evaluation Reports Document Title	(5) 1-WS9-COEM-AMN-161, Rev 1 Existing Document Number and Revision

(10) Item	(11) Page	(12) Step	(13) Proposed Modification
49	24	5.4. [2]	Move to pg. 25
50	24	5.4. [2]	Remove: "Operational Review Committee (ORC)", replace with: "ISR"
51	25	5.4. [3]	Remove: "DMR", replace with: "SER Change Form"
52	25	5.5	Remove: "Technical Support Manager", Add: "Engineering Approval Authority"
53	27		Remove "1-MAN-001-SDRM, Site Documents Requirements Manual"
54	29	App 1	Revised
55	37		Add ISR review and Note to cover sheet
56	73-75	App 5	Add Appendix 5, SER Change Form

Item	(14) Justification

Rocky Flats
Environmental Technology Site

1-W59-COEM-AMN-161

REVISION 1

PREPARATION, REVIEW, AND APPROVAL OF SYSTEM EVALUATION REPORTS

APPROVED BY: D G Ruscitto / David G. Ruscitto / 1/21/98

Site Chief Engineer, Kaiser-Hill Company, LLC | Print Name | Date

Responsible Organization: Design Engineering Effective Date: 1/21/98

CONCURRENCE BY THE FOLLOWING COMPANIES WILL BE DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Rocky Mountain Remediation Services
Safe Sites of Colorado

USE CATEGORY 4

The procedure is available at a known location for reference.

ORC review not required.

The following have been incorporated into this revision:
97-DMR-001777

Reviewed for Classification/UCNI
By D E Hall UNU
Date 1/16/98

This procedure supersedes procedure 1-W59-COEM-AMN-161, Revision 0.

Periodic review frequency: 4 years from the effective date

PADC-97-00114

CONTROLLED COPY

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LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	01/21/98		
2-30	07/02/98		
31-36	01/21/98		
37	07/02/98		
38-72	01/21/98		
73-75	07/02/98		

Rev 1, Chg 1

Rev 1, Chg 1

The following DCFs for change are active for this procedure:

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Rev 1, Chg 1

1. PURPOSE

This procedure provides detailed instructions for the preparation, change and revision, approval, and control of System Evaluation Reports (SER) for systems identified in approved authorization basis documents at Rocky Flats Environmental Technology Site (Site). This procedure establishes the methodology for the development of an SER for System Category (SC)1/2 and SC-3 structures, systems, or components (SSCs) and for the development of a SER in abbreviated format for select SC-3 systems.

This procedure applies to contractors and subcontractors developing or changing SERs for any Site facility or system.

2. OVERVIEW

An SER is used to develop design basis information which, in general, does not exist at the Site. Instead of reconstituting the design basis, the SER provides those elements of a design basis that are necessary to adequately implement the authorization basis. The SER is the system design documentation that provides system functional requirements which ensure that the system is capable of meeting its credited Authorization Basis functions.

The credited functions of a safety SSC are determined in the accident analyses of the Authorization Basis. The SSCs are categorized into three SC levels depending on the credited protection they provide:

- SC-1/2. Those SSCs principally required to protect the public, the co-located worker, and the environment. These SSCs are directly relied upon to prevent or mitigate significant radiological releases.
- SC-3. Those SSCs required to protect the immediate worker, to provide defense-in-depth, or to provide a support function for SC-1/2 SSCs.

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The SER provides functional requirements for system operability that are commensurate with the level of protection required by the SC.

The content and format of SERs are the result of crosstable discussions with the Department of Energy (DOE) during the review of the Building 771 Basis for Operation (BFO) and the Building 371 Basis for Interim Operations (BIO).

Rev 1, Chg 1

SERs are not authorization basis documents and do not receive DOE approval. However, DOE requires that SERs be submitted to facilitate the review and approval process for authorization basis documents. DOE has indicated that the authorization basis and supporting documents are not to be submitted in varying formats.

Mandatory requirements are identified in this procedure by using the word **SHALL**. Additionally, the word **Should** is used in this procedure to indicate a recommendation. In limited circumstances, the word **may** is used when permission is granted rather than constituted as a requirement or recommendation.

SERs for all *credited* SC-1/2 and SC-3 SSC **SHALL** contain detailed system descriptions; define interfacing system boundaries; provide functional requirements, acceptance criteria, and compliance requirements for system operability; provide system and performance categorization; and establish other engineering considerations to maintain the safety envelope. System, boundary, and location diagrams are also provided in the SER. (See Appendix 3, System Evaluation Report Content Outline and Instructions.)

An abbreviated format **may** be used for select SC-3 system SERs. These SC-3 systems are not credited in the accident analyses but provide substantial defense-in-depth benefit in reducing consequences to the worker and the public.

The content of an SER in abbreviated format **SHALL** consist of an Acceptance Criteria Compliance Matrix and Simplified Boundary Diagrams. (See Attachment 4, System Evaluation Report Abbreviated Format Instructions.)

An SER for select SC-3 systems **may** be expanded to include additional sections from the full SER format. Credited SC-1/2 and SC-3 systems SHALL not be documented in an abbreviated format.

2.1 Revision Considerations

SERs that were written in support of an approved authorization basis document prior to the effective date of this revision of COEM-AMN-161 **may** remain in the format and content that was in effect at the time of its approval. When it becomes necessary to issue an SER as a subsequent revision, the SER **Should** be converted to the format presented in this procedure.

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A Safety Evaluation Screen is required when an SER is revised. The Unreviewed Safety Question Determination (USQD) process is invoked because of a requirement established in previous authorization basis review reports. This requirement does not imply that an SER is an authorization basis document or that DOE must approve changes to an SER. For new SERs, the Nuclear Safety approval signature on the SER Cover Sheet will replace this requirement (see Instruction 1, Cover Page in Appendix 3).

Rev 1, Chg 1

2.2 Independent Safety Review Considerations

The Operations Review Committee (ORC) or its company level successor—such as the Safe Sites of Colorado Plant Review Committee—**SHALL** review all documents associated with an authorization basis. According to 1-52000-ADM-02.01, Operations Review Requirements, an Independent Safety Review (ISR) is required for SERs. ISR review is not required for SERs prepared in support of a new, unapproved authorization basis.

Rev 1, Chg 1

2.3 Content Direction

The content and format of the SER presented in COEM-AMN-161 was developed in concert with the DOE during the development of previous authorization basis documents. Appendix 3 provides the requirements for an SER that supports a BIO as the Authorization Basis document. The contents of the sample SER in Appendix 3 **SHALL** be included in SERs for SSCs with SC-1/2 and SC-3 categorization. Appendix 4 provides a sample SER in Abbreviated Format for select SC-3 SERs. The contents of an SER in abbreviated format **SHALL** consist of the Acceptance Criteria Compliance Matrix and the simplified boundary diagrams. All other portions of the SER content are optional.

Rev 1, Chg 1

SERs for each building **Should** reflect a high level of consistency. Format changes may be necessary to reflect changes of direction that emerge during the Authorization Basis development process. If format changes are required, all SERs for that building **SHALL** reflect the new format.

To promote consistency, boilerplate sections have been developed and are presented in the sample SER located in Appendix 3. Additional boilerplate **may** be developed by the SER team as appropriate to reflect emerging authorization basis issues. Changes in content and format are not permitted because of author preference.

2.4 Non-Authorization Basis Activities

The SER **may** be used for providing documented evidence of system capability for non-authorization basis activities. Examples of activities that may require documentation of functional requirements are as follows:

- Systems that are credited in Process Hazard Analyses; usually associated with specific activities such as Caustic Waste Processing.
- Systems that are credited as supporting a specific environmental issue or industry standard such as OSHA or NFPA.
- Systems that are credited with satisfying a permit condition in permits and associated documents.

The format and contents provided in this procedure are appropriate for use in providing functional requirements in support of non-authorization-basis activities. The requirements of this procedure are not binding upon SERs that do not support a building authorization basis document.

2.5 Approval

Concurrence by an Independent Verifier, the Building Engineering Approval Authority, Nuclear Safety, and other discipline-specific organizations, as appropriate, **SHALL** be documented by signature on the SER Cover Sheet.

In accordance with the Kaiser-Hill Policy for Site Design Authority, a Site Chief Engineer (SCE) **SHALL** be in responsible charge of all engineering activities at the Site, including modifications to nuclear facility authorization bases. The SCE **may** delegate design work of the Site Design Authority as specified in DOE-STD-1073-93, The Guide for Operational Configuration Management Program. The SCE delegates the approval of SERs to the Responsible Company Chief Engineer (CCE). Approval of the SER by the CCE **SHALL** be documented on the SER Cover Sheet.

2.6 Administration

The SER **SHALL** be corrected, changed, or revised to reflect changes that are made to the authorization basis, system equipment or configuration, or system boundaries and interfaces as follows (see Section 5.2 to determine the appropriate action):

- When a change is made to the authorization basis, the associated SER(s) **SHALL** be revised before the authorization basis can be implemented.

- When a change is made to system equipment or configuration or to system boundaries and interfaces, the Baseline Document Change Form (BDCF) in the design package **SHALL** identify the SER as a baseline document that requires an update. (For how to complete a BDCF, see 1-V51-COEM-DES-210, Design Process Requirements, Appendix 2, Form 5.)

Rev 1, Chg 1

The SER **SHALL** be issued as a new revision when changes or corrections affect the system boundaries, functional requirements, acceptance criteria, compliance requirements, or the boundary drawing(s).

The SER **SHALL** be reviewed annually. Recent changes or revision to the SER **SHALL** not satisfy this requirement. The responsible Building Engineering Approval Authority **SHALL** be responsible for the annual review.

3. DEFINITIONS

Acceptance Criteria. Requirements or measurable standards that must be met to satisfy the associated functional requirement. A system is operable when it meets all the acceptance criteria associated with its functional requirements.

Authorization Basis. Those aspects of the facility design basis and operational requirements relied upon by DOE to authorize operation. These aspects are considered to be important to the safety of facility operation. The authorization basis is described in documents such as the Basis for Interim Operation (BIO), Basis for Operation (BFO), and Final Safety Analysis Report (FSAR).

Bases. Summary statements of the rationale for the Functional Requirements, Acceptance Criteria, and Compliance Requirements as they support the Limiting Conditions for Operation (LCO) and associated Surveillance Requirements (SR) listed in the Authorization Basis document.

Compliance Requirements. Requirements relating to testing, calibration, or inspection to ensure that the acceptance criteria of Safety SSCs is met and that the system is operable.

Credited. A function (assumed to exist in the accident analysis or supporting document) that prevents, detects, or mitigates a postulated accident.

Design Features. Those passive Safety Structures, Systems, and Components (SSC) which, if altered or modified, would have a significant affect on safety.

Functional Requirements. The requirements that a system, subsystem, or component must meet as credited in the Authorization Basis document.

Limiting Condition for Operations (LCO). The lowest function capability or performance level of an SSC and its support systems required for safe operations of the facility.

Operable/Operability. A system, subsystem, component, or device is operable when it is capable of performing its intended safety function as specified in the SER.

Operational Safety Requirements (OSRs). See Technical Safety Requirements.

Safety Structures, Systems, and Components (SSCs). Those SSCs that are credited with a safety function in the safety analysis of the Authorization Basis document. Safety SSCs that support LCOs and their boundaries or Design Features are designated as System Category 1&2. Safety SSCs that are important for worker safety and defense-in-depth are designated as System Category 3.

System Evaluation Report (SERs). SERs are used to develop a design basis which, in general, does not exist at the Site. The SER is the system design documentation that provides system requirements which ensure that the system is capable of meeting its credited Authorization Basis functions.

Technical Safety Requirement (TSRs). Authorization Basis TSRs/OSRs define the operating limits and surveillance requirements, the bases thereof, and the acceptance criteria necessary to protect the health and safety of the public and to minimize the potential risk to workers from the uncontrolled release of radioactive or other hazardous materials and from radiation exposure due to inadvertent criticality.

4. RESPONSIBILITIES

4.1 Building Engineering Approval Authority

Develops SERs in support of the building authorization basis documents.

Assigns SER Preparer, when applicable.

Reviews the SER for technical content and consistency as it applies to the facility and to the appropriate authorization basis document.

Submits the completed Review Comment Sheet(s) to the Preparer.

Signs SER Cover Sheet for new SERs and complete revisions to indicate concurrence for technical content and consistency as it applies to the facility and to the appropriate authorization basis document.

Ensures SERs are changed or corrected, when applicable.

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Signs the SER Change Form as Approval Authority for Editorial Corrections and Nonintent Changes.

Ensures SERs are revised, when applicable.

Performs an annual review of the SERs to ensure they are accurate with respect to the Authorization Basis document.

Ensures changes identified during the Annual Review are incorporated into the SER.

4.2 Independent Verifier

Reviews the SERs to ensure technical accuracy. The Independent Verifier is an individual who is technically competent in the system covered by the SER, not necessarily in a separate organization.

Submits the completed Review Comment Sheet(s) to the Preparer.

Signs the SER cover page for new SERs and complete revisions to indicate concurrence with technical accuracy.

4.3 Other Reviewers

Reviews the SER to ensure compliance with requirements in respective areas of responsibility. (See 5.3[4] in this procedure for examples of Other Reviewers.)

Submits the completed Review Comment Sheet(s) to the Preparer.

Signs the SER cover page for new SERs and complete revisions to indicate concurrence ensuring compliance with requirements in respective areas of responsibility.

4.4 Preparer

Develops the SER in accordance with the format and content required by COEM-AMN-161.

Word processes SERs according to Appendix 3 recommendations.

Obtains a classification review.

Distributes SER Revision Package to reviewers with an attached informational letter.

Rev 1, Chg 1

Obtains ISR approval or company-level equivalent.

Develops SER documentation files and submits them to Site Design Document Control (SDDC), Building 130.

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Releases approved SER package to SDDC using a Document Release Form (DRF) (see 1-W56-COEM-AMN-101, Site Design Document Control, Form 5).

Changes or revises SERs as required.

4.5 Responsible Company Chief Engineer

Reviews contents of SER to ensure technical adequacy and accuracy.

Submits the completed Review Comment Sheet(s) to the Preparer.

Signs the SER Cover Sheet for new SERs and complete revisions to indicate approval of the document.

4.6 Responsible Company Nuclear Safety Manager (or Designee)

Reviews SERs for technical content and consistency with Nuclear Safety Authorization Basis and accident analyses assumptions.

Submits the completed Review Comment Sheet(s) to the Preparer.

Signs the SER cover page for new SERs and complete revisions to indicate concurrence with technical content and consistency with Nuclear Safety Authorization Basis and accident analyses assumptions and that an Safety Evaluation Screen has been performed, if applicable.

4.7 Responsible Engineering Organization

Works with the preparer in the development of the SER.

Participates in the development of technical inputs and walkdown efforts for SSCs within their area of responsibility.

Identifies qualified individuals to perform an independent verification of the SER prior to approval, someone who is not directly involved in the development of the SER.

4.8 Screener

Performs Safety Evaluation Screen.
Completes Section 2 of the USQD Checklist for SER Nonintent Changes form in conjunction with evaluating the SER (see Appendix 2).

Returns the completed and signed checklist and the SER to the preparer.

4.9 Site Design Document Control

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Assigns the SER Change Form number (see Appendix 5).

Prepares an Transmittal/Receipt Form for SER distribution.

Distributes the Transmittal/ Receipt Form and the approved SER (or affected pages) to SER custodians.

Maintains SER controlled distribution list.

Maintains SER documentation for future access.

5. INSTRUCTIONS

This section provides instruction for developing or changing an SER along with the required reviews, approvals, and distribution of an SER.

5.1 New System Evaluation Report

Preparer

[1] **IF** this is a new SER,
THEN prepare the SER in accordance with the required format and content in Appendix 3. The required SER format and content is based on a BIO-type authorization basis.

[2] Proceed to Step 5.3 for new SER review and comment.

5.2 Changes to System Evaluation Report

Preparer

[1] **IF** changes are being made to a SER,
THEN request a copy of the current SER version from SDDC.

[A] Redline a copy of the existing SER to show the changes necessary.

NOTE *Modifications that are permitted are 1) a REVISION, 2) an EDITORIAL CORRECTION, or 3) a NONINTENT CHANGE. AN INTENT CHANGE is not permitted. If a change of intent is made, the modification is a REVISION.*

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[2] Complete the System Evaluation Report Change Determination Checklist to evaluate what process to use when making changes to an SER (see Appendix 1).

[A] **IF** the answer to any question in Box 1 is "Yes,"
THEN check Box 1 indicating a Revision.

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[B] **IF** the answer to any question in Box 2 is "Yes,"
THEN check Box 2 indicating an Editorial Correction.

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[C] **IF** the answer to any question in Box 3 is "No,"
OR
IF the answer to Question 3 is "Yes" **AND** the change passes the USQD process according to Appendix 1,
THEN check Box 3 indicating a Nonintent Change.

[D] **IF** the change does not pass the USQD process,
THEN check Box 1 indicating a Revision.

[E] Obtain Responsible Manager (RM) or Subject Matter Expert (SME) and Building Engineering Approval Authority signatures on the checklist. (The RM **may** also be the Building Engineering Approval Authority.)

[3] Proceed to the appropriate section to complete the SER:

- Section 5.2.1 for Revisions
- Section 5.2.2 for Editorial Corrections
- Section 5.2.3 for Nonintent Changes

5.2.1 Revisions to System Evaluation Reports

Preparer

[1] **IF** the changes to a SER are a Revision,
THEN prepare the SER revision in accordance with the required format and content in Appendix 3.

NOTE 1 *Revision bars are <u>not</u> required if the SER is a Revision.*

NOTE 2 *An SER that was approved prior to the effective date of Revision 1 of this procedure **may** remain in the format and content that was in effect at the time of approval until it requires revision.*

[2] Proceed to Section 5.3 for review and comment of the SER revision.

5.2.2 Editorial Corrections to System Evaluation Reports

Preparer

[1] **IF** the changes are Editorial Corrections,
THEN incorporate changes into the existing SER using one of the following methods:

- Pen and ink
- Word processing

[A] Identify all changes with revision bars.

Rev 1, Chg 1 Rev 1, Chg 1

[2] Complete the SER Change Form, Appendix 5.

Rev 1, Chg 1

[3] Submit a copy of the SER editorial corrections to the RM or SME for review.

Rev 1, Chg 1

[4] **WHEN** the RM or SME has completed review of the SER and all comments have been dispositioned,
THEN obtain signatures/dates from the RM or SME to verify concurrence with the editorial corrections.

Rev 1, Chg 1

[5] **WHEN** concurrence signatures have been obtained from the RM or SME,
THEN submit the following to the Building Engineering Approval Authority for signature:

- Copy of the SER
- SER Change Form

[6] Proceed to Section 5.4[3] for final distribution.

5.2.3 Nonintent Changes to System Evaluation Reports

Preparer

[1] **IF** the changes are Nonintent Changes,
THEN incorporate the changes into the existing SER.

[A] Identify all changes with revision bars.

Rev 1, Chg 1

[3] Submit a copy of the SER Nonintent Changes to the RM or SME for review.

Rev 1, Chg 1

[4] **WHEN** the RM or SME has completed reviewing the SER and all comments have been dispositioned,
THEN obtain signatures/dates from the RM or SME to verify concurrence with the Nonintent Changes.

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NOTE *Step [5] applies only to Nonintent Changes that require the USQD process as indicated by the checklist in Appendix 1.*

[5] Initiate the USQD process to verify that changes to the SER have been correctly determined as a Nonintent Change.

[A] Complete Section 1 of the USQD Checklist for SER Nonintent Changes form (see Appendix 2).

[B] Submit the checklist with the SER when initiating the USQD process.

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[C] **IF** the change passes the USQD process,
THEN continue to Step [6].

[6] Submit the following to the Building Engineering Approval Authority for signature:

- Copy of the SER
- SER Change Form

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[7] Proceed to Section 5.4[3] for final distribution.

5.3 New or Revised System Evaluation Report Review and Comment

Preparer

[1] Obtain a classification review of the SER from an authorized derivative classifier on the SER Cover Page (see Instruction 1, Cover Page in Appendix 3).

[2] Assemble the SER Review Package as follows:

- System Evaluation Report
- Comment Review Sheet(s)
- Review package informational letter or memo

[3] Distribute the SER for required review to the following organizations/disciplines:

— Building Engineering Approval Authority
— Nuclear Safety
— Discipline Specific, if applicable
— Responsible Company Chief Engineer

NOTE *Additional reviews **may** be obtained at the preparer's discretion.*

[4] Distribute the SER package for review to additional organizations/ disciplines, as appropriate, such as:

— Criticality Safety
— Fire Protection Engineering
— Radiological Engineering

Independent Reviewer

[5] Review the SER to ensure technical accuracy and adequacy.

[6] Enter comments on the Review Comment Sheet(s).

[7] Submit the completed Review Comment Sheet(s) to the Preparer.

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Responsible Company Nuclear Safety Manager (or Designee)

[8] Review the SER for technical content and consistency with Nuclear Safety Authorization Basis and accident analyses assumptions.

[9] Enter comments on the Review Comment Sheet(s).

[10] Submit the completed Review Comment Sheet(s) to the Preparer.

NOTE *Other applicable Reviewer(s) such as Fire Protection or Radiological Engineering may review the SER.*

Other Reviewer(s)

[11] Review the SER to ensure compliance with requirements in respective areas of responsibility.

[12] Enter comments on the Review Comment Sheet(s).

[13] Submit the completed Review Comment Sheet(s) to the Preparer.

Responsible Company Chief Engineer

[14] Review contents of SER to ensure technical adequacy and accuracy.

[15] Enter comments on Review Comment Sheet(s).

[16] Submit the completed Review Comment Sheet(s) to the Preparer.

Preparer

[17] Disposition comments from the Review Comment Sheet(s).

[18] Document comment resolution on the Review Comment Sheet(s).

[19] Incorporate dispositioned comments into the SER.

NOTE *The USQD Checklist for SER Nonintent Changes form is <u>not</u> required for a SER revision.*

[20] **IF** this is a revision,
THEN initiate the USQD process.

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[A] **WHEN** the USQD review is complete/passed,
THEN proceed to Section 5.4 for SER approval.

5.4 System Evaluation Report Approval

Preparer

[1] For concurrence verification of a new or revised SER, obtain the following required signatures on the SER Cover Sheet (see Instruction 1, Cover Sheet in Appendix 3):

- Preparer signs to indicate all comments have been resolved and incorporated into the SER.
- Independent Verifier signs to indicate concurrence with technical accuracy and adequacy.
- Building Engineering Approval Authority signs to indicate concurrence with technical content and consistency with the facility authorization basis as it applies to the facility and to the appropriate document.
- Responsible Company Nuclear Safety Manager (or designee) signs to indicate concurrence with technical content and consistency as it applies to the facility and accident analyses assumptions.
- Other Reviewer(s) sign to indicate approval with requirements in respective areas of responsibility (for example: Criticality Safety, Fire Protection, or Radiological Engineering).
- Responsible CCE signs to indicate the SER is technically adequate and accurate.

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NOTE *Independent Safety Review (ISR) is not required for SERs developed in support of a new, unapproved authorization basis.*

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[2] Obtain an ISR in accordance with ADM-02.01.

[A] Verify ISR approval by entering ISR identifying number on SER Cover Page.

[3] Release the approved SER package to SDDC for distribution using a Document Release Form (DRF) in accordance with COEM-AMN-101.

[A] Ensure the SER package contains the following:

- Approved SER
- Two electronic copies (labeled with SER number, revision number and chapter)
  - (1) Working Disk
  - (2) Controlled Disk
- Completed DRF
- History File
  - — Comment Resolution Sheet(s)
  - — Documentation and forms associated with SER preparation
  - — Redline changes
  - — SER Change Form with approval signature, if an Editorial Correction or a Nonintent Change.

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5.5 Annual Review

An annual SER review **SHALL** be performed to ensure that the SERs are accurate with respect to the Authorization Basis document and field conditions. Editorial corrections, Nonintent Changes, or revisions that have been made since the last annual review **SHALL** not satisfy this requirement. The Building Engineering Approval Authority **SHALL** be responsible for all SER reviews.

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Building Engineering Approval Authority

[1] Ensure an annual SER review is performed.

[2] **IF** no changes are deemed necessary,
THEN provide documentation as follows:

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[A] Document date annual SER review was performed.

[B] Document scope of annual SER review performed.

[C] Document results of annual SER review.

[3] **IF** SER changes are required,
THEN proceed to Section 5.2.

5.6 Final Distribution

Responsible Engineering Organization

[1] **IF** the SER is new,
THEN coordinate the development of the distribution list with SDDC.

[2] **IF** additional names need to be added to the existing distribution list,
THEN submit a Controlled Distribution Request form according to COEM-AMN-101.

Site Design Document Control

[3] Prepare a Transmittal/Receipt Form in accordance with COEM-AMN-101 along with the SER controlled distribution list.

[4] Distribute the Transmittal/Receipt Form and the SER to designated custodians in accordance with COEM-AMN-101 and the SER controlled distribution list.

[5] Maintain the SER controlled distribution list in accordance with COEM-AMN-101.

5.7 System Evaluation Report Records

Site Design Document Control

[1] Maintain the System Evaluation Report Package documentation for future access.

6. RECORDS

6.1 Permanent Records

System Evaluation Report Packages documentation

6.2 Non Permanent Records

None

7. REFERENCES

DOE ltr, AME:ABD:MP:04780, Basis for Interim Operation Template, dated September 22, 1997

DOE-STD-1073-93, The Guide for Operational Configuration Management Program

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1-V51-COEM-DES-210, Design Process Requirements

1-W56-COEM-AMN-101, Site Design Document Control

1-52000-ADM-02.01, Operations Review Requirements

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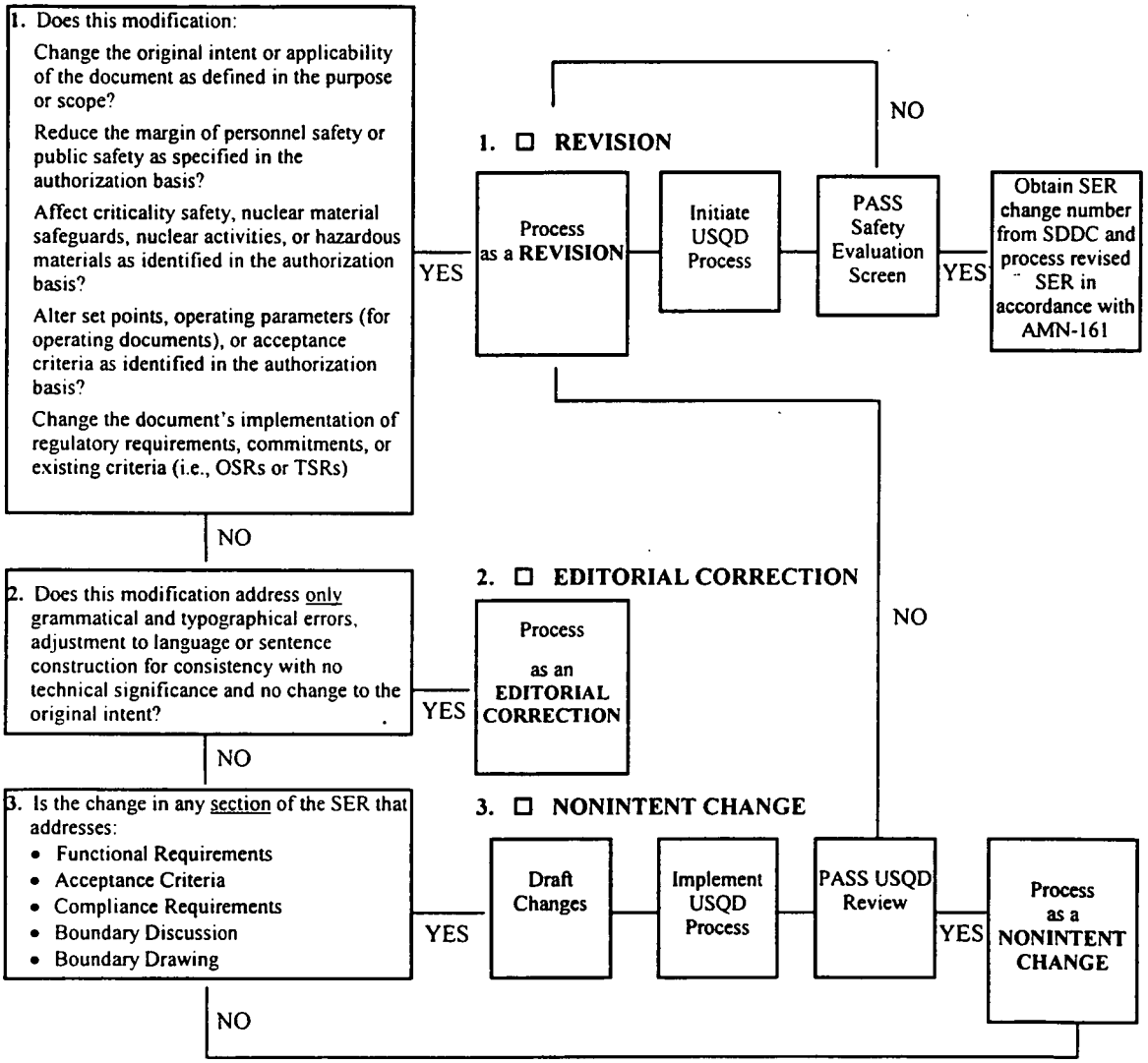
SYSTEM EVALUATION REPORT
CHANGE DETERMINATION CHECKLIST

Rev 1, Chg 1

Document Title: _____ **Revision #** _____

Answer questions in boxes 1-3. Check the coordinating change process box: 1. REVISION 2. EDITORIAL CORRECTION 3. NONINTENT CHANGE. Obtain the Responsible Manager/Subject Matter Expert and Building Engineering Approval Authority signatures and process the System Evaluation Report in accordance with AMN-161.



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Type of Change: ☐ **REVISION** ☐ **EDITORIAL CORRECTION** ☐ **NONINTENT CHANGE**

Is USQD process required? ☐ **Yes** ☐ **No**

Responsible Manager or Subject Matter Expert - Print/ Signature/ Date

Building Engineering Approval Authority - Print/ Signature/ Date

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USQD CHECKLIST
FOR SER NONINTENT CHANGES

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY STE

(1-W59-COEM-AMN-161)

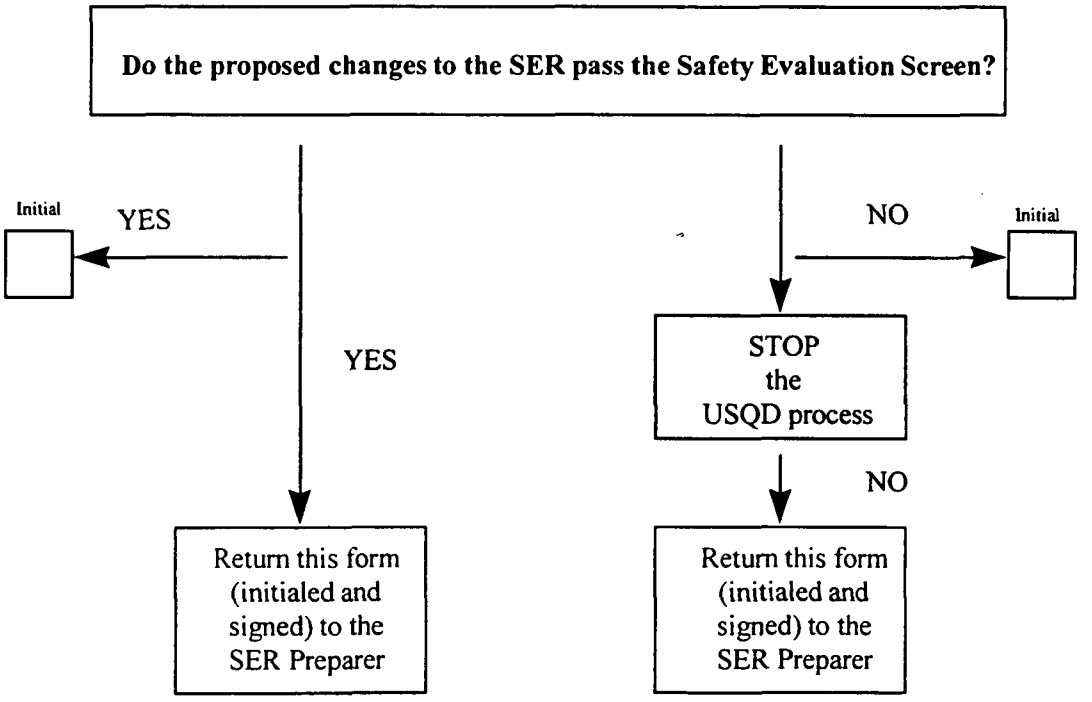
SER Change and Revision USQD Checklist

SECTION 1 - Preparer: This form is submitted with the SER for USQD Review ONLY when the SER is an NONINTENT CHANGE. Complete Section 1 and attach the form to the SER.

SER Preparer: _____ Ext: _____

SER Title: _____

SECTION 2 - Screener: Complete Section 2 and return the form and the SER to the Preparer.



Screener Signature: _____

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SYSTEM EVALUATION REPORT CONTENT OUTLINE AND INSTRUCTIONS

Below is the outline of an SER chapter. The SER format and content were developed in support of the Building 371 BIO and reflect the DOE-approved content and format for use in SER chapters that support SC-1/2 SSCs and most SC-3 SSCs. Appendix 4 provides the instructions for developing an SER in abbreviated format for use with select SC-3 SSCs.

SYSTEM EVALUATION REPORT OUTLINE

Each item in the outline refers to an Instruction number. The Instructions provide the methodology for developing an SER chapter. Instructions begin on page 37.

* * *

Cover Sheet *(see Instruction 1)*

List of Effective Pages *(see Instruction 2)*

Revision Log *(see Instruction 3)*

Table of Contents *(see Instruction 4)*

1.0 INTRODUCTION *(see Instruction 5)*

2.0 SAFETY BASIS *(see Instruction 6)*

3.0 SYSTEM DESCRIPTION *(see Instruction 7)*

4.0 SYSTEM BOUNDARIES AND INTERFACES *(see Instruction 8)*

4.1 Boundaries *(see Instruction 9)*

SYSTEM EVALUATION REPORT OUTLINE (continued)

4.2 **Support Systems** *(see Instruction 10)*

4.2.1 **Support Systems with LCOs** *(see Instruction 11)*

4.2.2 **Support Systems without LCOs** *(see Instruction 12)*

4.3 **Interfaces** *(see Instruction 13)*

5.0 **FUNCTIONAL REQUIREMENTS** *(see Instruction 14)*

5.1 **LCO Requirement** *(see Instruction 15)*

5.1.1 **Write out the LCO as it appears in the BIO** *(see Instruction 16)*

Functional Requirement 1: *(see Instruction 17)*

Basis: *(see Instruction 18)*

Required Equipment: *(see Instruction 19)*

Acceptance Criteria 1: *(see Instruction 20)*

Compliance Requirement: *(see Instruction 21)*

Repeat Instructions 20 and 21 for each additional Acceptance Criteria. (see Instruction 22)

Repeat Instructions 17 through 21 for each additional Functional Requirement. (see Instruction 23)

5.1.2 *Repeat Instructions 16 through 21 for each additional LCO. (see Instruction 24)*

SYSTEM EVALUATION REPORT OUTLINE (continued)

5.2 **Design Features** *(see Instruction 25)*

6.0 **SYSTEM CATEGORY** *(see Instruction 26)*

7.0 **PERFORMANCE CATEGORY** *(see Instruction 27)*

8.0 **OTHER ENGINEERING CONSIDERATIONS** *(see Instruction 28)*

8.1 **BIO Credited SC-3 Safety Functions** *(see Instruction 29)*

8.1.1 **Write out the SC-3 Safety Function from the BIO** *(see Instruction 30)*

Functional Requirement 1: *(see Instruction 31)*

Basis: *(see Instruction 32)*

Required Equipment: *(see Instruction 33)*

Acceptance Criteria 1: *(see Instruction 34)*

Compliance Requirement: *(see Instruction 35)*

Repeat Instructions 34 and 35 for each additional Acceptance Criteria. (see Instruction 36)

Repeat Instructions 30 through 35 for each additional Functional Requirement. (see Instruction 37)

8.1.2 *Repeat Instructions 31 through 35 for each additional SC-3 Safety Function. (see Instruction 38)*

8.2 **Non-BIO Related SC-3 Functions** *(see Instruction 39)*

SYSTEM EVALUATION REPORT OUTLINE (CONTINUED)

8.3 Other Considerations *(see Instruction 40)*

9.0 REFERENCES *(see Instruction 41)*

Attachment 1 Cover Sheet - Acceptance Criteria Compliance Matrix *(see Instruction 42)*
Attachment 1 - Acceptance Criteria Compliance Matrix *(see Instruction 43)*
Table 1 - LCO Requirements *(see Instruction 44)*
Table 2 - Design Features *(see Instruction 45)*
Table 3 - BIO Credited SC-3 Safety Functions *(see Instruction 46)*
Attachment 2 Cover Sheet - System Location Drawings *(see Instruction 42)*
Contents of Attachment 2 *(see Instruction 47)*
Attachment 3 Cover Sheet - System and Boundary Diagrams *(see Instruction 42)*
Contents of Attachment 3 *(see Instruction 48)*
Additional attachments **may** be included.

INSTRUCTION 1 - COVER SHEET

Revision No: X
Page 1 of 17*

Building XXX System Evaluation Report
In Support of the Building XXX Basis for Interim Operation
Chapter XX
[System Name]

Prepared by: _____ Date: _____
[Preparer's Name]

Reviewed by: _____ Date: _____
Independent Verification**

_____ Date: _____
Building Engineering Approval Authority

_____ Date: _____
Nuclear Safety

_____ Date: _____
*Additional Reviewers****

Approved by _____ Date: _____
Company Chief Engineer
[Name]

Reviewed for Classification/UCNI

By: _____

Rev 1, Chg 1 | ****ISR Review: [ISR Number} Date: _____

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* Total pages represent the number of pages in the body of the SER; that is, the cover sheet through Section 9.0 References. The attachments are not included in the total page count.

** Independent Verification - an individual who possesses adequate qualifications to determine that the SER contains sound application of engineering/system/Authorization Basis principles.

*** Additional Reviewers, appropriate to the subject matter, **may** be included on the Cover Sheet.

**** Independent Safety Review is not required for SERs developed in support of a new, unapproved authorization basis.

INSTRUCTION 2 - LIST OF EFFECTIVE PAGES

Prepare and maintain the List of Effective Pages in accordance with Appendix 16 of the Site Documents Requirements Manual, 1-MAN-001-SDRM.

Attachments **SHALL** be listed as units regardless of the number of pages in the attachment. List each attachment number, attachment title, and the attachment effective date. A change to any page or figure within the attachment **SHALL** require a new effective date for the entire attachment.

The following footer begins on this page and continues through the body of the SER. The Acceptance Criteria Compliance Matrix contains the footer. Page numbering starts over at one in the matrix and continues through Tables 1, 2, and 3. Other attachments do not contain the footer.

Footer format: Font 10 point - Times/Times New Roman

Building XXX SER XX, Rev. X [Page No.] [Effective date of this page]
[Name of System]

INSTRUCTION 3 - REVISION LOG

Revision No.	Date	Summary of Changes
0	MM/DD/YY	Original Issue

When a revision is issued under a subsequent revision number, the changes that have been incorporated in the revision are summarized on the Revision Log.

Editorial Corrections and Nonintent Changes do not have to be logged on the Revision Log.

INSTRUCTION 4 - TABLE OF CONTENTS

The Table of Contents utilizes only two outline levels (for example, 4.0 and 4.1) with associated page numbers. Additional sub-points are not reflected in the Table of Contents.

List attachments without page numbers.

In the following SER Instructions, two methods of illustration are used. Boilerplate should be used exactly as presented. Examples are for illustration. Boilerplate and Examples are described below.

Boilerplate:
Boilerplate is used to convey information that is prescribed wording for use in each SER chapter. The content and location of Boilerplate should be identical in each SER chapter unless it is not applicable to the specific case being discussed.

Much of the Boilerplate presented is the result of cross table negotiations between DOE and the BIO team regarding the precise presentation of controversial or disputed concepts or issues. Boilerplates can be edited or changed, if needed, to appropriately address the requirements of the Authorization Basis. When the Boilerplate is changed, the changes should be applied to each SER chapter.

Examples:
Examples are for guidance only. They do not need to be used verbatim. Examples are based on the Building 371/374 BIO and taken from Building 371 SERs. Adjustment may be necessary if the SER is written to another type of Authorization Basis document.

INSTRUCTION 5

1.0 INTRODUCTION

Title is Bold, All Caps

Text is indented to align with the title.

The following Boilerplate satisfies the requirements for the Introduction. The inclusion of addition information is optional.

INSTRUCTION 5 (continued)

Boilerplate:

This System Evaluation Report (SER) identifies the Safety Basis, provides a system description, defines the boundaries with interfacing systems, identifies System Category (SC) and Performance Category (PC), and establishes the functional requirements and acceptance criteria for the Building XXX [Name of System]. The functional requirements defined in this SER are derived from the Limiting Conditions for Operations (LCO) or the Administrative Controls (AC) and Chapter 6 of the Building XXX Basis for Interim Operation (BIO) (Reference 1).

Meeting the acceptance criteria for each of the functional requirements demonstrates that the [Name of System] is operable in accordance with the BIO. Emergent issues associated with system design, functional requirements, and acceptance criteria will be included in revisions to this SER.

INSTRUCTION 6

2.0 SAFETY BASIS

Title is Bold, All Caps
Text is indented to align with the title.

This section begins with the following Boilerplate:

Boilerplate:

This section describes the safety functions of the system as it is credited in the BIO. See Section 6.0 of the SER for system category and Section 7.0 for performance category.

Additional information should be included in this section based on the following discussion:

INSTRUCTION 6 (continued)

Summaries of safety functions are provided in the BIO. The BIO safety function summary is the basis for the Safety Basis section in the SER. A system **may** have more than one safety function. In many cases, the safety function as stated in the BIO is sufficient discussion for purposes of the SER.

The Safety Basis is associated with the system category of the system (see Instruction 26 for discussion of system category. The BIO will provide safety bases for the portions of the system that are SC-1/2 and/or SC-3. If the system has more than one safety function, they all must be listed in decreasing order (SC-1/2 first, then SC-3).

Examples:

Fire Water Supply

The safety function of the Fire Water Supply is to provide a water supply to the Automatic Sprinkler System and Plenum Deluge System.

Automatic Sprinkler System

The safety function of the Automatic Sprinkler System is to reduce the frequency of large fire occurrences and mitigate the fire consequences (radiological dose) to the public, co-located worker, and facility workers from significant size fires, i.e., fires large enough to jeopardize multiple-material containers. This function specifically applies at all times in Building 371 Material Access Area (MAA).

INSTRUCTION 7

3.0 SYSTEM DESCRIPTION

Title is Bold, All Caps
Text is indented to align with the title.

This section begins with the following Boilerplate:

INSTRUCTION 7 (continued)

Boilerplate:

This system description is an overview of the Building XXX [System Name]. It was compiled from information contained in (give specific sources such as the BIO, walkdowns, or drawings) (References XX).

Additional information should be included in this section based on the following discussion:

The system description should address the system as it exists. It should answer the following general questions:

- What is the system?
- Where is the system located?
- What is the purpose for the system?
- What are the major or significant components?
- What is the system configuration?
- How does it normally operate?
- Does it support other systems?
- What systems does it interface with?

The system description is compiled from information contained in the BIO, on various Rocky Flats drawings, from walkdowns, and from other pertinent documents.

The system description forms the basis upon which functional requirements will be established in a subsequent SER section. The system description should make it apparent whether the system, in its current configuration and condition, is capable of performing its credited function.

The text in the System Description should be consistent with the System Location Diagrams (Attachment 2) and the System and Boundary Diagrams (Attachment 3). Make reference to Attachments 2 and 3 in the text of the System Description.

INSTRUCTION 8

4.0 SYSTEM BOUNDARIES AND INTERFACES

Title is Bold, All Caps

Text is indented to align with the title.

This section consists solely of the following Boilerplate:

Boilerplate:

This section contains a definition of the system boundaries, identification of the significant system interfaces, and a description of required support systems. This section describes the context within which the system must operate while performing the functions identified in Section 5.0.

An interface is any connection or influence on the system of concern. A support system is an interface that is required to perform some function for the supported system to perform its intended function. The set of support systems is a subset of the set of interfaces.

In general, the supporting system would be classified the same as the supported system. Exceptions could include the following:

- Systems, Structures, and Components that "Fail Safe" upon loss of the supporting system (e.g., SSC fails in safe position upon loss of electrical power).
- Support Systems that are physically located outside of Building XXX Complex and are under the jurisdiction of other organizations.

INSTRUCTION 9

4.1 Boundaries

Title is Bold, Underlined

Text is indented to align with the title.

Provide a written description of the boundaries of the system. Be specific. Identify components and configuration, such as downstream of valve number XXX, the line side of breaker number XXX.

INSTRUCTION 9 (continued)

The text should be consistent with the System and Boundary Diagrams, Attachment 3. Refer to the appropriate diagrams in the boundary discussion.

Examples:

4.1 Boundaries

The boundary for the Turbine Generator System is at the connection from the generator breaker to the bus between 371-5/6 and 371-6/5 tie breakers. The two tie breakers and ESWGR 371-5 and ESWGR 371-6 are part of the Electrical Power Distribution System. See Attachment 3, System Boundary Diagrams, for a graphic representation of the system boundaries.

4.1 Boundaries

Within the boundaries for the water-based Fire Suppression System are the fire water supply; the automatic sprinkler system; and the plenum deluge system and all the valves, piping, and appurtenances from and including the PIV to the sprinkler heads, deluge nozzles, and hose connections. The check valve in the nitrogen supply line immediately upstream of the fire water tanks is the boundary between the Plenum Deluge System and the Compressed Gas System. The alarm port to the retard chamber of the alarm valve is the boundary between the water supply risers and the Fire Detection and Alarm System. See Attachment 3, Figure 5, for a simplified boundary diagram.

INSTRUCTION 10

4.2 Support Systems

Title is Bold, Underlined
Text is indented to align with the title.

Support systems are systems that provide functions that must be available for the subject system to provide its intended or credited function.

The support systems that have LCOs in the BIO will be listed in Section 4.2.1.
The support systems without LCOs in the BIO will be listed in Section 4.2.2.

INSTRUCTION 10 (continued)

Boilerplate:

The [Name of System] requires the following SSCs to be operable in order to perform its required safety functions.

INSTRUCTION 11

4.2.1 Support Systems with LCOs

Title is Bold

Text is indented to align with the title.

The support system should be listed and a brief explanation of its function given. Refer to the SER chapter that addresses the support system.

Example:

4.2.1 Support Systems with LCOs

Automatic Sprinkler System

Water flowing through the Automatic Sprinkler System as the result of heat from a fire fusing a sprinkler head activates the pressure-operated switch in the alarm valve at the riser. The pressure-operated switch sends an alarm signal to the CAS and FDC via an SIO panel. See SER, Chapter 10, Fire Suppression System, for additional information on the Automatic Sprinkler System.

If there are no support systems with LCOs, state that there are none.

INSTRUCTION 12

4.2.2 Support Systems without LCOs

Title is Bold

Text is indented to align with the title.

INSTRUCTION 12 (continued)

The support system should be listed and a brief explanation of its function given. Refer to the SER chapter that addresses the support system.

Example:

4.2.2 Support Systems without LCOs

Electrical Power Distribution System

Electrical power is provided to the detection devices through fire alarm panels during normal operation via the Electrical Power Distribution System. The power **may** be supplied by either Site power or the Turbine Generator System. See SER, Chapter 11, Electrical Power Distribution System, for additional information on electrical power supply and see SER, Chapter 13, Turbine Generator System, for additional information on the Turbine Generator.

If there are no support systems without LCOs, state that there are none.

INSTRUCTION 13

4.3 Interfaces

Title is Bold, Underlined
Text is indented to align with the title.

An interface is *any connection or influence on the system of concern.* List all systems that interface with the system of concern. The support systems that were discussed in Sections 4.2.1 and 4.2.2 should be *listed* first. All other interfaces are *listed* next.

Example:

4.3 Interfaces

The following systems interface with the UPS System and directly support its functional requirements:

- Electrical Power Distribution System (SER 11)

INSTRUCTION 13 (continued)

The interface from the UPS System is that portion of the system which can distribute backup power to the required loads.

The following systems also interface with the UPS System:

- HVAC Ventilation System (SER 2)
- Air Monitoring System (SER 4)
- HP Vacuum System (SER 5)
- Life Safety/Disaster Warning System (SER 7)
- Compressed Gas System (SER 14)

The UPS System interfaces with all of the systems listed above by providing electrical power to individual components in the system.

INSTRUCTION 14

5.0 FUNCTIONAL REQUIREMENTS

Title is Bold, All Caps
Text is indented to align with the title.

This section begins with the following Boilerplate:

Boilerplate:

This section of the SER addresses the functional requirements of the system to meet the LCOs and design features set forth in the BIO. It provides the basis for the requirements and the acceptance criteria which satisfy each functional requirement from the LCO. This section also contains functional requirements and compliance requirements for designated design features. The Acceptance Criteria Compliance Matrix (Attachment 1, Tables 1 and 2) presents this information in chart form.

Meeting these functional requirements defines operability with respect to satisfying LCO requirements. See Section 8.0 for engineering considerations not identified in these functional requirements.

INSTRUCTION 15

5.1 LCO Requirement

Title is Bold, Underlined
Text is indented to align with the title.

If there is an LCO requirement, use the following Boilerplate:

***Boilerplate**:*
Following are the LCO requirements for the [Name of System]:

* * *

If there is not an LCO requirement, use the following Boilerplate:

***Boilerplate**:*
There are no LCO requirements for the [Name of System]:

INSTRUCTION 16

5.1.1 [Title of the LCO]

Title is Bold
Text is Bold, indented to align with the title.

Copy the LCO requirement as it is provided in the BIO.

Example:

5.1.1 Building 371/374 Complex Sprinkler Systems and Flow Alarms

LCO 3.2.1: The Building 371/374 Complex sprinkler systems and flow alarms served by Risers 371-B, 371-C, and 374-A shall be operable.

APPLICABILITY: At all times in the Building 371 MAA; Building 374, and Support Facility Room 3189, and when radiological material is present in Rooms 3187A and 3187B.

INSTRUCTION 17

Functional Requirement 1:

Title is Bold, indented to align with title 5.1.1.

Text is Bold, Italic, indented to align with the title.

The functional requirement defines operability and functionality of a system in support of the Authorization Basis requirements. It is the formal definition of operability relative to the safety function as defined in the BIO.

The functional requirement statement will provide the following:

- What the system must provide to support the safety function.
- What the system must do to be operable.

The functional requirement is a broad, comprehensive requirement that concisely states the fundamental essential requirement for operability. The functional requirement below establishes that in order to satisfy the LCO in Instruction 16, the fundamental essential requirement is that fire water supply is available.

Example:

Functional Requirement 1: ***The fire water supply must be available.***

INSTRUCTION 18

Basis:

Title is indented to align with title 5.1.1.

Text is indented to align with the title.

The Basis provides summary statements for the rationale for the Functional Requirement and associated Acceptance Criteria. The Basis provides the tie between the Functional Requirement and the Authorization Basis and explains how the Functional Requirement fulfills the credited safety function.

INSTRUCTION 19

Required Equipment:

Title is Bold, Italic, indented to align with title 5.1.1.

Text is indented to align with the title.

Provide a list of the components of the systems that are affected by the Functional Requirement.

Example:

Required Equipment

- PIV XXX
- Risers 371-B and 371-C and associated piping and valves

INSTRUCTION 20

Acceptance Criteria 1:

Title is Bold, indented to align with title 5.1.1.

Text is Bold, Italic, indented to align with the title.

The Acceptance Criteria is a measurable standard against which an inspection, test, or surveillance is performed. The surveillance measures system performance against the specified Acceptance Criteria and demonstrates whether the system is capable of providing its credited function.

Every Functional Requirement will have at least one Acceptance Criteria and may have more than one. Provide enough Acceptance Criteria to demonstrate that the Functional Requirement is met.

Example:

Acceptance Criteria 1: ***System static pressure at Risers 371-B, 371-C, and 374-A must be ≥70 psig under no-flow conditions.***

INSTRUCTION 20 (continued)

Acceptance Criteria 2: ***Minimum flow must be demonstrated for Systems 371-B, 371-C, and 374-A by recording a system residual pressure of ≥ 90 percent of system static pressure under simulated steady flow conditions.***

Acceptance Criteria 3: ***Alignment of fire water valves supporting Systems 371-B, 371-C, and 374-A must be in accordance with lineup shown in Tables 3.1C, D, and E.***

NOTE: Normally each Acceptance Criteria is followed by a section entitled, *Compliance Requirement*. For multiple Acceptance Criteria, the format would be:

Acceptance Criteria 1:
Compliance Requirement:
Acceptance Criteria 2:
Compliance Requirement:

If the same Compliance Requirement can be used to measure multiple Acceptance Criteria, list all the Acceptance Criteria before the associated Compliance Requirement as in the following:

Acceptance Criteria 1:
Acceptance Criteria 2:
Compliance Requirement:

INSTRUCTION 21

Compliance Requirement:
Title is Bold, Italic, indented to align with title 5.1.1.
Text is indented to align with the title.

The Compliance Requirement is the inspection, test, or surveillance which, when performed on the system, will prove the associated Acceptance Criteria. The Compliance

INSTRUCTION 21 (continued)

Requirement is based on requirements set forth by national codes such as NFPA, industry standards such as ANSI or IEEE, DOE requirements such as Compliance Schedule Agreements, and Rocky Flats requirements.

The frequency for performing activities that demonstrate the Acceptance Criteria is given in this section.

Example:

> ***Compliance Requirement:*** The ability of the fire water supply to meet the acceptance criteria **may** be demonstrated by performing the following activities:
>
> Once per month
> - Verify system pressure.
> - Verify that valves are properly aligned.

The last sentence of this section should tie the Compliance Requirements to the LCO and the pertinent Surveillance Requirements as set forth in the Technical Safety Requirements (TSR) section of the BIO.

Example:

> These compliance requirements directly support LCO 3.2.1, SR 4.2.1.1.

INSTRUCTION 22

Repeat Instructions 20 and 21 for each additional Acceptance Criteria.

INSTRUCTION 23

Repeat Instructions 17 through 21 for each additional Functional Requirement.

INSTRUCTION 24

5.1.2 [Repeat]

Repeat Instructions 16 through 21 for each additional LCO.

INSTRUCTION 25

5.2 Design Features

Title is Bold, Underlined.
Text is indented to align with the title.

Design Features are passive structures that provide preventive or mitigative functions whose failure could adversely affect the health and safety of the public or co-located worker. Design Features are credited in the accident analyses and are identified as Design Features in the BIO.

If there are Design Features, functional requirements and acceptance criteria are required. In the text, make reference to Attachment 1, Table 2. The following content and format is to be used:

Functional Requirement: (See Instruction 17 for instructions)
Basis: (See Instruction 18)
Acceptance Criteria: (See Instruction 20)
Compliance Requirement: (See Instruction 21)

If there are no Design Features for the system, state that there are none.

INSTRUCTION 26

6.0 SYSTEM CATEGORY

Title is Bold, All Caps.
Text is indented to align with the title.

INSTRUCTION 26 (continued)

This section begins with the following Boilerplate:

Boilerplate:

Appendix 1 of the Design Process Requirements, 1-V51-COEM-DES-210, provides guidance to assigning system categories to Systems, Structures, and Components which are relative to their safety-related function. SC-1/2 components are those credited in the BIO principally for protection of the public and co-located worker. There is no distinction in the way SC-1 and SC-2 SSCs are managed; therefore, they are grouped together in terms of system category. SC-3 components include those associated with immediate worker safety, engineered safety features, security, material accountability, fire safety, defense-in-depth, and environmental compliance. Other components that are not safety related (SC-1/2 or SC-3) are categorized as SC-4.

* * *

Additional information should be included in this section based on the following discussion:

The System Category (SC) of the SSCs will be SC-1/2, SC-3, or SC-4. The BIO provides system categorization for SC-1/2 and SC-3 systems that are specifically involved in the BIO accident analyses. The SSCs that provide specifically credited safety features for the public and co-located worker are categorized as SC-1/2.

The SSCs that provide specifically credited safety features for the immediate worker are categorized as SC-3.

SSCs listed in the BIO accident analyses tables as providing a non-credited preventive or mitigative safety function furnish defense-in-depth and are categorized as SC-3.

The SER **may** address SSCs that are not safety related. These SSCs are SC-4.

Appendix 1 of the Design Process Requirements, 1-V51-COEM-DES-210, provides guidance for assigning system categories to SSCs.

INSTRUCTION 26 (continued)

Examples:

Heat Detection Systems

Heat detectors in the HVAC System 1 and 2, Zones I and IA automatic plenum deluge systems, and the related actuation circuitry are SC-1/2 based on the BIO LCO requirements. The other automatic plenum deluge system heat detectors and associated circuitry are SC-3.

Heat detectors are installed in gloveboxes and in the turbine generator enclosure. The system is credited in the BIO for facility worker safety and defense-in-depth; therefore, the system is SC-3.

Fire Water Supply

The BIO credits the Automatic Sprinkler systems that are supplied from Risers 371-B, 371-C, and 374-A with protecting the public and co-located worker from potential release of contamination during accident analyses involving fire. All fire water supply piping associated with Risers 371-B, 371-C, and 374-A is SC-1/2. All fire water supply piping associated with Riser 371-A is SC-3.

INSTRUCTION 27

7.0 PERFORMANCE CATEGORY

Title is Bold, All Caps.
Text is indented to align with the title.

The Performance Category (PC) refers to the ability of an SSC to withstand Natural Phenomena Hazards (NPH) events. Appendix 1 of the Design Process Requirements, 1-V51-COEM-DES-210, provides the PC level. The PCs are PC-3, PC-2, and PC-1. The PC is associated with the System Category. SC-1/2 systems are PC-3; SC-3 systems are PC-2; SC-4 systems are PC-1.

The BIO **may** credit the SSC with providing its intended function following a specified NPH, such as earthquake. The SER should state the following:

INSTRUCTION 27 (continued)

- That the BIO does/does not require the system to function following the specified NPH.
- Which NPH scenarios challenge the subject SSC.

The following Boilerplate was used in Building 371 SERs. The Boilerplate should be edited to be applicable to each BIO.

Boilerplate:

Performance Category is derived from DOE Standard 1021-93 (Reference 28) and refers to an ability to withstand Natural Phenomena Hazard (NPH) events. NPH events analyzed in the Building 371/374 BIO include seismic, wind, tornado generated missiles, and heavy snows and rains. The most significant of these is the seismic hazard, which is defined as the EBE. SSCs required to be qualified for the EBE must be shown to perform their required safety function following the event.

Of these scenarios, only the seismic accident scenarios (see BIO accident scenarios NPH-1, NPH-2, and NPH-3) are postulated to challenge the Fire Suppression System.

INSTRUCTION 28

8.0 OTHER ENGINEERING CONSIDERATIONS

Title is Bold, All Caps.
Text is indented to align with the title.

This section consists of the following Boilerplate:

Boilerplate:

This section addresses items either credited in the BIO as SC-3 functions, or other considerations not specifically credited in the BIO but important to additional functional requirements of the system.

Functions associated with immediate worker safety, engineered safety features, security, material accountability, fire safety, defense-in-depth, or

INSTRUCTION 28 (continued)

environmental compliance are identified as SC-3 and are discussed in Section 8.1 as BIO credited or Section 8.2 as non-BIO related. Other considerations are discussed in Section 8.3.

INSTRUCTION 29

8.1 BIO Credited SC-3 Safety Functions

Title is Bold, Underlined.
Text is indented to align with the title.

This section begins with the following Boilerplate:

Boilerplate:
Certain SC-3 functions are credited in the BIO accident analyses with providing protection to the immediate worker. This section provides the basis for the identified safety function and the acceptance criteria which satisfy each functional requirement. The Acceptance Criteria Compliance Matrix (Attachment 1, Table 3) presents this information in table form.

* * *

If there are no BIO credited SC-3 Safety Functions, state that there are none.

If there are Safety Functions, continue to develop Instructions 30 through 35.

INSTRUCTION 30

8.1.1 [Write the title of the system or component followed by the SC-3 Safety Function as identified in the BIO]

Title is Bold.
Text of the SC-3 Function is Bold, Italic (see below), indented to align with the title.

Example:

8.1.1 Portions of the Automatic Sprinkler System Credited as SC-3

INSTRUCTION 30 (continued)

SC-3 Safety Function: ***In areas <u>not</u> containing hazardous materials, the automatic sprinkler suppression system reduces the frequency of large fire occurrences and mitigates the consequence of significant sized fires. The fire water supply must be available at the riser and sprinklers must be able to provide their intended function of activation and discharge of water.***

INSTRUCTION 31

Functional Requirement 1:

See Instruction 17.

INSTRUCTION 32

Basis:

See Instruction 18.

INSTRUCTION 33

Required Equipment:

See Instruction 19.

INSTRUCTION 34

Acceptance Criteria:

See Instruction 20.

INSTRUCTION 35

Compliance Requirement:

See Instruction 21.

INSTRUCTION 36

Repeat Instructions 34 and 35 for each additional Acceptance Criteria.

INSTRUCTION 37

Repeat Instructions 31 and 35 for each additional Functional Requirement.

INSTRUCTION 38

8.1.2 [Repeat]

Repeat Instructions 30 through 35 for each additional SC-3 Safety Function.

INSTRUCTION 39

8.2 Non-BIO Related SC-3 Function

Title is Bold, Underlined.

Text is indented to align with the title.

SC-3 system functions provide preventive or mitigative protection for the immediate worker. SC-3 functions that are not credited in the BIO but are functions that should be provided by the system are discussed in this SER section.

The discussion should provide information such as:

- what function is provided by the system.
- what documentation provides inspection, testing, and maintenance requirements.
-

INSTRUCTION 39 (continued)

Example:

8.2 Non-BIO Related SC-3 Functions

SC-3 functions which are not specifically credited in the BIO are discussed below.

8.2.1 Instrument/Plant Air

Title is Bold.
Text is indented to align with the title.

The Instrument/Plant Air System provides backup air supply to the Breathing Air System and seal air to the HVAC System 1 and 2 isolation valves. The Instrument/Plant Air System is the preferred supply of compressed air for the HVAC Systems 1 and 2 inlet and outlet valves but is not required for operability. Acceptance criteria and compliance requirements are the same as those in Section 8.1.1 of this SER for BIO-required SC-3 functions.

8.2.2 Breathing Air System

The Breathing Air System must provide clean, dry air of proven quality for use by facility workers. Air quality, system maintenance, and testing requirements are defined in the Health and Safety Practices Manual, Procedure 1-F13-HSP-7.05, Breathing Air. This procedure specifies that the Breathing Air System provide Grade D or better air to meet ANSI/CGA G7.1, Commodity Specifications for Air, 1989 (Reference 4).

If there are no non-BIO related SC-3 functions, state that there are none.

INSTRUCTION 40

8.3 Other Considerations

Title is Bold, Underlined.
Text is indented to align with the title.

INSTRUCTION 40 (continued)

This section begins with the following Boilerplate:

> ***Boilerplate***:
> Important parameters are monitored routinely to ensure component and system reliability and availability. Operator training in conjunction with good operating and maintenance practices is established to ensure proper functionality of systems.
>
> The following items represent other considerations not specifically credited in the BIO but important to additional functional requirements of the system.

Additional information should be included in this section based on the following discussion:

Any discussion or issues regarding system function that have not been previously discussed can be included in this section.

Instructions that are appropriate for inclusion in this section are illustrated by the following:

Examples:

8.3.1 Fire Suppression

Title is Bold.
Text is indented to align with the title.

The Fire Suppression System fire water supply begins at the PIV. The adequacy of the building fire water supply is based on the premise that sufficient water pressure and volume are available from the Domestic Cold Water System. See SER, Chapter 15, Water Systems, for discussion of requirements for the Domestic Cold Water System.

INSTRUCTION 40 (continued)

Fire Department connections which supply building hose stations and automatic sprinkler system risers should be visually inspected periodically in accordance with NFPA 15, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

Hose stations should be inspected quarterly in accordance with NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

8.3.2 Dry Chemical Extinguishing Systems

Dry Chemical Extinguishing Systems are addressed in NFPA 17, Standard on Dry Chemical Extinguishing Systems.

If there are no Other Considerations, state that there are none.

INSTRUCTION 41

9.0 REFERENCES

References are numbered (1, 2, 3) with one source document per number. Only references that are cited in the text of the SER are to be included.

Within the body of the text, write a reference using the following format:

(Reference 1)
(References 2 and 7)
(References 2, 3, and 7)
(References 11 through 16)

INSTRUCTION 42

Cover Sheets for the Attachments

1. Use the same FOOTER as previous. Omit page number.
2. Place the title of the attachment in the center of the page. Attachment 1 - 3 titles are listed below in the applicable format:

ATTACHMENT 1 - Acceptance Criteria Compliance Matrix

ATTACHMENT 2 - System Location Diagrams (Figures 1 - X)

ATTACHMENT 3 - System and Boundary Diagrams (Figures 1 - X)

ATTACHMENT 4 - *Additional attachments may be included*

INSTRUCTION 43

ATTACHMENT 1 - Acceptance Criteria Compliance Matrix

The Acceptance Criteria Compliance Matrix SHALL contain the following three tables:

- TABLE 1 - LCO Requirements
- TABLE 2 - Design Features
- TABLE 3 - BIO Credited SC-3 Safety Functions

INSTRUCTION 44

TABLE 1 - LCO Requirements

1. See the attached samples for the content and format of the table heading.
2. Provide the LCO as it appears in the Authorization Basis document.
3. Develop Table 1 with the following columns:
   a. FUNCTIONAL REQUIREMENTS - Use the same wording as in Section 5.1.1 (or appropriate section).

INSTRUCTION 44 (continued)

b. ACCEPTANCE CRITERIA - Use the same wording as in Section 5.1.1 (or appropriate section).

c. COMPLIANCE REQUIREMENTS - Use the same wording as in Section 5.1.1 (or appropriate section).

d. FREQUENCY - Use the same frequency as in Section 5.1.1 (or appropriate section).

e. GOVERNING REQUIREMENTS - Governing requirements are requirements set forth by national codes such as NFPA, industry standards such as ANSI or IEEE, DOE requirements such as Compliance Schedule Agreements, and Rocky Flats requirements.

f. REQUIRED ACTIONS IF AC IS NOT MET - The Required Actions are provided by the Authorization Basis document and are associated with the LCO.

4. **IF** there are no LCO Requirements,

THEN omit the table and use the following sentence:

There are no LCO Requirements for the [Name of System]

ATTACHMENT 1
ACCEPTANCE CRITERIA COMPLIANCE MATRIX

TABLE 1 - LCO Requirements

- **LCO 3.2.1: The Building 371/374 Complex sprinkler systems and flow alarms served by Risers 371-B, 371-C, and 374-A shall be operable.**

APPLICABILITY: At all times in Building 371 MAA: Building 374, and Support Facility Room 3189, and when radiological material is present in Rooms 3187A and 3187B.

FUNCTIONAL REQUIREMENTS	ACCEPTANCE CRITERIA	COMPLIANCE REQUIREMENTS	FREQUENCY	GOVERNING REQUIREMENTS	REQUIRED ACTIONS IF AC IS NOT MET*
1. The fire water supply must be available.	1. System static pressure at Risers 371-B, 371-C, and 374-A must be ≥ 70 psig under no-flow conditions.	Verify that system static pressure gauge at the risers indicates ≥ 70 psig.	Once per month	SR 4.2.1.1 (Verify risers static pressure ≥ 70 psig.) Procedure 4-V31-SPR-SURV, Sprinkler System Surveillances NFPA 25, 9-4.3.1.1 and ltr BGC-096-96 (Reference 24)	Refer to ACTIONS for LCO 3.2.1

*Repair and restoration of SC-1/2 SSCs found to be inoperable shall be completed as soon as practical and within 30 days, with exception as noted in Table 5.9.1 of the Administrative Controls section of the TSRs, for HVAC Systems 1, 2, and 3. An action plan and schedule for restoration of the function shall be submitted to DOE-RFFO within the same completion time if the repair and restoration cannot be completed within the specified time period.

If there are no LCO Requirements, omit the table and use the following sentence:

THERE ARE NO LCO REQUIREMENTS FOR THE [NAME OF SYSTEM].

INSTRUCTION 45

TABLE 2 - Design Features

1. See the attached samples for the content and format of the table heading.
2. Provide the Design Feature as it appears in the Authorization Basis document.
3. Provide the Required Action if compliance requirements are not met.
4. Develop Table 2 with the following columns:
   a. FUNCTIONAL REQUIREMENTS - Use the same wording as in Section 5.2.1 (or appropriate section).
   b. ACCEPTANCE CRITERIA - Use the same wording as in Section 5.1.1(or appropriate section).
   c. COMPLIANCE REQUIREMENTS - Use the same wording as in Section 5.1.1 (or appropriate section).
   d. GOVERNING REQUIREMENTS - Governing requirements are normally drawn from requirements of the safety analysis associated with the Authorization Basis document.
5. **IF** there are no Design Features,
   THEN omit the table and use the following sentence:
   There are no Design Features for the [Name of System]

ATTACHMENT 1
ACCEPTANCE CRITERIA COMPLIANCE MATRIX

TABLE 2 - Design Features

Design Features: Fail Safe closed Nitrogen flow control valve.

Required action if compliance requirements are not met: Enter corrective action program and initiate Unreviewed Safety Question - Determination.

FUNCTIONAL REQUIREMENTS	ACCEPTANCE CRITERIA	COMPLIANCE REQUIREMENTS	GOVERNING REQUIREMENTS*
The nitrogen system flow control valve shall fail safe, closing the valve and shutting down the flow of nitrogen to the CSV and other areas of the building under high flow conditions or upon loss of power or air.	The Nitrogen System flow control valve design shall ensure that it will fail to the closed position.	The fail safe design of the nitrogen system flow control valve assures closure for most likely failure modes (i.e., under high flow conditions or upon loss of power or air) expected during seismic events. Verify design with engineering design calculation or one-time test of valve.	Safety analysis.

*Repair and restoration of SC-1/2 SSCs found to be inoperable shall be completed as soon as practical and within 30 days, with exception as noted in Table 5.9.1 of the Administrative Controls section of the TSRs, for HVAC Systems 1, 2, and 3. An action plan and schedule for restoration of the function shall be submitted to DOE-RFFO within the same completion time if the repair and restoration cannot be completed within the specified time period.

If there are no Design Features, omit the table and use the following sentence:

There are no Design Features for the [Name of System].

INSTRUCTION 46

TABLE 3 - BIO Credited SC-3 Safety Functions

1. See the attached samples for the content and format of the table heading.
2. Provide the SC-3 Safety Function as it appears in the Authorization Basis document.
3. The contents of this table are not discussed in the body of the SER.
4. Develop Table 3 with the following columns:
   a. FUNCTIONAL REQUIREMENTS
   b. ACCEPTANCE CRITERIA
   c. COMPLIANCE REQUIREMENTS
   d. FREQUENCY
   e. GOVERNING REQUIREMENTS
   f. REQUIRED ACTIONS IF AC IS NOT MET

4. **IF** there are no BIO Credited SC-3 Safety Functions,
   THEN omit the table and use the following sentence:
   There are no BIO Credited SC-3 Safety Functions for the [Name of System]

ATTACHMENT 1
ACCEPTANCE CRITERIA COMPLIANCE MATRIX

TABLE 3 - BIO Credited SC-3 Safety Functions

- **SC-3 Safety Function: In areas not containing hazardous materials, the automatic sprinkler suppression system reduces the frequency of large fire occurrences and mitigates the size of significant sized fires. The fire water supply must be available at the riser and sprinklers must be able to provide their intended function of activation and discharge of water.**

APPLICABILITY: Portions of the Automatic Sprinkler System credited as SC-3.

FUNCTIONAL REQUIREMENTS	ACCEPTANCE CRITERIA	COMPLIANCE REQUIREMENTS	FREQUENCY	GOVERNING REQUIREMENTS	REQUIRED ACTIONS IF AC IS NOT MET*
1. The fire water supply must be available.	1. System static pressure at Riser 371-A must be ≥ 70 psig under no-flow conditions.	Verify that system static pressure gauge at the riser indicates ≥ 70 psig.	Once per month.	SR 4.2.1.1 (Verify riser static pressure ≥ 70 psig.) Procedure 4-V31-SPR-SURV, Sprinkler System Surveillances NFPA 25, 9-4.3.1.1 and ltr BGC-096-96 (Reference 24)	Appropriate compensatory measures shall be taken in accordance with the Fire Protection Program.

*Repair and restoration of SC-1/2 SSCs found to be inoperable shall be completed as soon as practical and within 45 days, with exceptions as noted in Table 5.9.1 of the Administrative Controls section of the TSRs, for the inert ventilation system fans and instrument air. An action plan and schedule for restoration of the function shall be submitted to DOE-RFFO within the same completion time if the repair and restoration cannot be completed within the specified time period.

If there are no BIO Credited SC-3 Safety Functions, omit the table and use the following sentence:

There are no BIO Credited SC-3 Safety Functions for the [Name of System].

INSTRUCTION 47

1. Continue the footer without page numbers.

2. The heading of each diagram is as follows:

ATTACHMENT 2, Figure X
Location of [Name of System]

INSTRUCTION 48

1. Continue the footer without page numbers.

2. The heading of each diagram is as follows:

ATTACHMENT 3, Figure X
[Name of System]
Title of Diagram (such as Automatic Sprinkler System 371-C)

SYSTEM EVALUATION REPORT ABBREVIATED FORMAT INSTRUCTIONS

The System Evaluation Report in Abbreviated Format is the prescribed format for use with Select SC-3 systems.

The System Evaluation Report in Abbreviated Format consists of the following:

- Cover Sheet
- Table of Contents
- Acceptance Criteria Compliance Matrix
- System and Boundary Diagrams (only the boundary diagrams are required)

Additional SER content **may** be included but is not required for the System Evaluation Report in Abbreviated Format.

ABBREVIATED FORMAT INSTRUCTIONS

Cover Sheet (*see Appendix 3, Instruction 1*)

Table of Contents (page numbers are not required)

Acceptance Criteria Compliance Matrix. Use Appendix 3, Instruction 46, with the following exception:

- Do not use Table number

System and Boundary Diagrams Cover Sheet. Use Appendix 3, Instruction 42 with the following exception:

- For the System Evaluation Report in Abbreviated Format, the System and Boundary Diagram is Attachment 1

ABBREVIATED FORMAT INSTRUCTIONS (continued)

Contents of System and Boundary Diagrams. Use Appendix 3, Instruction 48 with the following exception:

- Change the attachment number to Attachment 1

Page 1 of ____	**SER CHANGE FORM*** This form is available electronically on the Site Intranet/ Organizations and Departments/Engineering/Forms	**SER Change No:** _____ (Obtain from SDDC, Bldg 130) **Charge #**

*Use for Editorial Corrections and Nonintent Changes. Do not use for new SERs or Revisions.

(1)
SER Change Form Originator:
(If different from (2))

_____
Print Sign Date

Organization: _____

Phone/Pager/Location: _____

(2)
Responsible Manager or Subject Matter Expert:

_____
Print Sign Date

Organization: _____

Phone/Pager/Location: _____

(3)
_____
Document Title

_____
Existing Document Number and Revision

(4)
Type of Modification

☐ **Editorial Correction**
☐ **Nonintent Change**

(5) Item	(6) Page	(7) Step	(8) Proposed Modification
			If more space is needed, a continuation sheet should be used.

Building Engineering Approval Authority: _____
(Required) Print Sign Date

Rev 1, Ch

SER CHANGE FORM

(Instructions for Completing)

BLOCK		COMPLETED BY:	INSTRUCTIONS
1	SER Change Form Originator	Originator	Enter name, organization, phone, pager, and location of the SER Originator.
2	Responsible Manager or Subject Matter Expert	Originator	Enter name, organization, phone, pager, and location of the Responsible Manager or Subject Matter Expert.
3	Document Title Number	Originator Originator	a. Enter Title of Document to be modified b. Enter Current Document No. & Revisions of the Document
4	Type of Modification	Originator	Check the box for the Type of Modification.
5	Item	Originator	Sequential numbering of modified items, i.e., 1, 2, 3, etc.
6	Page	Originator	Enter the page number.
7	Step	Originator	If providing a word for word proposed change, enter the step number. For all other modification and when providing a summarized change, enter N/A (N/A for New, Revised, canceled).
8	Proposed Modification	Originator	Summarize or provide word-for-word proposed modification (N/A for New, Revised, Canceled).

Rev 1, Chg 1

Page 2 of ____	**SER CHANGE FORM (continuation sheet)**	**SER Change No:**

_____ **Document Title**	_____ **Existing Document Number and Revision**

(5) Item	(6) Page	(7) Step	(8) Proposed Modification

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
Print or Type All Information (Except Signatures).

1. Date	2a.
6/2/94	DMR No. 94-DMR- 01154

2. Existing Document Number/Revision	3. New Document Number or Document Number if it is to be changed with this Revision
See Attached	See Attached
4. Originator's Name/Phone/Pager/Location	**5. Document Title**
[redacted] Bagwell / 6339 / 130	See Attached - COEM Manual

6. Document Type ☒ Procedure ☐ Other _____

7. Document Modification Type (Check only one)
☐ New ☐ Revision ☐ Intent Change ☐ Nonintent Change ☒ Editorial Correction ☐ Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
			Change Procedure Number to reflect reorganization of COEM Manual in Table of Contents and throughout individual procedures. Delete obsolete references

12. [redacted]tion (Reason for Modification, EJO #, TP #, etc.)

Renumbering to reflect reorganization of COEM Manual. (Reformatting is not being done at this time.) This DMR will be filed with the COEM Table of Contents. The following statement will be listed on each procedures' title page: "This procedure has been renumbered and is the same as XXXX, Rev. X, per 94-DMR-XXX)

AGM signature on this DMR constitutes signature for each procedure.

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurrer prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (If applicable)	15. Date (If applicable)
AGM	M. M. McDonald /s/ C. E. Beutler for M.M. McDonald	6/3/94
SQE	M. J. Collins /s/ M. J. Collins	6/9/94

16. Originator's Supervisor (print/sign/date)
P. W. Speyer /s/ 6/3/94

17. Assigned SME/Phone/Pager/Location	18. Cost Center	19. Charge Number	20. Requested Completion Date	21. Effective Date
P. W. Speyer / 5120 / 130	3077	820111		

22. [redacted]ted Review? ☐ No ☒ | 23. ORC Review: not required

24. Responsible Manager (print,sign,date)
L. R. Bailey /s/ 6/2/94

RF-47940 (5/93)

REVIEWED FOR CLASSIFICATION / UCNI
BY /s/ D. E. HEPLER ULNU
DATE 6/6/94

COEM VOLUME 2		REV	DATE
Directives			
ENG-DIR 92-006	Evaluation and Troubleshooting of Vital Safety Systems	0	07/31/92
Design Processes			
2-D16-COEM-DES-207	CANCELLED		06/01/98
1-V51-COEM-DES-210	Design Process Requirements	3	06/01/98
Tools			
2-D80-COEM-DES-221	Engineering Walkdown Package (EWP) Preparation	0	08/31/94
	94-DMR-001974		03/10/95
2-D03-COEM-DES-223	CANCELLED		06/01/98
2-F30-COEM-DES-225	CANCELLED		06/01/98
2-E19-COEM-DES-229	CANCELLED		06/01/98
2-K88-COEM-DES-231	CANCELLED		06/01/98
2-G46-COEM-DES-233	CANCELLED		06/01/98
2-K09-COEM-DES-235	Pressure Vessels, Systems and Relief Devices	1	03/10/95
	96-DMR-000116		02/05/96
2-L94-COEM-DES-237	Life Cycle Cost Analysis	0	08/31/94
2-L99-COEM-DES-239	Energy Management	0	08/31/94
	96-DMR-000117		02/05/96
2-D75-COEM-DES-241	Preparation of Conceptual Design Reports	0	08/31/94
	96-DMR-000118		02/05/96
2-L85-COEM-DES-243	Preparation of Design Criteria	1	03/10/95
2-L91-COEM-DES-245	Preparing, Revising, and Controlling of System Category I, II, and III Operational Testing Procedures	0	08/31/94
	96-DMR-000119		02/05/96
2-L93-COEM-DES-247	Preparing, Revising, and Controlling of System Category IV Operational Testing Procedure	0	08/31/94
	96-DMR-000120		02/05/96
2-E17-COEM-DES-249	Title I Design Summary/Review	0	08/31/94
	96-DMR-000121		02/05/96
2-D62-COEM-DES-251	CANCELLED		06/01/98
2-D46-COEM-DES-255	CANCELLED		06/01/98
2-L77-COEM-DES-257	Project Design Effectiveness Evaluation	0	08/31/94

Planning, Budgets, & Procurement

2-C93-COEM-DES-273	Engineering Standards for Procurement	0	08/01/94
	DCF-Change 1		04/07/98
	97-DMR-000099		01/29/97
	96-DMR-000143		02/05/96
	95-DMR-000589		05/31/95
2-I02-COEM-DES-281	Specification for Procurement and Construction	1	03/10/95
	96-DMR-000125		02/05/96
2-L86-COEM-DES-283	Government Furnished Equipment (GFE)	0	08/31/94
2-E62-COEM-DES-291	Architect-Engineer (A-E) Subcontract Completion and Performance Evaluation	0	08/31/94

CONDUCT OF ENGINEERING MANUAL
ENGINEERING DIRECTIVE

Title: EVALUATION AND TROUBLESHOOTING OF VITAL SAFETY SYSTEMS

Number: ENG-DIRECTIVE 92-006
Revision: 0
Date: JULY 31, 1992
Page: 1 of 3

Approved: [signature] **Date:** 6/29/92
Responsible AGM

1.0 PURPOSE:

This Engineering Directive clarifies Engineering personnel's responsibility and response to unexpected system test and troubleshooting results on Vital Safety Systems (VSS).

2.0 EFFECTIVE DATE: JULY 31, 1992

3.0 APPLICABILITY:

3.1 All Engineering Personnel:

3.1.1 Performing or supporting tests or troubleshooting on VSS

3.1.2 Evaluating unexpected test or troubleshooting results on VSS.

4.0 INSTRUCTIONS:

4.1 Systems Engineers (SEs) and Design Engineers (DEs) performing or supporting tests or troubleshooting on VSS, shall conform to the formality of operations required by the Conduct of Operations Program (COOP), and the Integrated Work Control Program (IWCP).

4.2 When performing evaluation and troubleshooting, it is necessary to follow an ordered approach to prevent possible injury to personnel, damage to equipment and facilities, and breaching of the safety envelope.

4.3 Preliminary instructions - Read this entire directive to gain an oversight of the thought process to be accomplished:

4.3.1 Maintain safety of operations. Ensure that appropriate personnel involved in this process are under the control of a supervisor, to prevent any unauthorized actions. Request the assistance of the Shift Manager or Operations Manager to assign responsibilities and authorities if required.

4.3.2 Ensure that the system or component to be evaluated is turned off or is in the safest possible configuration consistent with maintaining the safety envelope. Ensure the building Operating Safety Requirements (OSRs) are maintained throughout evaluation, troubleshooting and testing. Consider the effects if the system/component status is inadvertently changed during the process. Ensure that appropriate personnel are aware of the initial configuration, and any changes as they occur.

Concurrence	*Signature*	*Date*
K. P. Ferrera	F.T. Zarey for K.P. Ferrera	6/29/92
S. A. Marshall	S. A. Marshall	6/29/92
L. J. McGovern	[signature]	6/29/92
D. P. Snyder	D. P. Snyder	6/29/92
L. R. Bailey	L. R. Bailey	6/29/92
D. A. Ringle	D. A. Ringle	6/29/92
Quality Assurance	D. Wickenhaft	6/29/92

REVIEWED FOR CLASSIFICATION

BY: Brent Bell Ohm

DATE: 6/29/92

PADC-97-00038

4.3.3 Avail yourself of appropriate sources of expertise for advice and assistance. Consider systems and design engineers, and Operations, Maintenance, and Construction personnel. Obtain manufacturers advice or assistance when appropriate.

4.4 Troubleshooting instructions - Document each of the following steps as they are performed. Establish a log to be maintained with the equipment log, with the date, time, and name of the recorder:

4.4.1 Record a clear description of the problem, malfunction, or event to be evaluated.

4.4.2 List appropriate data, symptoms, and conditions existing at the time of the event being evaluated.

4.4.3 List any known causes, or possible causes and tests required to confirm them. Consider the following possibilities:

1) The system/component was not placed in the fully operational state. Check for improper state of operating controls, switches, interlocks, safety devices, fuses, electrical power sources, operating pressure sources, etc. Check operating procedures, technical manuals, and get advice from subject matter experts.

2) The event may be the result of recent work on the system. Look for loose or incorrect connections, assembly, components, adjustments, etc. Review recent work history to determine likely affected areas, components, etc.

3) The event may be the result of failure to perform recommended periodic maintenance, adjustments, lubrication, cleaning, etc. Check manufacturer's manuals, and other technical references, and maintenance history.

4) This may be a recurring event, or may be related to another event on record. Consult with operators, maintenance personnel, etc. Review appropriate work records.

5) There may be one or more failed or malfunctioning components, due to age, wear, overloading, physical abuse, power system variations, random event, etc.

6) Formulate and list the tests and measurement s needed to confirm or deny the possible causes.

a) First, consider tests which may be performed with power off, and are not difficult or time consuming.

b) Next, consider tests which require system operation, but which are easily performed.

c) Finally, list the more difficult or time consuming tests in the order of probable benefit.

4.4.4 Perform a detailed visual inspection with power off, or with the system still in its initial safest configuration. Look for physical damage, loose connections, misalignments, etc., that may provide evidence. Read and record any operational meters, gauges, or other instrumentation.

4.4.5 Formulate and record the most probable cause of the problem based on the available evidence and logical analysis. Also list in separate statements, any alternate possibilities.

4.4.6 Double check your decisions and conclusions! Discuss and evaluate probing questions, such as the following to assure that the event has been thoroughly analyzed and that appropriate factors and related events have been considered:

1) Does what you found explain all the symptoms?

2) Could there have been additional collateral or downstream damage/effects?

3) Are you sure how all functions work, so that your repairs/changes restore all functions?

4) Have you considered all system interactions/interfaces?

5) Are all appropriate disciplines involved in the decisions?

6) What are the consequences to equipment or operations if I'm wrong?

7) Does operation depend on a questionable automatic function (interlocks, ATS, etc.)?

8) Are there additional controls or compensatory measures which should be in place when we troubleshoot/repair/test the system?

4.4.7 Sign the documentation and submit to Operations Management if requested, to assist in decision making and/or in the preparation of a work package.

5.0 **REFERENCES:**

1-74000-IWCP, Integrated Work Control Program

Conduct of Operations Program, COOP-001, "Conduct of Operations."

6.0 **ATTACHMENTS:**

None

Rocky Flats
Environmental Technology Site
1-V51-COEM-DES-210
REVISION 3
DESIGN PROCESS REQUIREMENTS

APPROVED BY [signature] for DGR / David G. Ruscitto / 6/1/98
Site Chief Engineer, Kaiser-Hill Company, LLC — Print Name — Date

Effective Date: 6/1/98

CONCURRENCE BY THE FOLLOWING IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Closure Projects Integration
DynCorp of Colorado, Inc.
Nuclear Operations
Quality Program
Rocky Mountain Remediation Services
Safe Sites of Colorado
Safeguards, Security, Site Operations & Integration
Wachenhut Services LLC

USE CATEGORY 3
The procedure SHALL be available at a known location for reference.

Independent Safety Review: SORC 98-014, 06/01/98

Nuclear Safety Review: SES-RFP-98.0983-ARS

The following have been incorporated into this revision:
DCF-Change 1

This procedure supersedes 1V51-COEM-DES-210, Revision 2

Periodic review frequency: 4 years from the effective date

Reviewed for Classification/UCNI
By [signature]
Date 6-1-98

PADC-97-00040

CONTROLLED COPY

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1 - 89	06/01/98		

The following DCFs are active for this document:

NONE

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1. PURPOSE

The purpose of this procedure is to provide requirements and to set quality performance standards for the engineer/designer to use when developing the technical content and required format for Rocky Flats Environmental Technology Site (Site) Design Output Documents in support of Site Configuration Management. This procedure implements engineering and configuration change control process requirements identified in MAN-027-SERM, Site Engineering Requirements Manual (hereinafter called the SERM) and performed in association with 1-W56-COEM-AMN-101, Site Design Document Control.

This procedure applies to development of all design products and describes minimum performance standards used for creating, reviewing, approving, releasing, and redlining Design Output Documents to be used on Site for construction, modification, or decommissioning of Site structures, systems, or components (SSCs).

For clarification purposes pertaining to this procedure, the term "Decontamination and Decommissioning" (D&D) will not be used. Design features that facilitate decommissioning **SHALL** be identified during the planning and design phase. (Also see Section 4, Definitions and Acronyms.)

This revision supersedes 1-V51-COEM-DES-210, Revision 2. Revision 3 is a total rewrite, and revision bars are omitted.

2. DESIGN AUTHORITY

See Section 4.4 of the SERM.

3. OVERVIEW

Adherence to this procedure by the integrating contractor, principal subcontractors, and associated independent contractors is prescribed in Section 5.6 of the SERM. The SERM is the Kaiser-Hill requirements manual

3. OVERVIEW (continued)

for design, change control, interfaces, and oversight control. All requirements in the SERM are based on DOE Orders and Standards, Federal and State regulations, standard industry codes and practices, and Kaiser-Hill [or Integrating Management Company (IMC)] requirements.

Generic job titles are used in this procedure and are **NOT** intended to be defined. Specific job titles or how a design group organizes to produce Design Output Documents are **NOT** addressed in this procedure. These activities **Should** be described by site-wide, multiple company procedures or by procedures within each design group, organization, or company.

The design process sequence of tasks **may** vary depending on the complexity of the design, skill, and experience of the Designer and the subcontractor company policy. Figure 1, Design Process Task Sequence Flow Chart on Page 8 provides the sequence of tasks required to develop a design package, from initiation through the life cycle of the design process.

3.1 As Low As Reasonably Achievable

Modifications to existing and design of new nuclear facilities **SHALL** incorporate As Low As Reasonably Achievable (ALARA) features as required by Article 128 of the Site Radiological Control Manual. Reference to 10-CFR-835, Occupational Radiation Protection in this procedure **SHALL** not be changed without concurrence of Radiological Safety Engineering.

3.2 Computer Software Design Installation/Changes

This procedure applies to design output required for computer software installation or changes to installed software which fall into System Categories 1&2 and 3 as specified in 1-MAN-004-CSMM, Computer Software Management Manual. Design products for System Category 4 computer software also apply to the requirements of this procedure in order to retain a history of changes and software backups.

3.3 Design Interfaces

See Section 5.6 of the SERM.

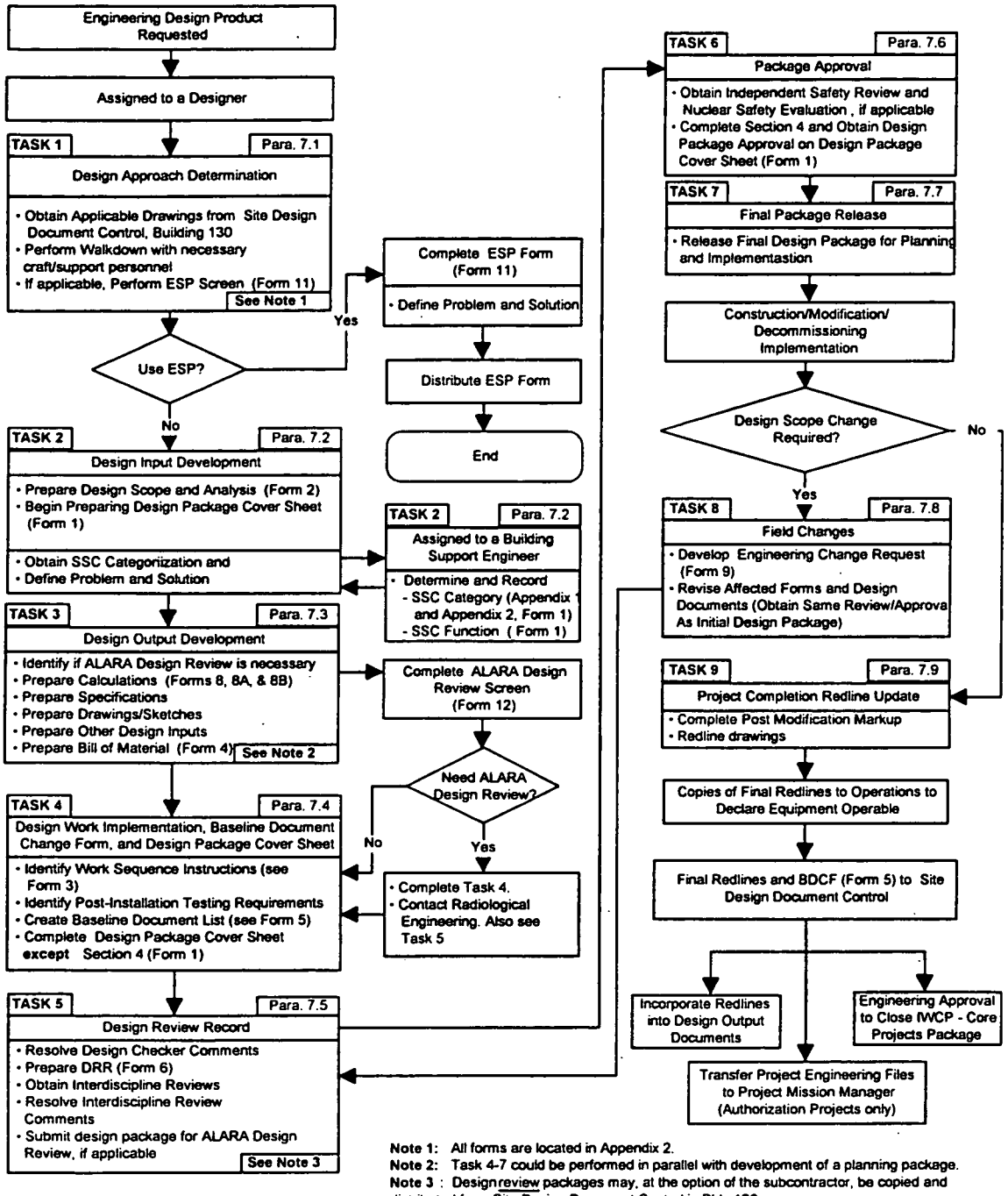
3.4 Site-applicable Requirements

See Section 3.1 of the SERM.

3.5 Verification and Validation

See Section 5.6 of the SERM.

Figure 1, Design Process Task Sequence Flow Chart



Note 1: All forms are located in Appendix 2.
Note 2: Task 4-7 could be performed in parallel with development of a planning package.
Note 3 : Design review packages may, at the option of the subcontractor, be copied and distributed from Site Design Document Control in Bldg 130.

4. DEFINITIONS AND ACRONYMS

Also see Section 10 of the SERM.

4.1 Definitions

Administrative Control Requirement. Administrative Control Requirements (ACRs) are the provisions relating to the organization and management, procedures, recordkeeping, reviews, and audits necessary to ensure safe operations of the facility. The ACR section of the Technical Safety Requirements (TSRs) **SHALL** contain the requirements associated with Administrative Controls including those for reporting deviations from TSRs (for example, exceedances of LCO, LCS, or SER or violation of TSR). Staffing requirements for facility positions important to safe operation of the facility **SHALL** be provided in the Administrative Controls sections. Physical and administrative controls of the criticality safety program **SHALL** also be provided in the Administrative Controls section.

ALARA. An acronym representing a stand-alone term derived from the phrase As Low As Reasonably Achievable. This acronym represents the DOE-wide mandate to reduce personnel and environmental radiation exposures to the lowest levels commensurate with sound operating practices. ALARA encompasses both numerical exposure guidelines and conceptual radiation protection practices.

As-Built Condition. The physical configuration of a facility, system, or component.

As-Built Drawing. A Master Drawing that documents the project as As-Built Condition.

Authorization Basis. Those aspects of the facility design basis and operational requirements relied upon by DOE to authorize operation. These aspects are considered to be important to the safety of the facility operations. The authorization basis is described in documents such as the facility Safety Analysis Report and other safety analysis, Hazard Classification Documents, Technical Safety

4.1 **Definitions (continued)**

Requirements, DOE-issued safety evaluation reports, and facility-specific commitments made in order to comply with DOE rules, orders, or policies.

Authorization Project. A construction or decommissioning project, authorized by Congress and assigned to a Project Manager.

Building Support Engineer. Engineer or Engineer Technologist that is knowledgeable of the systems for a specific building. The Building Support Engineer **may** also act as Designer, Design Checker, Independent Verifier, or Responsible Engineering Manager when applicable.

Calculation. A document which confirms or substantiates Engineering design decisions based on equations, references, design inputs, assumptions, and conclusions.

Configuration Change Control. The process by which any changes to facilities are identified, controlled, reviewed, approved, implemented, and closed out.

Configuration Management. An integrated management program that establishes consistency among design basis requirements, physical configuration, and facility documentation and that maintains this consistency throughout the life of the facility as changes occur.

Deactivation. The process of placing a building, portion of a building, structure, system, or component (as used in the rest of this paragraph, "building") in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program in a manner that is protective of workers, the public, and the environment. Actions during deactivation could include the removal of fuel, draining, and/or de-energizing of nonessential systems, removal of stored radiological and hazardous materials and related actions. As the bridge between operations and decommissioning, based upon Decommissioning Operations Plans or the Decommissioning Program Plan, deactivation can accomplish operations-like activities such as final process runs, and also decontamination activities aimed at placing the building in a safe and stable condition. Deactivation does **NOT** include

4.1 Definitions (continued)

decontamination necessary for the dismantlement and demolition phase of decommissioning, for example, removal of contamination remaining in fixed structures and equipment after deactivation. Deactivation does **NOT** include removal of contaminated systems, system components, or equipment except for the purpose of accountability of Special Nuclear Material (SNM) and nuclear safety. It also does **NOT** include removal of contamination except as incidental to other deactivation or for the purposes of accountability of SNM and nuclear safety.

Decommissioning. Decommissioning means, for those buildings, portions of buildings, structures, systems or components (as used in the rest of this paragraph, "building") in which deactivation occurs, all activities that occur after the deactivation. It includes surveillance, maintenance, decontamination and/or dismantlement for the purpose of retiring the building from service with adequate regard for the health and safety of workers and the public and protection of the environment. For those buildings in which no deactivation occurs, the term includes characterization surveillance, maintenance, decontamination and/or dismantlement for the purpose of retiring the building from service with adequate regard for the health and safety of workers to the public and protection of the environment. The ultimate goal of decommissioning is unrestricted use or, if unrestricted use is not feasible, restricted use of the buildings.

Decontamination. Decontamination means the removal or reduction of radioactive or hazardous contamination from facilities, equipment or soils by washing, heating, chemical or electrochemical action, mechanical cleaning or other techniques to achieve a cleaner stated objective or end condition.

Decontamination and Decommissioning. Decontamination and Decommissioning (D&D) encompasses an overall process from planning to demolition and cleanup—deactivation, decommissioning, dismantlement, and demolition.

Design Basis. The collection of design requirements (for example, flow rates, seismic strengths, delta pressures, control parameters, program sequence, load carrying capability, response time, fire suppression and detection capabilities, shielding, criticality spacing, and corrosion resistance) as specified in codes,

4.1 Definitions (continued)

standards, authorization basis (as applicable), and other requirements documents for Site SSCs and land.

Design Change. Changes to an approved design that increase project technical scope or alter design basis requirements.

Design Checker. An Engineer, preferably a Professional Engineer (PE), assigned to check the technical and administrative accuracy of a design within that Engineer's specific discipline. The Design Checker **SHALL** not be an Engineer who has provided input to the design.

Design Clarification. A design clarification is a field change order to resolve contradictions, ambiguities, vagueness, or drawing errors in the final design. Clarifications do **NOT** affect an operating system; do **NOT** potentially impact the health or safety of workers, do **NOT** potentially impact the safety or quality of the finished product, and do **NOT** change the scope of design tests or specifications. This **SHALL** in no way invalidate any data in the current design.

Design Input. Those criteria, parameters, bases, or other design requirements upon which detailed design is based.

Design Output. Documents, such as drawings, specifications, and other documents, which define technical requirements of structures, systems, components, and computer programs.

Design Output Documents. The documents generated as part of the design process (for example, drawings, calculations, and specifications).

Design Process. Technical and management processes that commence with identification of design input and that lead to and include the issuance of design output documents.

4.1 **Definitions (continued)**

Design Review. The formal review of an existing or proposed design for the purpose of detection and remedy of design deficiencies which could affect fitness for use and environmental aspects of the product, process, or service and/or identification of potential improvements of performance, safety, and economic aspects.

Dismantlement. Dismantlement means the demolition and removal of any building or structure or a part thereof during decommissioning.

Drawing. A graphical documentation, in either manual or electronic form, of the physical or diagrammatic configuration of a SSC.

Engineering Analysis. An engineering evaluation of an existing, proposed, or postulated condition. An engineering analysis by itself **may** not be used to directly conduct any changes, tests, or experiments; however, it **may** provide the basis for an Unreviewed Safety Question Determination (USQD). An engineering analysis **may** be used to document, justify, or support project activities such as, but not limited to:

- Safety Analysis Report parameter change.
- Possible approaches for operating strategy.
- Testing results.
- Engineering feasibility or approach for SSC modification.
- Engineering decisions made during the development of a modification.
- Disposition of Nonconformance Reports.
- Documentation of walkdowns.
- Operability determination.

Engineering Order (EO). A standard form required for release and transmittal of design, procurement, construction, and other documents.

Final Safety Analysis Report (FSAR). A document prepared to systematically identify the hazards of a nuclear facility, to describe and analyze the adequacy of the measures taken to eliminate, control, or mitigate identified hazards, and to analyze and evaluate potential accidents and the associated risks. The FSAR is

4.1 Definitions (continued)

the principal reference used for developing Nuclear Safety Evaluations to determine that the nuclear facilities can be operated without any undue risk to the plant, public, or environment. For the purposes of performing Nuclear Safety Evaluations at the Site, the FSAR includes supporting reference documents (for example, applicable safety or criticality analyses).

Independent Verifier. An engineer, preferably a Professional Engineer (PE), other than those engineers that performed the work. The Independent Verifier is responsible for examining the design document or process prior to approval or concurrence which includes determining that sound engineering/scientific principles and appropriate standards were used and that the design work, including changes, incorporated applicable requirements and design bases. This individual **may** be from the same organization.

Interface Discipline Engineer. The engineer that provides technical design interface input, as needed, to the Design Engineer for his/her discipline.

Interface Discipline Review. An evaluation which is performed outside of the originating Engineer's discipline to verify that other discipline information is correct.

Interference Report. A document created from the SDDC drawing database which lists those drawings and jobs currently in progress (not in closure) that could potentially impact the document(s)/job(s) requested by an individual performing design activities.

Interim Drawing. A drawing affecting one or more controlled drawing with its drawing number identifying one controlled drawing. This drawing is utilized to indicate proposed changes and can be a reproduced or hand-drawn version. A composite affecting multiple controlled drawings can be prepared and will have its four-digit drawing number begin with a 'K'. A list of the affected controlled drawings is to be shown on the composite drawing.

4.1 Definitions (continued)

Landlord. The major subcontractor representative responsible for the building or area for which the design package is applicable. This signature does **NOT** constitute technical acceptance of the design but rather indicates that the Landlord is cognizant of the design.

Limiting Condition for Operation. Limiting Conditions for Operation (LCO) are the lowest functional capability or performance level of safety-related structures, systems, component, and their support systems required for normal safe operation of the facility. This subsection for the TSR **SHALL** contain the limits on functional capability or performance level. When a LCO is not met, the contractor **SHALL** take remedial actions defined by the TSRs until the condition can be met. The LCO **SHALL** describe the action to be taken in case of exceedance of the LCO. In cases of exceedance of an LCO, the contractor **SHALL** notify DOE in accordance with DOE 5000.3A, review the matter, and record the results of the review including the cause of the condition and the basis for any corrective actions taken to preclude reoccurrence.

Minor Change. Technical changes to approved design documents that are within the boundaries defined by the original design basis documents.

Modify. Synonymous with the term change and includes all new construction to facilities or technical basis changes to existing facilities, systems, processes, safety related software or site lands at Rocky Flats (Site definition for Configuration Change Control).

Natural Phenomena Hazard Performance Category. See Site Engineering Standard SC-206A, Natural Phenomena Hazard Analysis of SSCs.

Procurement Process Levels. The Site graded procurement process which applies controls consistent with risks and consequences of failure in order to assure that items perform their intended function. The desired controls **may** consist of supplier Quality Assurance (QA) programs, source inspections, verification of item characteristics after receipt, post installation testing, or any combination of these.

4.1 Definitions (continued)

- PL1 - - Approved Supplier. Applicable to items whose failure effects demand that high technical standards and quality controls be placed on their purchase. The supplier of these items must have a Site-approved QA program which maintains the controls required to ensure that items will perform their intended function.

- PL2 - - Unapproved or Not Fully Approved Supplier. Applicable to items whose failure effects demand that high technical standards and quality controls be placed on their purchase. However, the supplier of these items does not have a Site-approved QA program which maintains necessary controls, therefore, controls **SHALL** be implemented by the Site in order to ensure that items will perform their intended function.

- PL3 - - Items Not Requiring Technical or Quality Control During Purchase. Applicable to items whose failure effects are insignificant, and technical and quality controls, beyond assuring receipt of the specified item, are **NOT** required.

Project. A nonroutine, complex scope of activities with firmly scheduled beginning and end points, specific performance requirements, established costs, and cognizant management, planning, and control elements. A project will result in discreet products and deliverables, may involve multiple organizations, and may be capital or expense funded. Facilities projects at Rocky Flats include all new construction and modifications to existing facilities, and acquisition of new construction and modifications to existing facilities, and acquisition of new Pequipment under the capital equipment program. Routine maintenance and service contracts are not generally classified as projects.

Quality. The degree to which an item or process meets or exceeds the user's expectation. (See also Site Quality Assurance Manual.)

Quality Assurance (QA). The planned and systematic actions necessary to provide confidence that items are designed and constructed in accordance with applicable standards.

4.1 Definitions (continued)

Safe Design. Design which eliminates or minimizes recognizable hazards and provides optimum protection for the health and safety of employees, the public, and the environment. Safe design has priority over any other design criteria, specifications, operating parameters, and design objectives.

Scope. The work content and products of a PROJECT or component of a project. Scope is fully described by naming all ACTIVITIES performed, the RESOURCES consumed, and the end products which result including QUALITY standards. A statement of scope **Should** be introduced by a brief background to the project, or component, and the general OBJECTIVE(S).

Sketch. A drawing developed by an engineer which **may** be used only when limited circumstances exist and when no controlled documents are available. Restrictions for using sketches include:

- For clarification during construction, decommissioning, or temporary modification and used in conjunction with a controlled document.
- When information on the sketch has no future value for operational or design purposes.

Standards. Specific actions or prescribed activities applicable to the responsibilities of the Site for the management and/or operation of the Site which are either mandated by an agency having regulatory authority over the Site or are self-imposed. Under the Compliance Management Program, the term standards includes commitments and requirements.

- Commitments. Recurring/periodic obligations communicated in writing to agencies having regulatory authority over the Site and recurring/periodic obligations adopted or self-imposed in standing orders, plant policies, and selected procedures.

- Requirements. Specific actions or performance prescribed in applicable legal regulations issued by Federal, State, and local agencies having regulatory authority over the Site.

4.1 Definitions (continued)

System Category. The classification method used for determining the level of standards and quality assurance that apply to real property SSCs, based on the safety significance of the SSCs (see Appendix 1). There are three system categories at the Site.

NOTE *Old System Category 1 and System Category 2 were combined into the new System Category 1&2 because the requirements applicable to both were the same.*

- System Category 1&2. Those engineered safety features credited or designated in an approved Authorization Basis document which have been determined to be essential to assuring public safety or worker nuclear safety related to immediate fatalities or serious injuries. This includes those SSCs that are credited for the detection or mitigation of the nuclear consequences of credible, postulated accidents as defined in the Authorization Basis or supporting analysis or those SSCs required for nuclear criticality safety.

  For design activities where DOE Order 6430.1A, General Design Criteria applies, those SSCs that meet the Safety Class criteria in Section 1300-3 of DOE Order 6430.1A.

  Those existing SSCs whose failure could reasonably inhibit or prevent System Category 1&2 SSCs from performing their intended Vital Safety Function, including failures due to natural phenomena hazards, such as earthquakes and wind.

- System Category 3. SSCs that do not meet the requirements of System Category 1&2, but:
  - — Are relied upon for worker protection from radiological or toxicological hazards; or,
  - — Are required for protection of Special Nuclear Material or classified material; or,
  - — Are required for site response in an emergency; or,

4.1 Definitions (continued)

— Are designated as Facility Support Systems in an approved Authorization Basis/Agreement document; or,
— Provide automatic fire suppression or detection capability.

System Category 3 SSCs include, but are not limited to:

— Breathing air systems.
— Systems containing more than 30% by volume of class A chemicals [National Fire Protection Association Hazard Classification 3 and 4] as defined in Rocky Flats Plant Standard SP-220, Standard for Piping Material Specification or containing chemicals of the type, and in the quantities listed in 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals.
— Site Life Safety/Disaster Warning System (excluding Criticality Alarm Annunciation which is System Category 1&2).
— Systems which contain pesticides, carcinogens, beryllium, or toxic chemicals in sufficient quantities to be controlled by the following Health and Safety Practices (HSP) Manual Procedures:
  - HSP 13.01, Control of Pesticides
  - HSP 13.03, Carcinogen Control
  - 1-15310-HSP-13.04, Beryllium Protection
  - HSP 13.05, Toxic Chemical Control
— Systems providing for containment or shielding of radioactive material or contamination.

System Category SSCs are typically covered in ACRs if an approved Authorization Basis/Agreements exists.

- System Category 4. SSCs that do not meet the requirements of System Category 1&2 or System Category 3.

Technical Basis. A justification for the acceptability or suitability of an engineering methodology.

Temporary Modification. See Section 5.5.5 and Section 10 of the SERM.

4.1 Definitions (continued)

Verification. The act of rechecking the design output from an individual or group which is performed by other than the preparer, but who **may** be from the same organization. This verification **may** be performed by the originator's supervisor provided that the supervisor did not specify a singular design approach, rule out certain design considerations, or establish the design inputs used in the design and provided that the supervisor is the only individual in the organization competent to perform the verification. Cursory supervisory reviews do not meet the intent of this requirement.

Vital Safety Functions. Those functions described within the Final Safety Analysis Report (FSAR) or System Evaluation Report (SER), Accident Analysis, and supporting analyses that are relied upon to detect or mitigate the radiological consequences of a credible accident, including criticality. (For Category criteria, see System Category.)

Vital Safety System. Those systems or portions of systems that are relied on to accomplish Vital Safety Functions (Category 1).

Work Package. Corrective, predictive, or preventive maintenance or modification work directive package containing the essential integrated components (authorizations, tasks instructions, procedures, BOM, PMT instructions, and drawings) to accomplish the required work with the appropriate technical and ACRs and testing to perform the work safely and correctly. Work Packages **Should** be prepared and used to provide appropriate work direction to ensure that maintenance is performed safely and efficiently.

4.2 Acronyms

ACR	Administrative Control Requirements
ALARA	As Low As Reasonably Achievable
BDCF	Baseline Document Change Form
BIO	Basis for Interim Operation
BOM	Bill of Material
DRR	Design Review Record
ECR	Engineering Change Request
EO	Engineering Order
ESP	Engineering Support Process
FSAR	Final Safety Analysis Report
IWCP	Integrated Work Control Program
LCO	Limiting Conditions of Operations
NSM	Nuclear Safety Manual
SER	System Evaluation Report
TSR	Technical Safety Requirements

5. QUALIFICATIONS

Specific qualifications have been established for the major performers involved in a design package.

5.1 Designer

Possesses, as a minimum, four years engineering experience or a four-year Bachelor of Science degree in an engineering discipline.

Possesses engineering experience and/or Engineering degree within the applicable working discipline as classified and authorized by the cognizant Company Chief Engineer and the company's Human Resources department. The Designer function may be performed by personnel with Design Checker or Responsible Engineering Manager qualifications.

5.2 Design Checker

Possesses, as a minimum, a four-year Bachelor of Science degree in Engineering or a related Science degree, preferably a Professional Engineer (PE).

Possesses a minimum of four years engineering-related experience within the applicable working discipline as classified and verified by Human Resources. Experience that is job-related may be substituted for the required education on a case-by-case basis as authorized by the cognizant Company Chief Engineer and the company's Human Resources department per DOE Order 5480.20A, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities.

Possesses approval by the cognizant Company Chief Engineer and the company's Human Resources department to perform tasks consistent with the individual's qualifications and experience.

5.3 Independent Verifier

Possesses, as a minimum, a four-year Bachelor of Science degree in Engineering or a related Science degree, preferably a Professional Engineer (PE).

Possesses a minimum of four years engineering-related experience within the applicable working discipline as classified and verified by Human Resources. Experience that is job-related may be substituted for the required education on a case-by-case basis as authorized by the cognizant Company Chief Engineer and the company's Human Resources department per DOE Order 5480.20A, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities.

Possesses approval by the cognizant Company Chief Engineer and the company's Human Resources department consistent with the individual's qualifications and experience.

5.4 Responsible Engineering Manager

Possesses, as a minimum, a four-year Bachelor of Science degree in Engineering or related Science degree, preferably a Professional Engineer (PE).

Possesses a minimum of four years nuclear-related engineering experience OR has exemption from the four years nuclear-related engineering experience requirement if approved by the Site Chief Engineer. Experience that is job related may be substituted for the required education on a case-by-case basis as authorized by the cognizant Company Chief Engineer and the company's Human Resources department per DOE Order 5480.20A, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities.

Possesses approval by the cognizant Company Chief Engineer and the company's Human Resources department to perform tasks consistent with the individual's qualifications and experience.

6. RESPONSIBILITIES

6.1 Building Support Engineer

Determines the System Category in accordance with Appendix 1.

Determines SSC Function in accordance with Appendix 1.

6.2 Designer

As a minimum:

- Performs design calculations, drawings, and walkdowns.
- Prepares applicable DES-210 forms and ensures information provided is technically accurate.
- Obtains required approval signatures on DES-210 forms.
- Ensures completed documents are submitted to Site Design Document Control (SDDC).

Ensures that the appropriate technical disciplines necessary to complete each design are involved and that each reviews the design package.

Obtains input from appropriate end-user organizations (for example, Operations personnel) during initial design development to ensure factors that may affect the design parameters have been identified.

Ensures that ergonomic considerations are incorporated into the initial design of new equipment and/or processes.

Ensures unresolved comments are submitted to the Responsible Engineering Manager for resolution with the reviewing organization(s).

Ensures all affected documents are updated.

Functions when applicable as the Building Support Engineer.

6.2 Designer (continued)

Does **NOT** also function as the Design Checker, Independent Verifier, or Responsible Engineering Manager for the same design package.

6.3 Design Checker

Possesses technical authority/responsibility for the Engineering tasks to be performed. As a minimum, this will include:

- Approves method and approach for the design.
- Verifies accuracy of the calculation and design.
- Ensures design is technically correct.
- Ensures all affected documents are updated.

Does **NOT** also function as the Designer, Independent Verifier, or Responsible Engineering Manager for the same design package.

6.4 Engineering Site Closure Group

Processes Design Output Documents according to engineering document control procedures.

6.5 Independent Verifier

For System Category 1&2 or PC2 or 3 projects **ONLY**:

- Examines the design document or process prior to approval or concurrence, for example:
  - — Were design inputs correctly selected?
  - — Are assumptions necessary to perform the design activity adequately described?
  - — Was an appropriate design method and approach used?
  - — Were the design inputs correctly incorporated?
  - — Is the design output reasonable considering the inputs?

6.5 Independent Verifier (continued)

- Determines that sound engineering/scientific principles and appropriate standards were used.
- Determines applicable requirements and design bases are incorporated.
- Ensures construction/assembly techniques to implement the design are efficient.
- Does **NOT** also function as the Designer, Design Checker, or Responsible Engineering Manager for the same design package.

6.6 Responsible Engineering Manager

Selects a qualified Designer, Design Checker, and an Independent Verifier (for System Category 1&2 projects **ONLY**).

Ensures disposition of unresolved design package comments.

Approves and verifies administrative compliance to the following:

- Company policies, procedures, and Site Engineering Standards were followed.
- Administrative and technical reviews were accomplished by qualified individuals and comment disposition was acceptable.
- Design package is acceptable to release for work, planning, implementation, and controlled document close.
- Design drawings are approved and signed off.

Does **NOT** also function as the Designer, Design Checker, or Independent Verifier for the same design package..

6.7 Site Design Document Control

Maintains control of Design Output Documents in accordance with accepted site document control practices.

7. INSTRUCTIONS

Engineers developing design products **SHALL** follow this procedure, complete the forms called out; add required drawings, calculations, specifications, and supplemental forms; and obtain final design package release through Site Design Document Control (SDDC), located in Building 130, before the Integrated Work Control Program (IWCP) planning package is approved.

All forms included in a design package **SHALL** be legible and completed in indelible black or dark/medium blue ink (preferably computer laser printer generated or medium black ball point pen). Documents prepared in pencil **SHALL** be converted to an indelible medium such as photocopies.

NOTE 1 *Design Package forms initiated before the effective date of Revision 3 of this procedure* ***may*** *be used if the technical content is the same as the forms in this procedure.*

NOTE 2 *Electronic copies of all forms in this procedure are available from Design Engineering, Building 130. Hardcopy forms in this procedure* ***may*** *be obtained from SDDC.*

NOTE 3 *The Continuation Sheet is provided for when additional pages are needed to complete a form or to provide additional information not included on a form (for example, technical justification or acceptability statements). It can be used as many times as necessary (See Appendix 2, Form 10).*

7.1 TASK 1 Design Approach Determination

Results of this task provide the necessary information to determine if a design package is required or if the Engineering Support Process (ESP) **may** be used.

All areas affected by design activities (construction, modification, and decommissioning) **SHALL** be walked down to ensure that the understanding of the technical scope is accurate. Appropriate personnel such as craft, planning,

7.1 TASK 1, Design Approach Determination (continued)

safety, and operations personnel **SHALL** perform a walkdown to ensure minimum changes to the packages.

The walkdown process **SHALL** include a controlled search for design documents relating to the proposed activity, for example drawings, calculations, specifications, and cut sheets. These documents are located at SDDC. It is **NOT** acceptable to create a sketch or new drawing instead of performing a drawing search or updating an existing drawing.

SSCs **SHALL** be evaluated to assist the engineer in determining the appropriate Natural Phenomena Hazard Performance (NHP) Category requirements for Procurement Level and pre-operational instrument calibration requirements.

Responsible Engineering Manager

[1] Assign a Designer in the appropriate discipline to develop an engineering solution.

Designer

[2] Ensure a review of the design has been performed to identify impact and/or interfacing organizations required to allow completion of the design.

[A] Ensure an interference report is requested from SDDC to show interactions between jobs and documents.

NOTE *All drawings and sketches are classified prior to use in any type of package. Additionally, "Approved for Use 'Job Number' " is annotated on all sketches*

[3] Perform a drawing search and obtain affected drawings related to the proposed activity.

[4] Perform a walkdown with necessary craft and support personnel.

7.1 TASK 1, Design Approach Determination (continued)

[5] Perform an Engineering Support Process Screen (Appendix 2, Form 11) to determine if the ESP is appropriate.

NOTE *The Engineering Support Process **may** be used when engineering guidance is needed for projects that do **NOT** change the Site design or configuration basis.*

[6] **IF** the ESP will be used,
THEN:

[A] Complete the Engineering Support Process form according to instructions (Appendix 2, Form 11).

7.2 TASK 2 Design Input Development

This task results in the systematic development of the purpose, scope, functional requirements, system parameters, regulations, codes and standards, or other design requirements that govern the scope and bases of a design modification package.

Designer

[1] Initiate Design Scope and Analysis form according to instructions (see Appendix 2, Form 2).

[A] Complete Section 1, Form Purpose and Work Identification.

[B] Complete Section 2, Problem Description and Solution.

[a] Determine the purpose and scope of the intended design, including discussion from the customer as follows:

- Why modification is necessary, and
- What the modification accomplishes.

7.2 TASK 2, Design Input Development (continued)

[b] Establish a list of Design Inputs and requirements that establish the technical design basis. The Designer **Should** consider, but is **NOT** limited to, the following design inputs:

- System Parameters such as pressures, temperatures, flow rates, and set points
- NPH criteria
- National codes and standards
- Site Engineering Standards
- Final Safety Analysis Reports (FSARs), Limiting Conditions for Operations (LCOs), Basis for Interim Operations (BIOs), and System Evaluation Reports (SERs)
- Assumptions and the bases
- As Low As Reasonably Achievable (ALARA)
- Site Health and Safety requirments
- Ergonomics/human factors engineering, as appropriate

[c] Determine appropriate interfacing disciplines for support in preparation of design input. Examples of technical disciplines and topical and areas of expertise to consider are as follows:

TECHNICAL DISCIPLINES	
• Architectural	• Environmental Engineering/Science
• Biology	• Fire Protection Engineering
• Chemical Engineering	• Hydrology
• Civil Engineering	• Industrial Hygiene
• Construction Engineering	• Mechanical Engineering
• Chemistry	• Radiological Engineering
• Criticality Engineering	• Safeguards and Security Engineering
• Nuclear Engineering	• Structural and Stress Mechanics Engineering
• Ecology and Watershed Sciences	
• Electrical Engineering	

7.2 TASK 2, Design Input Development (continued)

TOPICAL AND AREAS OF EXPERTISE	
• Air Pollution Control	• Radioactive Waste Management
• Decommissioning	• Regulatory Analysis
• Environmental Protection and Restoration	• Safety and Health Design Review
	• Seismic and Wind Evaluation
• Hazardous Waste Management	• Site Evaluations
• Instrumentation and Process Controls	• Soil Mechanics
• Mixed Waste Management	• Traffic Department
• Occupational Safety	• Heating, Ventilation, and Air Conditioning (HVAC)
• Procurement Engineering Product Packaging	• Worker, Craft, Planning, Operations Personnel
• Quality Assurance	

[C] Retain Form 2 and its associated documentation in a designated Design Package file.

NOTE *Initiation of the Design Package Cover Sheet begins in Task 2, evolves through Task 5, and is completed with design package approval in Task 6 (See Appendix 2, Form 1).*

[2] Initiate Design Package Cover Sheet according to instructions (see Appendix 2, Form 1).

Building Support Engineer

[3] Determine applicability of DOE Order 6430.1A, General Design Criteria and DOE Standard 1021-93, Natural Phenomena Hazards Performance Categorization Guidelines for SSCs in accordance with Appendix 1.

[4] Determine the System Category and SSC Function in accordance with Appendix 1, Structures, Systems, Components Categories and notify the Designer with the results.

7.2 TASK 2, Design Input Development (continued)

Designer

[5] Initiate Design Package Cover Sheet (Form 1).

[6] Retain the Design Package Cover Sheet for further documentation in the designated Design Package file.

7.3 TASK 3 Design Output Development

Design Output Documents provide the technical justification necessary for design modification approval. The engineer **SHALL** consider all aspects of the design process when deciding what Design Output Documents are applicable.

Topics applicable to the design process **SHALL** be included in the Design Output Document package. Examples of topics the engineer **Should** consider include, but are **NOT** limited to, the following:

DESIGN OUTPUT DEVELOPMENT TOPICS	
• Criticality	• Mechanical
• Electrical	• Nuclear Safety
• Environmental	• Piping/Pipe Stress
• Fire Protection	• Radiological
• HVAC	• Security
• Instrumentation and Controls	• Seismic
• Material Compatibility	• Structural

Once all efforts have been exhausted and it is concluded that no existing drawings are available, sketches **may** be used if the information will not be required for use again. If it is concluded that no existing drawings are available and the information will be used again, a drawing **SHALL** be constructed.

Drawing numbering, title block format, and electronic media requirements **SHALL** be used in accordance with Site Engineering Standard SX-300, General Drafting Standards. Drawing numbers **SHALL** be obtained from SDDC.

7.3 TASK 3, Design Output Development (continued)

Designer

[1] Prepare the appropriate Design Output Documents. Examples of Design Output Documents include but are **NOT** limited to:

- Bill of Material (BOM)
- Calculations
- Component Checklists and System Operability Tests
- Design Specifications
- Drawings
- Inspection Plans
- Post Maintenance Tests

[2] If applicable, ensure technical justification and/or acceptability of the design is included with the design package. A Continuation Sheet (Form 10) **may** be used to document this information.

[3] **IF** the design requires a temporary modification,
THEN:

[A] Obtain a temporary modification number (TM#) in accordance with 1-31000-COOP-006, Operating Area Log and Records.

[B] Identify changes to affected Design Output Documents by completing the Design Scope and Analysis Form (Form 2).

[C] Identify changes to affected Design Output Documents on the Design Package Cover Sheet (Form 1).

[D] Change all associated interim drawings or create new drawings if drawings do not exist.

[E] Record temporary modification changes on the affected Design Output Documents as follows:

[a] Cloud the affected area.

7.3 TASK 3, Design Output Development (continued)

[b] Document the TM# in the description area of the title block.

[4] **IF** the design requires the removal of a temporary modification, **THEN** ensure that one of the following have been accomplished:

- The affected equipment is returned to the pre-modification condition. OR,
- The modification is made into a permanent change and the Design Output Documents are updated to reflect the modification.

Modifications to existing and design of new nuclear facilities **SHALL** incorporate ALARA features as required by Article 128 of the Site Radiological Control Manual. Typically, ALARA Design Reviews are completed by an assigned Radiological Engineer. Radiological Engineering **SHALL** be contacted if the results of the ALARA Design Review Screen indicate the need to complete an ALARA Design Review.

[5] Complete the ALARA Design Review Screen form (see Appendix 2, Form 12).

[A] **IF** an ALARA Design Review is determined necessary, **THEN** retain the screen in the designated Design Package file and submit the design package to Radiological Engineering after completion of the package (see Section 7.5[4]).

[B] **IF** an ALARA Design Review is determined unnecessary, **THEN** retain Form 12 as a quality document in the designated Design Package file.

[6] **IF** a design/planning package can be prepared in parallel to expedite or reduce cost of the design and planning activities, **THEN** initiate planning activities in parallel with the development of the design.

7.3 TASK 3, Design Output Development (continued)

[7] **IF** a calculation is required,
THEN use the Calculation/Technical Basis Cover Sheet and Revision Summary , Calculation/Technical Basis Sheet, and Calculation Sheet to document the calculation in accordance with the instructions on the back of the forms (Appendix 2, Forms 8, 8A, and 8B).

[8] **IF** System Category 1&2 or 3 computer software is being installed or modified,
THEN use the Calculation / Technical Basis Sheet to document changes and independent verification (Appendix 2, Form 8A).

[9] **IF** the design involves fissionable material operations as defined in 1-MAN-018-NSM, Nuclear Safety Manual (NSM),
THEN incorporate additional requirements as specified in the NSM.

NOTE *When the design package is for decommissioning and controlled drawings do **NOT** exist, it is acceptable and recommended to use removal photographs and sketches as a means to save drafting costs The removal photographs and sketches are retained in the designated Design Package file.*

[10] **IF** the design package is for decommissioning,
THEN:

[A] Update drawings to describe removal designation and, if necessary, use photographs and sketches for clarification purposes.

[B] Maintain project documentation of removal status/configuration during stripout activities.

NOTE 1 *Closeout drawings (redlines) are not always finalized concurrently with completion of work activities described on an individual Engineering Order (EO). Several EOs **may** be necessary for completing any project.*

7.3 TASK 3, Design Output Development (continued)

NOTE 2 *Closeout is complete when: 1) project scope of work is complete, or 2) project is canceled prior to completing scope of work.*

[11] **IF** the scope of work has been determined complete by Project Management,
THEN process a Baseline Document Change Form (BDCF) to void all drawings, Preventive Maintenance Orders (PMOs), procedures, Operations Orders, authorization basis documents, System Evaluation Reports (SERs), and other documents depicting parts/systems in the facility that no longer exist (see Appendix 2, Form 5).

[A] Redline (as-built) all remaining drawings to depict the final configuration of the facility and associated utilities.

[12] **IF** the project is canceled prior to completing the scope of work,
THEN incorporate all documentation of the removed systems/equipment/utilities into as-built drawings and proceed to Section 7.9, Task 9, Project Completion Redline Update.

[13] **IF** the design package is for decommissioning and all System Category 1 & 2 Vital Safety System (VSS) SSCs and utilities are **NOT** being removed from service,
THEN:

[A] Identify controlled drawings for systems to be disassembled.

[B] Maintain and redline controlled drawings for remaining SSCs, floor and plot plans.

[C] Use removal photographs and sketches along with controlled drawings when items are designated to be moved.

[D] VOID drawings when all SSCs on the drawing are removed in accordance with 1-W56-COEM-AMN-101.

7.3 TASK 3, Design Output Development (continued)

NOTE *Selection of gauges and instruments are demonstrated using calculations.*

[14] **IF** instrumentation is installed, removed, or modified,
THEN follow building instructions on pre-operational calibrations.

[A] Document calibration requirements through the use of a calculation.

[B] Provide instructions for calibration on the Design Work Implementation Instructions (Appendix 2, Form 3), to ensure:

— Installed or modified instrumentation is calibrated before it is made operational, and,

— Appropriate instrument calibration tracking system is updated.

[15] **IF** the design involves increases or decreases in power loads,
THEN prepare the necessary calculations using the existing power loads calculations if available.

[16] **IF** power load calculations do **NOT** exist,
THEN prepare necessary calculations to demonstrate that the circuit breakers, emergency generator capacities, and power factors are **NOT** adversely affected.

[17] Reference codes and standards that were used in the design on drawings, calculations, and specifications. Use Forms 3 and 8A as applicable.

NOTE *A bill of material is completed on either: 1) the Bill of Material form or 2) the drawing when an Engineering bill of material is prepared. (See Appendix 2, Form 4, Bill of Material)*

[18] Initiate or develop material specifications or bill of material as required.

7.3 TASK 3, Design Output Development (continued)

[A] **IF** a bill of material is required for the project,
THEN complete a Bill of Material form according to instructions (see Appendix 2, Form 4).

[B] Submit a copy of the BOM to Material Engineering for development of a Consolidated Bill of Material.

7.4

TASK 4	**Design Work Implementation Instructions, Baseline Document Change Form, and Design Package Cover Sheet**

This task results in the identification of work sequence, acceptance criteria, and post maintenance testing requirements for the implementation of the design and the identification of new and affected Design Output Documents that must be properly closed out at completion of the project. Additionally, this task is used in preparing the design package for review.

NOTE *After the final, approved design package is submitted for planning, the work planner under the direction of the Designer may revise Form 3, Section 2, Block 4, Work Sequence Instructions as deemed necessary*

Designer

[1] Complete the Design Work Implementation Instructions form (Appendix 2, Form 3).

NOTE *The BDCF may be used to identify drawings that need to be updated when revising documents such as drawings, procedures, PMOs, and SERs.*

[2] Complete the BDCF according to the instructions on form (Appendix 2, Form 5).

7.4 TASK 4, Design Work Implementation Instructions, Baseline Document Change Form, and Design Package Cover Sheet (continued)

[3] Assemble the design package according to the sequence listed in Section 2 on the Design Package Cover Sheet (Form 1) and record the total design package page numbers in Section 1, Block 4 .

7.5 TASK 5 Design Review Record

This task results in the resolution of comments from Design Checker, Independent Verifier, and interdiscipline reviews.

NOTE *The Designer **may** request Design Checkers and Independent Verifiers from different Site subcontractors if the Responsible Engineering Manager has approved the request.*

Designer

[1] Submit the design package to the Design Checker for review.

Design Checker

[2] Perform an independent technical check of design documents in the design package to verify that:

- Documents are administratively correct
- Controlled documents included in the package meet the requirements of Site Engineering Standard SX-300, General Drafting Standards (for example; all required signatures are included, drawings are properly numbered) to avoid issuance delays
- Documents are technically adequate
- System Category is correct
- Design assumptions are realistic
- Verifications supporting design decisions are adequate
- Methods applied are appropriate
- References are provided
- Proper design inputs and construction techniques are used
- Appropriate codes and standards are used
- ALARA considerations have been incorporated

7.5 TASK 5, Design Review Record (continued)

Independent Verifier

[3] Perform the verification required for System Category 1&2 using an appropriate method.

Designer

[4] **IF** the design is determined to affect radiological conditions according to the ALARA Design Review Screen (Form 12),
THEN submit the design package for a Radiological/ALARA Design Review (see Section 7.3[6]).

[5] Resolve Design Checker and Independent Verifier comments.

[6] **IF** a comment is **NOT** resolved,
THEN escalate the unsolved comment for resolution to the Responsible Engineering Manager.

NOTE *For multidiscipline designs, interfacing disciplines may require review and checking of drawings and calculations.*

Design Checker

[7] Sign all drawings and calculations reviewed after comments have been resolved.

The design package **SHALL** be reviewed by any person or group deemed necessary by the Designer. All Design package review comments that are submitted by an oversight organization **SHALL** be answered and dispositioned by the design organization regardless whether the names appear on the DRR.

NOTE *The subcontractor may request SDDC to copy and distribute design packages for review by submitting an EO in accordance with 1-W56-COEM-AMN-101.*

7.5 TASK 5, Design Review Record (continued)

Designer

[8] Distribute copies of the design package for review with attached Comment Review Sheets and according to instructions provided on the Design Review Record (DRR) (Appendix 2, Forms 6 and 7).

[9] Disposition all comments and obtain concurrence of the dispositions on the Review Comment Sheet(s) submitted by the reviewer.

[10] Complete the DRR according to the instructions on the back of the form.

7.6 TASK 6 | Package Approval

This task results in the final review and approval of the completed design package.

Designer

[1] Obtain Landlord signature on Design Package Cover Sheet as verification that the major subcontractor representative responsible for the building or area for which the design package is applicable has been notified of the impending design package (Form 1, Blocks 30-32).

[2] Complete an Engineering Change Request (ECR) form, if applicable, according to instructions. (See Appendix 2, Form 9.)

[3] Prepare the Design Package for final approval and final package release.

[A] Ensure all Design Package forms are complete.

[B] Ensure all pages in the design package are numbered in sequence according to forms instructions.

[C] Ensure Section 4, except Responsible Engineering Manager approval (Blocks 27-29), of the Design Package Cover Sheet is complete (Form 1).

7.6 Task 6, Package Approval (continued)

[a] Complete Blocks 16-20.

[b] Ensure Design Checker and Independent Verifier signatures have been obtained. (Blocks 21 -26).

[c] Obtain review for classification from authorized classifier (Block 30).

[4] Obtain Responsible Engineering Manager approval signature to verify that the Design Package is complete and approved for release (Blocks 27-29).

[5] Obtain a Nuclear Safety Evaluation in accordance with the NSM and unreviewed safety question process implementing procedures (for example, the K-H procedures 1-C10-NSM-04.03, Safety Evaluation Screen and 1-C11-NSM-04.05, Unreviewed Safety Question Determination or the SSOC procedure 3-X97-SSOC-USQP1, Unreviewed Safety Question Process).

Design Packages **SHALL** be evaluated through the Unreviewed Safety Question Determination process in accordance with approved Site procedures as required in Appendix 1. The Design Package may be evaluated in conjunction with the final Work Package.

[6] Obtain an Independent Safety Review in accordance with 1-52000-ADM-02.01, Operations Review Requirements, the RMRS Operations Review Committee (ORC), or the SSOC Plant Review Committee (PRC) procedures, as applicable.

[7] Retain appropriate Nuclear Safety Evaluation (such as Prescreen, Safety Evaluation Screen, Unreviewed Safety Question Determination, or Categorical Exclusion) and Independent Safety Review documentation as quality records in the designated Design Package file.

7.7 TASK 7 Final Package Release

This task results in the release of the final design package for planning and implementation in the field. Release of the final design package **SHALL** include all documents listed in Section 8.1, Table 2, Design Package Contents.

Design packages have a one-year shelf life starting from the date of Responsible Engineering Manager approval. To release a Design Package greater than one year old, the Design Package **SHALL** be reviewed by the same functional organizations that reviewed the original Design Package and then approved by the Responsible Engineering Manager.

NOTE *Once a design package has been approved and released for implementation, changes to applicable codes and standards used in the design package are **NOT** applicable unless mandated by DOE.*

Designer

[1] Release all Site design packages for modifications or decommissioning of SSCs through SDDC using an EO in accordance with 1-W56-COEM-AMN-101, Site Design Document Control.

[2] **IF** the design package is for the installation of a Temporary Modification, **THEN** provide a copy of the design package to the Operations Manager and follow the requirements of 1-31000-COOP-006.

Site Design Document Control

[3] Retain the original design package and issue copies in accordance with 1-W56-COEM-AMN-101.

7.8 TASK 8 Field Changes

This task results in the development, review, and approval of the necessary documentation to change a final-released design package.

7.8 Task 8, Field Changes (continued)

Subsequent field changes **SHALL** be approved by Radiological Engineering if the initial design package required an ALARA Design Review. If the field change is being performed in the field, a Radiological Building Engineer **may** be contacted for assistance.

Designer

[1] **IF** a change is required to a final-released design package, **THEN** use Table 1, Processing Field Changes, to determine the documentation and review requirements.

TABLE 1, PROCESSING FIELD CHANGES

TYPE	SCOPE OF CHANGE	REVIEWED BY	DOCUMENTATION REQUIREMENTS
1	**Administrative clarification or corrections** (for example, typographical errors, spelling errors)	Designer or Construction Manager (for Authorization Projects only with telecon concurrence from the Designer and **Should** be documented)	Cloud, initial, and date affected area in field redline drawing/package. Accomplished in the field with NO ECR required.
2	**Minor design change.** Any change that does **NOT** affect design basis or scope.	Designer and Design Checker	Complete Engineering Change Request (ECR) according to instructions on the form (Appendix 2, Form 9). After review signatures are received, work **may** commence upon submittal of a ECR follow-up copy to SDDC within the next two working days.
3	**Full ECR.** Any change in design basis or scope.	Follow Appendix 2, Form 9 instructions	Complete Engineering Change Request form (Appendix 2, Form 9). The ECR **SHALL** be released through SDDC using an EO.

7.9 TASK 9 Project Completion Redline Update

This task results in updating Site Design Output Documents listed on the BDCF according to the instruction on the back of the form (Appendix 2, Form 5).

7.9 TASK 9, Project Completion Redline Update (continued)

Designer

[1] Perform a post modification walkdown to redline drawings affected by the implementation of the design package.

[A] For drawings that require an update prior to return to service, ensure the following have been done:

- Verify the revision level of the drawing
- Red line the drawing
- Increment revision level manually to next revision
- Enter Field Verified/BDCF in revision description
- Obtain approvals, including classification review, on drawings
- Obtain approvals on BDCF
- Copy, stamp or mark with *red* "Information Only," and submit the copy to Building Document Control Center/Operations
- Submit the original red-line to SDDC or the Engineering Support Closure group

[2] Submit to SDDC upon completion of the work activity all redline drawings, Review Comment Sheets, and supporting/developmental documentation including all documents listed in Section 8.1, Table 2. Design Package Contents.

NOTE *Systems **may** be declared operable before closure of the IWCP package if operability criteria is appropriate.*

[3] **IF** the IWCP package installs or removes a temporary modification, **THEN** submit a copy of interim redline drawings to Building Operations to update the Temporary Modification Log.

[4] Complete the Engineering closure signature line on the IWCP Work Package cover sheet indicating Engineering concurrence with the Work Package.

7.9 TASK 9, Project Completion Redline Update (continued)

[5] **IF** the design package includes computer software installation or modification,
THEN submit two copies of the computer software program (on electronic media) and a copy of the Calculation / Technical Basis Sheet (Appendix 2, Form 8A) to SDDC.

[6] Update the Design Output Documents by incorporating redlines and ECRs into original controlled document masters.

Engineering Site Closure Group

[7] Process Design Output Documents according to engineering document control procedures.

Designer

[8] Close Authorization Project engineering files in accordance with 2-F32-COEM-PMG-301, Introduction to the Construction Project Management System and 2-L92-COEM-PMG-302, Overview to Quality, Environmental, Davis-Bacon, Security, and Safety and Health Requirements for Project Managers.

8. RECORDS

8.1 Design Package Contents

The following table identifies the contents of IWCP and Authorization Project design packages for review, release to field for implementation and final records:

TABLE 2, DESIGN PACKAGE CONTENTS

Form Name	In Review Package	In Final Release Package	In Final Record Package
Design Package Cover Page (Form 1)	X	X	X
Design Scope and Analysis (Form 2)	X	X	X
Design Work Implementation Instructions (Form 3)	X	X	X
Bill of Material (Form 4)	X	X	X
Baseline Document Change Form (Form 5)	X	X	X
Design Review Record (Form 6)	X	X	X
Review Comment Sheet (Form 7)	(Blank form)	X	X
Engineering Change Request (Form 9)	—	—	X (if used)
Calculation/Technical Basis Cover Sheet and Revision Summary (Form 8), Calculation/Technical Basis Sheet (Form 8A), and Calculation Sheet (Form 8B)	(optional) Only required to support review of design package	(optional) Only required for installation or clarification	X
Engineering Support Process (Form 11, Page 2 of 2) and ALARA Design Review Screen (Form 12)	X	X	X
Continuation Page (Form 10) (attached to associated forms)	X	X	X
Other forms listed on Form 1, Section 2	X	X	X
Other documents important to the development of the design package. (for example Independent Safety Review and Nuclear Safety Evaluation)	—	X	X

8.2 Non-Quality Assurance Records

No Non-Quality Assurance Records are generated by this procedure.

8.3 Quality Assurance Documents

Quality documents and drawings generated by the performance of this procedure **SHALL** be managed in accordance with 1-V41-RM-001, Records Management Guidance for Records Sources.

Designer

[1] Release all design records associated with the final design package to SDDC for interim storage until the closure process is complete.

Company Chief Engineer

[2] Retain documentation of Responsible Engineering Manager authorization, such as a brief summary of qualifications and justification stated in a memorandum.

8.4 Active Records

Active records necessary to conduct engineering business **SHALL** be maintained and stored by Site Design Document Control in accordance with 1-V41-RM-001. These records include but are not limited to drawings, new design, and construction.

Site Design Document Control

[1] Retain all design records associated with the final design package until closure is complete.

[2] Submit design package files to Records Management for disposition.

9. REFERENCES

DOE Order 5480.20A, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities

DOE Order 6430.1A, General Design Criteria

DOE Standard 1073, Operational Configuration Management.

DOE Standard 1021-93, Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components

HSP 13.01, Control of Pesticides

HSP 13.03, Carcinogen Control

HSP 13.05, Toxic Chemical Control

Integrated Work Control Program Manual

MAN-027-SERM, Site Engineering Requirements Manual

Nuclear Criticality Safety Manual

Rocky Flats Environmental Technology Site Engineering Standards

Site Quality Assurance Manual

Site Radiological Control Manual

1-C10-NSM-04.03, Safety Evaluation Screen

1-C11-NSM-04.05, Unreviewed Safety Question Determination

1-MAN-004-CSMM, Computer Software Management Manual

9. REFERENCES (continued)

1-MAN-018-NSM, Nuclear Safety Manual

1-V41-RM-001, Records Management Guidance for Records Sources

1-W56-COEM-AMN-101, Site Design Document Control

1-15310-HSP-13.04, Beryllium Protection

1-31000-COOP-006, Operating Area Log and Records

1-52000-ADM-02.01, Operations Review Requirements

2-C93-COEM-DES-273, Engineering Standards for Procurement

2-F32-COEM-PMG-301, Introduction to the Construction Project Management System

2-L92-COEM-PMG-302, Overview to Quality, Environmental, Davis-Bacon, Security, and Safety and Health Requirements for Project Managers

3-X97-SSOC-USQP1, Unreviewed Safety Question Determination

29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals

APPENDIX 1
Page 1 of 2

STRUCTURES, SYSTEMS, AND COMPONENTS CATEGORIES

The following table is provided to determine the System Category of Site structures, systems, and components (SSCs). By answering the questions in Column 1, the Systems Category (Column 2) can be identified. Once determined, other requirements for the contents, preparation, review, and approval of the design package and associated documentation can be identified using Columns 3 through 8 (also see Appendix 1, Page 2).

1 Question	2 Systems Category	3 Engineering Package Type	4 Independent Safety Review	5 Nuclear Safety Evaluation	6 Natural Phenom Haz Perf Criteria	7 Procure-ment Level	8 Instrument Calibration Required
Does the SSC provide a building with credited Safety SSC functions identified in Authorization Basis Documents (such as FSAR, BIO)? OR	1 &/or 2 Safety SSCs	Design package required	See Footnote 3	See Footnote 3	PC3[1]	PL1 or PL2 Per DES-273	YES (For Monitoring LCO compliance)
Does this SSC provide direct support to an SSC (defined in a Safety SSC System Evaluation Report and its failure (for any reason) would prevent the: 1) SSC from providing its function and 2) there is no acceptable analyzed alternative?							
Does the SSC provide regulator required radiological, toxicological, or high energy protection for workers, and/or environment, support Site response to an emergency, or provide fire protection or suppression to a building intended for occupancy or is the system formally designated as a Facility Safety System or SC-3 in approved AB document?	3 Facility Safety Systems (FSSs)	Design package or ESP required (based on results of ESP screen)			PC2[1]		As determined for maintaining safe operations and regulatory compliance. or As requested by Operations or Engineering to support "Good Practice" or permanent Plant Instruments.
None of the Above	4 All Others	Complete design package or ESP based on screen			PC1 or PC0[1]	PL3 (Per DES-273)	Optional

1 Wind and seismic load requirements are defined in DOE Standard 1020-94, Natural Phenomena Hazards Design and Evaluation Criteria for DOE Facilities. Performance category is determined in accordance with DOE Standard 1021-93, Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components at DOE Facilities Subjected to Natural Phenomena Hazards. Also use Site Engineering Standard SC-206A, Natural Phenomena Hazard Analysis of SSCs for guidance in determining seismic qualification. PC4 is not included in this table because it is reserved for reactor facilities and does not apply to this Site.

2 OS&D = Over, Short, and Damaged Inspection.

3 See 1-MAN-018-NSM, Nuclear Safety Manual and 1-52000-ADM-02.01, Operations Review Requirements to determine Nuclear Safety Evaluation and Independent Safety Review requirements.

4 Columns 2 & 7 - Building specific authorization basis (or the Building SERs) **SHALL** be used to determine Systems Category and Performance Criteria in lieu of this table, if available.

APPENDIX 1
Page 2 of 2

The following information is provided to assist in determining additional design package contents, preparation, review, and approval requirements:

Engineering Package Type (Column 3)

For System Category 1 & 2 SSCs, a Design Package is required. As a minimum, Appendix 2, Forms 1, 2, 3, 4, 5 and 6 are required.

For System Category 3 and System Category 4 SSCs, either a Design Package or an Engineering Support Process (ESP) form is used. This determination is based on the results of the Engineering Support Process Screen (Appendix 2, Form 11).

Independent Safety Review (Column 4)

See 1-52000-ADM-02.01, Operations Review Requirements to determine Independent Safety Review requirements.

Nuclear Safety Evaluation (Column 5)

See 1-MAN-018-NSM, Nuclear Safety Manual to determine Nuclear Safety Evaluation requirements and, as applicable, see 1-C10-NSM-04.03, Safety Evaluation Screen, 1-C11-NSM-04.05, Unreviewed Safety Question Determinology, or 3-X97-SSOC-USQP1, Unreviewed Safety Question Process.

Natural Phenomena Hazards Performance Category (Column 6)

DOE Standard 1021-93, Performance Categorization Criteria for Structures, Systems, and Components at DOE Facilities Subjected to Natural Phenomena Hazards **SHALL** be used to determine Performance Category.

Procurement Level (Column 7)

Material Engineering is responsible for determining or concurring with assignment of Procurement Levels for System Category 1 & 2.

Operational Calibration Requirements (Column 8)

All process control instruments **Should** be calibrated by a metrology lab traceable to National Institute of Standards and Technology if they meet the attributes stated in Column 8.

APPENDIX 2 - FORM 1
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DESIGN PACKAGE COVER SHEET

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 1 (1-V51-COEM-DES-210)

Design Package Cover Sheet

Section 1: DESIGN PACKAGE IDENTIFICATION

1. IWCP/Authorization Project Number	2. System Category ☐ 1 & 2 ☐ 3 ☐ 4	3. Bldg. No./Area	4. Page of
5. Modification Description Title	6. Modification Type ☐ Permanent ☐ Temporary; TM#:		6A. Calculated Design Life Date
7. Parent System Basis Document ☐ SER ☐ BIO ☐ BFO ☐ SAR ☐ None ☐ Other:		8. Document Reference	
9. SSC Function			

Section 2: DESIGN PACKAGE ASSEMBLY

10. No. of Pages	11. Title of Form	10. No. of Pages	11. Title of Form
	Form 1, Design Package Cover Sheet		Form 8, Calculation / Tech. Basis Cover Sheet & Rev. Summary
	Form 2, Design Scope and Analysis		Form 8A, Calculation / Technical Basis Sheet
	Form 3, Design Work Implementation Instructions		Form 8B, Calculations Sheet
	Form 4, Bill of Material		Form 9, Engineering Change Request
	Form 5, Baseline Document Change Form		Form 10, Continuation Sheet (Attach to Associated Forms)
	Form 6, Design Review Record		Form 11, Engineering Support Process-ESP Screen Only
	Form 7, Review Comment Sheet		Form 12, ALARA Design Review Screen

Section 3: DESIGN PACKAGE CONTENTS

12. No. of Pages	13. Document Control No. (if applicable), Title of Optional and Supporting Design Documents (for example, calculations, drawings, cutsheets, specifications, attachments, etc.). (If Required? (¦)	14. Rev.	15. BDCF Closeout Req.(¦)
	☐		☐
	☐		☐
	☐		☐
	☐		☐
	☐		☐
	☐		☐

Section 4: DESIGN PACKAGE PREPARATION, REVIEW, AND APPROVAL

16. Major Subcontractor Authorizing Design	17. Subcontract Architect Engineering Company Producing Design ☐ None	
18. Designer - Name (Print)	19. Designer - Signature	20. Date
21. Design Checker - Name (Print)	22. Design Checker - Signature	23. Date
24. Independent Verifier - Name (Print)	25. Independent Verifier - Signature	26. Date
27. Responsible Engineering Manager - Name (Print)	28. Responsible Engineering Manager - Signature	29. Date
30. Landlord - Name/Company (Print)	31. Landlord - Signature	32. Date
33. Reviewed for Classification		

(6/98)

APPENDIX 2 - FORM 1
Page 2 of 37

DESIGN PACKAGE COVER SHEET FORM COMPLETION INSTRUCTIONS

This form is integral in pulling together the final design package contents. Preparation of Form 1 begins in Task 2 and is completed in Task 6.

Note 1: *Unless specified, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*
Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any section on this form.*
Note 3: *If multiple disciplines are involved with a design project, it is up to the Responsible Engineering Manager to determine which Design Checker and Independent Verifier signatures will be on the Design Package Cover Sheet. If more than one Design Checker and Independent Verifier signatures are required, use the Continuation Sheet (Form 10).*

Block	Instructions
Section 1: DESIGN PACKAGE IDENTIFICATION	
1	Enter the IWCP or Authorization Project Number.
2	Check the appropriate System Category box based on Appendix 1, Systems, Structures, and Components Categories determination.
3	Enter the Building Number or Area.
4	Enter the form or package page count prior to release for implementation.
5	Enter the Modification Description Title.
6	Check the appropriate box that identifies the modification type. If the modification is designated as temporary in the IWCP then check the Temporary box; otherwise, check the "Permanent" box. If a Temporary Modification, enter the TM number obtained from Operations in accordance with 1-31000-COOP-006, Operating Area Logs and Records.
6A	Enter calculated design life date in accordance with MAN-027-SERM, Site Engineering Requirements Manual, Section 5.5.5. and Section 10, Glossary/Definitions.
7	Identify basis for SSC category by checking the appropriate box or check "Other" and enter the title of the basis document.
8	Identify the location in the reference basis document (for example, Section/Paragraph or page number)
9	Provide a brief description of the function of the SSC being classified.
Section 2: DESIGN PACKAGE ASSEMBLY	
10	Enter the total number of pages for each form.
11	Required design package contents are listed in Section 8, Table 2 of this procedure. All forms completed for the design package including completed forms indicated optional **SHALL** be retained in the designated Design Package file as a quality record. *If a required form is not applicable, enter the IWCP or Authorization Project Number and Modification Description Title on the form and write NA across the form.*
Section 3: DESIGN PACKAGE CONTENTS	
12	Enter the total number of pages for document listed in Column 13.
13.	Enter the document number assigned by Site Design Document Control, Building 130, and the title of optional and supporting documents as stated. If document is required, (√) the box to left of column.
14	Enter the document revision number.
15	Check the box if redlines are required during IWCP closure. Ensure that each document checked is included on the Baseline Document Change Form (Form 5).

(Continued on next page.)

APPENDIX 2 - FORM 1
Page 3 of 37

DESIGN PACKAGE COVER SHEET
FORM COMPLETION INSTRUCTIONS (continued)

Section 4: DESIGN PACKAGE PREPARATION, REVIEW, AND APPROVAL

16	Enter the name of the major subcontractor company that authorized the design.
17	Enter the name of the subcontractor's architect engineering company that produced the design, or if none was used, check the box "None."
18-20	Designer - Print / sign name and date indicating that the technical disciplines necessary to complete this design and the discipline interfaces are appropriate.
21-23	Design Checker - Print / sign name and date indicating that a review for technical and administrative adequacy of the design has been performed.
24-26	Independent Verifier - Print / sign name and date indicating that the design document or process has been examined to ensure that sound engineering/scientific principles and appropriate standards were used and that the design work incorporated applicable requirements and design bases. (Required for System Category 1&2 or Performance Category 2 or 3.)
27-29	Responsible Engineering Manager - Print / sign name and date indicating that (1) the appropriate administrative and technical design reviews have been completed by qualified individuals, (2) all comments have been resolved appropriately, and (3) this package is acceptable to release for planning.
30-32	Landlord - Print name / company / sign name and date indicating that the major subcontractor representative responsible for the building or area for which the design package is applicable is cognizant of the design. Landlord signature is not required if the design documents were produced by the landlord company
33	Classifier - Sign and date indicating that the package was reviewed in accordance with DOE Order 5650.2B, The Classification of Information and DOE Order 5650.3A, Identification of Unclassified Controlled Nuclear Information (until DOE Order 471.1 is included in the Site contract).

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DESIGN SCOPE AND ANALYSIS

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 2 (1-V51-COEM-DES-210)

Design Scope and Analysis

Section 1: FORM PURPOSE AND WORK IDENTIFICATION

1. IWCP/Authorization Project Number	2. Page of
3.Modification Description Title	4. Is this a Temporary Modification? ☐ No ☐ Yes - TM #:
	5. Date

Section 2: PROBLEM DESCRIPTION AND SOLUTION

6. Problem Description (Purpose, Scope, Assumptions, Design Inputs)

7. Problem Solution, Design Analysis

8. Impacts to SAR, SER, BIO ☐ None

(11/97)

APPENDIX 2 - FORM 2
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DESIGN SCOPE AND ANALYSIS FORM COMPLETION INSTRUCTIONS

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*
Note 2: *Use the Continuation Sheet (Form 10), if more room is needed to complete any block on this form.*

Block	Instructions
Section 1: FORM PURPOSE, WORK IDENTIFICATION, AND SSC CLASSIFICATION	
1	Enter the IWCP or Authorization Project Number.
2	Enter the form or package page count prior to release for implementation.
3	Enter the Modification Description Title.
4	Indicate if the activities associated with this design will result in a Temporary Modification by checking the appropriate box. If a Temporary Modification, enter TM number obtained from Operations in accordance with 1-31000-COOP-006.
5	Enter date.
Section 2: PROBLEM DESCRIPTION AND SOLUTION	
6	Enter detailed problem statement.
7	Enter problem solution, design analysis.
8	Identify impacts of design on SAR, SER, BIO and provide a description of impacts. If none, check box "None."

APPENDIX 2 - FORM 3
Page 7 of 37

DESIGN WORK IMPLEMENTATION INSTRUCTIONS

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 3 (1-V51-COEM-DES-210)

Design Work Implementation Instructions

Section 1: DESIGN PACKAGE IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Page of

Section 2: DESIGN WORK IMPLEMENTATION REQUIREMENTS

4. Work Sequence Instructions (Provide justification if None is marked) ☐ None

5. System Interactions (Identify System Category 1 & 2 interactions that will be impacted by this Design Package and need to be addressed during implementation.) (Provide justification if None is marked) ☐ None

6. Acceptance Criteria, Standards, and Inspections (for example acceptance inspections and Post Maintenance Tests) (Provide justification if None is marked) ☐ None

7. Deviation to Standards with Technical Justifications (To include Description, Purpose, and Scope.)

(11/97)

APPENDIX 2 - FORM 3
Page 8 of 37

DESIGN WORK IMPLEMENTATION INSTRUCTIONS FORM COMPLETION INSTRUCTIONS

The Engineer can facilitate work planning if specific installation and test instructions are provided for non-routine or complex designs. This form is used to communicate these requirements to the work planners.

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A. If information requested in Blocks 4-6 is not applicable, check the None box.*
Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*
Note 3: *Once the final, approved design package is submitted for planning, the work planner under the direction of the Designer may revise Section 2, Block 4, Work Sequence Instructions as deemed necessary. (These changes do not require issuance of an ECR.)*

Block **Instructions**

Section 1: DESIGN PACKAGE IDENTIFICATION

1 Enter the IWCP or Authorization Project Number.

2 Enter the Modification Description Title.

3 Enter the form or package page count prior to release for implementation.

Section 2: WORK IMPLEMENTATION REQUIREMENTS

4 When required, the Designer **SHALL** clearly delineate a construction work sequence, identifying responsibilities interfaces between all parties to ensure construction can be completed safely, as efficiently as possible, while maintaining system operability and minimizing downtime. Identify activities to be performed by operations personnel, or other subcontractors, before the contractor can initiate work.

5 Provide Systems Interactions information as indicated.

6 The design package **SHALL** identify required cleaning of systems and testing of all equipment, components, and/or systems. Test procedures **SHALL** describe every test and operation to be performed for testing and checking out equipment, components, and complete systems for functional operation.

Methods for cleaning and flushing and the degree of cleanliness **SHALL** be clearly specified prior to completion of acceptance tests.

Identify desired inspections. Reference Site Engineering Standards, sections of national codes and standards, or other inspection plans as required.

Equipment, component, and certain operational system testing, designated as Construction Component (CC) Tests, **SHALL** be stipulated by the Designer. The procedures for these tests **SHALL** list the items and operations necessary for checking the installation for conformity to the manufacturer's specification and to the drawings and specifications. The Designer **Should** utilize applicable codes and standards whenever possible to define testing parameters. Critical CC design limit tests may, at the option of the Designer, be performed by vendors.

CC testing **may** include the following as applicable: fan balancing, fan rotation, refrigerant charging of equipment, suction pressures, proof pressures entering and leaving air temperatures (dry bulb and wet bulb), pump flow and pressure, instrument calibration and initial settings, operability of remote and local controls, interlocks, temperatures. For electrical, the CC **may** include continuity megger, initial load readings for the power system, circuit breakers and switches **SHALL** be checked and manually operated to ensure shipping blocks and tie-downs have been removed.

Systems Operational (SO) testing is normally required to verify conformance to drawings and specifications. Test procedures, when required, **SHALL** be developed by the Designer. SO test procedures **SHALL** cover the complete operation of each system and **SHALL** include not only the determination that the system operating characteristics are as designed, but **SHALL** be used to complete the equipment/component testing if required. Examples of SO testing are: complete balancing of the HVAC distribution system; final calibration settings, sequencing, and functional control of all instruments, loops and control systems, calibration of circuit breakers and substation protective relays; load testing of emergency generators, isolated power systems, and uninterruptible power sources; and checking these systems for switching to emergency and then back to normal power.

7 Enter technical justification for deviations to standards as indicated. If applicable, document justification for boxes checked "None" in Sections 4 - 6.

APPENDIX 2 - FORM 4
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BILL OF MATERIAL

RFETS — ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 4 (1-V51-COEM-DES-210)

Bill of Material

Section 1: DESIGN PACKAGE IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Page of
4. Building No./Area	5. Parent System Title	

Section 2: BILL OF MATERIAL

6. ITEM NO.	7. QUANTITY	8. DESCRIPTION / PART NO.	9. CONSEQUENCE OF FAILURE	10. CODE NO.	11. SSC / PART AFFECTS	12. SAFETY CLASS? IF YES (1)

Section 3: FORM INITIATION

13. Initiator's Name (Print)	14. Location	15. Phone No.	16. Pager No.

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APPENDIX 2 - FORM 4
Page 10 of 37

BILL OF MATERIAL
FORM COMPLETION INSTRUCTIONS

The information provided in the Bill of Material Section will assist the Material Engineer in determining the most cost effective, efficient, and timely method of procuring material.

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer.*
Note 2: *Use the Bill of Material (continued) page or Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*

Block **Instructions**

Section 1: DESIGN PACKAGE IDENTIFICATION

1 Enter the IWCP or Authorization Project Number.
2 Enter the Modification Description Title.
3 Enter the form or package count prior to release for implementation.
4 Enter the Building Number or Area.
5 Enter the parent system title that describes the items entered in Column 8.

Section 2: BILL OF MATERIAL

Note 1: *The following blocks are normally completed by the Designer, but may also be completed by the Planner, Material Engineer, or Project Engineer/Manager.*
Note 2: *This section is optional.*

6 Enter a sequential item number beginning with 1.
7 Enter the quantity of components/parts required.
8 Enter a description of the component or part (noun name, descriptors). Provide enough detailed information to ensure that Planner or Material Engineer can identify the component/part.
9 List consequence of failure modes (for example, fire, flooding, steamline break, personnel exposure, life support system failure, loss of fire detection/mitigation).
10 Enter the applicable code(s) from the table below to assist Material Engineering in determining technical and quality requirements:

Code	Affect	Code	Affect
1	Affects Sys Cat 1&2 Operability	6	Affects Special Nuclear Material
2	Affects Worker Safety	7	Affects Security Systems
3	Affects Emergency Response	8	Affects Fire Protection
4	Needs Counterfeit Inspection	9	Hazardous Chemical
5	Environmental Barrier/Concern		

11 Enter any special procurement considerations that may affect Material Engineer's Procurement Level determination (for example, high temperature, high pressure, corrosive).
12. If yes for safety class, (√) box.

Section 3: FORM INITIATION (REQUIRED)

13-16 Enter name, location, phone and pager number of the individual that initiated this form. This information is provided to identify a contact point for information provided on this form.

BILL OF MATERIAL (continued)

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 4 (1-V51-COEM-DES-210)

Bill of Material (continued)

Section 1: DESIGN PACKAGE IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Building No./Area	4. Parent System Title	5. Page of

Section 2: BILL OF MATERIAL

6. ITEM NO.	7. QUANTITY	8. DESCRIPTION / PART NO.	9. CONSEQUENCE OF FAILURE	10. CODE NO.	11. SSC / PART AFFECTS	12. SAFETY CLASS? IF YES (!)

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APPENDIX 2
Page 12 of 37

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APPENDIX 2 - FORM 5
Page 13 of 37

BASELINE DOCUMENT CHANGE FORM

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 5 (1-V51-COEM-DES-210)

Baseline Document Change Form

Section 1: DESIGN PACKAGE IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Page of

Section 2: BASELINE DOCUMENT LIST

(Operations Manager) Check box if item requires update prior to return to service.
(Designer) Check items which require update and closeout by Engineering.

Section 3: POST MOD MARKUP

4.	5.	6. System/ Component	7. Document Identification	8. Rev	9. Final Rev	10. Engineering Walkdown Verification	11. Building 130 Site Design Doc Control Receipt	12. Operations Manager Receipt
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☐	☐							
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Section 4: POST MODIFICATION MARKUP ACCEPTANCE BY OPERATIONS

13. Operations Manager - Name (Print)	14. Operations Manager - Signature	15. Date

Section 5: DOCUMENT UPDATE / ENGINEERING DOCUMENTATION CLOSEOUT

16. Site Design Document Control - Name (Print)	17. Site Design Document Control - Signature	18. Date

(11/97)

APPENDIX 2 - FORM 5
Page 14 of 37

BASELINE DOCUMENT CHANGE FORM FORM COMPLETION INSTRUCTIONS

The Baseline Document Change Form (BDCF) is used to track Site controlled documents that are required to be revised at the completion of the work activity. Closure of the IWCP Package **SHALL** not occur until the Designer completes the redline process and delivers the design package (including redlines and the BDCF) to Site Design Document Control, Building 130.

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*

Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form or if the drawings listed on the BDCF do not exactly match the drawings actually attached to the design package.*

Block **Instructions**

Section 1: DESIGN PACKAGE IDENTIFICATION

1 Enter the IWCP or Authorization Project Number.

2 Enter the Modification Description Title.

3 Enter the form or package page count prior to release for implementation.

Section 2: BASELINE DOCUMENT LIST

4 After completing Columns 5 through 8, have the Operations Manager identify documents required to be updated prior to return to service by checking the corresponding boxes.

5 After completing Columns 6 through 8, identify documents which required update and closeout by Engineering by checking the corresponding boxes.

6 Identify the system or component in cases where each system or component will be returned to service separately; otherwise enter N/A.

7 Identify document number (for example, drawing number, procedure number, vendor manual number, catalog number) or computer software name and number.

8 Enter the current revision level of document.

9 Leave blank until document update.
Site Design Document Control - Enter final revision level after document has been revised.

Section 3: POST MODIFICATION MARKUP

Note 1: *Columns 10-12 and Blocks 13-18 are completed after implementation of the Design Package.*

Note 2: *Columns 11 and 12 are only used if single or multiple components or systems are being returned to service (phased implementation). Instructions for Column 10 are to be followed for both full and phased implementation.*

10
A. Perform a post modification walkdown to redline drawings (N/A for sketches or computer software).
B. Redlines must include all field changes.
C. Sign and date indicating the redline has been verified. Then perform the following:
   a. Obtain a copy of the BDCF and the redlined drawings.
   b. Deliver redline drawing copies to building Operations.
   c. Deliver field redlined design package (which includes redlined interim controlled drawings) to Site Design Document Control before the IWCP Package is closed using a Document Release Form in accordance with 1-W56-COEM-AMN-101, Site Design Document Control.
   d. Complete the Engineering closure signature line on the IWCP Work Package cover sheet.

11 Site Design Document Control - Initial and date indicating receipt of specific line item redlined document. Use Blocks 16-18 if all redlined documents are submitted at one time (N/A for computer software).

12 Operations Manager - Initial and date indicating receipt of field verified markups. Use Blocks 13-15 if all requested markups are received at one time (N/A for computer software).

Section 4: POST MODIFICATION MARKUP ACCEPTANCE BY OPERATIONS

13-15 Operations Manager - Print/sign name and date indicating that all required markups listed on the BDCF have been received.

Section 5: DOCUMENT UPDATE / ENGINEERING DOCUMENTATION CLOSEOUT

16-18 Site Design Document Control - Print/sign name and date indicating that all required markups listed on the BDCF have been received.

APPENDIX 2 - FORM 6
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DESIGN REVIEW RECORD

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 6 (1-V51-COEM-DES-210)

Design Review Record

Section 1: DESIGN PACKAGE IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Page of

Section 2: DESIGN REVIEW

4. Reviewing Organization/Discipline	5. Print Name of Reviewer that signed Review Comment Sheet	6. Comments Resolved		7. Reason For Non-Resolution
		YES	NO	
Safety & Industrial Hygiene (required) [1]				
Fire Protection (required) [1]				
Criticality Safety Engineering [1, 2]				
Radiological Engineer [3]				

1 Telecon approval allowed. See instructions on back of form for documentation requirements.
2 Required if the design involves fissionable material operations as defined in the Nuclear Criticality Safety Manual.
3 Required if ALARA Design Review Screen fails. Telecon approval allowed.

I certify that all reviewers listed above have reviewed this design document and returned comments, and that they are cognizant of the disposition of their comments.

8. Designer - Name (Print)	9. Designer - Signature	10. Date

(11/97)

APPENDIX 2 - FORM 6
Page 16 of 37

DESIGN REVIEW RECORD FORM COMPLETION INSTRUCTIONS

The purpose of this document is to record independent verification and to identify who reviewed the package. Design packages must be independently reviewed by appropriate design disciplines and Design Checkers to assure compliance with the Price-Anderson Amendment Act and to provide design packages that receive the benefit of input by affected Site safety and operations organizations. The design review approach (such as, roundtable, return comments to designer) is left up to the subcontractor discretion.

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*
Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*
Note 3: *Submit a Review Comment Sheet(s) (Form 7) with the design package being reviewed. The reviewer **SHALL** record all comments on the Review Comment Sheet(s).*
Note 4: *Retain original Review Comment Sheets as quality records. Attach original Review Comment Sheets to this form prior to closeout and submittal to Site Design Document Control, Building 130.*

Block **Instructions**

Section 1: DESIGN PACKAGE IDENTIFICATION
1 Enter the IWCP or Authorization Project Number.
2 Enter the Modification Description Title.
3 Enter the form or package page count prior to release for implementation.

Section 2: DESIGN REVIEW
4 Enter organizations/disciplines required to perform a review of the design. As a minimum, the following organizations and functions **SHALL** review Design Packages:

Organization	Purpose / Applicability
Health & Safety Representative*	All packages.
Fire Protection*	All packages.
Criticality Safety Engineering	All packages that involve fissionable material operations as defined in the Nuclear Criticality Safety Manual.
Security	All packages that affect security systems.
Waste Management	All packages that produce large volumes of waste that cannot be placed in a sanitary land fill.
Radiological Engineering	All packages that fail the Radiological Engineering Screen (Appendix 2, Form 12)
QA	Systems Category 1 & 2 and 3
Engineering Interdiscipline Review	Any discipline (for example, Electrical, Mechanical, Architectural, Civil, Structural) that adds technical value to the design package based on their involvement in the initial design (for example, if Structural did not participate in the design and the design includes structural items).

5 Print name of Reviewer.
6 Check the appropriate column.
7 If applicable, justify why comments were not resolved.
8-10 Designer - Print name, sign and date indicating acceptance of certification statement.

* Telecon approval **may** be obtained if authorized by the Responsible Engineering Manager. Reviews **Should** be documented on a Review Comment Sheet. If authorized, document telecon approval as follows:
1. In Column 5, print the name of the individual providing telecon approval followed by: telecon approval.
2. In the appropriate section of Column 6, initial and date.

APPENDIX 2 - FORM 7
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REVIEW COMMENT SHEET

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 7 (1-V51-COEM-DES-210)

Review Comment Sheet

Section 1: DESIGN PACKAGE AND REVIEWER IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Page of

4. Type of Review ☐ Design Check ☐ Independent Verification ☐ Other (specify): | 5. Due Date

Section 2: REVIEW COMMENTS AND DISPOSITION

6. No.	7. Reference: Page, Para, Dwg #, etc	8. Comments: Provide comment and proposed resolution	Accept / Reject	9. Proposed Comment Disposition: Plans to Incorporate Comments OR Justification for Rejection	10. Date Comment Closed

11. ☐ No Comments ☐ No impact or relevance to discipline or organization

Reviewers Name (Print) / Reviewers Signature

Ext./Pager/Fax / Bldg./Organization / Date

12. **FULL CONCURRENCE:** I have reviewed the document referenced above from my organization's discipline-specific point of view and concur fully with its implementation. All comments and concerns have been resolved to my satisfaction.

Print Name / Concurrence Signature / Date

13. **FINAL COMMENT DISPOSITION:** I have made final disposition for all comments not resolved to the satisfaction of the reviewer. Technical justification for the disposition of these comments is attached.

Print Name / Responsible Engineering Manager Signature / Date

Ext./Pager/Fax / Bldg./Organization

(11/97)

APPENDIX 2 - FORM 7
Page 18 of 37

REVIEW COMMENT SHEET FORM COMPLETION INSTRUCTIONS

This form is used to document design package comments from reviewers performing Engineering Interdiscipline Reviews. The form is also used to document proposed disposition of comments and disposition concurrence.

Note 1: *Use the Review Comment Sheet (continued) form included with Form 7 if additional space is required to enter comments or document comment disposition.*
Note 2: *Designer - Complete Blocks 1, 2, 4 and 5 and include this form with the design package before issuing for review.*
Note 3: *Reviewer - Record all comments on the Review Comment Sheet(s).*

Block	Completed By	Instructions
Section 1: DESIGN PACKAGE AND REVIEWER IDENTIFICATION		
1	Designer	Enter the IWCP or Authorization Project Number.
2	Designer	Enter the Modification Description Title.
3	Reviewer	Enter the form page count after review is completed.
4	Designer	Check the box which identifies the type of review. If the "Other" box is checked, specify the type of review being performed.
5	Designer	Enter date comments are due.
Section 2: REVIEW COMMENTS AND DISPOSITION		
6	Reviewer	Number all comments sequentially, starting at 1.
7	Reviewer	Enter reference to specific item being addressed (for example, page and paragraph number, drawing number, calculation number).
8	Reviewer	Provide short concise comments. For each comment, provide a proposed resolution.
9	Designer	Indicate if the comment is accepted or rejected by placing a Ã in the first column (indicating acceptance) or an X in the second column (indicating rejection). If accepted, enter specific plans for incorporating comments. If rejected, provide justification for the rejection.
10	Designer	This column is used for tracking comment resolution concurrence. Enter date comment disposition is accepted.
11	Reviewer	Check the "No Comments" box if no comments are submitted. Check "No impact or relevance to discipline or organization" box if appropriate. Print name and sign. Enter Extension/Pager/Fax, Bldg/Organization, and Date.
12	Reviewer/Concurror	After comments have been acceptably dispositioned or if no comments have been submitted, print name, sign, and date indicating full concurrence as stated on form.
13	Responsible Engineering Manager	If comment disposition has been escalated due to inability to reach an acceptable resolution, document final disposition and justification and attach to this form. Obtain reviewer concurrence for remaining comments. Print name, sign and date to document final comment disposition. Enter Extension/Pager/Fax and Bldg/Organization.

APPENDIX 2 - FORM 7

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REVIEW COMMENT SHEET (continued)

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 7 (Continued) (1-V51-COEM-DES-210)

Review Comment Sheet (continued)

Instructions: Number all continuation pages in Block 3.

Section 1: DESIGN PACKAGE AND REVIEWER IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Reviewer's Name (Print)	4. Page of

Section 2: REVIEW COMMENTS AND DISPOSITION (continued)

No.	Reference: Page, Para, Dwg #, etc	Comments: Provide comment and proposed resolution	Accept ✓ / Reject X	Proposed Comment Disposition: Plans to Incorporate Comment, OR Justification for Rejection	Date Comment Closed

(11/97)

APPENDIX 2
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APPENDIX 2 - FORM 8
Page 21 of 37

CALCULATION / TECHNICAL BASIS COVER SHEET AND REVISION SUMMARY

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 8 (1-V51-COEM-DES-210)

Calculation / Technical Basis Cover Sheet and Revision Summary

Section 1: IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Page
4. Use of Form ☐ Calculation ☐ Engineering Analysis ☐ Software Installation or Change ☐ Technical Basis	5. Job Title	
6. Calculation Number / Assigned Document Control No.	7. Affected Building Nos. / 8. Room / 9. Floor	
10. System ID	11. System Category ☐ 1 & 2 ☐ 3 ☐ 4	12. Natural Phenomena Category (PC) ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ N/A

Section 2: PREPARATION, REVIEW, AND APPROVAL

13. Rev. No.		14. Designer/ Date	15. Design Checker(s)/ Date	16. Independent Verifier(s)/Date	17. Responsible Engineering Manager/Date	18. Landlord	19. Supersedes Calc. No. or Rev. No.	20. Field Confirm. Required (!)
	Print Name Sign Date							☐ Yes ☐ No
	Print Name Sign Date							☐ Yes ☐ No
	Print Name Sign Date							☐ Yes ☐ No

Section 3: REVISION SUMMARY

21. Rev. No.	22. Description/Reason For Revision	23. Affected Pages

24. Reviewed for Classification

(6/98)

APPENDIX 2 - FORM 8
Page 22 of 37

CALCULATION / TECHNICAL BASIS COVER SHEET AND REVISION SUMMARY FORM COMPLETION INSTRUCTIONS

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*
Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*
Note 3: *Complete a Document Release Form to issue a Calculation/Technical Basis and submit to Site Design Document Control, Building 130 in accordance with 1-W56-COEM-AMN-101, Site Design Document Control.*
Note 4: *If the calculation requires more than three revisions, then start a new form and include all forms in the designated Design Package file.*

FORM USE	BLOCKS REQUIRED TO BE COMPLETED BASED ON FORM USE
Calculation	All
Technical Basis	All except 18 and 19
Engineering Analysis	All except 18 and 19
Software Installation or Change	1-11, 13-18, 21-23s

Block **Instructions**

Section 1: IDENTIFICATION

1 Enter the IWCP or Authorization Project Number.
2 Enter the Modification Description Title.
3 Enter the form or package page count prior to release for implementation.
4 Check the appropriate box to identify purpose of form.
5 Enter job title.
6 Enter the calculation number/assigned control number obtained from Site Design Document Control prior to release of final package or Calculation/Technical Basis/Engineering Analysis/Walkdown.
7 Enter Building or Area number for all affected buildings or areas.
8 Enter the room number.
9 Enter the floor and/or elevation.
10 Enter System identification number obtained from SX-164, Standard for Plant System and Component Identification and Labeling.
11 Check the appropriate System Category box based on Appendix 1, System, Structures, and Component Classification determination.
12 Enter the Natural Phenomena Hazard Performance Category based on Appendix 1, System, Structures, and Component Classification determination. If the design package does not affect SSC, check box "0."

Section 2: PREPARATION, REVIEW, AND APPROVAL

13 Enter revision number.
14 Designer - Print name, sign, and date indicating that the contents of the forms are complete and technically accurate.
15 Design Checker - Print name, sign, and date indicating that the contents of the forms are technically accurate.
16 Independent Verifier - (Required for System Category 1 & 2, or PC 2 or 3) Print name, sign, and date indicating that contents of the forms are complete and technically accurate. Must be different person than the Design Checker.
17 Responsible Engineering Manager - Print name, sign, and date indicating that the appropriate technical reviews have been completed by qualified individuals and all comments have been dispositioned appropriately.
18 Landlord - Print name, sign, and date indicating that the major subcontractor representative responsible for the building or area for which the design package is applicable is cognizant of the design. Landlord signature is <u>not</u> required if the design documents were produced by the landlord company.
19 Enter number of calculation superseded.
20 If the calculation must be verified in the field, check Yes box and record post installation test requirements on Design Work Implementation Instructions (Form 3).

Section 3: REVISION SUMMARY

21 Enter revision number.
22 Describe nature of revision.
23 List affected pages
24 Classifier - Sign and date indicating that the package was reviewed in accordance with DOE Order 5650.2B, The Classification of Information and with DOE Order 5650.3A, Identification of Unclassified Controlled Nuclear Information (until DOE Order 471.1 is included in the Site contract).

APPENDIX 2- FORM 8A

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CALCULATION / TECHNICAL BASIS SHEET

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 8A (1-V51-COEM-DES-210)

Calculation / Technical Basis Sheet

Section 1: IDENTIFICATION		
1. IWCP/Authorization Project Number	2. Modificaiton Description Title	3. Page of
4. Calculation Number / Assigned Control Number		5. Rev. No.

Section 2: OBJECTIVE, METHODS, ASSUMPTIONS, REFERENCES, AND CONCLUSION

6. Objective (Both Functional and Structural Requirements)

7. Method

8. Assumptions and Technical Basis

9. Design Inputs/ References

9A. Ref. No.	9B. Inputs/References (with Revision and/or Date or Source)

10. Conclusions

(11/97)

APPENDIX 2 - FORM 8A
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CALCULATION / TECHNICAL BASIS SHEET FORM COMPLETION INSTRUCTIONS

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*
Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*
Note 3: *If this form is developed for use external to the design process and classification/UCNI review is required, then have a classifier stamp and sign this form.*
Note 4: *If more than 10 attachments are included with this form or if attachments are voluminous, an index of attachments Should be included.*

FORM USE	BLOCKS REQUIRED TO BE COMPLETED BASED ON FORM USE
Calculation	All
Technical Basis	All
Engineering Analysis	All
Software Installation or Change	1-6, 9 (A and B), and 10

Block **Instructions**

Section 1: IDENTIFICATION

1 Enter the IWCP or Authorization Project Number
2 Enter the Modification Description Title.
3 Enter the form or package page count prior to release for implementation
4 Enter the calculation number/assigned Document Control number.
5 Enter the revision number.

Section 2: OBJECTIVE, METHODS, ASSUMPTIONS, REFERENCES, AND CONCLUSIONS

6 List objectives. Provide a brief description of the purpose and problem which will be resolved.
7 Summarize the method or techniques indicating how the inputs, references, and assumptions were used to achieve the objectives (for example, computer program, hand calculation, comparison).
8 List assumptions used. Document the technical basis when engineering judgment is used to support the assumptions.
9A Sequentially number and reference input data such that the source and/or documents are readily identifiable.
9B Identify all documents used (for example, Regulatory Guides, Industry Codes and Standards, vendor information). Identify the particular part of included reference material that applies.
10 After completion, delineate whether the objective was attained.

APPENDIX 2- FORM 8B

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CALCULATION SHEET

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 8B (1-V51-COEM-DES-210)

Calculation Sheet

Section 1: CALCULATION IDENTIFICATION			
1. Calculation Number	2. Revision Number	3. IWCP/Authorization Project Number	4. Page of
5. Modification Description Title		6.Designer (Print Name)	
		7. Design Checker (Print Name)	

Section 2: CALCULATION

(11/97)

APPENDIX 2 - FORM 8B
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CALCULATION SHEET
FORM COMPLETION INSTRUCTIONS

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*

Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*

Block	Instructions
Section 1: IDENTIFICATION	
1	Enter the calculation number/assigned Document Control number.
2	Enter the revision number.
3	Enter the IWCP or Authorization Project Number.
4	Enter the form or package page count prior to release for implementation
5	Enter the Modification Description Title.
6	Designer - Print name.
7	Design Checker - Print name.
Section 2: CALCULATION	
	Use this section for calculations.

APPENDIX 2 - FORM 9
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ENGINEERING CHANGE REQUEST

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 9 (1-V51-COEM-DES-210)

Engineering Change Request

Section 1: DESIGN PACKAGE IDENTIFICATION

1. IWCP/Authorization Project Number	2. Modification Description Title	3. Page of
4. ECR Number	5. Building Number	

Section 2: CHANGE DESCRIPTION

6. Description and Reason for Requested Change

7. Initiator - Name (Print)	8. Initiator Signature	9. Date	10. Ext. / Pager

Section 3: DESIGNER CONCURRENCE

11. Design Change Accepted ☐ Yes ☐ No (return to Initiator)

12. ECR Type ☐ 1 ☐ 2 ☐ 3

13. Technical Justification for Accepting or Rejecting Change

14. Problem Resoution	15. List of Affected Drawings/Documents: (Revise BDCF to reflect this list)

Section 4: CONCURRENCE / APPROVAL

16. Designer - Name (print)	17. Designer - Signature	18. Date
19. Design Checker - Name (Print)	20. Design Checker - Signature	21. Date
22. Independent Verifier - Name (Print)	23. Independent Verifier - Signature	24. Date
25. Safety & Industrial Hygiene- Name (Print)	26. Safety & Industrial Hygiene - Signature	27. Date
28. Fire Protection - Name (Print)	29. Fire Protection - Signature	30. Date
31. Criticality Safety Engineering - Name (Print)	32. Criticality Safety Engineering - Signature	33. Date
34. Radiological Engineering - Name (Print)	35. Radiological Engineering - Signature	36. Date
37. Interface Discipline Reviewer - Name (Print)	38. Interface Discipline Reviewer - Signature	39. Date
40. Interface Discipline Reviewer - Name (Print)	41. Interface Discipline Reviewer - Signature	42. Date
43. Responsible Engineering Manager - Name (Print)	44. Responsible Engineering Manager - Signature	45. Date
46. Reviewed for Classification		

(6/98)

APPENDIX 2 - FORM 9
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ENGINEERING CHANGE REQUEST FORM COMPLETION INSTRUCTIONS

This form is used to document design basis scope or intent changes (for example, changes to flow rates, seismic strengths, differential pressures, response times).

Note 1: *Block 1 -4 is completed by the Designer after Block 11, if ECR is accepted.*
Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*

Block	Completed By	Instructions
Section 1: DESIGN PACKAGE IDENTIFICATION		
1	Designer	Enter the IWCP or Authorization Project Number.
2	Designer	Enter the Modification Description Title.
3	Designer	Enter the form or package page count prior to release for implementation.
4	Designer	Enter ECR Tracking Number obtained from Site Design Document Control, Building 130.
5	Initiator	Enter Building Number.
Section 2: CHANGE DESCRIPTION		
6	Initiator/Designer	Enter a brief description of requested change and reason for the change.
7-10	Initiator/Designer	Enter name, sign, date, telephone and pager numbers **and forward form to Designer.** If Designer is Initiator, enter "Same" in Block 7 and skip Blocks 8, 9. and 13.
Section 3: DESIGNER CONCURRENCE		
11	Designer	Check the appropriate box. If rejected, provide justification in Block 17 and return to Initiator.
12	Designer	Check appropriate ECR type.
13	Designer	Enter the technical justification and the disposition of the proposed change.
14	Designer	Enter a concise description of the problem resolution.
15	Designer	List all documents affected by this change on the BDCF. (For example, documents could include USQDs, NSEs, SERs.) **Obtain necessary reviews/approvals in Section 4.**
Section 4: CONCURRENCE / APPROVAL		
Note 1:		*The same groups that reviewed the original design packages **Should** review the ECR (see DRR). Use Review Comment Sheets to document comments and comment disposition for ECR review.*
Note 2:		*Obtaining Telecon Approvals. The following is required documentation for Telecon Approvals to be provided within the signature blocks or referenced in the appropriate signature location on the ECR form and attached to the ECR package: (1) Name of individual approving ECR within the appropriate organization, (2) Date and time of conversation, (3) Designer's name and signature, and (4) An ECR copy **SHALL** be forwarded to the Telecon Approver by the close of business the following work day.*
16-18	Designer	Print/sign and date indicating the ECR and attached documents are complete and in compliance with 1-V51-COEM-DES-210, Design Process Requirements; the reason for the change is technically justified; the design is in accordance with good engineering practice; and all affected interface disciplines have reviewed the ECR.
19-21	Design Checker	Print/sign and date indicating that an in-depth documented design review was performed for the ECR and attached documents. If the Design Checker has become involved in the design by specifying the design approach, design inputs, or additional design considerations, he/she **SHALL** not sign as the Design Checker.
22-24	Independent Verifier	Print / sign name and date indicating that the design document or process has been examined to ensure that sound engineering/scientific principles and appropriate standards were used and that the design work incorporated applicable requirements and design bases.
25-27	Safety & Industrial Hygiene	Print, sign and date indicating full concurrence with the design change and acceptability for implementation.
28-30	Fire Protection	Print, sign and date indicating full concurrence with the design change and acceptability for implementation.

(Continued on next page.)

APPENDIX 2 - FORM 9
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ENGINEERING CHANGE REQUEST
FORM COMPLETION INSTRUCTIONS

Section 4: CONCURRENCE / APPROVAL (continued)

31-33	Criticality Safety Engineer	Print, sign and date indicating full concurrence with the design change and acceptability for implementation.
34-36	Radiological Engineer	Print, sign and date indicating full concurrence with the design change and acceptability for implementation.
37-39	Interface Discipline Reviewer	Print, sign and date indicating full concurrence with the design change and acceptability for implementation.
40-42	Interface Discipline Reviewer	Print, sign and date indicating full concurrence with the design change and acceptability for implementation.
43-45	Responsible Engineering Manager	Print, sign and date indicating the ECR and attached documents are complete and ready for implementation and all organizations who previously reviewed the original design and are affected by these technical changes have reviewed the ECR.
46	Classifier	Classifier - Sign and date indicating that the package was reviewed in accordance with DOE Order 5650.2B, The Classification of Information and DOE Order 5650.3A, Identification of Unclassified Controlled Nuclear Information (until DOE Order 471.1 is included in the Site contract).
	Designer	**Submit the approved ECR with an Engineering Order (EO) to Site Design Document Control, Building 130, for distribution.**

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APPENDIX 2 - FORM 10
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CONTINUATION SHEET

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 10 (1-V51-COEM-DES-210)

Continuation Sheet

Instructions:
1. This form may be used as a continuation sheet for any form in 1-V51-COEM-DES-210.
2. Complete Blocks 1-3 to identify the form being continued and Block 4 to identify the specific blocks being continued.
3. Initial and date each entry on this form.

Section 1: DESIGN PACKAGE IDENTIFICATION			
1. IWCP/Authorization Project/Calculation Number	2. Modification Description Title	3. Continuation of (Form Name):	4. Page of

4. Block No.	5. Continuation

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APPENDIX 2 - FORM 11
Page 33 of 37

ENGINEERING SUPPORT PROCESS

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 11 (Pg 1 of 2) (1-V51-COEM-DES-210)

Engineering Support Process

Section 1: WORK IDENTIFICATION

1. IWCP/Authorization ProjectNumber	2. Page of
3. Modification Description Title	4. Building Number / Area

Section 2: PROBLEM DESCRIPTION AND SOLUTION

5. Description of Work and Reason for Implementation

6. Problem Solution (Design Analysis)

7. Designer - Name (Print)	8. Designer - Signature	9. Date

Section 3: JUSTIFICATION AND APPROVAL

10. Work is listed on "Pre-approved Items for Engineering Support Process?" ☐ No ☐ Yes

11. Work passes "Engineering Support Process Assignment Screen?" ☐ No ☐ Yes (See Section 5)

12. Responsible Engineering Manager Justification

13. Responsible Engineering Manager Name (Print)	14. Responsible Engineering Manager Signature	15. Date	16. Phone / Pager

Section 4: ESP DISTRIBUTION [*Required **Also required for TMs] ☐ By SDDC ☐ By Engr

Name/Organization	Bldg.	Phone	Pager	Name/Organization	Bldg.	Phone	Pager
*Bldg 130 Site Design Document Control	130	N/A	N/A				
*Responsible Engineering Manager Name:							
**Facility or Shift Manager Name:							
				17. ESP Tracking No.			

18. Reviewed for Classification

(6/98)

APPENDIX 2 - FORM 11
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ENGINEERING SUPPORT PROCESS FORM COMPLETION INSTRUCTIONS

Note 1: *Unless noted otherwise, all blocks on this form are completed by the Designer. If a block is not applicable, enter N/A.*
Note 2: *Use the Continuation Sheet (Form 10) if more room is needed to complete any block on this form.*
Note 3: *The Engineering Support Process form cannot be used to change design basis.*

Block **Instructions**

Section 1: WORK IDENTIFICATION

1 Enter the IWCP or Authorization Project Number.
2 Enter the form or package page count prior to release for implementation.
3 Enter the Modification Description Title.
4 Enter the Building Number or Area

Section 2: PROBLEM DESCRIPTION AND SOLUTION

5. Enter detailed description of work and reason for implementation.
6. Enter problem solution (design analysis).
7-9 Designer - Print/sign name and date indicating an ESP Screen was performed and information provided is accurate.

Section 3: JUSTIFICATION AND APPROVAL

10-11 Enter results of ESP Screen by checking the appropriate boxes.
12 Responsible Engineering Manager - If an answer to questions in Blocks 10 or 11 is NO, and an ESP will be used, enter justification.
13-16 Responsible Engineering Manager - Print/sign name, date, and provide phone and pager numbers indicating that the problem resolution is adequate for ESP when screen failed.

Section 4: ESP DISTRIBUTION

Identify distribution requirements for ESP. (* Required ** Also required for TMs)
Distribution may be done by 1) submitting the original ESP for distribution through Site Design Document Control, Building 130 (Check "By SDDC" box **OR** 2) distributing the ESP and submitting an ESP copy to SDDC (Check "By Engr" box. Do **NOT** use an Engineering Order for ESP distribution.

17. Site Design Document Control - Enter ESP tracking number on copy submitted by Designer.

18 Classifier - Sign and date indicating that the package was reviewed in accordance with DOE Order 5650.2B, The Classification of Information and DOE Order 5650.3A, Identification of Unclassified Controlled Nuclear Information (until DOE Order 471.1 is included in the Site contract).

FORM 11 (Page 2 of 2)

19 Enter the IWCP or Authorization Project Number.
20 Enter the Modification Description Title.
21 Enter the form or package page count prior to release for implementation.

Section 5: ESP SCREEN

22-23. Provide information as requested.

APPENDIX 2 - FORM 11
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ENGINEERING SUPPORT PROCESS

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 11 (Pg 2 of 2) (1-V51-COEM-DES-210)

Engineering Support Process

19. IWCP/Authorization ProjectNumber	20. Modification Description Title	21. Page of

Section 5: ESP SCREEN

22. Review the ESP Pre-approved Items list and ESP Assignment Screen list to determine if the Engineering Support Process can be used. If the process will be used, enter the results of the determination in Block 10 or 11 of Section 3.

• ESP Pre-approved Items (Check Applicable Items)

- ■ Signs smaller than 6 by 8 feet
- ■ Sidewalks
- ■ Painting/Stenciling guidance
- ■ Technical guidance for digging trenches or ditches
- ■ Lawn sprinkler system, downstream of back flow preventer
- ■ Installation of "Tuff Sheds" or equivalent with or without pads
- ■ Concrete pads intended to support loads less than 50 lbs/ft2
- ■ Technical guidance for movement of 120 Volt circuits protected by existing circuit breakers (Increase or decrease in power load is not applicable)
- ■ Brackets for hanging items weighing less than 50 pounds
- ■ Technical guidance for rework that does not modify the system
- ■ Nonsecurity fences
- ■ Temporary wood/metal stairs
- ■ Weather shielding guards
- ■ Machinery/Equipment guards

• ESP Assignment Screen (Check Applicable Items)

The ESP <u>cannot</u> be used for work in any of the following conditions

Affects System Category (see Appendix 1) including:

- Modifying hardware and software or requiring a change in System Category 1 & 2
- Impacting a safety function during installation, modification, or rework
- Creating a "Violation" with respect to any Criticality Safety Operating Limit or Nuclear Material Safety Limit
- Impacting any SSC for which credit is taken in an Operational Safety Operating Limit or Nuclear Material Safety Limit
- Impacting any SSC for which credit is taken in an Operational Safety Requirement (OSR), Technical Safety Requirement (TSR), or Basis for Interim Operation (BIO)
- Creating an out-of-tolerance with respect to an OSR, TSR, or BIO Limiting Condition of Operation (LCO)
- Involves Hazardous Chemicals of sufficient quantity to qualify for reportability in the event of an accident
- Affects Safeguards and Security Systems
- Affects Design Output Documents in Building 130 Site Design Document Control

23. If it is believed that this process is still appropriate, then document justification and authorization from the Responsible Engineering Manager in Section 3, Blocks 12 - 16.

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APPENDIX 2 - FORM 12
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ALARA DESIGN REVIEW SCREEN

RFETS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FORM 12 (1-V51-COEM-DES-210)

ALARA Design Review Screen

Section 1: DESIGN PACKAGE IDENTIFICATION

Complete the ALARA Design Review Screen as follows:

Screening Criteria: Per 1-V51-COEM-DES-210, Design Process Requirements, Engineering will forward all design packages to Radiological Engineering for review/concurrence that require a "Yes" answer below.

Is the proposed work for new installation, modification, relocation, or removal of:

A radioactively contaminated system or piece of equipment?..... ☐ Yes ☐ No

A radioactive material processing line?..... ☐ Yes ☐ No

Permanent radiation shielding?..... ☐ Yes ☐ No

Major structures or equipment for radioactive material storage?..... ☐ Yes ☐ No

Major structures, walls, or equipment inside radiological areas?..... ☐ Yes ☐ No

Other engineering changes of radiological significance? (Explain)..... ☐ Yes ☐ No

1. IWCP/Authorization Project Number	2. Design Description Title	3. Page of
4. ECR Number	5. Building Number	

6. Additional Comments:

(6/98)

SWL 4/7/98

Page 1 of 1

DOCUMENT CHANGE FORM (DCF)

(7) DCF #: Change 1

(1) DCF Orginator: S.W. Smith S.W. Smith 4/7/98
Print Sign Date

Organization: K-H Design Engineering

Phone/Pager/Location: 8208/5113/B130

(2) Responsible Manager: H. SAUNDERS H. Saunders 4/7/98
Print Sign Date

Organization: K-H DESIGN ENGINEERING

Phone/Pager/Location: 5419/5108 B130-232

(3) Assigned SME: Same as originator
Print Sign Date

Phone/Pager/Location:

(4) Engineering Standards for Procurement
Document Title

2-C93-COEM-DES-273 R0
Existing Document Number and Revision

N/A
New Document Number and Revision (*if Applicable*)

(5) Type of Document

☐ Policy ☐ Directive ☐ Manual ☐ Technical Standard

☒ Procedure ☐ Instruction ☐ Job Aid ☐ Other

(6) Type of Modification

☐ New ○ One Time Use Only

☐ Revision

☐ Cancellation

☐ Change ☒ Editorial ○ Intent ○ Non-Intent

(8) Prescreen/SES/USQD Number: N/A

Independent Safety Review: N/A

(9) Effective Date: 4/7/98 Expiration Date:

(10) Item	(11) Page	(12) Step	(13) Proposed Modification
1	45	Technical Requirements	To Technical Description, add ... Function, and Source (if known). Should read; Technical Description, Function, and Source (if known)
SWL 4/22/98 2	45,46		Remove "SAMPLE"; change date on form to reflect change

(10) Item	(14) Justification
1. Closure of PATS Plan No. 96-002285 & Task 01, J. Gilmour 2. Allow form to be copied for use; reflect change date. SWL 4/22/98	

(15) Reviewing Organization	(16) Name of Reviewer	(17) Date	(15) Reviewing Organization	(16) Name of Reviewer	(17) Date
K-H Design Eng.	Steven W. Smith	4/7/98			
K-H DESIGN ENG.	H. SAUNDERS	4/7/98			

(18) Approval Authority: H. SAUNDERS H. Saunders 4/7/98
Print Sign Date

PADC-97-00064

CONTROLLED COPY

APPENDIX 3
Page 1 of 3

Page 1 of 1 **DOCUMENT MODIFICATION REQUEST (DMR)**
Print or Type all information (except signatures)

Originator

25. DMR No. 97-DMR-000099

1. Name/Phone/Pager/Location: DAVE WEBSTER / 5637 / 5813 / BLDG 130 C243
2. Date: 1/28/97
3. Existing Document Number and Revision: 1-C93-COEM-DES-273 REV 0
4. Document Type: ☐ Policy ☐ Manual ☐ Directive ☒ Procedure ☐ Instructions ☐ Job Aid ☐ Other
5. Document Title: ENGINEERING STANDARDS FOR PROCUREMENT

6. Item	7. Page	8. Step	9. Proposed Modification
1	19	6.6.1	Change items [2] + [3] & add [4] KAB 1/29/97 to: [2] Complete the Material Review Request in the PEMS database in accordance with PEMS User Manual instructions. [3] Assure that the item function and the item source are investigated and considered in determination of attributes to be verified. [4] Route/Distribute the completed Material Review Request to Facilities Inspection.
2	13	6.3	Change PL1, PL2 or PL3 to PL1 or PL2 in last PP before 6.4.

10. Item / 10. a Justification (Reason for Modification, EJO #, TP#, etc.)
Items 1 & 2 are commitments 96-00285 and 96-00095 that correct deficiencies found via Assessment No. 96-0154, Suspect/Counterfeit Items.

11. ☐ Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10 a) L. R. Bailey (print/sign/date) 1/28/97
12. Assigned SME/Phone/Pager/Location: DAVE WEBSTER / 5637 / 5813 / BLDG 130 C243
13. New Document/Rev. No. (if new or changed)

Complete either Section 14a or 14b as applicable

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ Cancellation ☐ One-Time-Use

14b. Changes: (check the applicable boxes): ☐ Intent Change ☒ Nonintent Change ☐ Editorial Correction ☒ Regular KAB 1/29/97 ☐ Interim Approval Request - Needed for immediate use (30-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes ☐ No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing organization in Block 16. After concurrence has been obtained on the Comment Sheet, enter the name of the reviewer followed by /s/ in Block 17. If the reviewer indicates No comments, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16.Reviewing Org.	17. Name of Reviewer for that Organization	18. Date	16.Reviewing Org.	17. Name of Reviewer for that Organization	18. Date
SME	D.D. Webster /s/	1-29-97			
FCM	L.R. Bailey /s/	1-29-97			
EI	D.P. Snyder /s/	1-29-97			

19. Prescreen/SES/USQD Number: Not Required
20. Independent Safety Review Meeting and Date: Not Required — Reviewed by V.P. of Health & Safety, (print/sign/date)

21. ☐ Process Policy Action (This block required for Policies only) ☐ Do not Process (state reason in Block 10a)

22. Approval Authority signs after obtaining ALL required signatures. R. E. Kell /s/ (print/sign/date) 1/28/97

KAB 1/29/97
23. Effective Date ~~1/30/97~~ 1/29/97
24. Expiration Date

CONTROLLED COPY

RFPF - 1000.01 (5/95)
Formerly RF-47940

Page 1 of 2

Document Modification Request

Printor Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000143

Originator

1. Name/Phone/Pager/Location: Jerry Weiser X5447/7335 Building 130 C218
2. Date: 01/31/96
3. Existing Document Number and Revision: 2-C93-COEM-DES-273, Revision 0
4. Document Type: ■ Procedure ☐ Plan ☐ Other
5. Document Title: Engineering Standards for Procurement

6. Item	7. Page	8. Step	9. Proposed Modification
1	All		Change title of group from Procurement Engineering to Material Engineering.
2	4	1.	Change Rocky Flats Plant to Site.
3	4	2.	Change EG&G to Rocky Flats Environmental Technology Site (Site).
4	4	2.	Change second to last bullet to: "items are not readily available from an approved supplier."
5	5	3.	(First paragraph) Change RFP to the Site (two occurrences).
6	5	3.	(Second paragraph first two lines) Change to: For safety class items (items with defined safety functions) there are two...
7	5	3.	(Second paragraph fourth line) Change to: ...and PL2 where the item is purchased from an unapproved supplier and Site inspection or test personnel shall...
8	5	3.	Delete 5th senetence.
9	6	3.	Paragraph befor note, change to: ...are routed through Material Engineering for generation of P-Specs or I-cs when aple for Systemn Category 1&2 or 3 applications.
10	7	3.	(Second paragraph) Change Rocky Flats Plant to Site
11	7	5.1	Change title to Material Engineering
12	7	5.1	(Second paragraph) Change Material Review Packages to Review Packages
13	8	5.2	Change title to Support Organizations
14	9	5.2.4	Change to: Maintains a file of all P-Specs released to Engineering Documentation.
15	13	6.3	(First line on page) Change to: personnel in Material Engineering have...
16	15	6.5[1]	Delete second sentence
17	16	6.5[2]	(First sentence) Delete per 1-50000-ADM-04.01
18	17	6.5[10]	(Second sentence) Delete (reference Receiving Inspection procedure, QCM-9.0).
19	18	6.5.1[3]	Change first sentence to: Transmit all original and revised P-Spec pages to Engineering Documentation...
20	23	6.8	(Second sentence in first paragraph) Delete per COEM-DES-223.
21	23	6.8[1]	Change to: Fill out an IFCT or FEMA if working within PEMS.
22	24	6.10.1	(First sentence) Non conformances related to items received are dispositioned by Material Engineering

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
All	To comply with requirements of 1-V51-COEM-DES-210 and new organizational structure.

Originator's Supervisor

11. ☒ Process ☐ Do not Process (state reason in Block 10a) — D. D. Webster (print/sign/date) Dave D. Webster 2/5/96

12. ☒ Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) L.R. Bailey 2/5/96

13. New Document/ Rev No. (if new or changed) N/A 2/5/96

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☒ Nonintent Change ☒ Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval) ☐ Editorial Correction

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes ☒ No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Mat. Eng.	D. D. Webster	2/5/96			
Mat. Eng.	Steve Smith	2/5/96			
Fac. Conf. Mgmt.	L. Reed Bailey	2/5/96			

19. Assigned SME/Phone/Pager/Location: Steve Smith X8202/5113 Building 130 C243
20. Cost Center: 3077
21. Charge Number: 820111
22. Requested Completion Date: 02/05/96
23. Prescreen/Screen/USQD Number: N/A
24. Independent Safety Review Meeting and Date: N/A

26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions) L.R. Bailey 2-5-96
27. Effective Date: 2/5/96
28. Expiration Date (if applicable)

Reviewed for Classification/UCNI
BY
DATE 2-5-96

PADC-97-00064

RFPF - 1000.01 (5/95)
Formerly RF-47940

DMR (continuation sheet)

25. DMR No.

Originator

Print or Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

3. Document Number/Revision	5. Document Title
2-C93-COEM-DES-273, Revision 0	Engineering Standards for Procurement

6. Item	7. Page	8. Step	9. Proposed Modifications
23	25	6.10.1[3]	Change step number to [2]
24	25	6.10.2	Delete last sentence of first paragraph.
25	25	7.[1]	Change to read: Quality records generated by this procedure shall be maintained and dispositioned in accordance with Records Management guidelines for records sources.
26	26	7.3[4]	Change to read: Transmit a copy of each new or revised P-Spec to Engineering Documentation for retention.
27	26&27	8	Change first reference to Site Quality Assurance Program Deleter references to: 2-D03-COEM-DES-223 2-L10-COEM-AMN-101 1-E33-IWCP-3 1-77000-RM-001 1-5000-ADM-04.01 1-5000-ADM-1501 QCM-9.0
28	28	App.1	Change form title to Procurement Engineering Material Evaluation Cover Sheet
29	43	App.4	Change Name (EG&G) to Name
30	45	App.5	Change PE to ME
31	46	App.5A	Change PE to ME
32	47	pp.5	Change first sentence to: The Form is intende to concisely document the evaluation of items intended for safety class applications and not required through receipt inspection.
33	49	1.1	Change first sentence to Determining item function is the responsibility of Engineering.
34	49	1.2	Change first sentence to... or supplier survey conducted by QA,...
35	51	C.	Change to read: Section IV defines dedication related inspection activities beyond those normally performed by Receipt Inspection personnel, e.g., dimensional verification in accordance with a catalog cut sheet.
36	51	D.	Delete last sentence
AB 37	6		Change 1st paragraph, 5th line to read: "The Site has not committed..."

10. Item	10a. Justification (Reason for Modification)

26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures and Revisions)

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
***Print** or **Type** All Information (Except Signatures).*

1. Date: 4/20/95

25. DMR No. 95-DMR- 000589

2. Existing Document Number/Revision: 2-C93-COEM-DES-273 / Rev. 0

3. New Document Number or Document Number if it is to be changed with this Revision: N/A

4. Originator's Name/Phone/Pager/Location: [redacted]san Spitzer / 7987 / d7330 / 130

5. Document Title: Engineering Standards for Procurement

6. Document Type: ☒ Procedure ☐ Other _____

7. Document Modification Type (Check only one): ☐ New ☐ Revision ☐ Intent Change ☐ Nonintent Change ☒ Editorial Correction ☐ Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
1	2	LOEP	REPLACE the List of Effective Pages with the new page 2 attached.
2	5	3.	CHANGE reference in 2nd paragraph from COEM 6.3.6 to **COEM-DES-223.**
3	9	5.2.4	CHANGE reference in 2nd line from COEM 6.6 to **COEM-AMN-101.**
4	15	6.5[1]	CHANGE reference in 2nd line from COEM 6.3.6 to **COEM-DES-223.**
5	18	6.5.1[3]	CHANGE reference in 2nd line from COEM 6.6 to **COEM-AMN-101.**
6	23	6.8	CHANGE reference in 1st paragraph from COEM 6.3.6, Appendix 3 to **COEM-DES-223, Appendix 4.**
7	23	6.8[1]	CHANGE reference in 1st line from COEM 6.3.6, Appendix 3 to **COEM-DES-223, Appendix 4**
8	26	7.3[4]	CHANGE references in 2nd and 3rd lines from COEM 6.6 to **COEM-AMN-101.**
9	26	8.	CHANGE 3rd reference from 2-D03-COEM-6.3.6 to **2-D03-COEM-DES-223.** CHANGE 4th reference from 2-80000-COEM-6.6 to **2-L10-COEM-AMN-101.**
10	47	App. 5	CHANGE reference in 2nd/3rd line from COEM Procedure 6.5.14 to **COEM-DES-273.**
[redacted]	49	App. 7	CHANGE reference in 2nd line of 1.1 from COEM 6.3.6, Appendix 3 to **COEM-DES-223, Appendix 4.**

12. Justification (Reason for Modification, EJO #, TP #, etc.)

2-11 To update references to reflect reorganization/renumbering of the COEM.
6, 7, & 11 Appendix number changes due to revision of DES-223.

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurror prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
N/A	N/A	

16. Originator's Supervisor (print/sign/date): P. W. Speyer *D. Bagwell for PW. Speyer*

17. Assigned SME/Phone/Pager/Location	18. Cost Center	19. Charge Number	20. Requested Completion Date	21. Effective Date
[redacted]W. Speyer /5120/130	3077	820111		5/31/95

22. Accelerated Review? Yes ☐ No ☒

23. ORC Review: not required for editorial corrections.

24. Responsible Manager (print,sign,date): L. R. Bailey *L R Bailey* 4/21/95

RF-47940 (5/93)

REVIEWED FOR CLASSIFICATION/UCNI
BY *Charles Adams*
DATE 4-24-95

PADC-97-00064

ROCKY FLATS PLANT

2-C93-COEM-DES-273

REVISION 0

ENGINEERING STANDARDS FOR PROCUREMENT

APPROVED BY: /s/ R. E. Kell / R. E. Kell / 07/30/94
Director, Engineering & Safety Services — Print Name — Date

Responsible Organization: Engineering Procurement Support Effective Date: 08/01/94

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Engineering and Safety Support
Engineering
Nuclear Safety
Project Management
Quality Program (optional)

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By /s/ Linda Ehrlich

Date 07/29/94

The following have been incorporated into this revision:
95-DMR-000589 96-DMR-000143
97-DMR-000099

This procedure supersedes procedure 2-C93-COEM-6.5.14, Revision 0.

Periodic review frequency: 4 years from the effective date

PADC-97-00064

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	08/01/94		
2	04/07/98		
3-12	02/05/96		
13	01/29/97		
14-18	02/05/96		
19	01/29/97		
20-28	02/05/96		
29-42	08/01/94		
43	02/05/96		
44	08/01/94		
45-46	04/07/98		
47-49	02/05/96		
50	08/01/94		
51	02/05/96		

The following DCFs for change are active for this procedure:

DCF-Change 1

The following DMRs for change are active for this procedure:

97-DMR-000099
96-DMR-000143
95-DMR-000589

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1. PURPOSE

This procedure provides guidance for implementing portions of RFP Policy 9-17, Use of Commercial Grade Items (CGI) in Safety Related Applications, and for preparing procurement documents meeting the requirements of the Rocky Flats Environmental Technology Site (Site) Quality Assurance Program, for new and replacement items.

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2. SCOPE

This procedure applies to Site employees and sub-contractors. It applies to the evaluation of new and replacement items intended for System Category 1 & 2 and 3 applications. It describes the relationships between System Category (1 & 2, 3 or 4), item classification (safety class, augmented quality, or non-safety class), and procurement process level (PL1, PL2 or PL3). It describes the general method by which:

- Items are evaluated for purchase in order to assign appropriate technical and quality controls to assure that operability requirements and commitments are met at an acceptable cost and schedule.
- A Consolidated Bill of Material (BOM) is developed.
- Procurement Specifications (P-Specs) and Item Specifications (I-Specs) are developed to identify the technical, quality and acceptance criteria for plant-wide use and for specific application.
- Equivalency evaluations are performed for replacement items when a like-for-like item is not readily available.
- Material evaluations are performed to upgrade warehouse stock items or other onsite material for use in higher category systems, and/or to establish the suitability of items for specific applications.
- Commercial grade items are dedicated for use in safety class applications when the items are not readily available from an approved supplier.
- Procurement process levels are chosen.

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3. OVERVIEW

To maintain the nuclear safety envelope at the Site, new and replacement items for the Site vital safety systems must be subjected to programmatic controls including development of technical and quality requirements by qualified engineers. Other items must be procured to meet lesser technical and quality requirements sufficient to ensure that operability requirements and commitments are met at an acceptable cost and schedule. This procedure defines required methods, and also provides discussion and examples regarding factors to be considered in the graded approach to procurement.

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For safety class items (items with defined safety functions) there are two procurement process levels: PL1, where items are purchased from suppliers approved for the scope of controls necessary to assure that the item will perform its intended function, and PL2, where the item is purchased from an unapproved supplier and Site inspection or test personnel shall verify that the item is as specified and will perform its intended function. Consistent with the graded approach presented in RFP Policy 9-17, the required verification activity should be consistent with the item's importance and consequences of failure. Whether or not an item is purchased PL1 or PL2, and defining the extent and methods of verification inspection/testing, are the responsibility of Material Engineering.

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Commercial grade dedication is performed to establish "reasonable assurance" that an item will perform its intended function. For application within this procedure, a "commercial grade item" is defined as an item intended for a safety class application and not purchased through the PL1 procurement process. However, augmented quality and non-safety class items may also be evaluated and purchased incorporating pertinent aspects of commercial grade dedication methods consistent with their importance. Note, however, that there is no commitment regarding procurement process level for augmented quality or non-safety class items. Material Engineering personnel have the experience and expertise to assist in the determination of appropriate technical and quality controls, and in the assignment of procurement process level consistent with the desired controls.

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3. OVERVIEW (continued)

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The Nuclear Regulatory Commission has endorsed (with certain exceptions) EPRI NP-5652, Guideline for the Utilization of Commercial Grade Items in Nuclear Power Plants (NCIG-07), as an acceptable method for dedication of commercial grade items intended for safety class applications in nuclear power plants. The Site has not committed to NCIG-07. However, to assure that commercial grade items will perform their safety function, the fundamental principles of the EPRI methodology have been incorporated as follows:

- A technical evaluation is performed to assure that requirements for an acceptable item are specified in the procurement document.
- Acceptance methods are defined to establish reasonable assurance that the item received is as specified and will perform its intended function.

Consistent with RFP Policy 9-17, a graded approach shall be used to verify that items purchased PL2 are as specified and will perform their intended functions. The extent of verification activity required for PL2 items during the procurement process, receiving process, or post installation, should be consistent with their importance and tempered by various factors, such as item complexity, credible failure modes, consequences of failure, risk of failure, ALARA concerns, design margin, accessibility for repair, replacement costs, schedule delays and commitments.

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Pertinent portions of Maintenance Work Packages performed under the Integrated Work Control Program (IWCP) are routed through Material Engineering for generation of P-Specs or I-Specs when appropriate for System Category 1 & 2 or 3 applications.

NOTE: *I-Specs are the electronic version of P-Specs. They are generated and recorded within the Parts and Equipment Management System (PEMS) data base, are considered equivalent to P-specs, and take precedence over P-Specs.*

3. OVERVIEW (continued)

Procurement process levels are assigned based on the item's end use classification (safety class, augmented quality or non-safety class), the types of controls ultimately placed on the purchase, the availability of approved suppliers, and the relative merits of the available procurement processes with respect to verification requirements, cost, and schedule.

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The PEMS data base provides computerized templates which enable electronic entry and distribution of P-Specs containing the required material evaluation and procurement information. Use of PEMS fulfills the intent of this procedure with respect to technical and quality aspects of the Site Quality Assurance Program. The details of this system are presented in a PEMS User Manual available from Material Engineering, but aspects of PEMS are discussed throughout this procedure when considered necessary for clarity on specific points.

4. DEFINITIONS

Definitions are in the Conduct of Engineering Manual (COEM) Glossary.

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5. RESPONSIBILITIES

5.1 Material Engineering

Assists Engineering in IWCP walkdowns, component and part classification, Failure Modes & Effects Analysis for downgrades, product identification, selection and substitutions, vendor identification and interface, Approved Supplier List additions/enhancement, and Engineering and Planner training related to procurement procedures and issues.

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Develops Material Engineering Review Packages that detail the technical and quality acceptance requirements for purchase of safety class, augmented quality, and selected non-safety class items.

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5.1 Material Engineering (continued)

Specifies verification requirements (in conjunction with Engineering and Planning, as necessary), including dedication testing, for PL2 procurement. Dedication testing shall be reasonable and appropriate, and consistent with the risk and consequences of failure. Acceptance requirements are defined in the P-Spec and transmitted to Planning, Logistics, QA and other organizations, as needed.

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Distributes and files Material Engineering documents.

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5.2 Support Organizations

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5.2.1 Engineering

Submits appropriate design package and work package information to support development of P-Specs, Consolidated BOMs, and supporting documents.

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Assists Material Engineering, as necessary, in development of suitable dedication test requirements for commercial grade items to demonstrate that they will perform their safety function. Assures that test requirements are incorporated into design and work packages.

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NOTE: *It is important that Engineering works closely with Material Engineering in the early stages of Design Package and Work Package development in order to incorporate dedication testing requirements in the initial package issue so that specific dedication testing requirements do not drive later revisions.*

Identifies items that are not like-for-like to installed items, so that Item Equivalency Evaluations can be completed as part of the Material Evaluation Package.

Signs concurrence, as required (may be furnished per Telecon without actual signature follow-up) on Item Equivalency Evaluations and BOM changes.

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5.2.2 Planner

Submits, to Material Engineering, BOMs and Work Package Section 10 test requirements for non-engineered Work Packages, in order to provide the basis for Consolidated BOM and P-Spec development. For Engineered Work Packages, submits BOM revisions resulting from Planning input to the Design/Work Package.

NOTE: *It is important that Planners work closely with Material Engineering in the early stages of Work Package development in order to incorporate dedication testing requirements in the initial package issue so that specific dedication testing requirements do not drive later revisions.*

Incorporates dedication testing requirements (as defined in P-Specs) into work packages.

5.2.3 Facilities Inspection

Inspects/verifies items in accordance with direction and criteria provided in Material Review Requests (MRR).

5.2.4 Engineering Documentation

Maintains a file of all P-Specs released to Engineering Documentation.

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6. INSTRUCTIONS

Material Engineering material reviews are triggered by receipt of initiating documents (BOMs, Material Review Requests, and Design Packages). The overall review process is illustrated in Appendix 6.

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6.1 Material Review Initiation

Planner

[1] Submit, to Material Engineering, non-engineered Work Package BOMs and Planning generated Design Package BOM changes, Material Review Requests, and other supporting documentation/information, as requested, to provide the basis for development of Consolidated BOMs and P-Specs.

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Engineering

[2] Submit Design Package information to Material Engineering to support development of the Material Evaluation Package. Submittal must include sufficient information to define system category, component classification, item description, quantities of items, applicable codes and standards, and other pertinent design criteria. Submittal shall include, as appropriate, the following documents/information:

- Design Package
- BOM or other lists of items required, including quantities and applicable codes and standards
- Drawings
- System Classification Form
- Item Functional Classification Table
- References to applicable standards
- Design criteria and other technical descriptions/information necessary to properly define items for purchase
- Test requirements

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Material Engineer

[3] Develop Consolidated BOM and associated P-Specs in accordance with BOM and intended plant applications.

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6.2 Material Engineering Material Evaluation Package

The Material Engineering Material Evaluation Package (Material Evaluation, see Appendix 1) is a document which consolidates the basis for classifying and purchasing items needed for new design, plant modification, or maintenance. The Material Evaluation typically consists of the following supporting documents, as applicable:

- Consolidated BOM
- System Classification Form
- Item Functional Classification Table (IFCT)
- Failure Modes & Effects Analysis (FMEA - PEMS version of IFCT)
- Item Equivalency Evaluation
- Material Review Request
- IWCP Work Package Section 10 test requirements

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In addition, it also references P-Specs as applicable to the Consolidated BOM listed items.

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Material Engineer

[1] Complete the Material Evaluation, including the above documents, as necessary.

Material Engineering Clerk

[2] Send the completed Consolidated BOM, including applicable supporting documents (with the exception of the Engineering Design Package, if applicable), to the Planner.

NOTE *Only the cover page and the testing portion of the P-Spec is sent to Planners. For I-Specs, the attributes screen is printed and sent if the applicable building is not on PEMS.*

[3] Send the Consolidated BOM, including applicable supporting documents (with the exception of the Engineering Design Package, if applicable), and the P-spec, to Logistics.

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6.2 Material Engineering Material Evaluation Package (continued)

[4] Send the completed Material Review Request to Facilities Inspection.

The following sections discuss the Material Evaluation process and supporting documents in more detail.

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6.3 Procurement Process Level Determination

Material Engineer

[1] Assign procurement process level using the following logic:

Procurement process levels are chosen based on the item's end use classification, i.e., safety class, augmented quality or non-safety class, the availability of approved suppliers, and the relative merits of the available procurement processes as they relate to the desired degree of control on the purchase.

For safety class items, it is preferred that items are purchased from approved (PL1) suppliers consistent with the item's complexity, credible failure modes, difficulty of verifying critical attributes, risk of failure, and failure consequences. For example, it is simpler to purchase safety class piping from a PL1 supplier rather than independently verify that the pipe was manufactured in accordance the applicable ASTM or ASME process and demonstrates the required end product material properties. On the other hand, terminal lugs intended for a safety class application could be purchased from a PL1 supplier who verifies all design characteristics and material properties. However, it is much less costly to purchase lugs PL2 and perform simple verification through receipt inspection by verifying the item is undamaged and marked correctly. This simple dedication process is less costly and consistent with the item's simplicity and lack of credible failure modes

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For augmented quality related applications, the responsible manager/designee is responsible for augmented quality classification determination and for determining the types and degree of technical and quality requirements to be placed on the purchase (Material Engineering

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6.3 Procurement Process Level Determination (continued)

personnel in Material Engineering have the experience and expertise to assist in the determination of classification and appropriate technical and quality requirements). It is then the responsibility of Material Engineering to determine the appropriate procurement process level (PL1, PL2, or PL3) consistent with the desired controls which the end user wishes to be placed on the purchase.

Considering the above discussion, items whose ultimate end use classification is safety class are purchased as either PL1 or PL2, depending on the relative merits of the procurement process levels as they relate to the specific item and application. Items ultimately classified by the end user as augmented quality may be purchased PL1 or PL2 consistent with their importance and the technical and quality requirements invoked on the purchase. Items ultimately classified as non-safety class are purchased PL3.

6.4 Consolidated BOM

The Consolidated BOM (Appendix 2) documents the results of evaluations performed for items within work packages or design packages. With the P-Spec, it is intended to adequately specify the technical and quality requirements and procurement level necessary for purchase and acceptance to RFP requirements.

Material Engineer

[1] Complete the Consolidated BOM, filling in the various fields in accordance with applicable requirements. The fields are largely self explanatory, however, see page 2 of the form for further instruction and information.

6.4 Consolidated BOM (continued)

[2] Document changes made to the Planning and/or Engineering BOM by lining through or adding information and initialing and dating the change. For changes, obtain Engineering concurrence (per Telecon is acceptable; a follow-up signature is not required) and initial and date the change.

NOTE *It is neither required nor desirable to revise Consolidated BOMs to incorporate P-Spec revision levels. The Consolidated BOM is not intended to be a living document beyond the requirement to reflect the items purchased for a specific job or Standard Work Package (SWP). P-Specs are often revised for reasons not related to a specific Consolidated BOM's purposes. Consequently, the Consolidated BOM/P-Spec inconsistencies that may develop over time due to P-Spec revisions are usually of no consequence. The P-Spec evaluation process includes a review for affects on items purchased to previous revisions. This is noted on the P-Spec cover sheet. If the P-Spec revision review process reveals that there is a concern with items purchased to previous revisions, it is the Material Engineer's responsibility to initiate appropriate action to resolve the concern.*

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6.5 Procurement Specification

The P-Spec (and the PEMS equivalent I-Spec) is the engineering document that details the technical and quality requirements, including acceptance criteria and procurement process level, for items being purchased. P-Specs (see Appendix 4) are required for:

- Safety Class items
- Items requiring in-storage maintenance or having limited life, regardless of classification
- Items requiring certification and routing through the quality receiving process (this is currently the only proceduralized mechanism for assuring routing through quality receiving and communicating quality inspection/verification requirements).

6.5 Procurement Specification (continued)

P-Specs are not required for augmented quality or non-safety class items which do not require in-storage maintenance, do not have limited life, and do not require routing through quality receiving.

NOTE: *In general, it is desirable to generate I-Specs for PEMS data base development in order to facilitate future procurement.*

To broaden their utility, P-specs are generally written for worst case applications. If, after an item has been received, the requirements invoked by the P-Spec are evaluated by Engineering as being excessive for a specific application, the excessive requirements may be waived for the specific application by Engineering's written technical justification. Technical justification becomes part of the work package.

I-Specs are the PEMS electronic equivalent of P-Specs. However, they are generally written for a specific work package functional classification and procurement level, not worst-case application. This reduces work package item costs and procurement delays due to invoking technical and quality requirements considered reasonable for worst case applications but excessive for a specific work package application, e.g., requiring CMTRs on a valve when the application is non-safety class and non-class A.

The P-Spec sections are largely self explanatory. However, the following specific instructions are provided for completing them.

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Material Engineer

[1] Determine the item's end use application and classification.

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6.5 Procurement Specification (continued)

[2] Determine the appropriate procurement process level per Section 6.3 and procurement level definitions. Consult the Approved Suppliers List and determine If an approved supplier is available. For Safety Class items, it is preferred that items are purchased from approved (PL1) suppliers consistent with the item's complexity, difficulty of verifying critical attributes, credible failure modes, risk of failure, and failure consequences. For simple safety class items whose critical attributes are easily verified (such as terminal lugs), an approved supplier is not desirable if the cost is significantly above a standard commercial item. If an approved supplier is not available, use the dedication process (PL2) for purchase and use of commercial grade items in safety class applications (see Sect. 6.9, Commercial Grade Dedication, and Appendix 7).

[3] For augmented quality and non-safety class items, use any procurement process level (PL1, PL2, or PL3) appropriate per Section 6.3.

NOTE *Not all sections of the P-Spec form are specifically discussed. Some sections are simple and self explanatory and therefore need no specific instruction. Sections not discussed are, however, required to be filled out if applicable. Sections considered not applicable shall be marked N/A.*

[4] Note the procurement level on the P-Spec cover sheet.

[5] Fill in Section I, sub-Section 1.0, Description. The intent of this section is to sufficiently describe the item so that the supplier will supply the correct item and receipt Inspection can properly identify the item and perform the required receiving tasks per the normal Receipt Inspection procedure and as specified in the P-Spec.

[6] Note external attachments and references in Section I, sub-Section 3.0.

[7] Fill in Section II, sub-section 1.0, Critical Verification Attributes, and sub-section 2.0, Basis for Selection. See Appendix 7, Section 1.5.A, Technical Requirements, for definition and use of Critical Verification Attributes.

6.5 Procurement Specification (continued)

[8] Define quality requirements, Section III, consistent with item classification, approved/unapproved supplier, and controls reasonable and consistent with item verification requirements. Note that certifications must be from approved suppliers if they are to be credited for verification in the purchase of safety class items. Certifications may also be requested from unapproved suppliers strictly for commercial contractual concerns.

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[9] Define shelf life, Section III, sub-section 4.0. Shelf life can be determined in various ways. If the shelf life furnished by the manufacturer/supplier is unreasonably stringent, Material Engineering may establish shelf life based on item end use considerations or specific material knowledge or industry experience. For guidance, engineers may refer to EPRI NP-6408, Guidelines for Establishing, Maintaining, and Extending the Shelf Life Capability of Limited Life Items (NCIG-13).

NOTE *Shelf life requirements may be waived for items to be installed per scheduled work.*

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[10] Define inspection requirements to be performed by Receipt Inspection, Section IV (also, see App. 7, Section 1.5.D). The intent is to define inspection requirements beyond normal receiving procedure requirements.

[11] Define dedication testing requirements, Section V, sub-section 1.0, and sub-section 2.0, Basis for Selection. The purpose of dedication testing, in conjunction with other procurement process controls, is to establish that the item will perform its intended function. The basis section should relate the selected testing to safety function and establishing "reasonable assurance" consistent with risk and consequences of failure. The intent is to work with Engineering and Planning during the design and work package development processes to ensure that reasonable and appropriate dedication

6.5 Procurement Specification (continued)

testing is specified. Dedication testing should be consistent with the item's importance and safety function, and tempered by various factors, such as item complexity, credible failure modes, consequences of failure, risk of failure, ALARA concerns, design margin, accessibility for repair, replacement costs, schedule delays, and commitments (see Appendix 7, Sections 1.5.D and 1.6, for further guidance).

[12] Define storage level and storage maintenance requirements, Section VI. For information and guidance, engineers may refer to EPRI NP–6896, Guidelines for Determining In-Storage Maintenance for Items for Nuclear Facilities (NCIG–18).

6.5.1 Revisions to P-Specs

Material Engineer

[1] Review previous P-Spec revisions for potential affect on previously purchased items, and indicate on the P-Spec cover sheet whether the revision affects previously purchased items. If the review reveals that there is a concern with items purchased to previous revisions, the Material Engineer will initiate appropriate action to resolve the concern.

Material Engineering Clerk

[2] Ensure the P-Spec has the necessary review/approval signatures and update the P-Spec Log to reflect the latest revision level.

[3] Transmit all original and revised P-Spec pages to Engineering Documentation for a reference file. The intention is to have each revision transmitted to Engineering Documentation contain all current pages reflecting the current revision level as a complete document.

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6.6 Warehouse Stock and Onsite Material Review

Warehouse stock and other onsite material review per Material Review Request (MRR) is required for items not previously evaluated in accordance with this procedure and intended for safety class applications. Augmented quality and non-safety class applications may be reviewed if requested, or per Engineering discretion depending on the merits of the specific item or application. Factors to be considered in determining the desirability of review, per MRR, of augmented quality and non-safety class items may include the item's complexity, indeterminate shelf life/remaining useful life, or the degree of personnel, plant, schedule or financial risk, or liability if the item is incorrect or fails.

Items intended to be installed do not require generation of P-Specs because the item is not being purchased. However, P-Specs are required (in accordance with Section 6.5) for items intended to be placed in stock.

NOTE: *For items associated with work packages, this review (MRR number) is substituted for the P-Spec reference on the CBOM.*

6.6.1 Material Review Request Initiation

Requestor

[1] Fill out the INITIATION section of page 1 of the form (Appendix 5) and send to Material Engineering.

Material Engineering Clerk

[2] Complete the Material Review Request in the PEMS data base in accordance with PEMS User Manual instructions.

[3] Assure that the item function and the item source are investigated and considered in determination of attributes to be verified.

[4] Route/distribute the completed Material Review Requests to Facilities Inspection.

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6.6.1 Material Review Request Initiation (continued)

Material Engineer

[5] Evaluate item for intended application, including remaining life if the item is to be installed, or shelf life and storage maintenance requirements if the item is to be stocked. Refer to EPRI NP-6408, Guidelines for Establishing, Maintaining, and Extending the Shelf Life Capability of Limited Life Items (NCIG-13), for guidance and shelf life data for a wide range of material types.

[6] Fill in Item Functional Classification Table, if applicable (see Section 6.8).

[7] Perform an Item Equivalency Evaluation, if applicable (see Section 6.7)

[8] Document the critical verification attributes and acceptance criteria consistent with establishing reasonable assurance that the item will perform its intended function.

[9] Note the MRR number on the Consolidated BOM (if applicable).

[10] Obtain the required signatures.

[11] Disposition MRRs returned as "REJECT" due to failure to comply with verification requirements.

Facilities Inspection/Engineering/Various

[12] Perform inspection/testing verification activities defined on the MRR.

Facilities Inspection

[13] Document material status (accept/reject) after completion of the verification activities detailed on the MRR.

6.6.1 Material Review Request Initiation (continued)

[13] If the disposition of the item's review is "ACCEPT", the completed MRR is substituted for the acceptance tag and retained in the applicable work package. If items are being evaluated for stock, the MRR stays with the items(s), serving the same acceptance documentation purpose as a green tag. If the disposition of the item's review is "REJECT", the completed MRR and acceptance methods results documentation are returned to Material Engineering for further evaluation/disposition.

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6.7 Item Equivalency Evaluation

An Item Equivalency Evaluation (Appendix 3) determines if a replacement item, not like-for-like to the original, will satisfactorily perform its intended function. Equivalency Evaluations apply to safety class items, but are not required for augmented quality or non-safety class items. However, they may be performed at the request of the end user, or per Engineering discretion depending on the merits of the specific item and application. Factors to be considered in determining the desirability of augmented quality or non-safety class equivalency reviews may include the item's complexity, degree of risk of hazard to personnel, or degree of risk to plant, schedule or finances if the item is incorrect or does not perform its intended function.

Equivalency Evaluations are not required for:

- Like-for-like items
- Items whose design basis is established per Engineering Design Package
- Commodity items manufactured and purchased to national standards and considered equivalent for the purposes of this procedure, e.g., terminal lugs and pipe fittings purchased to UL and ASTM
- Valves specifically listed on V Sheets

6.7 Item Equivalency Evaluation (continued)

Equivalency Evaluations are required for safety class applications if:

- The identification of the original item (part numbers, manufacturer drawings, tag information, and other product identifiers) is different than the replacement item's, or unverifiable
- The physical attributes of the original item, including those associated with fit, form, function and material, are different than the replacement item's, or unverifiable
- The performance characteristics of the original item, including technical and operating characteristics and interface with other components, are different than the replacement item's, or unverifiable
- The original manufacturer has changed the design or is unable to supply the original item

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Material Engineer

[1] Perform an Item Equivalency Evaluation for replacement items per the above criteria.

[2] Obtain Engineering concurrence (per Telecon is acceptable; follow up signature is not required) on the Item Equivalency Evaluation. Concurrence is not required for administrative part number changes.

[3] Identify the critical characteristics associated with the application and provide the actual values or ranges for the original item (if known) and the replacement item. Not required for administrative part number changes.

[4] Evaluate these characteristics and make a determination as to whether the replacement item can perform the intended function consistent with the component/system design basis. Not required for administrative part number changes.

[5] Obtain Engineering approval for any deviations from critical characteristic values.

6.8 Item Functional Classification

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Item functional classification is the responsibility of Engineering. Item classification is considered the same as the system classification unless specifically addressed on the Item Functional Classification Table (IFCT) or the Failure Modes and Effects Analysis (FMEA) screen within PEMS.

Item functional classification is required for safety class items (System Category 1 or 2) which are to be "downgraded", i.e., purchased at a lower classification (augmented quality or non-safety class) than the parent system classification. The final classification and its basis are documented on the IFCT or FMEA.

Documenting an item's functional classification on the IFCT/FMEA is not required if the item is classified the same as the parent system, e.g., System Category 1 or 2, item classification safety class.

Documenting an item's functional classification on the IFCT/FMEA is not required for augmented quality and non-safety class items intended for System Category 3 or 4 applications.

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Engineer

[1] Fill out an IFCT or FMEA if working within PEMS.

[2] Send the completed IFCT/FMEA to Material Engineering.

Material Engineer

[3] Revise or fill out a new IFCT/FMEA as required to downgrade items if downgrade is considered desirable and feasible. Revision of Engineering-generated IFCT requires their concurrence per Telecon (follow-up signature not required). Revision of Engineering-generated FMEAs within PEMS is accomplished electronically by routing and approvals within PEMS.

[4] Fill out the Consolidated BOM consistent with the IFCT/FMEA.

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6.9 Commercial Grade Dedication

See Appendix 7, Commercial Grade Item Dedication, for a discussion of the bases and process for commercial grade dedication, and for further direction and information on the following steps.

Material Engineer

[1] Review the Approved Suppliers List to determine if the safety class item can be purchased PL1. If the item can be purchased PL1, and if PL1 is considered prudent given the item type, credible failure modes, complexity, risk and consequences of failure, schedule, increased cost as compared to the same item purchased commercially and dedicated, then the following PL2 process is not necessary. If, after consideration of these factors it is considered prudent to purchase the item PL2, or if there is no approved supplier available, then go on to step 2. See Section 6.3 for further guidance on how to determine the appropriate procurement process level.

[2] For PL2 items, develop P-Specs per Appendices 4 & 7, or I-Specs if working within PEMS. This includes specification of procurement level, technical and quality requirements, and attributes to be verified to give reasonable assurance that the item received is as specified and will perform its intended function (see Appendix 7, Sections 1.5 D and 1.6 for further direction on choosing verification attributes and test requirements). This information is recorded on the P-Spec cover page and Sections II, III, IV, and V.

[3] Develop the Consolidated BOM per Appendices 2 & 7.

[4] Support inspection, testing and maintenance staff as necessary to complete the dedication process as required in the P-Spec.

6.10 Non Conformance Reports and Conditional Release

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6.10.1 Non Conformance Reports (NCR)

Non conformances related to items received are dispositioned by Material Engineering. The following actions are taken by Material Engineering:

6.10.1 Non Conformance Reports (NCR) (continued)

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Material Engineering

[1] Identify the NCR number on the Consolidated BOM.

[2] Disposition the NCR with assistance from Engineering, as necessary, prior to release of the Consolidated BOM.

6.10.2 Conditional Release

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Circumstances may dictate that the Material Engineering Material Evaluation Package process cannot be performed prior to authorizing the use of an item. An NCR can be used for conditional release of parts.

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Engineering

[1] Disposition Conditional Release NCRs (with Material Engineering assistance, as necessary)

7. RECORDS

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Engineering Documentation

[1] Quality records generated by this procedure shall be maintained and dispositioned in accordance with Records Management guidance for records sources.

7.1 Quality Records

- BOM
- Consolidated BOM
- Item Equivalency Evaluation
- Item Functional Classification Table
- Material Review Request
- Procurement Engineering Material Evaluation Package
- Procurement Specification
- System Classification Form

7.2 Non-Quality Records

- Procurement Specification Log

7.3 Records Control

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Material Engineering Clerk

[1] Maintain a status log of all open and closed Material Engineering Material Evaluation Packages (by work control number) in the Parts and Equipment Management System (PEMS) data base.

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[2] Maintain a P-Spec Log by listing items for which P-Specs have been developed.

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[3] Retain a copy of the latest revision of P-Specs and Material Engineering Material Evaluations Packages from which distribution of other controlled copies may be made.

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[4] Transmit a copy of each new or revised P-Spec to Engineering Documentation.

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8. REFERENCES

Site Quality Assurance Program

Rocky Flats Plant Policy 9-17, Use of Commercial Grade Items (CGI) in Safety Related Applications

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8. REFERENCES (continued)

EPRI NP-5652, Guidelines for the Utilization of Commercial Grade Items in Nuclear Safety Applications (NCIG-07)

EPRI NP-6408, Guidelines for Establishing, Maintaining, and Extending the Shelf Life Capability of Limited Life Items (NCIG-13)

EPRI NP-6896, Guidelines for Determining In-Storage Maintenance of Items for Nuclear Facilities (NCIG-18)

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APPENDIX 1
Page 1 of 1

MATERIAL ENGINEERING MATERIAL EVALUATION COVER SHEET

Revision No. 0 1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20

Date Received _____

Priority _____

Material Engineering
Material Evaluation Cover Sheet

EVALUATION TYPE:

- ☐ Design Package EBOM
- ☐ Work Package BOM
- ☐ Warehouse Stock Item Evaluation
- ☐ Revisions to Work Package BOM

Assigned to: _____ Date Required: _____

GENERAL INFORMATION:

Work Control No. _____ Bldg. _____

Planner _____ Ext. _____

Engineer _____ Ext. _____

SAMPLE

REVISION SUMMARY AND COMMENTS:

_____
_____
_____
_____
_____
_____

REVIEW AND APPROVAL:

Material Engineer _____
Name Signature Date

Material Engineering Manager _____
Name Signature Date

☐ Required ☐ Not Required

Engineering _____
Name Signature Date

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APPENDIX 2
Page 1 of 2

CONSOLIDATED BOM

CONSOLIDATED BILL OF MATERIAL

Revision No. 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Work Control/EJO Number _____

Parent System Name _____

System Category 1☐ 2☐ 3☐ 4☐

Item No.	Qty.	Unit of Issue	Item Description	SC AQ NSC	P.S., MRR or NCR No.	Rev. No.	PL	Dedication Testing Required	Like for Like Item

SAMPLE

DES-273/2 1(2) 8/1/94

APPENDIX 2
Page 2 of 2

CONSOLIDATED BOM

Instructions for Completing the Consolidated BOM Form

The purpose of the Consolidated BOM is to concisely document:

1. Item description, system category, functional class, and procurement level.
2. Applicable codes and standards.
3. Technical and quality requirements.
4. References to other documents or information necessary for completion of purchase, receipt, and testing, as applicable.

The purpose of the item description is to adequately describe the item for purchase and receipt inspection purposes, i.e., so that the vendor will supply the correct item and receipt inspection can verify that we received what was specified. It is neither required nor desirable to duplicate the entire description from a catalog or technical manual, or to include the entire description from the Procurement Specification.

The fields and spaces to be filled in on this form are self explanatory and therefore do not require specific instruction or explanation.

APPENDIX 3
Page 1 of 3

ITEM EQUIVALENCY EVALUATION

DOCUMENT NO.-_____
Page ____ of ____

ROCKY FLATS PLANT

ITEM EQUIVALENCY EVALUATION

DESCRIPTION OF CHANGE:

ORIGINAL ITEM INFORMATION

Item Description:

OEM:

Part No.

Manual or Dwg. No. Rev.

References/Attachments

SAMPLE

REPLACEMENT ITEM INFORMATION

Item Description:

OEM:

Part No.

Manual or Dwg. No. Rev.

References/Attachments

APPLICATION:

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APPENDIX 3
Page 2 of 3

ITEM EQUIVALENCY EVALUATION

Instructions for Completing the IEE Form

The purpose of the IEE is to evaluate and document differences between installed items and proposed replacement items for the purposes of design and configuration control. IEEs are required for safety class applications, but not required for augmented quality or non-safety class applications. They may, however, be used for augmented quality or non-safety class applications per end user request or per Engineering discretion depending on the merits of the item and application. Refer to procedure Section 6.7 for further discussion. Of special importance are differences in form, fit, function and design characteristics as they relate to the intended application design function. Differences are to be evaluated with respect to performance of the replacement item as well as affects on associated structures, systems, and components. For items determined to be equivalent, the conclusion should clearly state that the proposed replacement is equivalent and will perform its intended function without degrading the safety functions of other structures, systems, or components.

NOTE 1: For administrative part number changes, it is not required that the critical characteristics comparison table on page 2 of the Form be filled out. Engineering approval signature is not required.

NOTE 2: Items determined to be not equivalent with respect to structure, system, or component design bases are considered design changes and subject to the Configuration Change Control Program design change controls.

APPENDIX 3
Page 3 of 3

ITEM EQUIVALENCY EVALUATION

DOCUMENT NO. -_____
Page ____ of ____

ROCKY FLATS PLANT

ITEM EQUIVALENCY EVALUATION

CRITICAL CHARACTERISTICS	ORIGINAL	ALTERNATE

SAMPLE

CONCLUSION:

Prepared By: _____ Date: _____

Cognizant Engineer Approval: _____ Date: _____

APPENDIX 4
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PROCUREMENT SPECIFICATION

Proc. Spec. No. PS- _____
*Total Pages _____ (*Excluding cover sheet)

ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION
COVER SHEET

TITLE: _____ PROCUREMENT LEVEL: PL1 ☐ PL2 ☐ PL3 ☐

☐ Revision

☐ Technical
☐ Administrative

Prepared By: _____ (Name/Signature) _____ (Date)
Reviewed By: _____ (Name/Signature) _____ (Date)
Approved By: _____ (Name/Signature) _____ (Date)

This Revision Affects Only Items Procured to the Following Revisions(*): _____
*All Items Procured to Any Other Revision(s) Are Acceptable Under this Revision.
Reason for Revision: _____
Pages Affected: _____

SAMPLE

☐ Revision

☐ Technical
☐ Administrative

Prepared By: _____ (Name/Signature) _____ (Date)
Reviewed By: _____ (Name/Signature) _____ (Date)
Approved By: _____ (Name/Signature) _____ (Date)

This Revision Affects Only Items Procured to the Following Revisions(*): _____
*All Items Procured to Any Other Revision(s) Are Acceptable Under this Revision.
Reason for Revision: _____
Pages Affected: _____

☐ Revision

☐ Technical
☐ Administrative

Prepared By: _____ (Name/Signature) _____ (Date)
Reviewed By: _____ (Name/Signature) _____ (Date)
Approved By: _____ (Name/Signature) _____ (Date)

This Revision Affects Only Items Procured to the Following Revisions(*): _____
*All Items Procured to Any Other Revision(s) Are Acceptable Under this Revision.
Reason for Revision: _____
Pages Affected: _____

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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____

Page _____ of _____

Revision No. _____

ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION

SECTION I **ITEM IDENTIFICATION**

1.0 DESCRIPTION

Technical Description _____

Applicable Standards _____

Manufacturer _____ Part No. _____

Manual or Dwg. No. _____ Rev _____

Other _____

SAMPLE

2.0 SUGGESTED SUPPLIER IDENTIFICATION

3.0 EXTERNAL ATTACHMENTS/REFERENCES

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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____

Page _____ of _____

Revision No. _____

ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION

TO BE USED FOR COMPONENT PARTS IDENTIFICATION

SECTION I ITEM IDENTIFICATION (CONT'D)

ITEM NO.	MANUFACTURER PART NO.	ITEM DESCRIPTION

ITEM NO.	MANUFACTURER PART NO.	ITEM DESCRIPTION

ITEM NO.	MANUFACTURER PART NO.	ITEM DESCRIPTION

ITEM NO.	MANUFACTURER PART NO.	ITEM DESCRIPTION

ITEM NO.	MANUFACTURER PART NO.	ITEM DESCRIPTION

ITEM NO.	MANUFACTURER PART NO.	ITEM DESCRIPTION

SAMPLE

APPENDIX 4
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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____

Page _____ of _____
Revision No. _____

ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION

SECTION II **TECHNICAL REQUIREMENTS**

1.0 CRITICAL VERIFICATION ATTRIBUTES (CVAs)

CVA Code/Requirement	Acceptance Criteria	Verification Method

SAMPLE

2.0 BASIS FOR SELECTION OF VERIFICATION ATTRIBUTES

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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____
Page _____ of _____
Revision No. _____

ROCKY FLATS PLANT PROCUREMENT SPECIFICATION

NOTE: The requirements of this section to be part of the Purchase Order Supplier Requirement.

SECTION III QUALITY REQUIREMENTS

1.0 QUALITY ASSURANCE PROGRAM REQUIREMENTS

☐ RFP Approved ☐ ASME Section VIII ☐ Other _____

☐ STD Commercial Program _____

_____

2.0 SPECIAL QUALITY REQUIREMENTS

☐ Source Inspection/Surveillance with Access Requirement ☐ Performance Tests ☐ Qualification Testing

☐ Other _____

3.0 SUPPLIER DOCUMENTATION

3.1 CERTIFICATIONS

☐ Certificate of Conformance (C of C) to P.O. Requirements

☐ Certificate of Conformance to the following requirements _____

_____

☐ Certify to NQA-1

3.2 REPORTS

☐ Heat Treatment
☐ Certified Material Test

_____

_____

☐ ASME Code Data
☐ Other _____

_____

3.3 DRAWINGS

☐ As-Built
☐ Assembly
☐ Spare Parts List
☐ Bill of Material
☐ Other _____

_____

3.4 INSPECTION OR TEST PLANS

☐ Ultrasonic (UT)
☐ Radiographic (RT)
☐ Magnetic Particle (MT)
☐ Liquid Penetrant (LPT)
☐ Eddy Current (ET)
☐ Hardness
☐ Impact
☐ Proof Load (Fasteners)
☐ Welding
☐ Performance/Functional
☐ Leakage
☐ Pressure
☐ Other: _____

_____

3.5 MANUALS AND INSTRUCTIONS

☐ Operation and Maintenance
☐ Long Term Storage
☐ Preventive Maintenance
☐ Handling & Installation
☐ Other: _____

_____

SAMPLE

APPENDIX 4
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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____
Page _____ of _____
Revision No. _____

ROCKY FLATS PLANT PROCUREMENT SPECIFICATION

NOTE: The requirements of this section to be part of the Purchase Order Supplier Requirement.

SECTION III QUALITY REQUIREMENTS (CONT'D)

4.0 PACKAGING, HANDLING AND SHIPPING REQUIREMENTS

4.1 IDENTIFICATION REQUIREMENTS

NOTE: Each item, package/container or associated documentation shall be identified to provide traceability to below requirements.

☐ Identified as required by the following sections of the material specification or standard.

_____

☐ The item size as indicated in the P.O.

☐ The manufacturer's name and part number as indicated in the P.O.

☐ The serial number.

☐ The manufacturer's drawing and item number.

☐ The purchase order number.

☐ Recommended Shelf Life

☐ The material composition, cure date or cut date and shelf life expiration date for each item as applicable. (Expiration date may be estimated.) Supplier shall not ship any item which has less than 75% remaining shelf life at time of shipment. Any special storage conditions necessary to maximize the shelf life shall also be supplied

☐ The item shall be listed, approved, recognized or certified by UL, FM, CSA or other Nationally Recognized Testing Laboratory (NRTL).

☐ Other:_____

☐ Other:_____

4.2 HANDLING/SHIPPING INSTRUCTIONS

☐ Commercial packaging, handling and shipping: The item shall be packaged, shipped and handled to prevent damage, deterioration or loss.

☐ Packaging, handling and shipping of item(s) specified in this Procurement Specification shall be in accordance with RFP Standard SX-135 requirements for:

☐ Level A ☐ Level B ☐ Level C ☐ Level D

Other: _____

_____

SAMPLE

APPENDIX 4
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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____

ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION

Page _____ of _____
Revision No. _____

NOTE: This section is to be used for the Quality Assurance Receiving Inspection function

SECTION IV RECEIPT INSPECTION REQUIREMENTS

1.0 ITEM(S) INSPECTION

QA shall perform verification of required supplier documentation as indicated in Section III and the Receipt Inspector shall perform standard receipt inspection to verify that each item is traceable to the P.O. and meets requirements delineated in section III.

- ☐ Coatings and Preservatives _____
- ☐ Dimensions _____
- ☐ Physical Properties _____
- ☐ Thread Pitch _____
- ☐ Material Hardness _____
- ☐ Electrical Resistance _____
- ☐ Electrical Continuity _____
- ☐ Fraudulent Material Inspection _____
- ☐ Normal Receipt Inspection per QCM-9.0, Current Rev. _____
- ☐ Other _____
- ☐ Other _____
- ☐ Other _____

SAMPLE

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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____
Page _____ of _____
Revision No. _____

ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION

SECTION V DEDICATION TESTING REQUIREMENTS

The following dedication testing, conditioning, and/or calibration must be completed prior to declaring the part acceptable for safety class use and declaring the equipment or system containing the item operational.

1.0 Test Requirements

SAMPLE

2.0 Basis for Selection of Test Requirements

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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____

Page _____ of _____

Revision No. _____

ROCKY FLATS PLANT PROCUREMENT SPECIFICATION

NOTE: The requirements of this section pertain to storage of items onsite, as well as offsite storage at an approved storage facility.

SECTION VI STORAGE REQUIREMENTS

☐ Storage of item(s) specified in this Procurement Specification shall be in accordance with RFP Standard SX-135 requirements for:

☐ Level A ☐ Level B ☐ Level C ☐ Level D

Other: _____

SAMPLE

☐ The following in-storage maintenance of the item(s) specified in this Procurement Specification applies with the indicated frequency. _____

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PROCUREMENT SPECIFICATION

PROC. SPEC. NO. PS-_____
Page_____ of _____
Revision No._____

ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION

RECORD OF CONVERSATION

FROM: _____ DATE: _____
Name

TIME: _____

TO: _____ _____
Name Company

_____ _____
Title Phone

SUBJECT: _____

SUMMARY OF CONVERSATION: _____

SAMPLE

Proc. Spec. - Sec. ____ - Continuation Sheet
Rev. 1 - 2/93
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PROCUREMENT SPECIFICATION

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ROCKY FLATS PLANT
PROCUREMENT SPECIFICATION

SECTION _____ **CONTINUATION SHEET**

APPENDIX 5
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MATERIAL REVIEW REQUEST

Page _____ of _____
MRR # _____
Revision No. _____

ROCKY FLATS PLANT
MATERIAL REVIEW REQUEST FORM

INITIATION

Requested by _____ Date _____

Extension _____ Building _____

Application: ☐ For use on Work Control No. _____

☐ For Upgrade as Commodity (Plant-wide use)

Location _____ BOM Item No. _____ Work Pkg. No. _____ Qty. _____

Description _____

TECHNICAL REQUIREMENTS (Information to be completed by Procurement Engineering)

Technical Description, Function, and Source (if known) _____

Critical Verification Attributes _____

Attachments _____

Evaluator _____ _____
Name/Signature/Extension *Date*

ME Manager _____ _____
Name/Signature/Extension *Date*

Material Status: ☐ Accept ☐ Reject

Quality Assurance _____ _____
Name/Signature/Extension *Date*

Material Review Request Form
Rev. 0 - 8/94
DES-273/5.1(3) 4/7/98

DCF-Change 1

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DCF-Change 1

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MATERIAL REVIEW REQUEST

Page 2 of ____

ROCKY FLATS PLANT

MATERIAL REVIEW EVALUATION

Evaluator _____ _____
Name/Signature/Extension *Date*

ME Manager _____ _____
Name/Signature/Extension *Date*

Material Review Evaluation Form
Rev. 2 - 8/93
DES-273/5 2(3) 4/07/98

DCF-Change 1

DCF-Change 1 96-DMR-00043

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MATERIAL REVIEW REQUEST (MRR)

Instructions for Completing the MRR

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The Form is intended to concisely document the evaluation of items intended for safety class applications and not required through receipt inspection. This form/process may also be used to evaluate items intended for augmented quality or non-safety class applications per end user request or per Engineering discretion depending on the merits of the item/application. Refer to procedure section 6.6 for further discussion. It is also used to document the acceptance or rejection of items tested in accordance with the criteria and direction provided in the MRR Technical Requirements Section. Items evaluated per the MRR process typically have no known purchase history, pedigree, or green tags indicating acceptance through the receipt inspection process. Therefore, the pedigree, suitability, and acceptance are established per evaluation and verification. The attributes to be verified are selected based on the item's intended end use and associated design requirements. Verification attributes may be simple: verification of conformance to a catalog cut; or complex: verification of material type or specific testing requirements to verify design/performance characteristics within specified criteria.

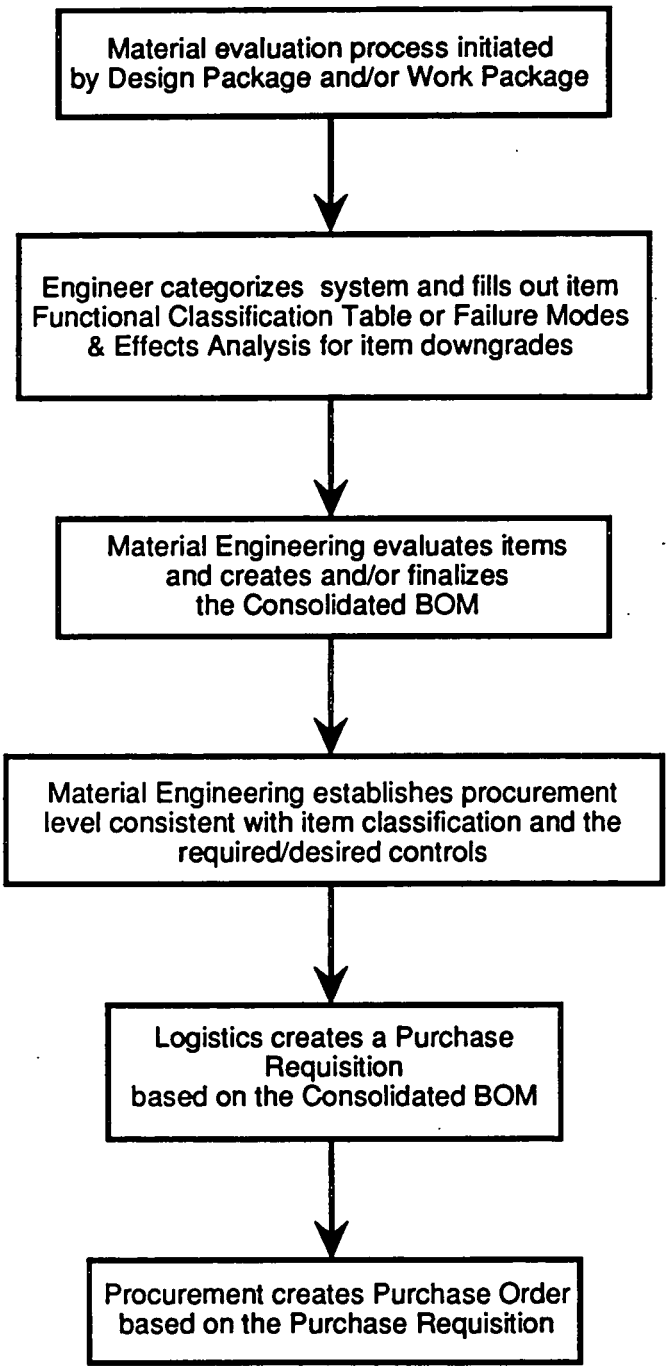
MRR numbers, including revision level, are entered on the Consolidated BOM. When MRRs are revised, the applicable Consolidated BOM must also be revised to reflect the current MRR revision. However, Consolidated BOMs should not be updated to reflect MRR revisions in the following cases:

1) When MRRs are written for plant-wide use, revisions may not apply to a specific work package/Consolidated BOM. If the plant-wide use MRR does not affect items for a specific work package, there is no need to update that specific Consolidated BOM to reflect the new MRR revision level.

2) If a work package has been closed, there is no need to update the Consolidated BOM to reflect the MRR revision level unless there is a specific concern that would require additional action.

APPENDIX 6
Page 1 of 1

PROCUREMENT REVIEW PROCESS



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APPENDIX 7
Page 1 of 3

COMMERCIAL GRADE ITEM DEDICATION

1.0 Process For Commercial Grade Item Dedication

The following fundamental process is described in more detail in 1.1 through 1.3.3:

- Determine the safety function of the item.
- Confirm that the item is commercial grade.
- Identify critical verification attributes.
- Verify critical verification attributes to establish reasonable assurance that the item is as specified and will perform its intended function.

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1.1 Safety Function Determination

Determining item function is the responsibility of Engineering. Item functions and failure modes are documented on the IFCT/FMEA if the item is to be downgraded. See procedure Section 6.8 for further discussion of item functional classification and failure modes and effects analysis.

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1.2 Commercial Grade Item Determination

Supplier approval for a PL1 purchase scope is dependent on successful completion of an audit or supplier survey conducted by QA, demonstrating implementation of a QA program acceptable under pertinent portions of NQA-1. If the supplier has not been approved for a PL1 purchase scope (as listed in the Approved Suppliers List), then the item/purchase is considered commercial grade (PL2).

1.3 Verification Attributes Determination

Certain attributes are identified and verified to establish reasonable assurance that the item supplied is as specified and will perform its intended function. These attributes are selected based on the item's complexity, credible failure modes, failure risk, failure consequences, design margin, etc. For items of simple design, verification of manufacturer model number and part number, and visual inspection to verify that the item was not damaged during shipment or flawed during manufacture, is usually sufficient verification activity. For example: visual inspection of a terminal lug, verifying part number and item integrity, is considered sufficient dedication for this simple item. Conversely, if the item is complex, or a specific material is critical, then verification methods beyond simple visual inspection would be required. For example: a valve intended for a highly corrosive application would require verification of material type (e.g., 304L stainless steel).

Implementation of the above principles is accomplished primarily through use of the following forms.

APPENDIX 7
Page 2 of 3

COMMERCIAL GRADE ITEM DEDICATION

1.4. Consolidated BOM

The fields on the Consolidated BOM are largely self explanatory, and specific directions are included on page 2 of the form. Specific to commercial grade dedication, the form notes the system category, the item classification, procurement level, and whether or not dedication testing is required. Specific test requirements are addressed in the P-Spec.

1.5 P-spec/I-Spec

The fields on the P-Specs are largely self explanatory. P-Spec Sections II, III, IV and V address concerns specific to commercial grade dedication, as follows:

A. Section II, Technical Requirements

Section II lists critical verification attributes. The critical verification attributes are those considered sufficient to establish that the item received is as specified and will perform its intended function

B. Section III, Quality Requirements

Section III lists quality requirements. Section 1.0 addresses quality program requirements which in turn relate to Sections 2.0 (Special Quality Requirements), 3.0 (Supplier Documentation), and item procurement level (PL1, PL2, or PL3).

The following logic is followed to establish the procurement level and technical and quality requirements:

1. Procurement Level

Items intended for safety class applications are purchased from approved suppliers if available and reasonable (see procedure Section 6.9, Commercial Grade Dedication, for criteria to be used in determining whether or not PL1 is reasonable). If a PL1 supplier is not available, or the PL1 process is not reasonable, the item is purchased commercial grade (PL2). PL2 purchases are addressed by the P-Spec sections, as follows:

2. Section III, 1.0, QA Program Requirements

Designates the appropriate QA program requirement.

3. Section III. 2.0, Special Quality Requirements

Indicates specific quality controls considered necessary or desirable to assure that the item's quality and technical requirements are controlled.

APPENDIX 7
page 3 of 3

COMMERCIAL GRADE ITEM DEDICATION

4. Section III, 3.0, Supplier Documentation Requirements

   Designates appropriate documentation to be supplied by the vender.

C. Section IV, Receipt Inspection Requirements

Section IV defines dedication related inspection activities beyond those normally performed by Receipt Inspection personnel, e.g., dimensional verification in accordance with a catalog cut sheet.

D. Section V, Dedication Testing Requirements

Section V specifies dedication testing to be performed to verify specific attributes. The intent of Section V is to define testing sufficient to establish reasonable assurance that the item received is as specified and will perform its intended function, and to provide the basis for the selected testing. Testing should be consistent with the item's complexity, credible failure modes, consequences of failure, risk of failure, ALARA concerns, design margin, accessibility for repair, replacement costs, schedule delays, commitments, and other factors pertinent to the application.

96-DMR-000143

96-DMR-000143

96-DMR-000143

1.6 Dedication Testing

Dedication testing may be performed in various ways and at different points in the procurement process, as follows:

- As part of the receiving activity, prior to release to the field, e.g., per P-Spec direction, Receipt Inspection coordinates transfer of a transmitter to the Calibration Laboratory on-site (or to an approved off-site supplier) for calibration prior to Receipt Inspection acceptance (green tag).
- Per P-Spec direction, per surveillance at a supplier's facility prior to shipment.
- Per P-Spec direction, as part of the maintenance work package, either prior to installation or post installation.

The Material Engineer is responsible for coordinating with Engineering and/or Planning to ensure dedication field testing requirements are reasonable and appropriate, and for giving clear direction regarding when/where dedication inspection/testing is to be performed.

RFPF - 1000.01 (5/95)
Formerly RF-47940

Page 1 of 1

Document Modification Request

25. DMR No. 96-DMR-000125

Originator

Print or Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

1. Name/Phone/Pager/Location
Jerry Weiser X5447/7335 Building 130 C218

2. Date
01/29/96

3. Existing Document Number and Revision
2-I02-COEM-DES-281, Revision 1

4. Document Type: ■ Procedure ☐ Plan ☐ Other

5. Document Title
Specifications for Equipment and Construction

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	7	6.1[2]	Change "...COEM-DES-223, Classification of Systems, Components, and Parts" to "..1-V51-COEM-DES-210, Design Process Requirements."
3	9	8	Delete: 2-D03-COEM-DES-223, Classification of Systems, Components, and Parts Add: 1-V51-COEM-DES-210, Design Process Requirements

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by the PPG.
2	1-V51-COEM-DES-210 has the SSC classification requirements.
3	Update the reference list

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) 1-31-96

13. New Document/ Rev. No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction ☐ Nonintent Change ☐ Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes ☐ No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location
L. Reed Bailey X458171764 Building 130 C230

20. Cost Center: 3077

21. Charge Number: 820111

22. Requested Completion Date: 02/05/96

23. Prescreen/Screen/USQD Number
N/A

24. Independent Safety Review Meeting and Date
N/A

25. After obtaining ALL required signatures, Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions)
L. K. Bailey L. K. Bailey 2-1-96

27. Effective Date: 2/5/96

28. Expiration Date (if applicable)

Reviewed for Classification/UCNI (UNN)
BY RC Norman
DATE 2-1-96

Returned to Originator

PADC-97-00065

Rocky Flats Environmental Technology Site

2-I02-COEM-DES-281

REVISION 1

SPECIFICATIONS FOR EQUIPMENT AND CONSTRUCTION

APPROVED BY: R E Kell / R. E. Kell 3/9/95
Director, Engineering & Safety Services — Print Name — Date

Responsible Organization: Engineering Standards — Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE

Engineering and Safety Support
Central Engineering
Nuclear Safety Engineering
Project Management

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By D E Hefler (UNL)
Date 2/13/95

This procedure supersedes procedure 2-I02-COEM-DES-281, Revision 0, and is to be used in conjunction wtih 3-K67-COEM-DSK-507, Writing Guide for Equipment and Construction Specifications

Periodic review frequency: 4 years from the effective date.

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	03/10/95		
2	02/05/96		
3-6	03/10/95		
7	02/05/96		
8	03/10/95		
9	02/05/96		

The following DMRs for change are active for this procedure:

96-DMR-000125

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1. PURPOSE

This procedure provides instructions for development and processing of consistently formatted equipment and construction specifications.

2. SCOPE

This procedure covers specifications created by the Operating Contractor and subcontractor personnel. This procedure should be used in conjunction with COEM-DSK-507, Writing Guide for Equipment and Construction Specifications.

3. OVERVIEW

A specification is a communication to Purchasing and Suppliers for the procurement of equipment, materials, or services. A specification may consist of: (1) a one-line description and a manufacturer's catalog or model number, (2) a multipaged document describing complex systems or equipment, or (3) a document describing only performance requirements. Engineering drawings may also be part of specifications.

Effective communications require a clear expression of ideas. A specification must be definitive, consistent, precise, and complete in essential details. Brevity and readability are absolutely necessary. Specification clarity is best achieved with a direct approach using: (1) proper vocabulary, (2) correct grammar, (3) proper sentence construction, (4) proper style, and (5) accurate detail.

Specifications:

- Provide technical requirements between Rocky Flats Environmental Technology Site (Site), suppliers, and subcontractors
- Complement design drawings
- Establish quality and workmanship requirements
- Provide a description of a function to be performed (construction specification) or of material to be purchased (equipment specification)

3. OVERVIEW (continued)

- Delineate the division of responsibility between Purchasing/Procurement Department, Project Management, Construction Management, and Engineering

- Define what to buy and what it must do.

Do not overlook the continuing emphasis on upgrading of safety, fire protection, and environmental protection requirements.

If possible, consult the writer of an old reference and ask him what problems he had with the specification or acquisition of the equipment. Look up old Purchase Requisitions accompanying old specifications to assure that revisions are included in your new specification.

4. DEFINITIONS

See COEM Glossary for applicable definitions.

5. RESPONSIBILITIES

5.1 Construction Management

Produces Construction Specifications General Conditions for submittal to Engineering Documentation.

5.2 Engineer

Creates Construction Specification Technical Provisions and Equipment Specifications and revisions thereto.

Reviews specifications provided by subcontractors or other disciplines.

Provides input to General Conditions/Provisions.

5.3 Engineering Documentation (ED)

Reproduces, distributes, and stores Construction and Equipment Specifications either as controlled documents or with designs as received.

5.4 Procurement Support Engineer

Reviews Equipment and Construction Specifications and prepares Item or Procurement Specifications.

96-DMR-0001125

6. INSTRUCTIONS

6.1 Document Preparation

Construction Management

[1] **IF** a Construction Specification,
THEN prepare Division 1 in accordance with ENG-PILOT-CM-011, Construction Subcontracting.

Engineer

[2] Determine the classification of all systems, structures, and components (SSC) being purchased using 1-V51-COEM-DES-210, Design Process Requirements.

[3] Prepare the equipment or construction specification (sections 2-16) using COEM-DSK-507, Writing Guide for Equipment and Construction Specifications.

[4] Submit the specification to Procurement Support Engineering for creation of Item or Procurement Specifications, if necessary, for purchasing purposes.

Procurement Support Engineering

[5] Develop Item or Procurement Specifications based on an agreement as to the classification of the SSC and return them to the Engineer.

[6] Determine review requirements. Minimum reviews required are:

- affected disciplines
- user
- applicable Program Chief Engineer
- Health & Safety Design Review Group
- Procurement Support Engineering

[7] Complete an Engineering Order (EO) (COEM-DES-253, Engineering Order) and submit to ED for reproduction and distribution for review.

6.1 Document Preparation (continued)

Engineering Documentation (ED)

[8] Arrange for reproduction and distribute per the EO instructions.

Engineer

[9] Resolve comments, obtain approvals.

[10] Complete a purchase requisition and attach specification.

[11] Complete an EO and submit to ED for reproduction and distribution.

- Minimum distribution is all previous reviewers plus procurement.

ED

[12] Arrange for reproduction and distribute per the EO instructions.

[13] Store original final documents.

6.2 Revision Process

Engineering

[1] Revise the specification.

[2] Complete steps [4] through [13].

7. RECORDS

Engineering Documentation

[1] Records generated as a result of this procedure are maintained in the Project History File in accordance with the retention schedule identified in 1–77000–RM–001, Records Management Guidance for Records Sources.

7.1 Quality Records

Final Construction Specifications

Final Equipment Specifications

8. REFERENCES

ENG-PILOT-CM-011, Construction Subcontracting

Master Specifications

1-V51-COEM-DES-210, Design Process Requirements

1–77000–RM–001, Records Management Guidance for Records Sources

2-D34-COEM-DES-253, Engineering Order

3-K67-COEM-DSK-507, Writing Guide for Equipment and Construction Specifications

96-DMR-000125

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
Print or Type All Information (Except Signatures).

1. Date	2a.
6/2/94	DMR No. 94-DMR- 601159

2. Existing Document Number/Revision	3. New Document Number or Document Number if it is to be changed with the Revision
See Attached	See Attached
4. Originator's Name/Phone/Pager/Location	**5. Document Title**
[redacted]al Bagwell / 6339 / 130	See Attached - COEM Manual

6. Document Type ☒ Procedure ☐ Other _____

7. Document Modification Type (Check only one)
☐ New ☐ Revision ☐ Intent Change ☐ Nonintent Change ☒ Editorial Correction ☐ Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
			Change Procedure Number to reflect reorganization of COEM Manual in Table of Contents and throughout individual procedures. Delete obsolete references

[redacted]ification (Reason for Modification, EJO #, TP #, etc.)

Renumbering to reflect reorganization of COEM Manual. (Reformatting is not being done at this time.) This DMR will be filed with the COEM Table of Contents. The following statement will be listed on each procedures' title page: "This procedure has been renumbered and is the same as XXXX, Rev. X, per 94-DMR-XXX)

AGM signature on this DMR constitutes signature for each procedure.

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurror prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
AGM	M. M. McDonald /s/ C. E. Beutler for M.M. McDonald	6/3/94
SQE	M. J. Collins /s/ M. J. Collins	6/9/94

16. Originator's Supervisor (print/sign/date)
P. W. Speyer /s/ 6/3/94

17. Assigned SME/Phone/Pager/Location	18. Cost Center	19. Charge Number	20. Requested Completion Date	21. Effective Date
[redacted]W. Speyer / 5120 / 130	3077	820111		

[redacted]lerated Review? [redacted]Yes ☐ No ☒ | 23. ORC Review: not required

24. Responsible Manager (print,sign,date)
L. R. Bailey /s/ 6/2/94

RF-47940 (5/93)

REVIEWED FOR CLASSIFICATION / UCNI
BY /s/ D. E. HEPLER UNCL
DATE 6/6/94

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	96-DMR-000126		02/05/96
2-L92-COEM-PMG-302	Overview to Quality, Environmental, Davis-Bacon, Security, and Safety and Health Requirements for Project Managers	0	07/18/95
	96-DMR-000127		02/05/96
3-L88-COEM-PMG-303	Project Initiation Guide	0	04/14/95
3-P31-COEM-PMG-307	Project Data Sheet (PDS) Preparation Guide	0	04/14/95
Scope Development, Planning, Funding			
3-K08-COEM-PMG-309	Operational Requirements Document (ORD)	0	10/01/94
	96-DMR-000128		02/05/96
3-P32-COEM-PMG-311	Scope and Estimate	0	10/01/94
3-L82-COEM-PMG-315	Line Item Budget Process Guide	0	04/14/95
3-L01-COEM-PMG-317	Work Breakdown Structure	0	10/01/94
3-L76-COEM-PMG-319	Scheduling	0	10/01/94
2-H36-COEM-PMG-321	Project Risk Management	0	07/18/95
3-K78-COEM-PMG-323	Preparation of Project Management Plan/Work Package	0	10/01/94
2-P33-COEM-PMG-325	Engineering Subcontracting Guide	0	07/18/95
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2-M54-COEM-PMG-327	Government Furnished Equipment (GFE)	0	07/18/95
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Procurement & Construction			
Close-out & Turnover			
3-J68-COEM-PMG-331	Project Closeout and Turnover	0	10/01/94
	96-DMR-000131		02/05/96
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3-M02-COEM-PMG-333	Baseline Management	0	10/01/94
3-P35-COEM-PMG-335	Baseline Change Proposal Guide	0	04/14/95
3-L89-COEM-PMG-337	Cost Estimating	0	10/01/94
3-P29-COEM-PMG-339	Reporting and Reviews Guide	0	10/01/94
3-M49-COEM-PMG-341	Construction Management Review Guide	0	04/14/95
ENG-PILOT-PM-009	Project Summary Report (Pilot)	0	08/05/94
3-P36-COEM-PMG-345	Project Control/Management Control System Interface	0	10/01/94
3-M55-COEM-PMG-346	Progress Tracking System/4700.1 Report Guide	0	04/14/95

2-P38-COEM-PMG-349	Records and Document Management for Authorization Projects	0	07/18/95
	96-DMR-000132		02/05/96
ENG-PILOT-PM-011	Transfer of Project Management (Pilot)	0	08/31/94
	Glossary of Project Management Terms	0	10/01/94

RFPF - 1000.01 (5/95)
Formerly RF-47940

Page 1 of 1

Document Modification Request

Print or Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000126

Originator

Name/Phone/Pager/Location: Jerry Weiser X5447/7335 Building 130 C218

2. Date: 01/29/96

3. Existing Document Number and Revision: 2-F32-COEM-PMG-301, Revision 0

4. Document Type: ■ Procedure ☐ Plan ☐ Other

5. Document Title: Introduction to the Construction Project Management System

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	13	6.2.3	Change the last sentence in the first paragraph to: 2-D75-COEM-DES-241, Preparation of Conceptual Design Reports and 2-L85-COEM-DES-243, Preparation of Design Criteria identifies in detail when a CDR or DC is required, what each must contain, and how each is prepared.
3	14	6.2.3 [5]	Change the second bullet to: COEM-DES-241. Change the third bullet to: COEM-DES-243.
4	15	6.3	Change the last sentence of the first bullet from "[COEM-DES-211]" to "[1-V51-COEM-DES-210, Design Process Requirements.]
5	16	6.3[3]	Change the last sentence of the first bullet to: "The Project Manager will determine when a Title I review is required." Change the first sentence of the second bullet procedure reference from COEM-DES-211 to 1-V51-COEM-DES-210.
6	17	6.3	Change the procedure reference in the first bullet from "COEM-DES-211" to "1-V51-COEM-DES-210."
7	18	6.3[9]	Change "[COEM-DES-211]" to "[1-V51-COEM-DES-210]".
8	21	6.4[14]	Change: "..System Category I, II, and III..." to "...System Category 1 & 2 and 3...", Change: "...System Category IV.." to "..System Category 4..."
9	25	8	Change "2-D57-COEM-DES-211, Authorization Design Process" to "1-V51-COEM-DES-210, Design Process Requirements."
10	25	8	Add: 2-D75-COEM-DES-241, Preparation of Conceptual Design Reports Add: 2-E17-COEM-DES-249, Title I Design Summary/Review

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	PPG requirement.
2-10	Change references from COEM-DES-211 to DES-249 and 1-V51-COEM-DES-210 since DES-211 was canceled on 11/9/95 and the referenced procedures adequately cover the material initially covered in DES-211.

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) 1-31-96

13. New Document Rev No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction [X] Nonintent Change [X] Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes [X] No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /s/	1/30/96			
SME	L. Reed Bailey /s/	1/31/96			

19. Assigned SME/Phone/Pager/Location: L. Reed Bailey X4581/1764 Building 130 C230

20. Cost Center: 3077

21. Charge Number: 820111

22. Requested Completion Date: 02/05/96

23. Prescreen/Screen/USQD Number: N/A

24. Independent Safety Review Meeting and Date: N/A

26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L.R. Bailey — 2-1-96

27. Effective Date: 2/5/96

28. Expiration Date (if applicable)

Reviewed for Classification/UCNI (NA)
BY RA Hartman
DATE 2-1-96

PADC-97-00090

Rocky Flats
Environmental Technology Site

2-F32-COEM-PMG-301

REVISION 0

INTRODUCTION TO THE CONSTRUCTION PROJECT MANAGEMENT SYSTEM

APPROVED BY: /s/ R. E. Kell / R. E. Kell / 06/01/95
Director, Engineering and Safety — Print Name — Date

Responsible Organization: Project Management Effective Date: 07/18/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Engineering and Safety Support
Central Engineering
Project Management
All PCEs

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By _____

Date _____

This procedure replaces procedure 1-F32-COEM-OVR-0110, Revision 0.

Periodic review frequency: 4 years from the effective date

PADC-97-00090

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	07/18/95		
2	02/05/96		
3-12	07/18/95		
13-18	02/05/96		
19-20	07/18/95		
21	02/05/96		
22-24	07/18/95		
25	02/05/96		
26-57	07/18/95		

The following DMRs for change are active for this procedure:

96-DMR-000126

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1. PURPOSE

This procedure describes the Rocky Flats Environmental Technology Site (Site) Construction Project Management System (CPMS) for projects. The objective of this process is to execute projects within an authorized budget, defined scope, and predictable schedule in a safe manner within necessary and sufficient performance standards. Project controls and objectives are integrated into five key phases:

- Phase I -- Project Initiation and Definition
- Phase II -- Conceptual Development and Approval
- Phase III -- Engineering Technical Analysis and Detailed Design
- Phase IV -- Work Planning, Construction or Disassembly
- Phase V -- Operational Testing and Project Close Out

2. SCOPE

The Project Manager is responsible for using CPMS as described to ensure projects adhere to these requirements. The CPMS includes processes that organize, define, assign, plan, authorize, and measure work performed; and control changes to established baselines.

This procedure provides an overview of project management, construction management, and design practices for all construction projects performed at the Site. It covers policies, requirements, responsibilities, organization structure, and process flow used in project management. All work performed at the Site is governed by necessary and sufficient performance standards, Department of Energy (DOE) Orders and related policies, the Configuration Change Control Program (CCCP), and good engineering and management practices.

This procedure does not generally cover Work Control Form (WCF) initiated activities.

For Major Projects (MP) and Major System Acquisitions (MSA) additional requirements will be provided by DOE on a case by case basis.

This procedure applies to all organizations which provide Project Management Services at the Site.

2. SCOPE (continued)

COEM-PMG-302, Introduction to Quality, Environmental, Davis-Bacon, Security, and Safety and Health Documentation, defines additional documentation requirements. This procedure is also based on the five key project phases. It is designed to help Project Managers understand when these other documentation processes are initiated.

This procedure was prepared by the Project Controls and Services Group of Project Management. Suggestions for the correction of errors, ommissions, or for the improvement of this procedure are to be directed to PM/PC&S at x5038/x5023.

3. OVERVIEW

In order to accomplish the missions of the programs at the Site, it is necessary to establish projects which support program missions. These projects produce discreet, non-routine, complex, and unique products and deliverables. Project Management is required to direct and coordinate the human and material resources throughout the life of these types of projects. Project Management uses modern management techniques to achieve the predetermined objectives of scope, cost, time, and quality, to satisfy the expectations of the program.

Project Managers and Project Teams are requested by the program to produce specifically needed products or deliverables. Requested projects are reviewed for justification and effects on existing safety systems, and screened for appropriate sources of funding. Based on prioritization and mission impact, projects are subsequently submitted to the DOE for funding approval and for more extensive pre-decisional development. Fully supported projects ultimately are approved for design, procurement, and construction in accordance with the DOE Key Decision (KD-0 through KD-4) approval process as defined by DOE Order 4700.1.

A Project Management Plan/Work Package (PMP/WP) is developed early in the course of each project. The PMP/WP details the method of performance, project goals, requirements, roles and responsibilities, management approach, safety and environmental considerations, configuration management, and establishes the scope, schedule, and cost baselines. This ensures work is authorized only after it has been well planned and approved in accordance with the Site Management Control System (MCS).

3. OVERVIEW (continued)

The systematic approach of CPMS assists in planning work in accordance with the MCS and DOE requirements. The CPMS:

- Provides a basis for identifying and evaluating the potential impact of cost, schedule, and technical scope changes and deviations from the plan by the organization responsible for execution of the work.
- Ensures integration of the technical scope, schedule, budget, with other elements needed in the consideration of a project.
- Implements DOE Orders 4700.1, Project Management System, and 4700.5, Project Control System Guidelines.

Reporting of actual performance against external performance milestones, required under the Task Order contract with the DOE-Rocky Flats Field Office (RFFO), is accomplished by measurement against the authorized scope, schedule, and budget approved in the PMP/WP. Periodic surveillance of the CPMS also:

- Provides a basis for:
  1) Identifying and evaluating the impact of potential changes.
  2) Analysis of deviations from the PMP by the organization responsible for execution of the work.
  3) Incorporating revised plans resulting from approved changes to baselines in accordance with the Management Control System.
  4) Ensuring all CPMS elements are being followed.

3.1 Project Funding Sources and Cycles

DOE Order 4700.1 and 4700.3 provides additional information regarding the processes for initiating, approving, and the management of Construction Line Items (LI) and other large projects. Appendix 5, Construction Project Life Cycles and Work Package Documents, graphically displays typical lead-times and funding requirements for development and execution phases of an average project and the Key Decision approval process by which DOE monitors and controls capital project expenditures. Appendix 5, funding cycles applies to LI projects and to a lesser degree to all capital projects depending on funding type. Program Managers and Project Requesters need to be cognizant of these lead-times in planning projects.

3.1 Project Funding Sources and Cycles (continued)

Projects are funded from various sources as determined by the Funds Control organization under Central Planning and Budgets (CP&B). Funding source determination is done during the preliminary scope and estimate phase of project development. These funding sources and their relationship to projects are as follows:

Expense:

- **Operating Expenses** -- Repair and like for like replacement of existing equipment with a value generally less than $5K and a useful life of less than two years.

- **Expense Project** -- An equipment or construction project which has an expected useful life of less than two years and is funded from operating expenses. Examples are R&D experimental facilities which are expected to be used for less than two years. A project data sheet is required for all projects in excess of the $2M.

Capital:

Most capital projects are funded with both capital (Total Estimated Cost [TEC]) and expense funding (Other Project Costs [OPC]) as depicted in Appendix 5, Construction Project Life Cycles. These together constitute the Total Project Cost or TPC. Appendix 6, Total Project Cost Expense and Capital Guidance defines what work elements are considered capital and expense.

- **Basic Capital Equipment (BCE)** -- A capital project involving only the purchase and installation of equipment with a total project cost including engineering, procurement, and installation, greater than $5K and less than $1M.

- **Capital Equipment Projects** -- An equipment project not related to construction with a total project cost including design, procurement, and installation, greater than $5K and has an expected service life of greater than two years. There is no ceiling to the dollar value of a capital equipment project.

3.1 Project Funding Sources and Cycles (continued)

- **General Plant Projects (GPP)** -- Construction projects that add capital value to the plant facilities with a total project cost including engineering, procurement, and installation greater than $5K and less than $2M.

- **Major Item of Equipment (MIE)** -- A capital equipment project with a total project cost including engineering, procurement, and installation, greater than $1M. Major Items of Equipment are usually single items of equipment require Congressional approval and have funding lead-times similar to Construction Line Items.

- **Miscellaneous Capital Equipment (MISC)** -- A capital equipment project with a total project cost of engineering, procurement, and installation, greater than $5K and less than $25K. Miscellaneous Capital Equipment projects are straight purchases requiring no design or installation.

- **Capital Construction Project** -- A construction project with a total project cost including design, procurement, and installation greater than $5K, has an expected service life of greater than two years, and results in a significant improvement to the plant site. DOE, in the interest of minimizing the number of projects, allows the grouping of smaller projects into a large construction project whenever the activities are site-wide and constitute a common theme.

3.1 Project Funding Sources and Cycles (continued)

- **Construction Line Item (CLI)** -- A capital construction project with a total project cost including engineering, procurement, and installation, exceeding $2M. CLI projects require Congressional approval and construction projects are further divided into Other Line Items (less than $50M), Major Projects (between $50M and $100M) and Major System Acquisitions (over $100M). DOE Order 4240.1K, Designation of Major System Acquisitions and Major Projects, lists specific DOE projects designated in these categories. A Major System Acquisition project as a unique funding source may not follow the traditional definitions of capital and expense funding as defined above. A project data sheet is required for all capital construction line item projects. Additional requirements for MP and MSA will be provided on a case by case basis.

WARNING

Severe penalties exist for overrunning the $2M expense limit on GPP projects and in overrunning the Total Estimated Cost of any projects. These penalties may include personnel impacts (up to and including termination), project shut down, a requirement for DOE HQ approval to proceed, and a high probability of Subcontractor demobilization costs.

4. DEFINITIONS

See COEM Glossary for applicable definitions.

5. RESPONSIBILITIES

Construction projects at the Site fall under the direction of the Director, Engineering and Safety Services, except for some specific Major System Acquisitions (projects over $100M) and small project like activities (i.e. WCF initiated projects). Project Management executes projects to meet the goals and objectives of a Program Manager/User. Appendix 1 describes the responsibilities of the primary organizations and key personnel that support the Construction Project Management System.

6. INSTRUCTIONS — THE CONSTRUCTION PROJECT PHASES

The normal process of the Construction Project Management System will ensure the project is planned, executed, and reported in accordance with established procedures. Depending on the size, complexity, and risk involved in a project, a graded approach may be used. Appendix 3 contains detailed flowcharts that outline required tasks for a typical project. Not all of these tasks will be required. COEM-PMG-302 should be referenced for additional requirements in each of the five project phases.

6.1 Phase I - Project Initiation & Definition

Phase I of a project is heavily dependent on the User/Program representative to define requirements and operating needs of the project. In this regard, the User may obtain the services of many organizations. A Construction Project will involve Budgeting, Engineering, Safety and Health, and Project Management, as well as other groups that have specific roles. The Initiation and Definition Phase can have a wide degree of latitude in its execution. A simple project may only require a preliminary scope and estimate; whereas a project with new technology may require several years of development supported by a multi-million dollar budget before Phase II can begin. The Phase I flow chart includes some steps that are intended to accommodate a range of projects. Although additional steps are often required, the key steps are summarized below.

Program Manager/User

[1] Identify the project objective, the stakeholders, and justification for the project.

[2] Assign work to Project Management in accordance with COEM-PMG-303, Project Initiation and Assignment Guide.

[3] Prepare an Operational Requirements Document in accordance with COEM-PMG-309, Operational Requirements Document (ORD), to assist in establishing the requirements of the project.

6.1 Phase I - Project Initiation & Definition (continued)

Program Manager/User

[4] Request an initial formal funding determination from CP&B - Funds Control office during the initial development of a project and prior to the final request for funding. The initial request for a formal funding determination must include a preliminary scope and estimate of the project.

[5] Proceed with the process of acquiring funding, upon receipt of the initial formal funding determination.

[6] Initiate research and development activities such as site characterization; technical, regulatory, and legal requirements review; alternative analysis and feasibility studies (e.g., ref. COEM-PMG-302).

[7] Submit required documentation to CP&B, for final priority and funding determination. Include a Short Form Project Data Sheet.

[8] Request KD-0 approval by DOE, when required.

[9] Develop a User Functional Requirements Document (UFRD) or project charter summarizing project objectives, operational parameters, preliminary scope and estimate, and attach the Operational Requirements Document (Ref. PMG-309) to the UFRD.

6.2 Phase II - Conceptual Development & Funding

Phase II is frequently called pre-decisional development for a Line Item project because the Conceptual Design Report (CDR) produced during this phase must be completed before DOE and Congress will provide capital funding for a Line Item project. The Phase II flow chart emphasizes the steps necessary for a Line Item project. Smaller projects have a simplified process to determine a definitive scope and PMP/WP.

6.2 Phase II - Conceptual Development & Funding (continued)

The goal of Phase II activities is to establish a firm baseline for technical scope, schedule, and budget. This process also results in a set of technical requirements in conformance with appropriate building codes and standards, environmental documentation, legal requirements definition, and a list of deliverables expected in the Detailed Design effort. Baselines developed in Phase II are expected to remain unchanged through the balance of the project cycle. It is essential that proper funding be included to support Technical Baseline Document up-dates/as-builts in Phase IV. Proper conceptual development of the project will result in a Project Management Plan and Design Criteria that satisfy the User Functional Requirements defined in Phase I.

6.2.1 National Environmental Policy Act Screening and Other Documentation

Project Manager

[1] Complete the Environmental Checklist and obtain a recommendation from the National Environmental Protection Act (NEPA) Compliance Committee (ref. COEM-PMG-302).

NOTE *One year should be allowed on large projects between initiation of NEPA screening and start of Preliminary (Title I) Design. The actual time required to complete the NEPA process will be known once a determination from the RFFO NEPA Compliance Office is obtained. Approval to proceed with Preliminary design may be granted by DOE; however, final NEPA determination must be finalized prior to the start of Detailed (Title II) Design.*

[2] Consider other Quality, Environmental, Davis-Bacon, Security, and Safety and Health documentation required by COEM-PMG-302.

6.2.2 Prepare or Update Project Data Sheet/Activity Data Sheet

Project Manager

[1] Coordinate and oversee all activities as applicable in the Scope Development, Planning, and Funding phase of the project.

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6.2.2 Prepare or Update Project Data Sheet/Activity Data Sheet (continued)

[2] Develop a Project Data Sheet (for Line Item projects only) and submit to DOE Headquarters as required by DOE-RFFO.

[3] Develop an Activity Data Sheet to support the annual budget call when required.

6.2.3 Prepare Conceptual Design Report/Design Criteria

A Conceptual Design Report (CDR) and Design Criteria (DC) are required on Line Item Construction Projects. Traditionally these documents have been prepared sequentially. However, the DC contains many of the same types of information as the CDR. It is feasible, therefore, to prepare these documents in such a way that much of the CDR contributes directly to the DC. 2-D75-COEM-DES-241, Preparation of Conceptual Design Reports and 2-L85-COEM-DES-243, Preparation of Design Criteria, identifies in detail when a CDR or DC is required, what each must contain, and how each is prepared.

The CDR is the formal presentation to Congress for justifying and requesting funding for the proposed project. After the validation process, the DC is used in the development of the design. A DC is also an appropriate format for specifying design requirements to an A/E firm for non-Line Item projects.

Project Manager/Project Team

[1] Initiate the Project Team, identify interfaces with related disciplines and organizations, and ensure membership is complete.

NOTE *If both the CDR and DC are to be prepared, steps 2-5 will be considered twice, once for each document. Otherwise these steps are completed once and summarized in the PMP/WP and SOW/DC.*

[2] Walkdown the proposed area or facility to be modified. Work with the Program Manager, User, building operators, Construction Management, and Engineering to define expectations and requirements.

[3] Identify statutory, decontamination, disposal, or special requirements (e.g. ref. COEM-PMG-302), and eliminate uncertainties in the project scope.

6.2.3 Prepare Conceptual Design Report/Design Criteria (continued)

[4] Prepare a Preliminary Project Management Plan for Construction Line Items that establishes cost, schedule, and scope baselines for a specific project. The PPMP defines scope (for expense funded elements of a project), methods of execution, responsibility assignments, project work breakdown structure and associated budgets, schedules, major milestones, project organization structure, and reporting requirements.

[5] Develop or review the following:

- Scope and Estimate (The UFRD/ORD or previous Scope and Estimate serves as the basis of the current Scope and Estimate) and budget objectives. Ensure scope is consistent with the project definition stated in the PPMP/PMP.
- CDR, when required, in accordance with COEM-DES-241.
- DC, when required, in accordance with COEM-DES-243.
- Work breakdown structure.
- List of expected drawings and major deliverables required for the Detailed Design (Phase III) effort.
- List of major equipment needed in construction.
- Technical Baseline Documents which will require as-builts or updating prior to project closeout.

[6] Obtain the User, S&H, Engineer(s), Project Engineer, Site Design Authority (SDA) and affected discipline review and written approval of the CDR/DC and submit the CDR/DC for DOE review. Resolve all comments.

6.2.4 Develop and Approve the PMP/WP

Project Manager

[1] Prepare the PMP/WP for execution of the project (Ref. COEM-PMG-323).

The PMP/WP shall include a description of scope, schedule milestones, budget, method of performance, key personnel responsibilities, and work breakdown structure. The PMP shall include input from Engineering (Engineering Work Plan) and Construction Management (Construction Work Plan).

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6.2.4 Develop and Approve the PMP/WP (continued)

[2] Submit the PMP/WP to DOE for approval and Request KD-1 and/or KD-2 as appropriate for Title I and II Design.

6.2.5 Validation Review, Funding, and Authorization Release

Project Manager

[1] Coordinate with Central Planning, support annual validation review, and coordinate with DOE to obtain funding and KD-1 approval for the project.

6.2.6 A/E Selection

NOTE *The acquisition strategy used for A/E selection may impact schedule.*

Project Engineer

[1] Assign engineering work to the Engineering Organization or initiate an A/E subcontract in accordance with COEM-PMG-325, Engineering Subcontract Guide, as required.

6.3 Phase III - Engineering Technical Analysis and Detailed Design

Phase III of the project process concentrates on completing detailed design. Phase III culminates in the completion and issuance of the Final Construction/Procurement Package.

It is the goal of Phase III to provide a detailed design that:

- Includes a set of design drawings, calculations, specifications, acceptance criteria, and other deliverables which reflect the scope of the project, comply with the site authorization basis, are technically adequate, have a documented design check, Engineering Safety & Health Design review, User approval, independent design reviews (when required by the graded design process [1-V51-COEM-DES-210, Design Basis Requirements]), and are stored in a retrievable form;
- Minimizes project, operating, and maintenance costs;
- Complies with legal and DOE required Quality, Environmental, Davis-Bacon, Security, and Health and Safety Documentation processes (COEM-PMG-302).

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6.3 Phase III - Engineering Technical Analysis and Detailed Design (continued)

Project Manager

[1] Coordinate and oversee all activities in the Design.

[2] Complete Value Engineering studies. The Value Engineering process is started at any time in the development process.

Project Engineer

[3] Ensure that the following activities, as applicable, are conducted in accordance with Site Policies/Procedures, Conduct of Engineering Manual, and good engineering and project management practice:

NOTE *Based on complexity and with DOE approval, Preliminary Design (Title I) may be combined with the Detailed Design effort (Title II).*

- Preliminary (Title I) Design which shall include a Title I Design Summary/Review for any construction project when the total estimated cost exceeds $250K. The Project Manager will determine when a Title I review is required.

- Detailed (Title II) Design and Review in accordance with 1-V51-COEM-DES-210. This packages should include all working drawings and specifications needed to construct the project. The format of the intermediate review is the same as for the Final Construction/Procurement Package.

NOTE *The Final Construction/Procurement Package (Title II Final) should be the same package that is submitted to Procurement for establishing the technical requirements of the Sub-Contract.*

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6.3 Phase III - Engineering Technical Analysis and Detailed Design (continued)

- A Final Construction/Procurement Package is required for every Construction/Procurement Project. Several possible formats of Final Construction/Procurement Packages and a graded set of review requirements are defined in 1-V51-COEM-DES-210. The graded design processes for Construction/Procurement Packages provides two levels of review and documentation. These are: General Engineering Services (Low Risk Work), and the Design Modification Package (High Risk Work).

- Technical Baseline Documents that reflect structure, system or component configuration must be included on a list in the Technical Scope, PMP/WP, or on a Baseline Document Change Form (BDCF).

- Integrated Work Control Program (IWCP) Package development in parallel with Detailed Design when appropriate.

- Safety Analysis Report (SAR), Criticality Safety Operating Limits (CSOLs), etc.

NOTE *COEM-DES-281, Specification for Procurement and Construction, describes the development of unique Equipment, Construction, and Design Build Specifications. Construction Management maintains, and modifies the standard Construction Specifications adapted to specific projects.*

COEM-PMG-327, Government Furnished Equipment (GFE), describes the process for procuring GFE Equipment.

COEM-DES-273, Engineering Standards for Procurement, describes the P and I Specifications documentation process and the various requirements for obtaining non-safety class, augmented quality, and safety class items. Either COEM-DES-273, or a Subcontractor's quality program approved by the Integrating Management Contractor must be used when procuring parts, and equipment for Site Construction Projects.

6.3 Phase III - Engineering Technical Analysis and Detailed Design (continued)

COEM-PMG-325 describes the process for initiating and controlling Sub-Contracts.

Project Engineer / Construction Engineer

[4] Prepare Specifications (GFE, Equipment, and Construction) in accordance with COEM-DES-281 and COEM-PMG-327 as appropriate and transmit the technical and quality related acceptance criteria to the Procurement Engineer when P or I Specifications are required.

Procurement Engineer

[5] Assist the Project Manager and Project Team as requested in expediting procurement in accordance with COEM procedures.

Program Manager/Project Manager

[6] Request required permits for the project (ref. COEM-PMG-302).

[7] Obtain requirements through CM for all required support hours by organization. Release work authorization to each cost center.

[8] Obtain firm project cost estimates and schedules for construction.

[9] Concur with the final design in accordance with 1-V51-COEM-DES-210.

[10] Obtain documentation of User's (Program Process Manager's) concurrence with the design.

[11] Process Baseline Change Proposals, and obtain a CP&B - Funds Control review of funding determination, if required.

Construction Engineer/Coordinator

[12] Review design and schedule for construction.

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6.3 Phase III - Engineering Technical Analysis and Detailed Design (continued)

Project Manager

[13] Request Key Decision 3 (KD-3) approval to proceed with procurement, construction, and installation.

6.4 Phase IV - Work Planning, Construction, or Disassembly

Phase IV of a project starts with the contract solicitation for construction and/or equipment procurement. With DOE approval, the Construction/Procurement and other Phase IV tasks may be initiated in Phase III (i.e. Construction / Procurement Contract initiation, Fast-Track Design / Construction, Phased Design / Construction). The goal is to: 1) obtain fair and cost effective contracts for equipment and construction; 2) achieve a fully installed/construction project inspected to specified acceptance criteria and As-Built to show it is consistent with the Detailed Design; and 3) achieve a completely constructed project with minimum changes and deviations from the initiating baseline design and other contract documents.

Project Manager

[1] Coordinate with DOE/RFFO to obtain KD-3 authorization to proceed with construction and oversee all activities in the Procurement and Construction phase of the project.

[2] Review the final version of subcontract documents such as procurement boilerplate, division 1, Engineering Specifications, and drawings before issuing the Construction Package for solicitation.

[3] Ensure that the following activities are conducted in accordance with Site Policies/Procedures, Procurement Procedures, Specifications, and applicable standards:

- Procurement of Government Furnished Equipment (GFE).
- Procurement of Capital Equipment.
- Procurement of subcontracted construction and installation related services.

6.4 Phase IV - Work Planning, Construction, or Disassembly (continued)

Construction Engineer/Coordinator

[4] Fulfill Contract Technical Representative duties for the construction contract.

[5] Coordinate approvals for the vendor submittals in accordance with the design and contract documents.

[6] Coordinate all construction subcontract documents; Safety & Health Performance Submittals; Technical Evaluations; the IWCP package development; utility outages and interruptions to normal site activities; project schedule interface with operation and maintenance schedules; lockout/tagout; Non-Conformance Report resolution; impact to operating, surveillance, and maintenance procedures; preparation of training, maintenance, operation manuals and procedures; and compliance with applicable site waste storage and disposal procedures (see Waste Operations and/or Waste Programs as provided by Environmental and Waste Management for guidance as required).

[7] Provide to the Project Manager a weekly Project Summary Report, Construction Meeting minutes, an updated Level 4 Project Schedule as requested by the Project Manager.

[8] Arrange for discipline support from the Project Team and Central Engineering Subject Matter Experts, as appropriate, for construction/quality control inspections.

[9] Arrange for periodic photos.

Project Manager

[10] Monitor all support organizations' weekly project labor charges, and ensure that support organizations maintain work authorization, schedules, and cost commitments.

6.4 Phase IV - Work Planning, Construction, or Disassembly (continued)

Construction Engineer

[11] Ensure that all drawings are red-lined by the Subcontractor and verified as construction progresses. Obtain support from original Project Team when required. This is essential to maintain the configuration of the technical baseline documentation of the project and in verifying the project was built according to the Design and User's requirements.

[12] Maintain all Construction Field Changes (CFC) by log and control numbering. Ensure all CFCs meet change requirements prior to initiating a change.

Project Engineer/Project Team

[13] Provide clarification and on-call support to the field when the project is in construction.

[14] Conduct System Operational Testing in accordance with COEM-DES-245, Preparing, Revision, and Controlling of System Category 1 & 2, and 3 Operational Testing Procedure, or COEM-DES-247, Preparing, Revision, and Controlling of System Category 4 Operational Testing Procedure, as appropriate.

[15] Initiate Engineering Change Requests when required to correct the original design, obtain all approvals necessary to initiate the change, and log the change into the Facilities Engineering Work Control/Engineering Change Requests (FEWC/ECR) database system, and turn the original ECRs into Engineering Documentation.

[16] Provide As-Built drawings on Safety Systems within 30 days of contract closeout unless an alternative schedule is approved by the Site Design Authority.

[17] Provide As-Built drawings within 90 days of contract closeout unless an alternative schedule is approved by the Site Design Authority.

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6.4 Phase IV - Work Planning, Construction, or Disassembly (continued)

Project Manager

[18] Coordinate with DOE/RFFO to obtain KD-4 authorization to operate the facility.

6.5 Phase V - Operational Testing and Project Close Out

Phase V of a project starts with completion of construction and initiates the remaining activities leading to final costing and closeout of the project. It is necessary to make a clear distinction between the project costs and operating costs on a project so that a well-delineated completion point for the project can be established.

The goal of Phase V is to verify the original objectives of the project have been met, that all construction, IWCP, engineering, training and start-up activities are complete, that all costing and accounting actions are closed, and that the project technical basis documentation has been completed and updated to reflect the as-built condition. A Project Acceptance and Transfer (PA&T) is issued to close the Subcontract and IWCP package. As-builts are then completed. Finally a Final Project Closeout (FPCO) is issued to close the project which effectively ends charging to the job. Afterwards, an Accounting Closeout (ACO) is issued and all costing on the project is ended and files can be sent to permanent storage.

Project Manager or Project Engineer

[1] Ensure the Final Safety Analysis Report (FSAR) is prepared when required by Safety Analysis Engineering.

[2] Obtain the User's acceptance or Beneficial Occupancy that the Construction Project is functionally complete, safe, and fit for performing its intended function when appropriate.

[3] Ensure the as-built project documentation is completed and received by Engineering Documentation, and Operation and Maintenance manuals are delivered to the responsible program, Maintenance, Engineering Documentation, Procurement Engineering, and the Project File.

6.5 Phase V - Operational Testing and Project Close Out (continued)

[4] Ensure all punch list items are complete (except for extended warranty work), operator training is complete (when required as part of the contract), and construction has been completed in accordance with the plans, specifications, and contract documents.

[5] Maintain project reporting and documentation files including a file index checklist as required by COEM-PMG-349, Records and Documentation Management.

[6] Ensure that funding is reconciled with final project costing and procurement actions.

[7] Ensure each Subcontract receives a Project Acceptance and Transfer, and the project a Final Project Closeout, and Accounting Closeout in accordance with COEM-PMG-331, Project Closeout and Turnover.

NOTE *A Final Project Close Out form can not be done until Construction Closeout has been completed. As a minimum IWCP closure, a letter of cancellation or all PA&Ts for each Sub-Contract, and As-builts shall be received prior to closing the project.*

A letter of cancellation shall detail the reason for cancellation, uncompleted scope, safety concerns of the Project Team that are unresolved, status of Technical Baseline Documentation needed to maintain project/plant configuration (e.g. as-built drawing/red-line status of each Technical Baseline Documents [TBD]), and shall be signed by the responsible Program Manager.

Project Manager

[8] After an Accounting Closeout Form is received from accounting, consolidate and submit the Construction, Project, and Design files, signed Engineering Project File Index to Engineering Documentation.

6.5 Phase V - Operational Testing and Project Close Out (continued)

[9] Send the Original Subcontractor Evaluation, and DOE Order 5480.9A Safety Documentation to Occupational Health and Safety for permanent storage.

Engineering Documentation

[10] Log and send project files to the Records Management Group in accordance with 1-77000-RM-001, Records Management Guidance for Records Sources, after receiving them from the Project Engineer/Project Manager.

[11] Maintain a log of all permanent project files and their disposition based on Record Management's return receipt.

7. DOCUMENTATION AND REQUIREMENTS

Project Management documentation for both COEM-PMG-301 and COEM-PMG-302 is summarized in COEM-PMG-349.

7.1 DOE Requirements

Project Management System:

DOE Orders 4700.1, Project Management System, and 4700.5, Project Control System Guidelines, are the primary DOE documents defining policies and specific requirements for project management and execution. The DOE project management system is an approach to management in which authority, responsibility, and accountability are vested in a single individual to provide detailed planning, organization, direction, and control of all activities leading to the successful execution of the project. That individual is identified as the Project Manager. DOE Order 4700.5 stresses accountability and places emphasis on the control of technical, schedule, cost and baseline changes. Additional documentation requirements are defined in COEM-PMG-302.

7.2 Site Requirements

The CCCP Manual describes the process for assuring technical basis documents meet the design basis requirements throughout the project life cycle and reflect the actual site configuration at project completion.

The Conduct of Engineering Manual (COEM) and Procurement Procedures Manual are the primary documents that contain detailed procedures pertaining to planning, design, procurement, and construction of projects.

The IWCP describes how "hands on" maintenance modification and construction activities are planed to provide safe work environments and installation work that meets technical requirements.

7.3 Project Requester Requirements

The requester of the project may have specific requirements pertaining to project documentation, regulatory requirements, and execution.

NOTE *The Project Manager shall ensure that all requester requirements comply with DOE Orders by reviewing these concerns with the appropriate Subject Matter Experts.*

8. REFERENCES

Conduct of Engineering Manual

1-V51-COEM-DES-210, Design Process Requirements
2-D75-COEM-DES-241, Preparation of Conceptual Design Reports
2-E17-COEM-DES-249, Title I Design Summary/Review
2-L91-COEM-DES-245, Preparing, Revision, and Controlling of System Category I, II, and III Operational Testing Procedure
2-L93-COEM-DES-247, Preparing, Revision, and Controlling of System Category IV Operational Testing Procedure
2-D62-COEM-DES-255, Engineering Change Requests
2-C93-COEM-DES-273, Engineering Standards for Procurement

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8. REFERENCES (continued)

- 2-I02-COEM-DES-281, Specification for Procurement and Construction

2-L92-COEM-PMG-302, Introduction to Quality, Environmental, Davis-Bacon, Security, and Safety and Health Documentation

2-L92-COEM-PMG-303, Project Initiation and Assignment Guide.

3-K08-COEM-PMG-309, Operational Requirements Document Conduct of Construction Management Manual

3-K78-COEM-PMG-323, Preparation of Project Management Plan/Work Package.

3-P33-COEM-PMG-325, Engineering Subcontract Guide

2-M54- COEM-PMG-327, Government Furnished Equipment

3-J68-COEM-PMG-331, Project Closeout and Turnover

2-F38-COEM-PMG-349, Records and Documentation Management

DOE Order 4700.1, Project Management System

DOE Order 4700.3, General Plant Projects

DOE Order 4700.5, Project Control System Guidelines

DOE Order 4240.1K, Designation of Major System Acquisitions and Major Projects

DOE-RFFO Rocky Flats Instruction 4700.1, Project Management

Procurement Procedures Manual

RFI 2250.1 Rocky Flats Management Control System

8. REFERENCES (continued)

Site Policy 1-8, Management Control System:

1-40ADM-MCS-1001, Management Control System

1-40ADM-MCS-1002, Work Package Development and Documentation

1-40ADM-MCS-1003, Work Breakdown Structure/Baseline Change Control

1-40ADM-MCS-1004, Work Authorization and Suspension

1-40ADM-MCS-1007, Site Wide Prioritization Process

Site Policy 9-9, Operational Requirements Document

Site Policy 9-10, Site Configuration Change Control Program

Site Policy 9-21, Facilities Project Management

Site Procedure 1-25000-EPR-NEPA.001, Implementation of NEPA Documentation

Site Procedure 1-46000-PROC-001, Requisitioning Items and Services

APPENDIX 1
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RESPONSIBILITIES BY ORGANIZATIONAL CHARTER

Project Management Organization

The Project Management Organization has the primary responsibility for the overall management of facility projects in support of the primary programs at the Site. Facility projects are defined as those that entail new construction, make major modifications to existing facilities, or involve procurement and installation of large capital equipment items. The Project Management mission is to support programs in the following areas:

- Ensure that projects are justified and funded based on programmatic priorities.
- Ensure that projects properly reflect programmatic needs and have adequate scope and budget definition.
- Develop, staff and manage appropriate project organizations/teams to accomplish project objectives and assign a qualified individual to manage each assigned project or sub-project.
- Develop thorough Project Management Plans/Work Packages (PMP/WP) with detailed cost, schedule, and scope baselines for accomplishment of projects.
- Manage projects according to plan, using well-defined monitoring and control techniques.
- Complete all projects within technical scope, budget and schedule baselines.
- Identify and coordinate the people, systems, and facilities as necessary to meet the collective requirements of all projects to support the Site mission.
- Prepare baseline and planning documentation for approval, including environmental documents.
- Coordinate and develop the justification and validation documentation required for the budget approval cycle for assigned projects.
- Provide reporting, communication, and approval interfaces with cognizant Department of Energy/Rocky Flats Field Office (DOE/RFFO) and DOE Headquarters (HQ) program offices.
- Approve engineering packages which contain Technical Baseline Documentation such as Design Drawings, ORD, SOW, CDR, DC, PMP, and Acceptance Criteria for implementation.
- Maintain project files for projects.
- Ensure that project management activities are conducted in accordance with Legal, Environmental, and DOE requirements, and necessary and sufficient standards as implemented by the CCCP, COEM, Project Management Manual, Site Policies/Procedures, the M&O contract and good management practice.

Program Organization

- Provide a qualified Program Manager who understands the relationships between the program and projects falling under the program umbrella.
- Identify program objectives relative to mission requirements.
- Justify and defend projects during budget call and validation processes.
- Provide planning to integrate budgets, schedules and scopes among multiple projects to achieve distinct and clearly defined programs.
- Perform planning for the development work and funding requests for individual projects that support the scope and justification in project requests.
- Provide a User Technical Representative

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Integration and Planning Organization

- Manage the project prioritization and screening process in accordance with 1-40-ADM-MCS-1007, Site Wide Project Prioritization Process.
- Act as the single integrating authority that coordinates all facilities and land use planning requirements for all Site Programs.
- Evaluate and propose for approval of facility and land use, including the prioritization and screening process.
- Support the budgeting process for project justification as it relates to building usage.
- Develop, publish and maintain the Master Site Plan representing the Site consensus on usage of Site facilities and land use.

Engineering Organization

- Plan, control, and execute the engineering design for the project.
- Establish design requirements for developing project schedules and budgets to be implemented in the PMP/WP for engineering tasks.
- Provide qualified personnel to design and manage the various stages and disciplines of design and coordinate internal and external design resources.
- When design is to be performed by a subcontractor, prepare scopes and/or statement of work as appropriate.
- Oversee the work by design subcontractors from a technical point of view.
- Ensure a technical engineering review and S&H review is provided when design is performed in-house or by an A/E subcontractor.
- Monitor performance against engineering project objectives and goals.
- Provide technical evaluation of proposals to include participation on Source Evaluation Committees as deemed appropriate by Procurement.
- Approve individual Technical Baseline Documentation such as Design Drawings, ORD, SOW, CDR, DC, PMP, and Acceptance Criteria for meeting performance standards.

Construction Management

- Plan construction activities and coordinate construction-related procurement at on Site.
- Provide qualified personnel to manage and coordinate project construction activities performed by construction subcontractors, equipment suppliers, and the Maintenance organization.
- Interface with Subcontracts Administration to facilitate procurement.
- Ensure the work is performed safely in accordance with Site procedures.
- Red-line or update field changes/ECRs on drawings and other TBDs to ensure project configuration and technical baselines are maintained.

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Central Planning & Budgets (CP&B)

- Integrate all budget and planning documentation for projects at the Site within the funds control system.
- Maintain the Site Management Control System through which projects are requested, prioritized, integrated and resource loaded.
- Maintain upper level project cost and variance reporting.
- Provide scheduling and accounting support services to the Project Manager and other performing organizations to support the integrated scheduling and cost tracking requirements of project management.

Funds Control

- Manage funds control activities related to construction projects.
- Coordinate, submit, and release capital funding documentation for projects.
- Make the final determination of funding source and submit budget schedules and data sheets for capital projects as required by the DOE budget call.
- Prepare and obtain budgetary approvals prior to releasing capital funds for projects.
- Provide data for monitoring budget outlays and commitments.
- Provide project financial reports to the DOE Financial Branch.

Procurement

- Assign a Buyer/Subcontract Administrator to the project as soon as possible after project initiation.
- Ensure all purchase requests and accompanying documentation are in accordance with Site Procedure 1-46000-PROC-001, Requisitioning Items and Services.
- Provide guidance for acquisition planning at project initiation to the Project Manager as requested for incorporation into the Project Management Plan/Work Package (PMP/WP).
- Solicit proposals, award subcontracts and track procurement actions in accordance with applicable Level One Site procedures.
- Administer all subcontracted portions of projects (as required by the applicable subcontract provisions) in conjunction with Contractor's Technical Representative (CTR).
- Jointly, with Contractor's Technical Representative, provide status of subcontracts to the Project Manager.

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RESPONSIBILITIES BY KEY PERSONNEL

Key Personnel

The typical project Organization Breakdown Structure (OBS) shown in Appendix 2 is representative of a project's organization. This Organization Breakdown Structure (OBS) shows the relationships of Key Personnel to their support organizations, and the hierarchy of management control on projects. Key Personnel are generally assigned using the matrix form of organization structure. Larger projects, primarily Line Items, will require dedicated personnel for the life of the project.

The following sections briefly describe the responsibilities of Key Personnel.

Program Manager/Project Requester

Establish overall program guidance based on direction from the DOE-RFFO.

Monitor and control overall performance within the assigned program area by:

- Establishing overall program objectives and goals and identifying projects that support the program.
- Submitting project request documentation, justifying and obtaining funding, and participating in establishing site priority for projects.
- Establishing a Master Program Schedule that defines the major milestone objectives to be satisfied by supporting projects.
- Establishing firm definition for each project to allow thorough planning of a project, including development of scope documentation as part of the Operational Requirements Document (ORD), Site Policy 9-9.
- Reporting progress of program elements to the DOE-RFFO and customers.

NOTE *For projects that do not have a Program Manager, the Project Requester is responsible for providing project goals and objectives, and establishing definitive requirements for the project scope via an Operational Requirements Document. The Project Requester is also responsible for requesting funding and providing justification, including economic analysis, identification of operational savings, and defining other drivers for the project.*

Project Manager

Responsible for overall project scope development, planning, work authorization and performance, analysis and reporting, change control for the work, and day-to-day communication with the DOE/Construction and Engineering Division (DOE/CED) and the user. The Project Manager has overall responsibility and authority for the execution of the project.

Plan, organize, direct, and control the project starting with conceptual development and ending with project closeout by:

- Acting as the formal point of communication between the customer and project team members, providing guidance and direction to all project participants so that quality in the construction project is achieved.

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Project Manager (continued)

- Ensuring that projects are justified and funded based on programmatic priorities.
- Developing, staffing and managing appropriate project organizations/teams to accomplish project objectives and to ensure qualified services are rendered.
- Developing thorough Project Management Plans/Work Packages (PMP/WP) which reflect programmatic needs and detail the work scope definition, schedule and budget baselines, methods of performance, analysis, change control, work authorization, reports, and plans for the accomplishment of the projects and reflect the programmatic needs.
- Overseeing the estimating process, by reviewing the detailed estimates, and validating these estimates with the project plan.
- Ensuring compliance with NEPA requirements.
- Preparing other baseline documents for submission to DOE for approval. These documents may also include, depending on type of funding, Project Data Sheets and Activity Data Sheets.
- Preparing the Project Master Schedule after receiving input from other members of the project team and identify Key Interface Milestones within the Program Schedule.
- Preparing a project specific Work Breakdown Structure (WBS) and applicable WBS dictionary to appropriate organization performance levels.
- Managing projects according to the PMP/WP, using well-defined performance measurement and control techniques.
- Ensuring projects meet technical scope, budget and schedule objectives.
- Ensuring that project management activities are conducted in accordance with Legal, Environmental, and DOE requirements, and necessary and sufficient standards as implemented by the CCCP, COEM, Project Management Manual, Site Policies/Procedures, the M&O contract and good management practice.
- Ensuring that site safety and health requirements are considered, developed, implemented, and enforced throughout the life of the project and resolved in a timely and effective manner.
- Negotiating and issuing work request contracts and associated budget, scope and schedule requirements to supporting organizations: e.g. Engineering, Environmental Documentation, Procurement, and Construction Management.
- Producing and Verifying deliverables are complete and the review distribution of each deliverable is coordinated with the appropriate organizations.
- Interpreting impartially contracted documents.
- Authorizing the commitment of project funding and approving all purchase requisitions for subcontracts of equipment and services.
- Reviewing, preparing and approving both internal and external monthly project reports including preparation of variance analysis.
- Ensuring Technical Baseline Documents are updated and funded for Title III As-built services.
- Defining, documenting, and submitting Baseline Change Proposals (BCPs).
- Implementing corrective action as required.
- Maintaining a central project file for permanent and ensuring working project documentation including red-line/as-built drawings are kept and updated.

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Project Engineer

Serves as the lead for technical scope and engineering support activities associated with a project by:

- Acting as the lead for the technical scope and engineering support activities associated with a project.
- Establishing the technical scope and ensuring that all engineering products satisfies design requirements, regulatory requirements, and applicable codes and standards, and good engineering practice.
- Developing the engineering budget and deliverables as input to the PMP.
- Developing the detailed engineering schedules for integration by the Project Manager into the Master Project Schedule.
- Preparing an Engineering Plan as input to the Project Management Plan that defines the engineering schedule, budget and deliverables.
- Managing the engineering baselines through the use of performance indicators established by the Project Management Plan. Identifying variance from baselines and initiating corrective actions.
- Obtaining appropriate discipline support of all engineering and S&H disciplines and coordinating all design activities.
- Coordinating the development of all drawings, calculations, specifications, and other design deliverables.
- Holding periodic meetings with the project design team to review engineering performance.
- Identifying variance from design baselines and initiates corrective actions.
- Preparing contract documents and specifications for Architect/Engineer subcontracts. Monitoring and controlling A/E performance.
- Acting as the Contractor Technical Representative (CTR) for A/E contracts, including review and approval of invoices for payment.
- Ensuring that all engineering activities follow the requirements of the Configuration Change Control Program, Site Policy 9-10.
- Reviewing and approving all subcontractor submittal for conformance to specifications.
- Ensuring changes to the design are conducted in accordance with DES-255, Engineering Change Requests once a Final Title II package is issued.

Construction Engineer

Serves as the lead for construction or installation activities associated with a project beginning early in the evolution of a project and continuing through construction to project completion and operation by:

- Preparing a Construction Plan as input to the Project Management Plan that defines the construction schedule, resources and execution requirements, including the construction procurement process.
- Participating in the design review process by identifying potential constructability concerns.
- Acting as the Contract Technical Representative (CTR) for construction subcontracts.
- Identifying construction-related problems and initiating corrective measures.
- Reviewing and approving the construction subcontractor's work plan and schedule to ensure compliance with subcontract requirements.

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Construction Engineer (continued)

- Reviewing subcontractor's invoices, determining earned value, and making recommendations for payment.
- Monitoring and reporting subcontractor performance against approved schedules and initiating actions with procurement to correct schedule variances.
- Issuing weekly reports on construction progress after a construction subcontract has been awarded.
- Coordinating the storage and disposal of all waste generated during construction.
- Obtaining excavation permits, asbestos demolition and/or removal notification (additional guidance provided by the Asbestos Hazard Emergency Response Act), rubble characterization documentation, and facility outage notifications.
- Confirms the project is built as specified, and functions in accordance with its initially intended purpose and User's requirements and expectations.
- Verifies as-builts are provided as required by the Technical Baseline Documents for the project and the Construction Contract.
- Ensuring that construction and support activities are conducted in accordance with approved procedures, applicable State and Federal regulations, and good construction practices
- Ensuring that construction management activities are conducted in accordance with the Construction Management Manual, Site Policies/Procedures, applicable state and federal regulations, and good construction practices.
- Ensuring construction drawings are routinely updated during construction and the Site Design Authority approval documented on changes to design deliverables when required by the ECR process, COEM-DES-255.

Construction Coordinator

Coordinates daily work control, and interface activities in support of the construction subcontractor by:

- Serving as the primary interface between the M&O contractor and the construction subcontractor regarding work safety requirements, construction inspections, site rules, and DOE regulations.
- Directing the planning of day-to-day construction activities associated with the permitting process the IWCP and standard operating procedures.
- Arranging for site support organizations that are required to support specific construction activities.
- Reviewing, evaluating, and monitoring construction subcontractor work performance to ensure compliance with subcontract documents during and upon completion of construction activities.
- Serving as the primary interface between and subcontractor regarding work safety requirements, construction inspections, site rules, and DOE regulations.
- Directing the planning of day-to-day construction activities associated with the permitting process through the Integrated Work Control Program and standard operating procedures.
- Coordinates efforts through the appropriate Plan of the Day (POD) Meeting for an area.
- Coordinating utility outages and other interruptions to the normal flow of site activities.
- Arranging for construction inspections by cognizant site organizations.
- Supporting the construction subcontractor by arranging for pickup and delivery of government-furnished equipment.

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Construction Coordinator (continued)

- Reviewing, evaluating, and monitoring construction subcontractor work performance to ensure compliance with subcontract documents during and upon completion of construction activities.
- Ensures documentation required by DOE Order 5480.9A, is provided by the Subcontractor and Division I Section 1700 is submitted as required (Ref.PMG-302, Appendix 5, DOE Order 5480.9A documentation).

Engineer

- Developing specific technical documents that have been identified in negotiated scope documents such as drawings, calculations, test procedures and specifications.
- Ensuring that the design is consistent with actual field configuration by walking down the proposed location of the modification, and ensuring the design is consistent with the User's intended scope of work referencing the Project Management Plan and by coordinating with User and operation personnel.
- Establishing the design requirements and acceptance criteria (design basis), and identifying all deliverables which are important to configuration and safety as technical design basis documents and ensuring there are provisions in the Project Management Plan to have these updated/as-built as required.
- Ensuring technical adequacy and integration of all design deliverables with other team members and Engineers.
- Preparing all engineering deliverables in accordance with the national standards and good engineering practices appropriate to each discipline.
- Ensuring the constructability and maintainability of the design.
- Coordinating engineering deliverables through Engineering Documentation.
- Ensuring changes to the design do not conflict with the original design basis unless those changes have been evaluated by the appropriate discipline experts and/or originator of the design.
- Providing as-built drawings, based on the construction red-lines, prior to signing the FPCO form.
- Support all System Operational and Component Check tests.
- Assuming technical responsibility for designs constructed when signing the FPCO for the project or PA&T at contract close out.

Project Buyer/Subcontract Administrator (SA)

- Coordinating procurement actions on projects.
- Providing status reports to the Project Manager.
- Providing direct project procurement support on smaller projects.

Accomplish the above items by:

- Participating in the development of procurement lead-times, recommended methods of subcontracting, a description of major procurement actions, and strategy for procurement.
- Submitting a schedule outlining all procurement milestones.
- Providing guidance on internal purchasing actions identifying other Buyers and purchasing functions/departments who may be required to support the procurement team.
- Monitoring the level of support to achieve projects schedules, tracking progress of procurement actions, and providing status to the Project Manager as requested.

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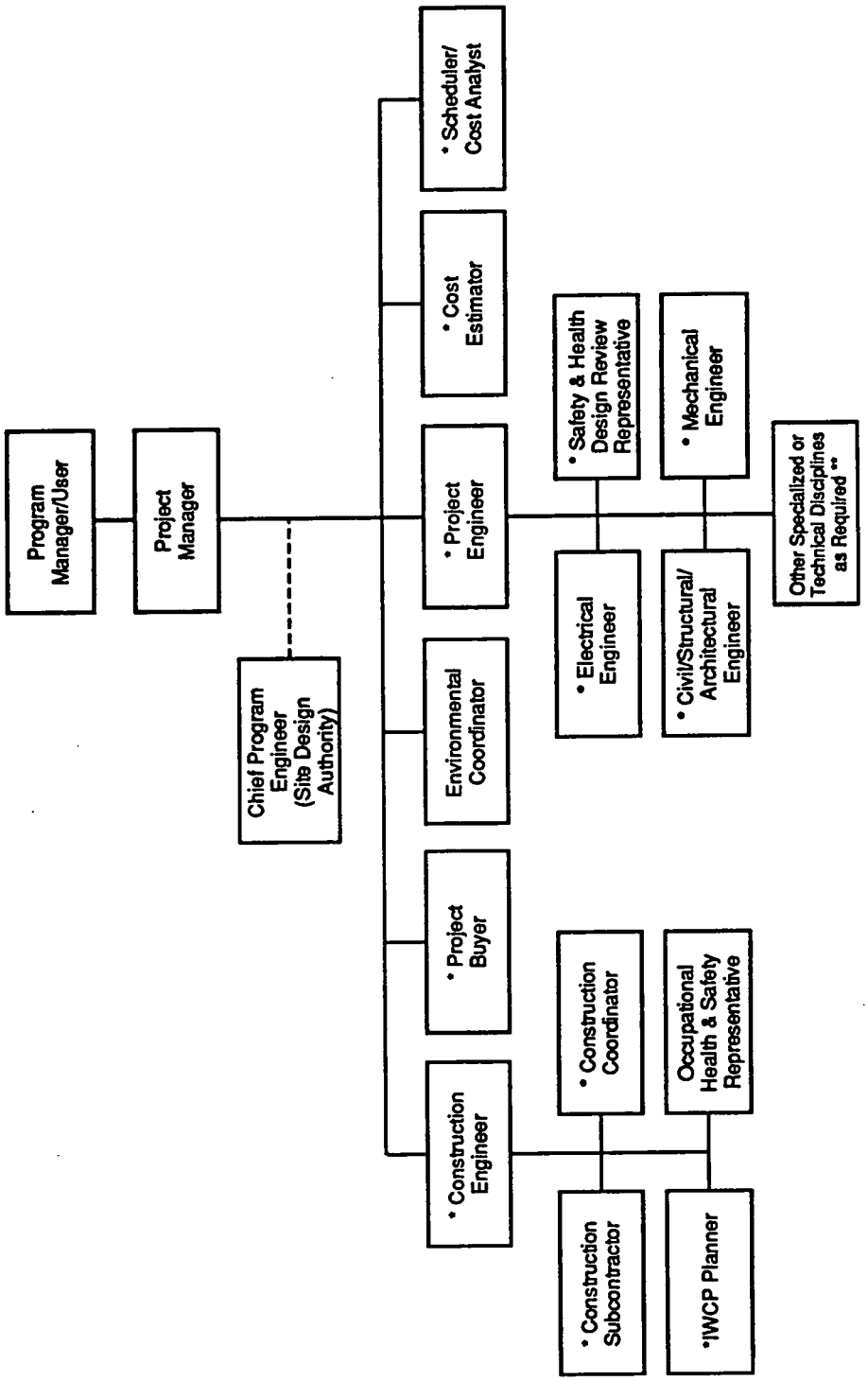
Typical Project Organization Breakdown Structure (OBS)
(Independent of RFETS Internal Organizational Structure)



* Key Personnel Matrix To Project Manager
** See COEM-PMG-302 for listing

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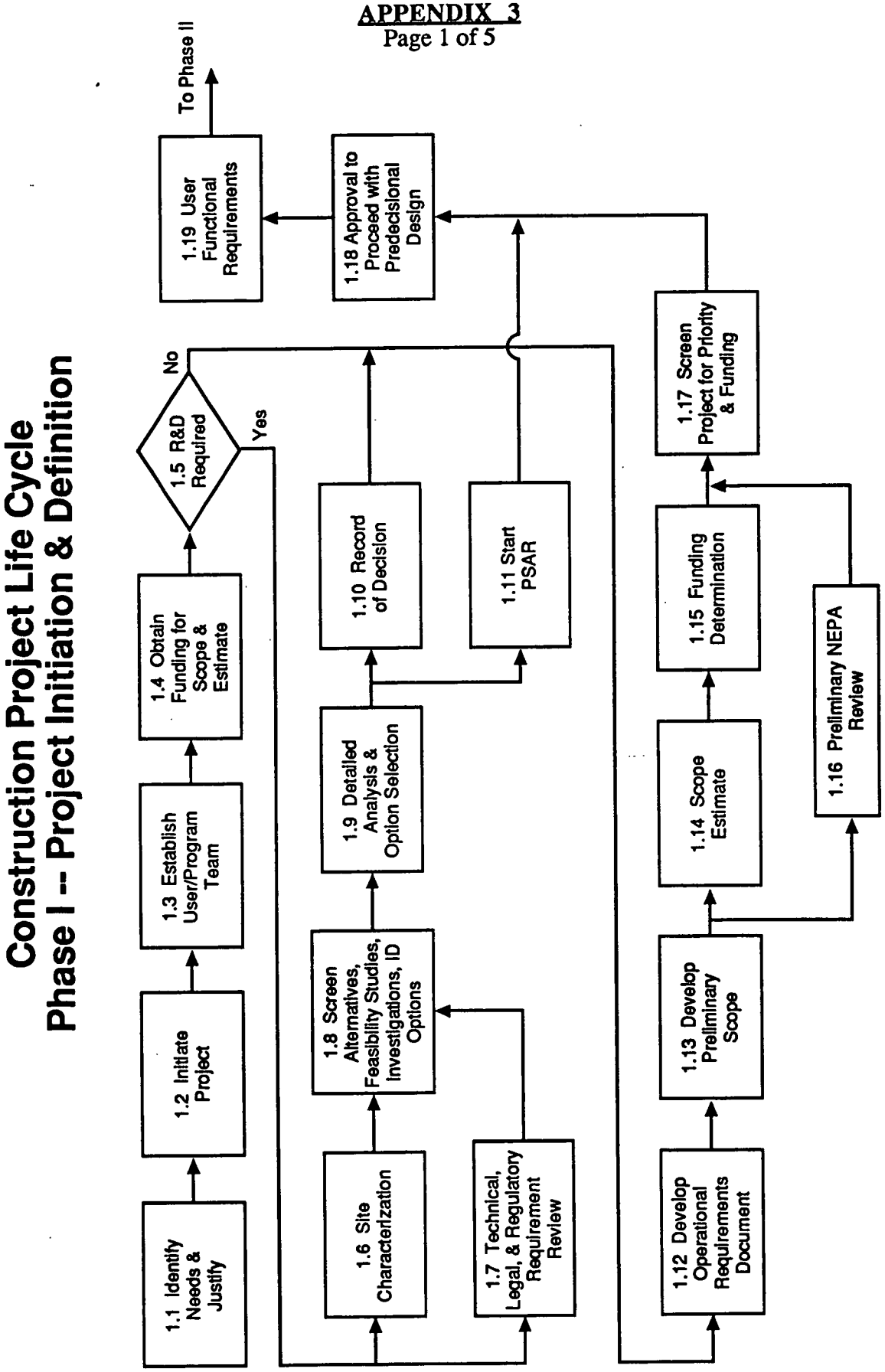

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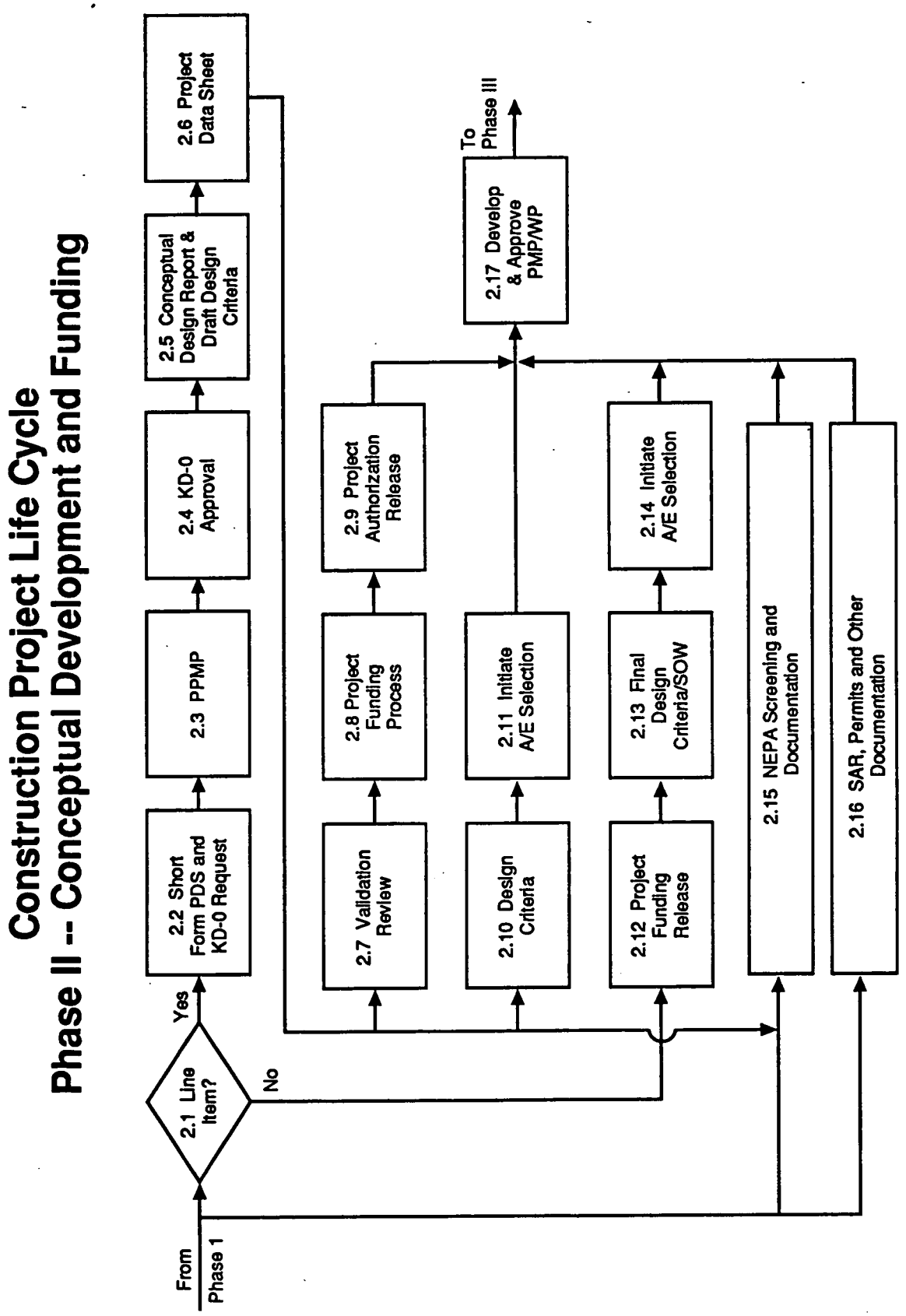

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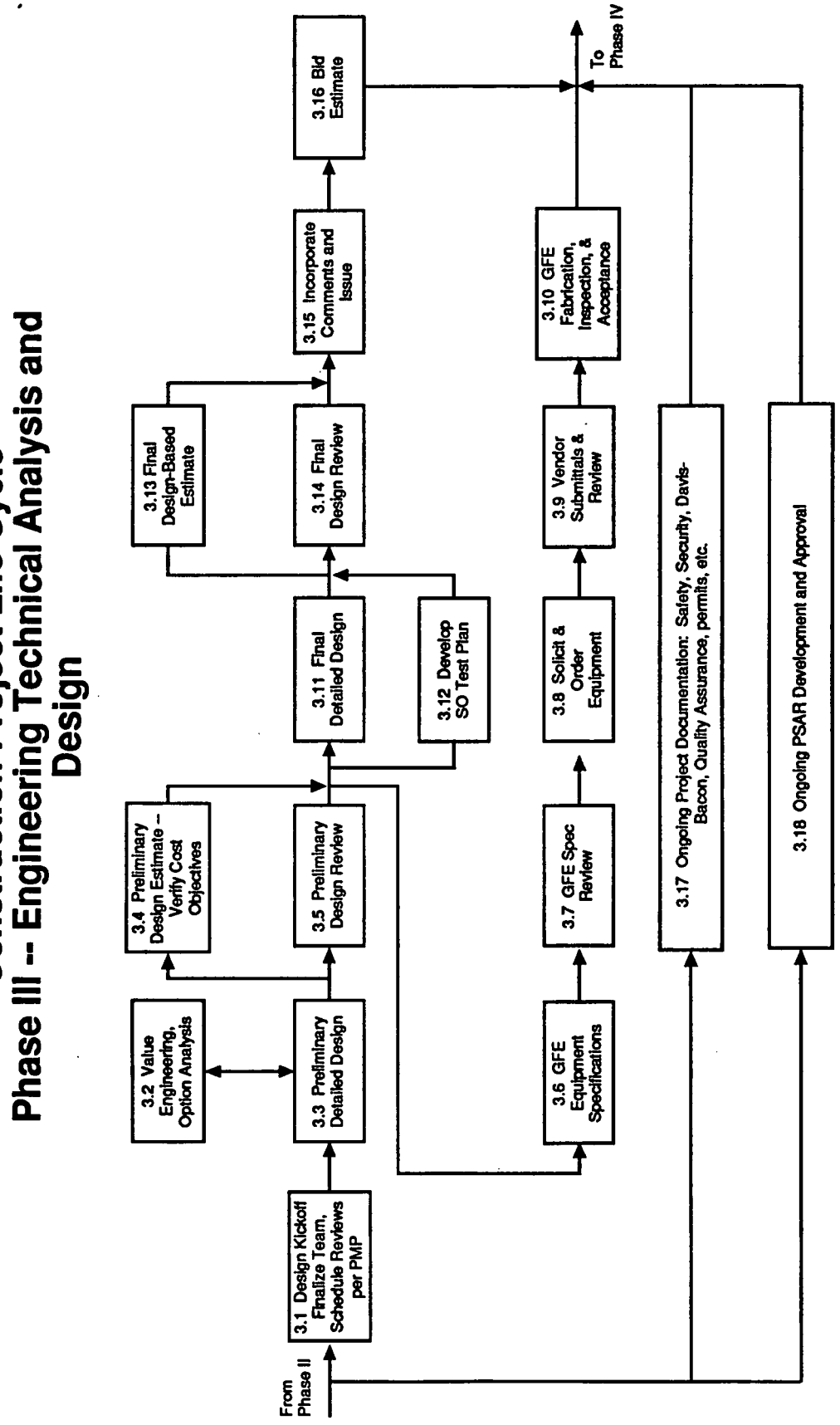
Construction Project Life Cycle
Phase III -- Engineering Technical Analysis and Design



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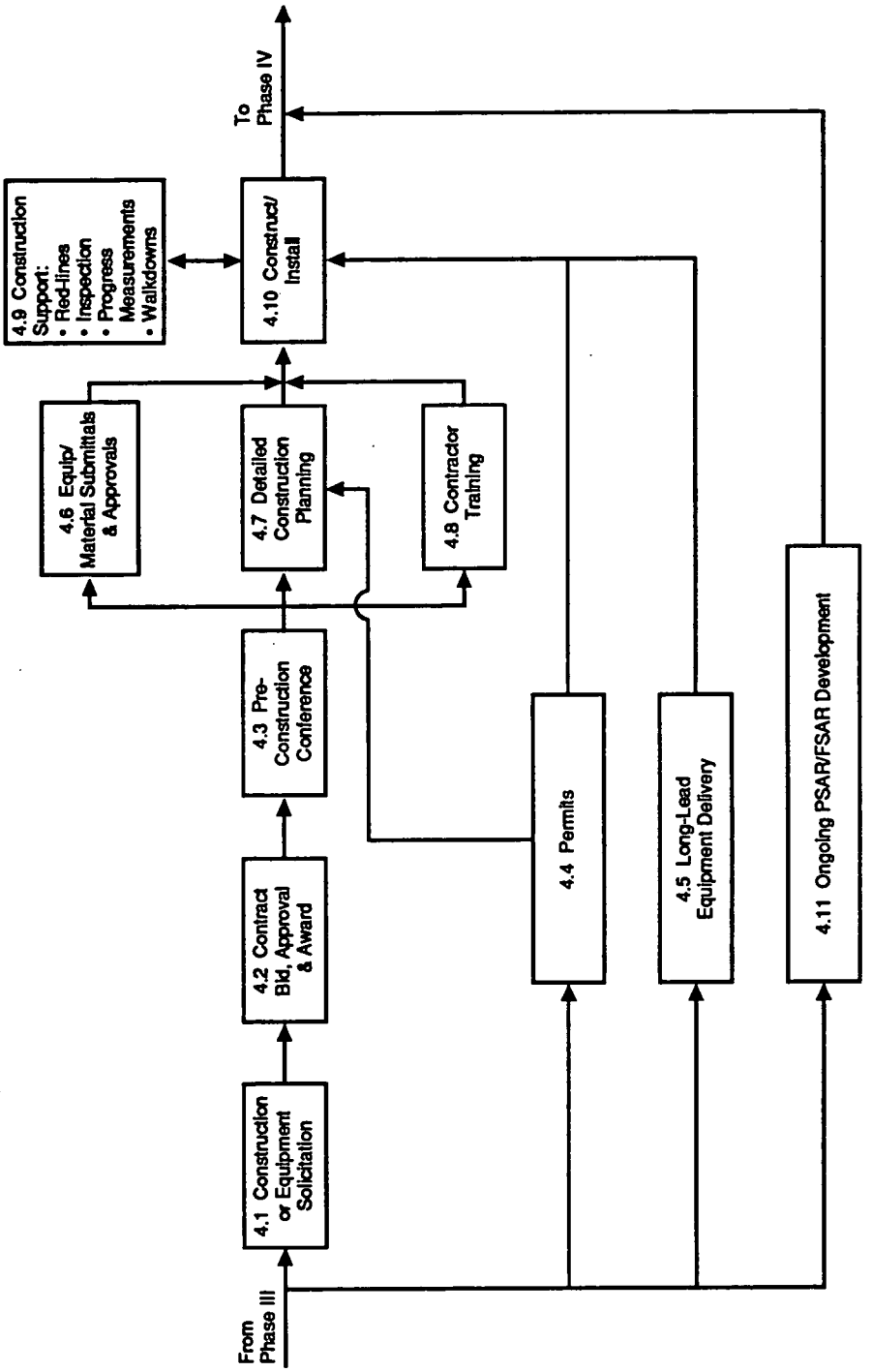
Construction Project Life Cycle
Phase IV -- Procurement and Construction



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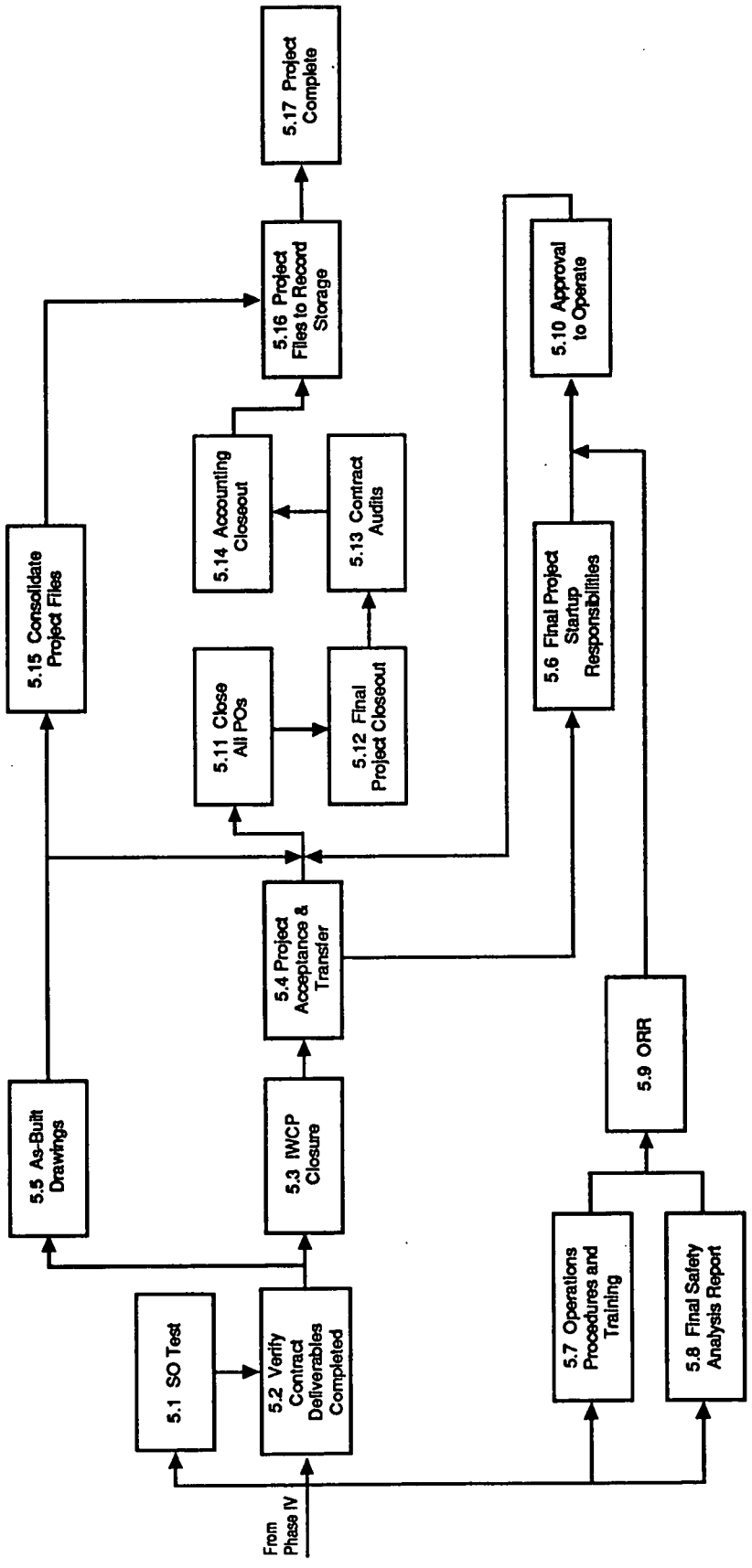
Construction Project Life Cycle
Phase V -- Closeout and Operation



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CONSTRUCTION PROJECT LIFE CYCLE FLOW CHART WBS DICTIONARY

This Work Breakdown Structure (WBS) dictionary defines the typical activities that make up a construction project life cycle. The referenced flowcharts define the five project phases in the project life cycle at the Site as identified in the Construction Project Management System procedure.

PHASE I PROJECT INITIATION AND DEFINITION

Phase I of a project is heavily dependent on the User/Program representative to define the requirements and operating needs of the project. In this regard the User may obtain the services of many organizations, and in the case of a construction project will involve budgeting, engineering, safety, project management as well as other groups that have specific roles in typical projects. The Initiation and Definition Phase can have a wide degree of latitude in its execution, since a simple project may only require a preliminary scope and estimate, whereas a project with new technology may require several years of development supported by a multi-million dollar budget before Phase II can begin. The Phase I flowchart includes some steps that are intended to accommodate a range of projects.

1.1 Identify Needs and Justification -- The objective and justification for the project must be fully defined in order to determine the next steps in project initiation. All planning and funding will require and reference the justification.

1.2 Initiate Project -- This element requires the User or Program office to identify the need for a product that could potentially be accomplished by a project approach. This step begins an active effort to initiate necessary planning or other paperwork that shows the potential need for the project.

1.3 Establish User/Program Team -- The key User/Program personnel that will support and develop the project should be identified as soon as possible to obtain their commitment and input for planning and execution.

1.4 Obtain Funding for Scope and Estimate -- At this time in a project's life cycle, the User/Program office controls all budget and fund sources. Depending on the size of the project, the funding may come from a generic funds source (as for general planning and support, or a scope & estimate work package) or may require multi-year planning with detailed funding submittals under a separate Activity Data Sheet (ADS). The User typically requests and justifies funding.

1.5 R&D Required? -- This decision block will separate the smaller from the larger projects. Environmental Restoration and Waste Management are typical programs that have longer lead-times for project definition.

1.6 Site Characterization -- Site Characterization is an activity that may be necessary to determine the scope of work of the project. A project may have research and development or other tasks that should appropriately be initiated early in this phase of the project.

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1.7 Technical Legal and Regulatory Requirement Review -- A crucial element of many projects is the identification of the external drivers that will influence scope and schedule of a project. DOE Orders, Federal and State Laws, and commitments to off-site agencies may have significant input to a project and must be adequately analyzed to avoid changing scope as the project evolves.

1.8 Screen Alternatives Feasibility Investigations Identify Options -- During the research phase of a project, many options and possible solutions may be studied and reviewed to satisfy the objectives of the program the project supports. Alternatives must be evaluated, and feasibility studies may be required. It is appropriate to narrow the options and start to identify the most viable solutions as soon as possible. Tools which are often used include Value Engineering, Life Cycle Cost Analysis, alternative methods study, and comparison of several options by preliminary cost, schedule and scope.

1.9 Detailed Analysis & Option Selection -- Once the most viable options are selected, further analysis is required for the selection of the preferred solution to achieve the objective of the project.

1.10 Record of Decision -- For some projects, such as environmental and waste, formal documentation is required for the scope selection process used for cleanup, waste processing, etc.

1.11 Start PSAR -- Once a scope is selected, the safety analysis process can start. The Preliminary Safety Analysis Report formally documents the safety review process.

1.12 Develop Operational Requirement Document (ORD) -- The ORD documents the operational parameters that will govern the conceptual development process. It represents the baseline against which all subsequent design efforts should be measured to verify whether the operational requirements are being met. The ORD is the primary user input to the preliminary scope development.

1.13 Develop Preliminary Scope -- The scope definition begins with this step on smaller projects. The preliminary scope is necessary to determine whether the project can realistically be achieved and whether the cost magnitude of the project is supportable.

1.14 Scope Estimate -- The first full estimate is developed from the preliminary scope. The purpose of this estimate is to determine the magnitude of the project and whether scope objectives will fall within budgetary constraints. The scope and estimate should be reviewed and agreed to by the user, funding authority, technical experts, and applicable regulatory bodies.

1.15 Funding Determination -- The type of funding required to complete the project will be based on the nature of the project and the magnitude of the funding requirement. Typical funding sources will be Basic Capital Equipment (BCE, less than $1.0M), General Plant Project (GPP, less than $2.0M), Construction Line Item (over $2.0M), Major Item of Equipment (MIE, over $1.0M), or operating expense (no upper limit, but usually less than $15.0M). The type of funding will mainly impact Phase II of the project in the justification and budget cycle process.

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1.16 Preliminary NEPA Review -- The NEPA process requires a preliminary review, usually initiated by a checklist and scope description, which screens the project for NEPA issues and results in a preliminary determination of the level of NEPA documentation required. Any determination above a Categorical Exclusion, such as an Environment Assessment, will impact project cost or schedule and must be factored into the scope estimate. Environmental impacts can have an extensive influence on a project and must be considered early in project planning.

1.17 Screen Project for Priority and Funding --The priority of the project and availability of funds will determine whether a project will proceed to Phase II of the project cycle.

1.18 Approval to Proceed with Pre-decisional Design -- Based on the results of the screening process in step 1.15 above, a project will require expense funding authorization to proceed to Phase II.

1.19 User Functional Requirements -- The end result of Phase I is to define the operating or end product requirements of the project, provide an oversight schedule, and establish the boundaries for cost and execution of the project.

Phase I activities have the goal to establish a firm definition of project objectives and operational parameters, an initial scope and estimate, and approval and funding to proceed with full conceptual development.

PHASE II -- CONCEPTUAL DEVELOPMENT AND FUNDING

Phase II is frequently called Pre-decisional development for a Line Item project because the development effort in the form of a Conceptual Design Report (CDR) must be completed before DOE and Congress will make a "decision" to provide capital funding for the project. The Phase II flowchart emphasizes the steps necessary for a Line Item project. Smaller projects have a simplified process to determine a definitive scope.

2.1 Line Item? -- The Line Item determination in Phase I determines the conceptual development process in Phase II, wherein a Line Item must follow a structured process for scope development and funding. Non-Line Item projects follow a shorter process for funding and conceptual development.

2.2 Short Form Project Data Sheet (PDS) and KD-0 -- A Short Form PDS must be submitted to DOE, Headquarters, and represents the request for approval of Key Decision Zero (KD-0) for a Line Item project. The Short Form PDS is a formal 2 to 3 page document that provides the primary justification, preliminary scope description, and approximate budget value for the project.

2.3 Preliminary Project Management Plan -- A PPMP is required for KD-0 approval for Line Item Projects by DOE HQ. The PPMP governs the expense funded activities that are initiated early in the Project Life Cycle. The PPMP has the same sections as the PMP/WP and identifies scope, schedule, budget, and methods of accomplishment for pre-decisional activities (Conceptual Design Report, Design Criteria). The PPMP does not address activities after KD-1 approval.

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2.4 KD-0 Approval -- A Line Item project specifically requires the approval of DOE, Headquarters, before expense funding can be spent on the Conceptual Design Report. This approval is identified as Key Decision Zero (KD-0) in accordance with DOE Order 4700.1.

2.5 Conceptual Design Report (CDR) -- The CDR is a document that establishes the scope of the project, schedule and funding requirements. The detailed estimate prepared from the CDR and will be used as the basis for Congressional funding requests.

2.6 Project Data Sheet (PDS) -- The PDS is a concise summary of the CDR in a very structured format and is typically 10 to 15 pages long. The CDR is first submitted to DOE, Headquarters, and is used for a more detailed review of justification, scope, and other parameters of the project. The PDS is ultimately submitted to Congress for review and a funding decision.

2.7 Validation Review -- The Validation Review is an annual requirement to review the justification, scope development and funding requirements of new and ongoing projects. For a new start project, the Validation Review will result in a recommendation to fund a project and the amount of first year funding.

2.8 Project Funding Process -- For a Line Item project a series of DOE internal Headquarters and Office of Management and Budget (OMB) reviews will be held based on recommendations from the Validation Review. The funding process ultimately results in Congressional approval of the project and its funding requirements.

2.9 Project Authorization Release -- Congressional approval will result in funding allocation to DOE, Headquarters. The funding will eventually appear in the Site Financial Plan.

2.10 Design Criteria (DC) -- The DC provides detailed instructions to the designer and is an expansion of the CDR regarding codes, DOE Orders, and performance requirements. Preliminary design work also includes one-line diagrams, Process and Instrumentation Diagrams (P&ID), general arrangement, site plan and utility location drawings.

2.11 Initiate A/E Selection Process -- Because of the greater complexity of a Line Item project, it is frequently necessary to solicit for specialized A/E firms to accomplish detailed design. The A/E selection process can take up to a year to complete and must be scheduled accordingly. Because the A/E selection process is expense funded it is considered part of Phase II activities.

2.12 Project Funding Release -- Smaller projects are typically approved by DOE during the annual budget review and do not require the long and detailed process required for funding of Line Item projects. Projects identified during the fiscal year may be submitted for funding release through the Site change control process.

2.13 Design Criteria/SOW -- A Statement of Work (SOW) is required for the A/E selection process. A Design Criteria is also required on Line Item projects and when additional guidance is to be provided to the A/E.

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2.14 Initiate A/E Selection Process -- Smaller projects may be designed using the M&O contractor in-house design staff. If in-house staff is not available or inappropriate, an outside A/E firm may be used by using preselected or task order contracting methods.

2.15 NEPA Screening and Documentation -- NEPA screening starts in Phase I after the initial scope is developed and continues in the conceptual phase. For Environmental Assessments and higher levels of NEPA approval, detailed information from the CDR is usually required to complete the documentation. NEPA reviews and approvals can continue up to Phase III of a project.

2.16 SAR, Permits and Other Documentation -- Various safety, security, permit applications and other planning will be completed in parallel with other activities in Phase II. Because the scope of this documentation varies widely from project to project, it is difficult to identify in a generic flowchart the actual steps that may be required. These elements must be thoroughly planned early in Phase II since they can frequently be on the critical path of the project. Safety and security reviews may also continue into Phase III.

2.17 Develop and Approve Project Management Plan (PMP) -- The PMP/Work Package provides the detailed outline of how the project will proceed beyond the pre-decisional activities in Phase II. The PMP includes a summary of justification, scope, detailed schedule and milestones, key personnel and responsibilities/assignments, methods of accomplishment, organization structure, and a detailed WBS with cost collection codes. Depending on the level of project, the PMP will generally require the approval of DOE, RFFO.

Phase II activities have the goal to establish a firm baseline for technical scope, schedule, and budget. This process also results in a set of technical requirements in conformance with appropriate building codes and standards, environmental documentation, legal requirements definition, and a list of deliverables expected in the detailed design effort in Phase III. Baselines developed in Phase II are expected to remain unchanged through the balance of the project cycle. Proper conceptual development of the project will result in a Project Management Plan and Design Criteria that satisfy the User Functional Requirements that ended Phase I.

PHASE III -- ENGINEERING TECHNICAL ANALYSIS AND DETAILED DESIGN

Phase III of the project process concentrates on completing detailed design. Phase III culminates in the completion and issuance of the final design package, ready for procurement of the major equipment and construction elements of the project.

3.1 Design Kickoff -- Before starting the design process, a kickoff meeting should be held advising design team members of schedule commitments, design budget allocations, design discipline and individual team member assignments, in-process and formal review points, and the list of design deliverables developed in the Phase II, Conceptual Design Process. These requirements must be in agreement with the Project Management Plan, design-basis documents, and the Engineering Work Plan before proceeding with design. On smaller projects, contracting for an A/E may be finalized in the beginning of Phase III.

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3.2 Value Engineering (VE) -- The value engineering process may occur at several points in the project process, and can occur as late as the preliminary detailed design. Although value engineering may occur in Phases I and II of the project, it is always prudent to consider the potential benefit of additional (or first time) value engineering during Phase III. The VE process can be formal and fully documented, or could be as simple as options analysis, component trade-off studies, or any other engineering activity that embraces the spirit of Value Engineering.

3.3 Preliminary Detailed Design -- Detailed design may be performed in a single step on a smaller project, or may have many steps and phases on a larger project. DOE has traditionally defined a two-step process, defined as Title I and Title II design. A Title I design/summary is required for some projects (ref. DES-211). However, it is recommended that the formal break between Title I and II may not be appropriate for many projects, and that each project should be planned to include only in-process and formal review points that lend value to a quality product. One or more reviews may be necessary for many reasons: to ensure adequate design, to provide a checkpoint for design goals and project cost objectives, to provide time for independent review, and to verify design performance.

3.4 Preliminary Design Estimate -- An in-progress design estimate should be scheduled for projects having a lengthy design period. This will ensure that project cost objectives are being achieved. Waiting until completion of design may impose a high project risk if the design results in an excessive project cost with subsequent rework of the design to reduce costs. Formal design reviews are traditionally appropriate times to request an updated project estimate.

3.5 Preliminary Design Review -- If a project requires a formal checkpoint to review progress, then one or more intermediate design reviews should be scheduled. Formal reviews typically result in a break in design while the design review documents (drawings, calculations, specifications) are circulated for review and comment. Design is resumed when comments are consolidated and approval is given by the Project Manager to proceed. DOE may require and issue a formal approval before proceeding (this is required for Line Item projects over $50M). Formal approvals must be specifically identified in the Project Management Plan and the detailed project schedule since they can definitely have an impact to the project schedule if not allowed adequate duration.In-process design reviews are encouraged in lieu of formal intermediate reviews (such as a formal Title I Review) which typically require a distinct stop in the design process while the review is being conducted.

3.6 Government-Furnished Equipment (GFE) Specifications -- GFE is usually procured for two reasons: 1) to select a specific vendor around whose equipment design must be based, or 2) to procure equipment that has a long-lead fabrication time and to wait for end of Phase III design would result in impact to the project critical path schedule.

3.7 GFE Specification Review -- A review is required of any final design resulting in procurement. The size of the procured item will determine the scope of the review with more expensive items requiring full reviews appropriate with the risk and impact of the item compared to project complexity.

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3.8 Solicit and Order Equipment -- The normal procurement process includes solicitation for the equipment, technical evaluation, order review (depending on order value), and placing of the contract with the successful bidder.

3.9 Vendor Submittals and Reviews -- Procurement of complex equipment will require vendor submittal prior to fabrication to confirm adequacy of the product and compliance to specifications. The submittals may also provide input to the final design of the project.

3.10 GFE Fabrication, Inspection, Acceptance and Delivery -- This step identifies the needed actions to complete delivery of the equipment at the job site. Inspection and acceptance can occur at the factory or upon delivery at the Site dependent on the complexity of the equipment and specification requirements.

3.11 Final Detailed Design -- Continuation and completion of the design. All design products must be fully completed at the end of this activity block in the form of final drawings, specifications, or other deliverables as defined in the PMP and Engineering Work Plan.

3.12 Develop SO Test Plan -- Prior to construction and installation for major components and systems, System Operation Test Plans are developed and issued to guide the SO testing to verify that such components/systems are fully operational in accordance with the design. The SO test may be developed in Phase III or Phase IV of the project life cycle but must be completed in Phase IV or V.

3.13 Final Design-Based Estimate -- At completion of design, a final design-based estimate should be requested to verify design-to-cost objectives and to determine whether any adjustments to the design (such as bidding options) are required to meet cost objectives.

3.14 Final Design Review -- This is a formal review point that is required on projects to ensure that the final design deliverables are completed in all aspects to ensure adequate definition for procurement and construction with no or minimal subsequent changes. It is not the intent of the Final Design Review to allow new input to the design that would affect scope, cost, or execution of the project.

3.15 Incorporate Comments and Issue -- Comments from the Final Design Review are consolidated and reconciled for incorporation into the final design package. This activity includes printing and issuance of the final design package for approval which leads to the beginning of Phase IV of the project process.

3.16 Bid Estimate -- After all comments are incorporate, a formal estimate is prepared based on the final design. This estimate is usually an update of the Final Design-Based Estimate and incorporate final changes resulting from review comments. This estimate will form the basis of official estimates to support the evaluation of procured items for equipment, services, and construction. Many formal procurement actions, such as an Invitation for Bids for a fixed-price contract, always require an official estimate at the Bid Opening.

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3.17 Ongoing Project Documentation -- In addition to the Project Management Plan/Work Package and design package, several other documentation steps must be considered and completed. These may include 1) NEPA documentation, usually starting and ending during Phase II (should be complete prior to Phase III), 2) a Safety Plan outlining non-typical safety concerns and corresponding measures, 3) a Security Plan to identify security steps to be taken during construction, 4) a Davis-Bacon determination in accordance with Federal Laws, 5) a project-specific Quality Plan when normal quality procedures may not be sufficient, and 6) any other special documentation or permitting defining execution or operation of the project.

3.18 PSAR Development and Approval -- On larger projects the Preliminary Safety Analysis Review (PSAR) is started during the conceptual stages of the project as a guide to design and construction. As the project is completed the PSAR becomes a Final Safety Analysis Review with formal approval at the end of the project. The PSAR is an ongoing task that crosses several phases of a project.

It is the goal of Phase III to provide a detailed design that includes: a design that agrees with the design-basis requirements and baseline scope; a final, documented design review coordinated with participating organizations; a set of construction drawings and specifications adequate to complete the project with minimal changes; acceptance criteria; and design and project records that document calculations, approvals, and critical decision points (e.g. value engineering alternative selection).

PHASE IV-- WORK PLANNING, CONSTRUCTION, OR DISASSEMBLY

Phase IV of a project starts with the solicitation of the major construction/equipment that form the basis of the project. The completion of construction generally signals the end of Phase IV but may also include significant system operation (S.O.) testing activities that prove out the operation of the installed components and systems.

4.1 Construction or Equipment Solicitation -- Includes any pre-bid notice, final assembly of the solicitation package, including terms and conditions, mailing of the solicitation, and any pre-bid conferences or tours that provide opportunity for potential bidders to ask questions and tour the construction site.

4.2 Construction Contract Bid Approval and Award -- The formal bid opening (required for an Invitation for Bid solicitation process), approval, and award can be a significant time factor in project planning. Depending of the size of the contract, Purchasing may prepare a Bid Narrative that defines the bidding process and results. The Narrative may be submitted to DOE for approval.

4.3 Pre-Construction Conference -- The conference is a meeting with the contractor and his significant subcontractors that may include contract signing, and does include a checklist review of the Site construction rules, interfaces, submittal requirements, lead-times for support, permits, safety requirements, etc. A Notice to Proceed is usually issued at the pre-construction conference, requiring the Contractor to mobilize on site within 10 days of the notice.

4.4 Permits -- Some projects require permits of approved plans from off site agencies (such as an approved asbestos plan from the Colorado Department of Health). These permits may be started in earlier phases of the project but are generally required to be in place before construction can begin. It is crucial that permits and plans be identified in the construction schedule to allow adequate lead-time for permit submittals, review and approval.

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4.5 Long-lead Equipment Delivery -- Equipment with excessive delivery times may be ordered during the design phase to avoid critical path impact during construction. Most equipment is the responsibility of the installing contractor for ordering and delivery.

4.6 Equipment/Material Submittals and Approvals -- Construction and equipment specifications dictate specific submittals required prior to purchase or installation of materials and equipment. Come submittals may be on the project critical path and should be identified on the Contractor's schedule if this is the case.

4.7 Detailed Construction Planning -- The contractor is required to submit a detailed construction schedule that shows all major elements of work plus all items that contribute to the critical path of the project. Construction contracts also require a bid breakdown (typically a WBS format) that is used to evaluate the value of the work for progress payments.

4.8 Contractor Training -- Many contracts require Site specific training that must be budgeted and scheduled by the Contractor prior to starting certain elements of work.

4.9 Construction Support Elements -- During the course of construction, several activities will parallel construction tasks. These include:

- Maintaining in-the-field red-line drawings marking deviations or clarification to contract drawings.
- Conducting frequent field and vendor inspections, measuring progress and verifying in-place work.
- Conducting periodic walk down of the project by the Project Manager, Project Engineer, and technical support, quality, safety and other personnel.
- Resolving Non-Conformance Reports (NCR).
- Developing punch list of items for Contractor completion.
- Obtaining final submittals from the Contractor, including spare parts lists and Operating and Maintenance (O&M) manuals.

4.10 Construction/Installation -- This is the physical component of construction and installation of equipment performed by the Contractor. The Contractor has responsibility to schedule, resource load, supervise and coordinate all work in accordance with the contract.

4.11 PSAR/FSAR Development -- The Preliminary Safety Analysis Report (PSAR) started early in the project concept phase is updated as the project is better defined in later phases of the project. As the project nears completion, the PSAR becomes the Final Safety Analysis Report (FSAR) which governs the final safety determination and operation of the facility.

The goal of Phase IV is to obtain fair and cost effective contracts for equipment and construction, and a fully installed/constructed project inspected to quality standards, achieved with minimum changes and deviations from the initiating baseline contract documents.

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PHASE V -- OPERATIONAL TESTING AND PROJECT CLOSEOUT

Phase V of a project essentially starts with completion of construction and begins the remaining activities leading to final costing and closeout of the project. When the Accounting Closeout (ACO) is issued, all costing on the project is ended and files can be sent to permanent storage. It is necessary to make a clear distinction between the project costs and operating costs on a project so that a well-delineated completion point for the project can be established.

5.1 System Operation Test -- The Contractor has responsibility to perform component checkout (CC) testing to ensure that components (individually or part of a larger system) are working according to design requirements and manufacturer's specifications. Once CC tests are completed, the SO test is performed to verify that overall systems are operational to meet the design intent of the project. SO tests are usually performed by the M&O contractor with support from the Contractor.

5.2 Verify Contract Deliverables Completed -- This task requires that all deliverables defined by the drawings, specifications and the contract have been completed. This means that all punch list items (except for possible extended warranty work) are complete, all O&M manuals are delivered, and training is complete when required to be performed by the Contractor/Manufacturer as part of the contract. Beneficial Occupancy may concur at or before this time as is acceptable by the Program Manager / User when the project is functionally complete.

5.3 IWCP Closure -- Each construction contract is supported by an IWCP package. The closure sheet of the IWCP must be completed prior to final closeout of the project. For multiple contracts, IWCP closure must be completed for each contract.

5.4 Project Acceptance and Transfer (PA&T) -- This is the formal approval documenting that all terms of the contract have been satisfied and that final payment (including any retainage) can be authorized on the contract. For multiple contracts or phases of construction/installation, a PA&T must be issued for each contract.

5.5 As-Built Drawings -- Once physical construction is completed, the red-lined drawings can be formally documented on the original drawings to create a permanent As-Built record of construction.

5.6 Final Program Start-up Responsibilities -- Program support for the project continues throughout the project and increases as the project nears completion. The program ownership responsibilities usually include elements of startup and planning that are outside the scope of project funding but are necessary to test, schedule and startup operations.

5.7 Operations Procedures and Training -- For projects that install new or modified processes, operator training and new/revised procedures may be required. Operations and program personnel are generally responsible for training and procedures, although some elements may be paid for by the project dependent on the nature of the project.

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5.8 Final Safety Analysis Report (FSAR) -- The PSAR evolves into the FSAR as the configuration and operating parameters of the project are finalized.

5.9 Operational Readiness Review (ORR) -- The ORR is required for larger or complex projects on a case-by-case basis. Program personnel are usually responsible for the ORR.

5.10 Approval to Operate -- Projects that have an operational component will require specific approval from DOE before starting operations.

5.11 Close Out Purchase Orders -- In order to issue a Final Project Closeout (FPCO), all purchase orders issued for the project must be closed. The closeout process ensures that all invoices have been paid, deliverables have been received, and the paid amounts agree with the purchase order value.

5.12 Final Project Closeout (FPCO) -- Issuance of the FPCO signifies that all physical construction, as-built, training and support work directly funded by the project is completed. Only one FPCO will be issued on a project. The project should be complete in all respects except for a long-lead audit or other minor closeout tasks. The FPCO is issued when no additional labor or material charges are expected. The FPCO puts all project participants on notice that labor charges to the project shall be terminated. Between the issuance of the FPCO and the ACO, some late charges and invoice payments may be accepted, which is why a time lag of two to three months is intentionally allowed between the two documents.

5.13 Contract Audit -- Many contracts, either due to type of contract or dollar value, require a formal audit of the contract before the contract can be closed. The audit may be done internally by the M&O contractor, or may be done by an external audit agency within the Government. Audits may take many months or years to initiate and complete and at times may be the only remaining action before the project can be finally closed out.

5.14 Accounting Closeout (ACO) -- The ACO is issued by the Accounting Department and formally closes all charges (both labor and material) to the project.

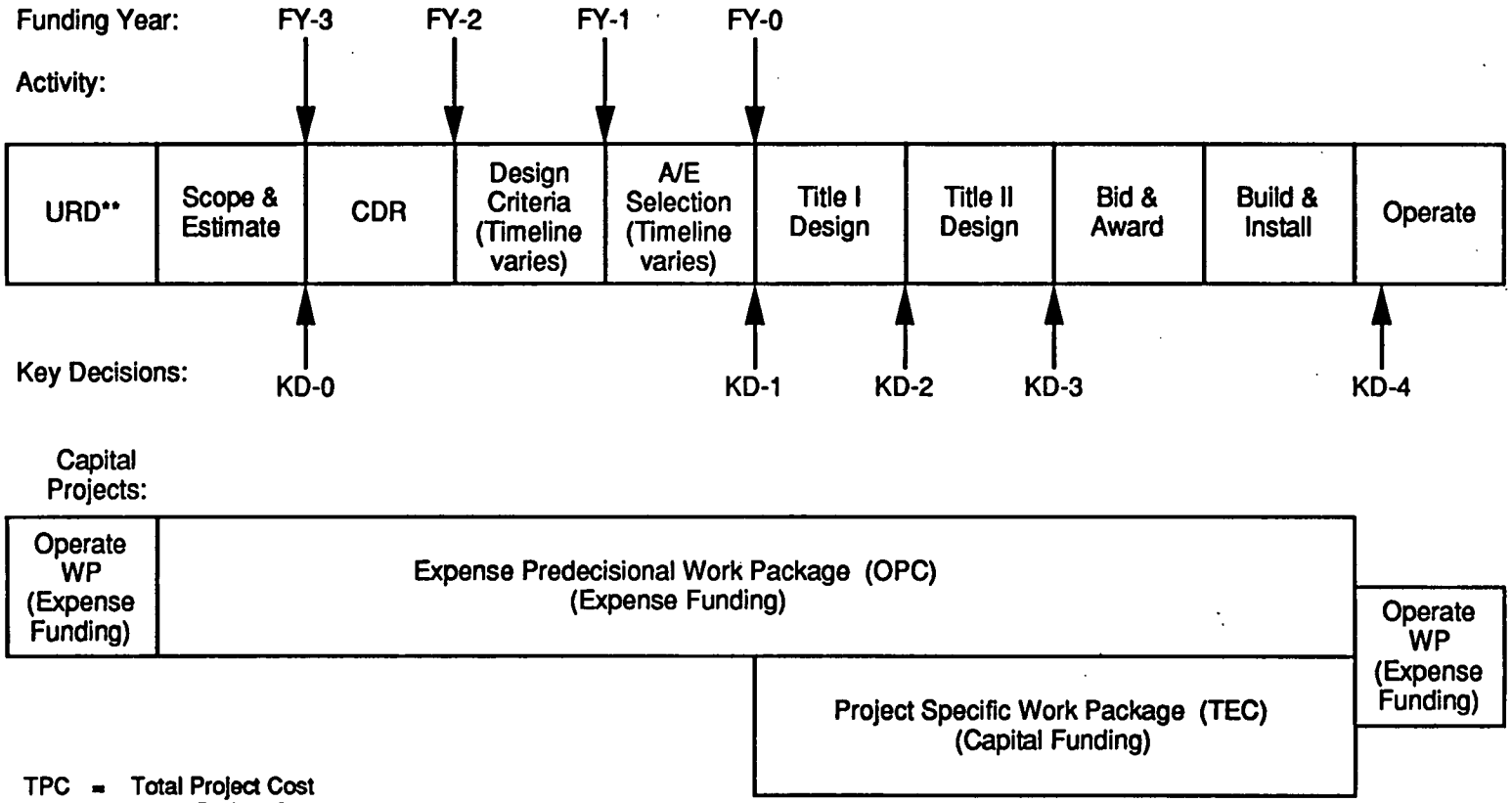
5.15 Consolidate Project Files -- Once all activities are completed except for closeout actions, the Project Manager will consolidate all project files maintained by key personnel to create the official project for long-term reference and storage.

5.16 Project Files to Records Storage -- After files are consolidated and the ACO is received, the project files are logged and sent to storage.

5.17 Project Complete -- The project is completed when all project costs are expended or accounted for, deliverables are verified, systems are operational, and closeout activities are completed. Operation startup, training, and other tasks not directly chargeable to the project (i.e. not part of Total Project Cost) may still be ongoing even though the project is officially complete.

The goal of Phase V is to verify that original objectives of the project have been met, that all construction is complete, that all IWCP, engineering, as-built, training and startup activities are complete, that all costing and accounting actions are closed, and that project documentation has been completed and archived.

Construction Project Life Cycles* and Work Package Documents



TPC = Total Project Cost
OPC = Other Project Cost
TEC = Total Estimated Costs
TPC = OPC + TEC

- Timeline shown is for line items. Expense, GPP, BCE projects will have a less complex development effort. Expense predecisional work package is still required for all capital projects. Predecisional and post KD-1 effort can be charged to the same charge number/WP for Expense projects.

** User Required Documentation

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TOTAL PROJECT COSTS (TPC) EXPENSE AND CAPITAL GUIDANCE

ACTIVITY		EXPENSE	TPC			
			TEC - CAPITAL			
		OPC	ED&I	PM	CM	CC
1.	PRE AUTHORIZATION - PRE TITLE I					
A.	Engineering Study	X				
B.	Site Selection Report	X				
C.	Surveying for Siting	X				
D.	Capital Review Board	X				
E.	Candidate Projects (support Sheet and Presentation to DOE)	X				
F.	Short Form Data Sheet (FUDS)	X				
G.	Conceptual Design Plan (CDP)	X				
H.	Work Orders - CDR Preparation, etc.	X				
I.	Integrated Project Schedule (R&D, Safety, Environmental, Operational, etc.)	X				
J.	Requirements for Safety Analysis/Risk Assessment Determination	X				
K.	Functional Design Criteria	X				
L.	Evaluation of RCRA/EPA/State Permit Requirements	X				
M.	Cultural Resources Review	X				
N.	Conceptual Design Report (CDR)	X				
O.	Design Reviews	X				
P.	Action Description Memo (ADM)	X				
Q.	NEPA Documentation	X				
R.	Conceptual Project Schedule	X				
S.	Security, Fire, Safety, & Environmental Work Reviews	X				
T.	Energy Conservation Report	X				
U.	Economic/Life Cycle Cost Analysis	X				
V.	Physically Handicapped Review	X				
W.	Statement of Work (SOW) - for Operating Contractor (OC) Project Management Activities (Pre Title I)	X				
X.	Preliminary Safety Analysis Report (PSAR) Pre Title I	X				
Y.	Security Review & Plan	X				
Z.	Vulnerability Assessments	X				
AA.	Master Safeguards & Secure Analysis	X				
AB.	Construction Project Data Sheets (CPDS 44s)	X				
AC.	ES&H Crosscut	X				
AD.	Strategic Facility Assessment	X				
AE.	Estimate as Required (Parametric, ICE)	X				
AF.	Project Justification/Validations (JVs)	X				
AG.	Conceptual Design Status Reports (Monthly)	X				
AH.	Request for Project Authorization (Directive)	X				
AI.	Architect/Engineer (A/E) Selection & Statement of Work (SOW) for Off-Site A/E	X				
AJ.	Identification of Project Record Requirements	X				
AK.	Project Management Plan (PMP)	X				
AL.	Project Quality Assurance (QA) Plan	X				
AM.	Configuration Management Plan	X				
AN.	Pilot Plants, Experimental and Demonstration	X				
AO.	Research and Development Activities	X				
AP.	Facility As-Built Drawings, Prior to Design Start (Title II)	X				

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TOTAL PROJECT COSTS (TPC)
EXPENSE AND CAPITAL GUIDANCE

	ACTIVITY	EXPENSE	TPC			
			TEC - CAPITAL			
		OPC	ED&I	PM	CM	CC
2.	**DESIGN - TITLE I & II (UNDER AUTHORIZATION)**					
A.	Letter of Instruction - Design			X		
B.	Funding to A/E for Design			X		
C.	Design Package Kickoff		X			
D.	Project Management Plan (PMP) Revisions			X		
E.	Construction Project Data Sheet (CPDS) Revisions			X		
F.	Integrated Project Schedules			X		
G.	Project Revalidations			X		
H.	Request for Project Authorization Modification (Directive)			X		
I.	A/E Internal Design Coordination		X			
J.	Identification of Long Lead Procurement Items		X			
K.	Design Studies		X			
L.	Design Calculations and Analysis		X			
M.	CADD Services (and Computer)		X			
N.	Preliminary Safety Analysis Report (PSAR) New or Changes (after Title I Engineering)		X			
O.	Cost Estimating		X			
P.	Procurement and Construction Specifications		X			
Q.	Design Reviews by Project Team		X	X		
R.	Design Review Support by OC	X				
S.	Drawings		X			
T.	Project Schedules		X		X	
U.	Acceptance Test Procedures and Plans		X		X	
V.	Certified Engineering Reports		X			
W.	R&D, Pilot Plant, Experimental and Demonstration	X				
X.	Performance Evaluations of A/E		X	X		
Y.	Inspection Planning		X		X	
Z.	Surveys - Design Support		X			
AA.	Design Cost & Scheduling Analysis and Control		X			
AB.	Design Progress Reporting		X			
AC.	Design QA Plan and Overview		X			
AD.	Constructibility Reviews		X	X	X	
AE.	Outside Contractor Support (Prior to Start of Title I Design)	X				
AF.	Outside Contractor Support for Design & Construction		X	X	X	
AG.	Safety Reviews by A/E		X			
AH.	Regulatory Overview by A/E		X			
AI.	Reproduction - for Design Package		X			
AJ.	Travel - Design Support		X			
AK.	Change Control - Design		X	X		
AL.	Obtain Permits Required Prior to Start of Construction (Pre Title I)	X				
AM.	Obtain Permits Required Prior to Start of Construction (After Title I)			X		
AN.	Value Engineering (Pre Title I)	X				
AO.	Value Engineering (After Start of Title I)		X	X		

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TOTAL PROJECT COSTS (TPC) EXPENSE AND CAPITAL GUIDANCE

	ACTIVITY	EXPENSE	TPC			
			TEC - CAPITAL			
		OPC	ED&I	PM	CM	CC
3.	**PROCUREMENT AND CONSTRUCTION**					
A.	Bid Package Preparation		X	X	X	
B.	Bid Evaluations, (Opening and Award)		X	X	X	
C.	Construction Coordination and Planning			X	X	
D.	Contract Administration			X	X	
E.	Engineering Support (A/E)		X			
F.	Design Changes/Control		X	X	X	
G.	Non-Conformance Reports (NCRs)		X	X	X	
H.	Control Systems for Construction Activities			X	X	
I.	Project Assessment and Reporting			X	X	
J.	Construction Status Reports and Meetings			X	X	
K.	Davis-Bacon Administration			X	X	
L.	Vendor Submittal Reviews		X	X	X	
M.	Field Support of Construction			X	X	
N.	Field or Laboratory Tests		X		X	
O.	Timekeepers (Radiation Control)					X
P.	Radiation Protection by OC			X		
Q.	Safeguard/Security Systems				X	X
R.	Operating Contractor/Operator Support (Construction)	X				
S.	Project Estimates (Review)		X	X	X	
T.	Quality Control (QC) Inspection		X		X	X
U.	Inspection and Acceptance		X			
V.	Safety/Security Review (Pre Title I)	X				
W.	Negotiations (Fixed Price Contract Changes)			X	X	
X.	Inspection Trips (Vendor/Fabricators)		X	X	X	X
Y.	Procurement Coordination			X	X	X
Z.	Equipment/Hardware Costs					X
AA.	Material Procurement Rate					X
AB.	Initial Complement of Operating, Lab & Office Furniture					X
AC.	Spare Parts (Inventory)	X				
AD.	Installation/Alterations					X
AE.	Disposal of Construction/Radiation Waste (Project Related)					X
AF.	CPAF/FP Construction					X
AG.	Plant Security Support (Dedicated Escorts)					X
AH.	Initial Required Spare Parts					X
AI.	Safety Planning and Overview				X	X
AJ.	Decontamination (Exceeds normal operating levels)	X				
AK.	Decontamination (Construction/Removal Cost Related)					X
AL.	Surveying (Supporting Construction)			X	X	X
4.	**ACCEPTANCE**					
A.	Perform Acceptance (Equipment Check-out)			X		X
B.	System Operation Tests (S.O. Test)	X				
C.	Final Safety Analysis Report (FSAR)			X		
D.	Operational Readiness Review (ORR)	X				
E.	Start-up Costs	X				
F.	Training of Operators	X				

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TOTAL PROJECT COSTS (TPC) EXPENSE AND CAPITAL GUIDANCE

ACTIVITY		EXPENSE	TPC			
			TEC - CAPITAL			
		OPC	ED&I	PM	CM	CC
G.	As-Built Drawings (Title III)		X	X		X
H.	A/E & Construction Performance Appraisal (Audits)			X		
I.	Project Closeout			X		

Costs collected under Engineering, Design and Inspection (ED&I):
1. Title I, II or III Engineering performed by Operating Contractor or Architect/Engineer (A/E).
2. Operating Contractor Engineering oversight of an A/E contract.
3. Operating Contractor Project Engineering.
4. Cost Estimating (if performed by A/E Contractor).
5. Operating Contractor Facilities Inspection.
6. Source Inspection Costs.
7. Procurement Direct Recovery for A/E contract.
8. Operating Contractor non-labor General and Administrative (G&A) Recovery for A/E contract (applies to all current expense funded projects and to all Fiscal Year (FY) 1995) projects and beyond, whose cost hasn't been approved or baselined by DOE).

Costs collected under Project Management (PM):
1. Facilities Project Management (FPM) Project Manager.
2. Central Planning and Budgets (CP&B) Scheduler.
3. FPM Project Support Services, Cost Estimating (Cost Center 283)

Costs collected under Construction Management (CM):
1. Construction Coordinator.
2. Construction Engineer (including Integrated Work Control Plan Prep)
3. Radiation Protection Technicians (RPTs)
4. Miscellaneous - Operating Contractor construction support provided to the Construction Contractor (Note guidance on miscellaneous support provided in D. H. Betcher letter, attached).

Costs collected under Other Costs (OC) - Construction, Equipment and Removals:
1. Operating Contractor Maintenance labor, materials and equipment.
2. Fixed Price (FP) labor, materials and equipment.
3. Cost Plus Fixed Fee (CPFF) labor, materials and equipment.
4. Government Furnished Equipment (GFE).
5. All removal costs including Operating Contractor Waste Inspector, waste boxes/drums, loading/certification, shipping, burial costs.
6. Procurement direct recovery on FP and CPFF contracts, GFE and maintenance materials.
7. Operating Contractor non-labor G&A Recovery for FP/CPFF contracts, GFE and maintenance materials (applies to all current expense funded projects and to all FY95 projects and beyond, whose cost hasn't been approved or baselined by DOE).

RFPF - 1000.01 (5/95)
Formerly RF-47940

Document Modification Request

Print or Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000127

Originator

1. Name/Phone/Pager/Location: Jerry Weiser X5447/7335 Building 130 C218
2. Date: 01/29/96
3. Existing Document Number and Revision: 2-L92-COEM-PMG-302 Revision 0
4. Document Type: ■ Procedure ☐ Plan ☐ Other
5. Document Title: Overview to Quality, Environmental, Davis-Bacon, Security, and Safety and Health Requirements for Project Managers

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	18	6.3.1 [5]	Change: (reference COEM-DES-211, Project Management Process)" to "(reference 1-V51-COEM-DES-210, Design Process Requirements)"
3	30	8.4	Change:"2-D16-COEM-DES-211, Project Management Process" to "1-V51-COEM-DES-210, Design Process Requirements)"

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by the PPG
2	COEM-DES-211 was canceled on 11/9/95. Correct reference is 1-V51-COEM-DES-210.
3	See (2).

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) [signature] 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) [signature] 1-31-96

13. New Document/Rev. No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction ☒ Nonintent Change ☒ Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes ☒ No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location: L. Reed Bailey X4581/1764 Building 130 C230
20. Cost Center: 3077
21. Charge Number: 820111
22. Requested Completion Date: 02/05/96
23. Prescreen/Screen/USQD Number: N/A
24. Independent Safety Review Meeting and Date: N/A
26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L. R. Bailey [signature] 2-1-96
27. Effective Date: 2/5/96
28. Expiration Date (if applicable)

Responsible Manager

Reviewed for Classification/UCNI (UW)
BY [signature]
DATE 2-1-96

PADC-97-00091

Rocky Flats
Environmental Technology Site

2-L92-COEM-PMG-302

REVISION 0

OVERVIEW TO QUALITY, ENVIRONMENTAL, DAVIS-BACON, SECURITY, AND SAFETY AND HEALTH REQUIREMENTS FOR PROJECT MANAGERS

APPROVED BY: /s/ R. E. Kell / R. E. Kell / 06/01/95
Director, Engineering and Safety Services — Print Name — Date

Responsible Organization: Project Management Effective Date: 07/18/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Engineering and Safety Support
Central Engineering
Nuclear Safety
Project Management
All PCEs
NEPA & NPDES/FFCA Management
Occupational Safety
Construction Management
Project Controls and Services

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By /s/ L. Ehrlich

Date 06/01/95

Periodic review frequency: 4 years from the effective date

RADC-97-00001

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Pages	Effective Date	Pages	Effective Date
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2	02/05/96		
3-17	07/18/95		
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The following DMRs for change are active for this procedure:

96-DMR-000127

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1. PURPOSE

This introduction to special project requirements was written to assist Project Managers in identifying, documenting and fulfilling project requirements which fall outside of the traditional Construction Project Management System.

This introduction provides information on the elements, steps and timing of basic documentation critical to requirement identification and project completion. This documentation is shown within the context of five project phases which are also discussed within COEM-PMG-301, Introduction to the Construction Project Management System.

Phase I - Project Initiation & Definition
Phase II - Conceptual Development and Approval
Phase III - Engineering Technical Analysis and Detailed Design
Phase IV - Work Planning, Procurement, Construction or Disassembly
Phase V - Operational Testing and Project Close Out.

The project management process, flow diagrams one and two, is covered by COEM-PMG-301.

2. SCOPE

This procedure is applicable to all Contractor and Sub-Contractor personnel. This procedure covers all Project Management Construction Project activities that will develop new facilities, or modify the technical basis configuration of existing facilities, systems, processes or site lands at Rocky Flats Environmental Technology Site (Site).

As an introduction, this procedure is only a starting point. The PM should use it as a tool to help identify the actual Quality, Environmental and Waste Management, Davis-Bacon, Security, and Safety and Health (S&H) documentation required. Expert legal, environmental, and other professionals should be contacted when appropriate.

This procedure was prepared by the Project Controls and Services Group of Project Management. Suggestions for the correction of errors, omissions, or for the improvement of this procedure are to be directed to PM/PC&S at x5038/x5023.

3. OVERVIEW

While the amount of documentation in any given area varies depending on risk, complexity of the job, cost, and other factors, the following areas of general concern shall be addressed on every project:

- Quality
- Environment and Waste Management Requirements and Permits
- Davis-Bacon Review
- Security
- Safety and Health

Compliance with these requirements is evaluated by groups external to Project Management. This introduction provides an index of requirements, implementing procedures, compliance organizations, and the timing needed for key initiating documentation within each process.

Quality

The Rocky Flats Quality Assurance (QA) Manual and the E&PM-QAP-001, Engineering and Project Management QA Plan, implement the requirements of Department of Energy (DOE) Order 5700.6C, Quality Assurance.

Major construction projects and other Site programs are performed in accordance with the Project or Program QA Plan.

In addition to these documents, publications of the American Society of Quality Control (ASQC) are highly recommended for determining the quality requirements of the project. Many of these are available through the Total Quality Management (TQM) Library. Manuals and Reports on Engineering Practice No. 73, Quality in the Constructed Project, published by the American Society of Civil Engineers (ASCE), contains numerous suggestions which will benefit many specific construction projects. The following excerpt from ASCE Manual #73 describes the pursuit of Quality.

3. OVERVIEW (continued)

- The pursuit of quality is the cement holding the owner (User/DOE/Regulatory Agency), design professional, and constructor together in a stable pattern where each supports the other in producing a successful project.

  All project team members working cooperatively in an atmosphere of mutual trust and understanding:
  - Fulfill contract commitments competently and faithfully
  - Deal openly and honestly with all project participants
  - Protect the public health, welfare, and safety

  Following these precepts the team members, acting with skill, integrity, and responsibility, reflect credit upon their individual professions and produce the desired quality in the constructed project.

Communication is particularly critical to project quality at the definition of project scope, budget, and schedule baselines, when reviewing construction contract documents, and when demonstrating that the project meets its originally intended expectations.

3.1 Environmental/Waste Management Regulations and Permits

The DOE has made a national commitment for the implementation of directives for Environmental Safety and Health (ES&H) protection objectives. These ES&H objectives, as established for DOE field offices, are to:

- Assure protection of the environment and the health and safety of the public
- Provide safe and healthful work places and conditions
- Control air, water, and soil pollution
- Limit to acceptable low levels the risks to the well-being of both operating personnel and the public
- Protect property from loss or damage
- Assure compliance with the letter and spirit of ES&H laws
- Determine statutory requirements, and establish policy and procedures
- Support development and implementation of codes, standards, and guides
- Apply systems safety principles

3.1 Environmental/Waste Management Regulations and Permits (continued)

- Provide for Hazard and Risk Assessments
- Support an Emergency Response capability
- Investigate accidents and seek corrective actions
- Conduct environmental monitoring and sampling
- Perform audits and appraisals

The primary means of implementation of these ES&H directives are the DOE Orders and the Rocky Flats Interagency Agreement between the DOE, EPA, and CDPHE which have been issued to address a number of general and specific ES&H topics. A listing of the primary DOE Orders applicable to environmental compliance and protection are provided in Section 8.1, of this procedure.

Proper and adequate environmental planning is critical to the project management process. For any given project, a large number of environmental requirements may be applicable. Compliance planning is an integral part of any project. Failure to adequately plan for environmental compliance may cause delays and loss of resources. Environmental issues, if not given adequate consideration, can create significant problems in maintaining established project baselines.

Virtually every project will have some type of environmental requirement. These requirements may include environmental assessments, removal or remedial actions, closures, permit modifications, or other related objectives. The primary regulatory drivers for remedial activities are the requirements of the Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA), and the appropriate and applicable sections of the Resource Conservation and Recovery Act (RCRA). The Rocky Flats Plant Interagency Agreement (IAG) and additional statutes may also impose additional requirements. A recent amendment to the IAG allows for a Proposed Action Memorandum to be completed once scope is well defined for simple removal actions that can be implemented within six months. For environmental projects that are not driven by CERCLA or RCRA (as associated with the IAG), the National Environmental Policy Act (NEPA) becomes the principal environmental directive. Many additional laws are also a concern.

3.1 Environmental/Waste Management Regulations and Permits (continued)

Remedial actions undertaken pursuant to the IAG (whether under CERCLA and/or RCRA) are exempt from NEPA documentation requirements if those actions are to be approved by the Environmental Protection Agency (EPA) and/or Colorado Department of Public Health and Environment (CDPHE) before beginning work. For example a Proposed Action Memorandum includes approval from DOE, EPA, and CDPHE. The document describing the actions that will be submitted to the agencies for approval must be reviewed by the NEPA group for inclusion of appropriate NEPA values before it is considered final. Absent such a review and approval by the NEPA group, NEPA compliance is not achieved. This condition also applies to CERCLA activities proposed to take place outside the IAG.

In the planning of a project, it is important that all members of the Project Team are aware of environmental protection requirements and address these requirements in all plans and studies prior to preparation of cost and schedule estimates. The Project Management Plan (PMP) shall describe the actions required to properly protect the environment. Time must be allocated to the NEPA and other regulatory processes, and in obtaining the S&H and regulatory reviews. Early attention to environmental requirements may avoid costly and time-consuming delays in project implementation.

Appendix 1, Environmental Design Process, illustrates the primary regulatory timetables in association with the traditional design process and DOE 4700.1, Project Management System.

Appendix 2, Environmental Topics Screen, is provided to assist the PM in identifying environmental concerns on their projects. This discusses several environmental topics, but is not comprehensive.

3.2 Davis-Bacon Reviews

The purpose of Davis-Bacon reviews is to satisfy the requirements of the DOE Acquisition Regulations Section 920 and 970, including the Application of Labor Laws to Government Acquisition. The Davis-Bacon review process establishes which Construction contracts are awarded through Procurement or worked through the resources of Maintenance when available. An Estimate of Labor and Materials, using Davis-Bacon Labor Wage Rates, is provided to the Contractor Davis-Bacon Committee in parallel with the end of the Engineering Technical Analysis and Detailed Design Phase.

The approval authority for Davis-Bacon determination lies with the DOE Davis-Bacon Committee. Davis-Bacon tasks that are determined to be covered are contracted in accordance with the Procurement process. Non-covered tasks are constructed by Maintenance when resources are available. Non-applicable tasks are usually service contracts not classified as construction.

3.3 Safety &Health

The S&H of the worker and the public must always be the paramount concern.

During the Preliminary and Engineering Technical Analysis and Detailed Design phase, the S&H Design Review group provides the lead point-of-contact for S&H in the design of Construction Projects. A S&H Review is required on all projects. A design check is done for each discipline involved in the design, for the same basic purpose, as well as interdiscipline concerns and to ensure technical quality. The Nuclear Safety group ensures compliance with nuclear safety standards and controls, prepares accident analyses and risk assessments for facilities or activities, performs safety analysis, supports site programs in the areas of criticality safety, and provides input to criticality safety when facilities are modified. When Nuclear Safety issues exist on projects, careful coordination of resources and identification of requirements is required early in the project life cycle.

3.3 Safety &Health (continued)

HSP-24.01, Construction Safety and Health Requirements, is the implementing procedure at the Site for Construction Project safety and is in accordance with DOE Order 5480.9A, Construction Project Safety and Health Management. A list of documentation required by DOE Order 5480.9A during the construction process is provided in Appendix 5, Documentation Required by DOE Order 5480.9A (also included in HSP 24.01). Division I Section 01700 of the Construction Specifications, Subcontractor Safety & Health Requirements, governs the Safety & Health requirements for Sub-Contractors.

3.4 Security

Protection of classified or UCNI information and restricted access to classified materials and many locations at the Site is required. In order to coordinate escort requirements, and to facilitate any compensatory measures required under certain conditions, a checklist has been developed. Appendix 4, Project Security Checklist, is a two-part form which is submitted to Security Operations at the time of Conceptual Design Report preparation or before the beginning of the Construction Phase of the project for smaller projects. In addition, projects which are considered to be a concern to Security Operations require a Security Plan. This process is not generally lengthy, but is required by DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M 5632.1C-1, Manual for Protection and Control of Safeguards and Security Interests. In addition, the requirements of 1-B21-SEC-3.3, Employee, Subcontractor, and Visitor Access Control, shall be followed.

If there is any potential that information in the project documentation is classified, then classification guidance should be requested from an authorized classifier.

4 DEFINITIONS

See COEM Glossary for applicable definitions.

5. RESPONSIBILITIES

All responsibilities for PMG-302 are listed in Appendix 1 of PMG-301.

6. INSTRUCTIONS

These instructions are organized by the five phases of the project life cycle as defined in PMG-301 and secondly by topical area. Steps within each of the five phases may not be chronological since activities in each topical area occur in parallel to normal project activities. Since the primary purpose of this procedure is to help Project Managers identify other plant process which may be impacted in completing a Construction Project, not all instructions needed have been included. Once other plant processes or requirements are identified, further instructions and definitions must be provided by the appropriate plant organizations and industry experts.

WARNING

This procedure is not suitable for field use.

Additional actions will be required by the organizations which evaluate compliance in these areas of concern that are not addressed by this procedure. Some of these topics and additional requirements are listed in Appendix 2. COEM PMG-301 shall also be referenced for the normal requirements in each of the five project phases for Construction Projects.

6.1 Phase I Requirements in Project Initiation & Definition Documentation

Typically this phase concludes when a User has developed a project concept and has obtained the support of Project Management. Project Management and Engineering personnel are not usually extensively involved in this phase of the project. Therefore the scope, schedule, and budget proposed are preliminary to detailed planning and investigation by Engineering and Project Management.

6.1.1 Quality

Project Manager

[1] Perform one of the following:

[A] Implement the requirements of the Site QA Manual, and the E&PM QA Plan, 2-E&PM-QAP-001.

[B] Develop an approved Project/Program specific QA Plan approved by the Site Design Authority.

[2] Develop a relationship of mutual trust with the program by striving to meet the User's and Team's expectations and requirements. The Project Team shall include workers who will build or operate the new or modified system or facility. Expectations are to be examined, and unrealistic or costly expectations discussed prior to being rejected. Once productive working relationships have been established, expectations are more likely to be revealed and fulfilled.

[3] Negotiate a written Scope of Work (SOW) with the User based on the User's expectations which includes the scope of services, schedule, cost, work break down structure, and division of responsibility. This shall be included in the PMP/Work Package.

NOTE *Sufficient time shall be allowed early in the coarse of the project to clearly define expectations and requirements and to provide this definition in a clear written form.*

6.1.2 Environment and Waste Management

Project Management

[1] Evaluate the source and bases for E/WM requirements for the project by:

- Reviewing Appendix 1, Environmental Project Process
- Reviewing Appendix 2, Environmental Topics Screen

6.2 Phase II Requirements in Conceptual Development & Approval

6.2.1 Quality

Project Manager

[1] Firmly establish the project technical scope (i.e., identify needed calculations, drawings, specifications, and acceptance criteria to be produced), schedule, and budget baselines.

[2] Obtain a Site Use Proposal from the Planning and Integration, Systems Analysis Group. Complete the required documentation and obtain approval from the Site Utilization Review Board to ensure no other use is intended in the same building or area which would conflict with the project scope.

6.2.2 Environment and Waste Management

Project Manager

[1] Submit an "Environmental Checklist" and a full project description to NEPA & NPDES/FFCA Management (NNFM) to initiate the NEPA process and schedule with the NNFM coordinator for a time to meet with the NEPA Compliance Committee (NCC).

[2] Include the disciplines and technical specialties required for proper project evaluation and planning on the project team. Areas of expertise that shall be considered include the following discipline, topic, and specialty expertise.

Technical Disciplines:

- Architectural
- Biology
- Chemical Engineering
- Civil Engineering
- Construction Engineering
- Chemistry
- Criticality Engineering and Nuclear Safety
- Ecology and Watershed Sciences
- Electrical Engineering
- Environmental Engineering/Science

6.2.2 Environment and Waste Management (continued)

- Geology
- Health Physics
- Hydrology
- Industrial Hygiene
- Mechanical Engineering
- Safeguards and Security Engineering
- Structural and Stress Mechanics Engineering

Topical and areas of expertise:

- Accelerated Cleanup
- Air Pollution Control
- Hazardous Waste Management
- Instrumentation and Controls
- Mixed Waste Management
- Occupational Safety
- Process Control and Engineering
- Procurement Engineering
- Product Packaging
- Radioactive Waste Management
- Regulatory Analysis
- Safety and Health Design Review
- Seismic and Wind Evaluation (Ref. DOE Standard 1020)
- Site Evaluation
- Soil Mechanics
- Traffic Department
- Ventilation and HVAC
- Worker, Craft, Planning, Operations Personnel

[3] Integrate the Project Team concerns into the Conceptual Design, Preliminary Design, and the PMP.

6.2.2 Environmental and Waste Management (continued)

[4] Discuss the project scope with the Ecology and Watershed Management Branch for all proposed Construction projects located outside of buildings to facilitate the early identification of issues involving the Endangered Species Act, Migratory Bird Treaty Act, Eagle Protection Act, Fish and Wildlife Coordination Act, and the Colorado Non-Game, Endangered, Threatened Species Conservation Act, and Wetland issues in association with the Clean Water Act (CWA).

[5] Initiate a Floodplain/Wetlands Environmental Review when requested by Ecology and Watershed Management to ensure compliance with the CWA, Wetland Protection Requirements, and 10 CFR 1022.

[6] Obtain written approval from the Traffic Department when packaging, shipping, or transporting hazardous waste. The Traffic Department has the ultimate responsibility for regulatory compliance with respect to these issues in accordance with the Rocky Flats Transportation Safety Manuals.

[7] Determine the requirements for site-specific permits, regulatory and state permits, approvals, and notifications, and ensure that the appropriate documentation is prepared and completed.

[8] Integrate all requirements into the project schedule and identify critical path items.

[9] Incorporate the requirements for environmental compliance and protection into the labor loading in the project estimate and resource planning.

[10] Coordinate with other Site departments to plan project waste management, minimization, volume reduction, pollution prevention, and determine if materials have potential future uses.

[11] Select a preferred solution.

6.2.3 Safety & Health (S&H)

Project Manager

[1] Obtain support from Nuclear Safety in developing a Safety Analysis, Hazard Categorization, and Preliminary Safety Analysis Report when required by the applicable DOE orders.

6.2.4 Security

Project Manager

[1] Complete Part I of the Security Checklist, Appendix 4, and submit it to Security Operations for review when preparing a CDR for Line Item projects. A Part II response, defining additional requirements, can be expected within one month which further defines additional requirements.

[2] Provide additional information, description of compensatory measures, and resource requirements for Nuclear Material Control, Production Control, and Wackenhut Security, Inc. (WSI) as directed by the Part II response. Often a specific format is required for this information called a Security Plan.

[3] Obtain support from Safeguards and Security Engineering when required by the Part II response.

6.3 Phase III Requirements in Engineering Technical Analysis and Detailed Design

6.3.1 Quality

Project Manager

[1] Ensure the Project Engineer, and Discipline Design Engineers are qualified to perform the intended work by reviewing their qualifications with the appropriate Engineering and Discipline Subject Matter Experts (SMEs).

Project Engineer/Team

[2] Establish a list of design inputs, assumptions, and requirements which establish the Technical Design Basis of the project.

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6.3.1 **Quality (continued)**

[3] Coordinate with all participants on the design team to ensure no element of the required Engineering Technical Analysis and Detailed Design is omitted, interferes, or duplicates the efforts of other Project Team members. Obtain an interface-discipline review of final deliverables when required and document this on the calculation, drawing, or deliverable.

[4] Develop drawings, calculations, acceptance and inspection criteria as required by the project scope and dictated by good engineering practice.

[5] Comply with the graded Design Process (reference 1-V51-COEM-DES-210, Design Process Requirements).

[6] Conform to Site drafting standards.

[7] Obtain a documented Design Check from the appropriate design discipline(s) on each deliverable, and an Environmental and S&H review from the S&H Design Review Group for the package, and any other appropriate organizations.

[8] Obtain the concurrence of the User or Program Process Manager for the completed design.

[9] Control calculations, drawings and other configuration controlled deliverables in accordance with the COEM.

Project Engineer/Team

[10] Check specifications and Integrated Work Control Program (IWCP) instructions for consistency with the Design Basis.

Project Manager

[11] Approve changes to cost, schedule, and estimate baselines in writing and provide work authorization and clear direction to the Project Team.

6.3.2 Environmental/Waste Management and Safety & Health

Project Engineer

[1] Coordinate and integrate the regulatory, operations, S&H, and Nuclear Safety requirements on the project.

[2] Obtain completed Permit to Install (PTI) or Notice of Intent (NOI) if required.

6.3.3 Davis-Bacon Reviews

Project Manager

[1] Obtain an Estimate of Labor and Materials, in accordance with Davis-Bacon Labor Wage Rates and submit it to the Davis-Bacon Committee.

[2] Obtain a Davis-Bacon Committee Review. The Davis-Bacon Committee determines if the project falls under any of the 25 pre-approved items as non-covered work or makes a recommendation to the DOE Davis-Bacon Review Committee that the project is covered (outside procurement), non-covered (Maintenance if resources are available), or non-applicable (usually a service subcontract).

[3] Initiates subcontract or Maintenance work in accordance with the final Davis-Bacon determination.

6.4 Phase IV Requirements in Work Planning, Procurement, Construction or Disassembly

6.4.1 Quality

Project/Discipline Engineers

[1] Review the inspection process to ensure critical inspection points are fully understood by the vendor, inspection personnel are assigned, and review the product to ensure it was constructed in accordance with Engineering Technical Analysis and Detailed Design drawings, specifications, and instructions.

6.4.1 Quality (continued)

Construction Engineer

[2] Verify Nonconforming Items are documented and technical justification provided by the appropriate Discipline Engineer and corrected, Engineering Technical Analysis and Detailed Design implemented, changes redlined and revised on final as-built drawings for the project.

[3] Control tests and satisfy their intended purpose.

[4] Receive construction contract submittal and obtain adequate technical evaluation and approval prior to affected work.

Construction Engineer/Coordinator

[5] Enforce the contract by ensuring the requirements of applicable building codes, standards, project specifications, and acceptance criteria are met.

[6] Provide a letter of cancellation detailing in writing the safety, environmental, security, legal, technical and other requirements left unfulfilled when funding is canceled prematurely, or project baselines compromised. Obtain a response to these concerns in writing in a timely manner from the responsible management organization.

NOTE: *A Final Project Close Out form can not be done until Construction Closeout has been completed. As a minimum IWCP closure, a letter of cancellation or all Project Acceptance and Transfers (PA&Ts) for each Sub-Contract, and As-builts shall be received prior to closing the project.*

Construction Engineer

[7] Serve as the Contract Technical Representative (CTR) during the construction phase of a project by: 1) enforcing contractual commitments, 2) coordinating site activities, and 3) planning and monitoring construction progress.

6.4.2 Environment and Waste Management

Project Manager

[1] Report any spill of waste material to the appropriate on-site organizations.

[2] Ensure radiation monitoring and soil characterization is performed when required to determine worker safety precautions (Ref. COEM-CMG-404, Excavations and Soil Disturbances).

6.4.3 Security

Project Manager

[1] Complete Part I of the Security Checklist, Appendix 4, and submit it to Security Operations for review if not previously done. A Part II response, defining additional requirements, can be expected within one month which further defines additional requirements.

[2] Provide additional information, description of compensatory measures, and resource requirements for Nuclear Material Control, Production Control, and Wackenhut Security, Inc. (WSI) as directed by the Part II response. Often a specific format is required for this information called a Security Plan.

[3] Obtain support from Safeguards and Security Engineering when required by the Part II response.

Nuclear Safety/Criticality Engineer

[4] Review the Detailed Design and update the Criticality Safety Operating Limits (CSOL), Nuclear Material Safety Limits (NMSL), Safety Evaluation Screen (SES), Unreviewed Safety Question Determination (USQD), SARs, Operational Safety Reviews, and applicable Hazard Classification reports as required to maintain compliance with applicable DOE orders, Nuclear Safety manuals, and OSHA Standards.

Construction Engineer

[5] Review and ensure the Sub-Contractor complies with the requirements of 1-B21-SEC-3.3, Employee, Subcontractor, and Visitor Access Control.

6.4.4 Safety and Health

Project Engineer

[1] Verify all aspects of the project which affect the Nuclear Safety / Criticality concerns are completely resolved. If not previously completed the following may be required by Nuclear Safety:

- Detailed Design Review
- Criticality Safety Operating Limits
- Nuclear Material Safety Limits
- Safety Evaluation Screen
- Unreviewed Safety Question Determination
- Safety Analysis Reports
- Operational Safety Reviews
- Hazard Classification reports

Project Engineer

[2] Incorporate personnel safety and protection measures into project design including: 1) Health Physics and Radiation Protection, 2) Industrial Hygiene concerns. These concerns include:

- Inhalation or ingestion of radioactive particles/compounds
- Direct radiation skin dose arising from beta-emitting isotopes
- Radioactive contamination in facilities and process areas
- Direct radiation whole body doses from materials during remediation of processing and/or waste storage facilities
- Inhalation of airborne isotopes (e.g. radon) during remediation of waste storage facilities
- Inhalation or ingestion of impurities or isotopes in waste and residue handling operations
- Hazardous chemicals
- Solvents

6.4.4 Safety and Health (continued)

- Where these concerns exist, the principles of ALARA shall be incorporated. Whenever work is required in an area that presents health physics concerns, it shall be verified that the proper site surveys have been conducted, Radiation Work Permits have been arranged, and building procedures understood and followed. Personnel assigned to work in radiation areas shall wear the proper dosimetry equipment. (Ref. DOE Order 5400.5, 5480.10, and 5480.11)

Construction Engineer

[3] Enforce HSP-24.01, Construction Safety and Health Requirements, and other applicable OSHA, and S&H Manual requirements on the Construction Site.

Occupational Safety and Health

[4] Oversee and monitor the construction site to ensure compliance with HSP 24.01.

Construction Engineer

[5] Ensure documentation required by DOE Order 5480.9A, Subcontractor's Monthly Summary Report, and Construction Technical Specification Division I, Section 01700 as required (Ref. Appendix, 5, DOE Order 5480.9A, Construction Project Safety and Health Management documentation) is maintained in the Construction Management project files.

[6] Verify that each worker has received the appropriate OSHA S&H, Rocky Flats Specific, and Building required training.

[7] Obtain excavation permits, asbestos demolition and/or removal notification (additional guidance provided by the Asbestos Hazard Emergency Response Act), rubble characterization documentation, and facility outage notifications.

[8] Coordinate efforts through the appropriate POD Meeting for the area.

6.5 Phase V Requirements in Operational Testing and Project Closeouts

6.5.1 Quality

Engineer(s) and Construction Engineer

[1] Ensure the project is built in accordance with the plans and specifications.

[2] Provide as-builts as required by the Technical Baseline Documents and Engineering Technical Analysis and Detailed Design.

6.5.2 Health & Safety

Project Manager

[1] Consider input from the Occupational Safety in preparing the Subcontractor Evaluation.

[2] Coordinate with Nuclear Safety to obtain the SAR initiated in Phase I.

Construction Engineer

[3] Forward DOE Order 5480.9A Documentation, Subcontractor's Monthly Summary Report of accidents and incidents form, and Subcontractor's Performance Evaluation to Occupational Safety.

7. RECORDS & DOCUMENTATION

Records and Documentation are summarized for both COEM-PMG-301 and COEM-PMG-302 in COEM-PMG-349.

8. REFERENCES

8.1 Environmental Regulations

NOTE: *Only the most fundamental laws are provided as a part of this list. Contact regulatory/legal experts for additional project specific requirements.*

8.1 Environmental Regulations (continued)

Atomic Energy Act, 42 U.S.C. 6912 (a), 6976

The Clean Air Act Amendments of 1990 - Title V, 42 U.S.C. 7601et. seq.

Clean Water Act of 1972 - 33 U.S.C. 1251 et seq.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C., sec. 9601 *et seq.*)

The Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11001 et. seq.) (EPCRA or SARA Title III)

The Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136)

Occupational Safety and Health Act of 1974 (29 U.S.C. 651 et. seq.)

The Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C., sec. 6901 *et seq.*)

The Rocky Flats Plant Federal Facility Agreement and Consent Order as amended Dec 20, 1994 (Interagency Agreement, IAG)

Rocky Flats Policy 9-12, National Environmental Policy Act

Safe Drinking Water Act of 1974 (42 U.S.C. 300f-300j-26) (SDWA or Public Health Service Act, Title XIV (PHSA))

Solid Waste Disposal Act (42 U.S.C. 6901 et. seq.)

Toxic Substances Control Act of 1976 (15 U.S.C. 2601 et. seq.)

Underground Storage Tank Program (49 U.S.C. 6991 et. seq.)

10 CFR 1021, National Environmental Policy Act; Implementing Procedures and Guidelines Revocation; Final Rule and Notice, April 24, 1992

8.1 Environmental Regulations (continued)

10 CFR 1022, Compliance with Floodplain/Wetlands Environmental Review Requirements.

40 CFR 61, National Emission Standards for Hazardous Air Pollutants

40 CFR 261, Identification and Listing of Hazardous Wastes

40 CFR 262, Standards Applicable to Generators of Hazardous Waste

40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 1500 - 1508 The National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), Jan. 01, 1970.

Environmental Laws and Legal Authorities Affecting the Rocky Flats Plant, Professor George (Rock) Pring, University of Denver, College of Law, 1991 (Ref. only)

8.2 DOE Requirements

Baseline Guidance for the Office of Environmental Restoration, U.S. DOE Department of Environmental Restoration, EM-40, Draft (for reference only)

DOE/EV-0132, DOE Environmental Compliance Guide (for reference only)

DOE NEPA Compliance Guide, Volumes I and II, September 1994 (for reference only)

DOE Standard 1020 - Natural Phenomena Hazards Design and Evaluation Criteria for DOE Facilities

8.2 DOE Requirements (continued)

DOE Order 1540.1A, Materials Transportation and Traffic Management

DOE Order 1540.2, Hazardous Material Packaging for Transport - Administrative Procedures

DOE Order 1540.3A, Base Technology for Radioactive Material Transportation Packaging Systems

DOE Order 4300.1C, Real Property Management

DOE Order 4320.1B, Site Development Planning

DOE Order 4700.1, Project Management System

DOE Order 5000.3B, Occurrence Reporting and Processing of Operations Information.

DOE Order 5100.3, Field Budget Process

DOE Order 5100.4, Internal Review Budget Process

DOE Order 5400.1, General Environmental Protection Program

DOE Order 5400.2A, Environmental Compliance Issue Coordination

DOE Order 5400.4, Comprehensive Environmental Response, Compensation, and Liability Act Requirements

DOE Order 5400.5, Radiation Protection of the Public and the Environment

DOE Order 5440.1E, National Environmental Policy Act Compliance Program

DOE Order 5480.1B, Environment, Safety, and Health Program for DOE Operations

8.2 DOE Requirements (continued)

DOE Order 5480.3, Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes

DOE Order 5480.4, Environmental Protection, Safety;, and Health Protection Standards

DOE Order 5480.5, Safety of Nuclear Facilities

DOE Order 5480.7, Fire Protection

DOE Order 5480.8A, Contractor Occupational Medical Program (inc. Change 1)

DOE Order 5480.9A, Construction Project Safety and Health Management

DOE Order 5480.10, Contractor Industrial Hygiene Program

DOE Order 5480.11, Radiation Protection for Occupational Workers

DOE Order 5480.13A, Aviation Safety

DOE Order 5480.15, DOE Laboratory Accreditation Program for Personnel Dosimetry

DOE Order 5480.16, Firearms Safety

DOE Order 5480.17, Site Safety Representatives

DOE Order 5480.21, Unreviewed Safety Questions

DOE Order 5480.22, Technical Safety Requirements

DOE Order 5480.23A, Nuclear Safety Analysis Reports

8.2 DOE Requirements (continued)

DOE Order 5480.24, Nuclear Criticality Safety

DOE Order 5481.1B, Safety Analysis and Review System

DOE Order 5482.1B, Environment, Safety, and Health Appraisal

DOE Order 5483.1A, Occupational Safety and Health Program for DOE Contractor Employees at GOCO Facilities

DOE Order 5484.1, Environmental Protection, Safety, and Health Protection Information Reporting Requirements

DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests

DOE Order 5700.6C, Quality Assurance

DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests

DOE M5632.1C, Manual for Protection and Control of Safeguards and Security Interests

DOE Order 5820.2A, Radioactive Waste Management

DOE Order 6430.1A, General Design Criteria

8.3 Project Requester Requirements

The requester of the project may have specific requirements pertaining to project documentation, regulatory requirements, and execution.

NOTE *The PM shall verify that all the requester's requirements are consistent with all applicable laws and necessary and sufficient standards.*

96-DMR-000127

8.4 Other References

American Society of Civil Engineers, Manuals and Reports on Engineering Practice No. 73, Quality in the Constructed Project

Conduct of Engineering Manual

1-V51-COEM-DES-210, Design Process Requirements

4-04C-COEM-CMG-404, Excavations and Soil Disturbances

2-F32-COEM-PMG-301, Introduction to the Construction Project Management System

Construction Management Manual

Construction Specifications

Davis-Bacon Act and DOE Acquisition Regulation (DEAR)

- Application of Labor Laws to Government Acquisition (Part 922)
- Administrative Controls and Criteria for Application of the Davis-Bacon Act for Operational or Maintenance and Construction Activities (Part 970).

Division I Section 01700 Construction Specifications, Subcontractor Safety & Health Requirements

HSP 24.01, Construction Safety and Health Requirements

Plant Procedure 1-25000-EPR-NEPA.001, Implementation of NEPA Documentation

Procurement Procedures Manual

Rocky Flats Policy 9-12, National Environmental Policy Act

1-B32-SEC 3.3, Employee, Subcontractor, and Visitor Access Control

1-C18-HSP-24.01, Construction Safety & Health Requirements

2-E&PM-QAP-001, Engineering and Project Management Quality Assurance Plan

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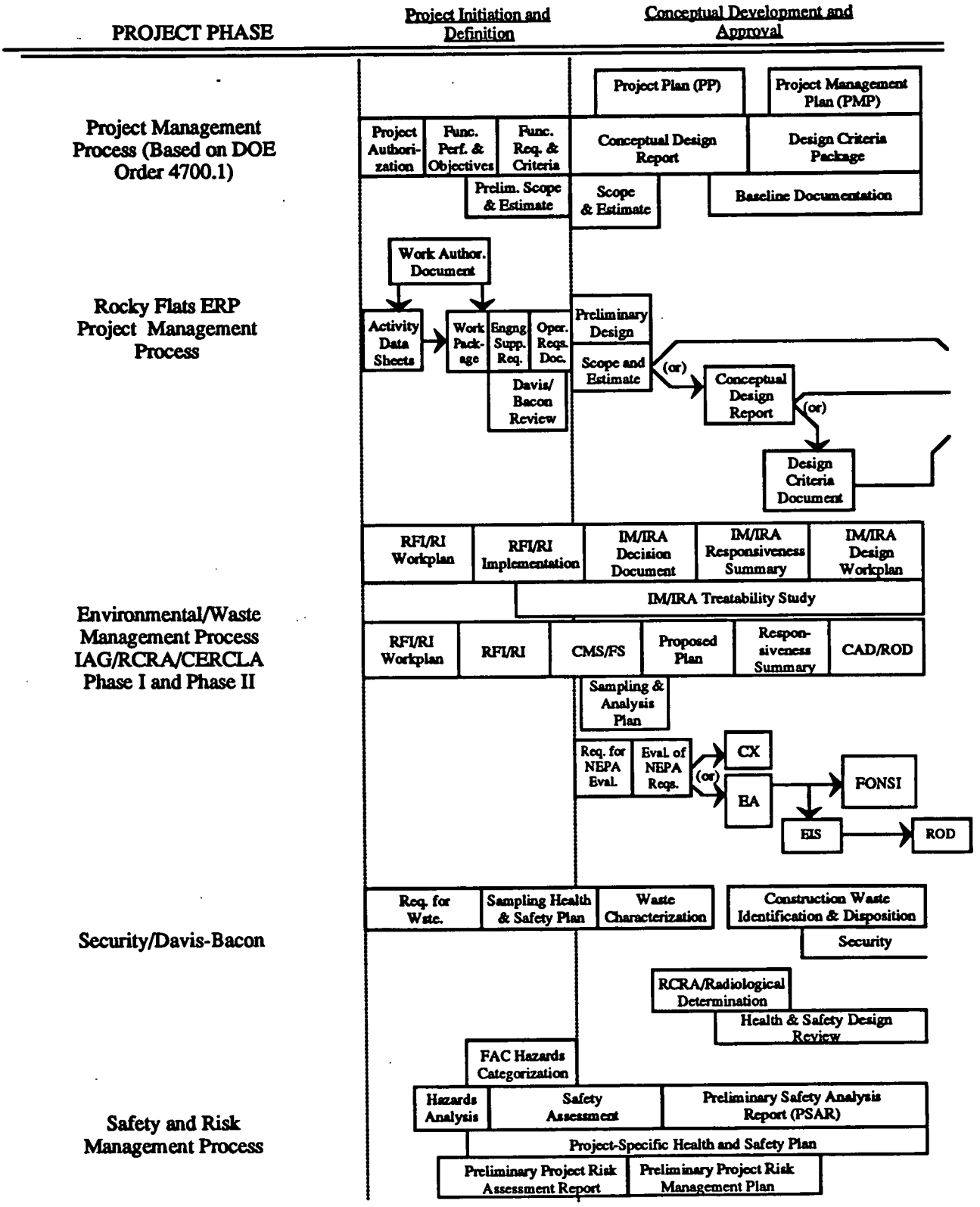
"The Environmental Project Process"



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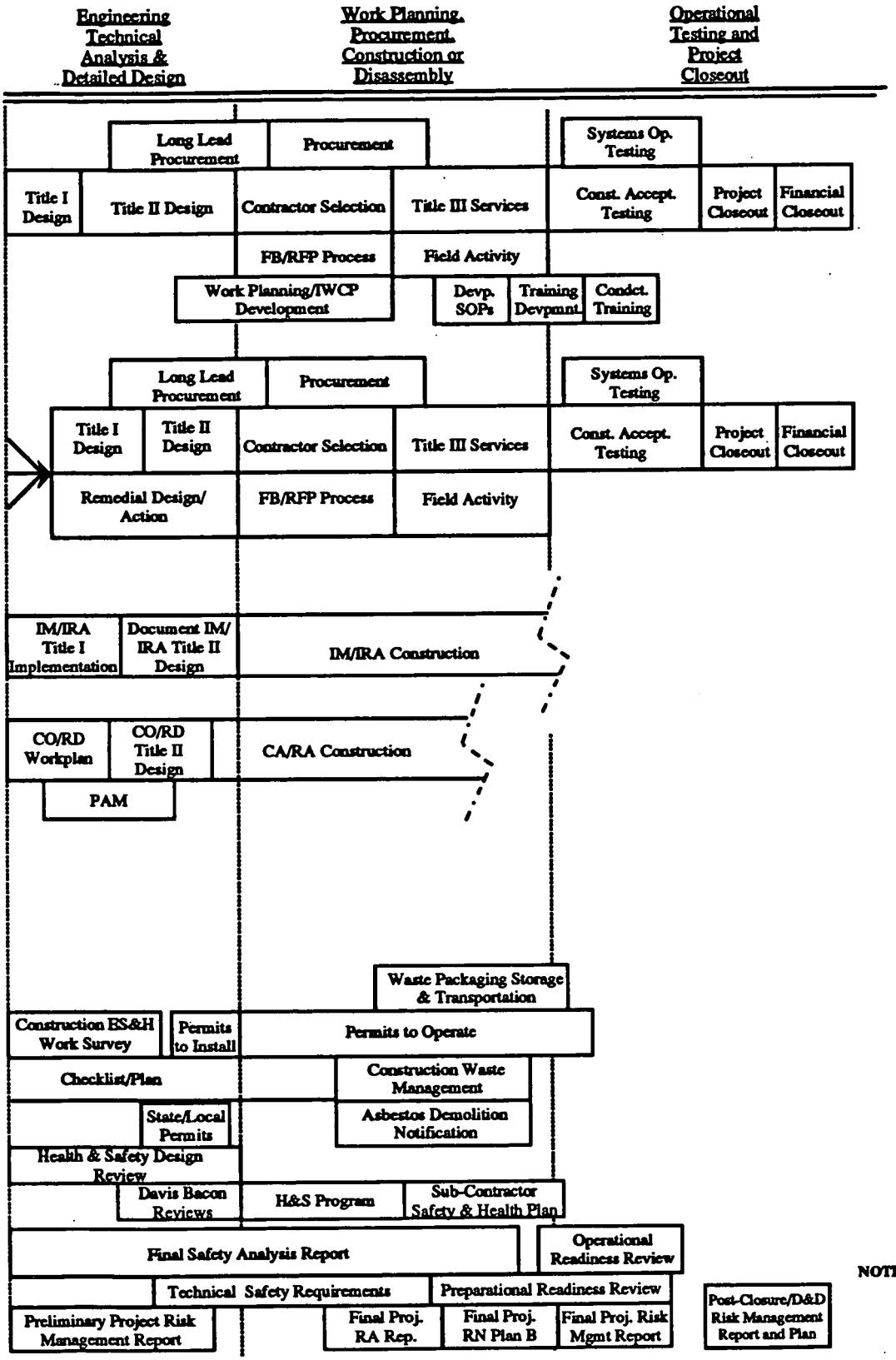

NOTE: Elements shown are typical only. Specifics are to be developed for individual projects.

APPENDIX 2
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ENVIRONMENTAL TOPICS SCREEN

Part I

Project: _____

PM: _____ **Phone:** _____

Description and Background of Project:

Program Environmental Coordinator/PM: ___

Phone: _____

The following guide is provided to assist the PM in identifying environmental concerns in their projects. This discusses several environmental topics, but is not all inclusive. The Program Environmental Coordinator, Environmental Project Manger, or a Regulatory Compliance Assistant is to be consulted for what specific requirements are applicable. Part I is a screen, Part II are additional requirements (not included in the body of the procedure) for certain types of projects.

Yes	No		Contact
		Area I - NEPA	
___	___	NEPA Checklist Required for all Construction Projects	NEPA & NPDES/FFCA Management
___	___	**Area II Ecology & Watershed Issues** - Protected, endangered species or habitat - Migratory Bird Treaty - Bald or Golden Eagle Protection Act - Fish and Wildlife Coordination Act - Colorado Non-game Endangered Species Conservation Act - Impacts to natural surface water drainage or impoundments - Potential to cause damage to wetlands areas or wetlands vegetation - New construction, dredging, fill or heavy traffic inside the buffer zone, or any surface disturbance	Ecology & Watershed Management

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Yes	No		Contact
___	/ ___	**Area III - Air Issues**	Air Quality Branch
		Air Emission Standards of Storage Vessels for:	
		- Petroleum Liquids	
		- Volatile Organic Liquids	
		- Secondary Lead Smelters	
		- Inorganic Liquids	
		Air Emission Standards for Hazardous Air Pollutants	
		Air pollution control equipment (scrubbers, cyclones, baghouses, electrostatic precipitators, wet or cloth collectors and filters)	
		- Stack emissions	
		- Dust	
		- Exhaust ducts or building exhaust points	
		- Internal/external combustion sources (i.e. generators, incinerators)	
		- Portable equipment	
		- Radiological or non radionuclide air pollutant emissions	
		Air sampling equipment used for the radioactive effluent or ambient air monitoring program	
		Beryllium	
		Building construction that could potentially release air pollutants into the atmosphere	
		Deactivation	
		Decontamination	
		Decommissioning	
		Land disturbance activities	
		Radionuclides	
		- Process systems that releases radionuclides or other air pollutants as defined in the respective building Air Pollutant Emission Notice (APEN)	
		Soil remediation or excavation	

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Yes	No		Contact
		Area IV - Water Issues	
___	___	Water Regulations - Discharges to the environment - Liquid effluents - Storm water permits - NPDES permits Drinking Water - Public drinking water systems treatment - Monitoring and testing for radiochemical contamination - Bacteriological contamination - Organic chemical contaminants - Record keeping for public drinking water systems Wells - Well installations - Underground injection facilities Wastewater - Wastewater for land application permit and operation	Surface Water Branch
___	___	**Area V - Toxic Substances Control Act (TSCA) and Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Issues** Polychlorinated biphenyl (PCBs) Asbestos Pesticides Lead	ER Accelerated Actions & Waste Compliance Programs & Industrial Hygiene & Nuclear Safety
___	___	**Area VI - Radiological Issues** Radiation exposure, permits, and notification	Radiological Engineering & Industrial Hygiene

APPENDIX 2
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Yes	No		Contact
___	/ ___	**Area VII - Superfund Amendment and Reauthorization Act (SARA) Issues**	Chemical Tracking

Chemical Handling
- usage, shipping, receiving, storage
- toxic chemical release reporting
- notification and record keeping

SARA Reporting
- Chemical annual reporting (SARA 312 and 313)

Spills
- Emergency planning
- Material Safety Data Sheet (MSDS) reporting
- Community Right-to-know
- CERCLA Emergency Notification
- SARA Title III Notification
- Spill prevention control and countermeasures
- Controls for PCB Spill Response

CERCLA
- Investigation Derived Material (IDM)
- Treatment processes
- Material Management
- ROD

___	/ ___	**Area VIII - RCRA Issues**	RCRA Permitting and Compliance

RCRA
- RCRA RA
- Hazardous Waste Management by Generators and Treatment, Storage, and Disposal Facility (TSDF)
- Hazardous Waste Storage Tank Systems and Container Requirements
- Ground water monitoring

Closure and past closure
- Hazardous waste treatments, such as: Incinerators, Thermal Treatment, Chemical, Physical, Biological Treatment
- Land disposal restrictions
- EPA/State permits

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Yes	No		Contact
		Storage	
		- Temporary Accumulation Area Management	
		- Accumulation Area Management	
		Tanks	
		- Upgrading existing petroleum tanks	
		- Upgrading hazardous underground tanks	
		- Process waste tanks or pipelines	
		Waste treatment, storage, or disposal areas	
___	/ ___	**Area IX - Waste Issues**	Waste Operations & ER Accelerated Actions
		Change or Drainage/Flow Patterns	
		Dams or Retention Ponds	
		Drains or Sumps	
		Fire suppression system	
		Landfills	
		- Collection, handling, disposal	
		- Storage of solid waste cover material and compaction techniques	
		- Records required for disposal	
		- Safety protocol	
		- Landfill design and permits	
		Large Excavations (>3' x 100 square feet)	
		Process liquid Waste System	
		New Buildings or Significant Additions	
		Sanitary Sewer Systems	
		Secondary or Primary Containment	
		Sewage Treatment Plant	
		Permit requirements for sewage disposal systems.	
		- Operation of sewage disposal systems	
		- Monitoring, record, and notification requirements	
		- Sewage disposal system	
		Steam Condensate System	
		Stormwater Runoff System	

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Yes	No		Contact
		Radioactive Waste - Low Level - Transuranic - Radioactive waste management - Decommissioning facilities - Management of radioactive mixed waste	
		Transport or Storage of Large Qty. of Fuel or Chemicals (> 50 gal)	
		Waste Minimization	
		Excess	
		Reuse	
		Recycle	
		Energy Recovery	
___	/ ___	**X Waste Shipment**	On Site Traffic
		Fabrication and Procurement of Containers	Department &
		Off-Site, Department of Transportation Requirements	Radioactive Waste
		On-site transportation	Programs &
		Package liners, and package product compatibility	Product Packaging
		Structural strength and durability	

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ENVIRONMENTAL TOPICS SCREEN

Part II - Considerations

The following guide is intended to prompt PMs on additional actions which may be needed on projects which have E/WM requirements.

Reviews

[1] Provide a comprehensive review of all applicable Departmental, Federal, State and local policies, programs, directives, and regulations, and identify environmental project requirements.

[2] Review requirements for air pollution control, including: Best Available Control Technology; National Emission Standards for Hazardous Air Pollutants (NESHAP) for Radionuclides, Radon, and/or Asbestos; and overall compliance with provisions of the Clean Air Act.

[3] Review requirements for water pollution control, including: Best Available Technology; National Pollution Discharge Elimination System permitting; PTI; RCRA groundwater monitoring; Best Management Practices Plan; and overall compliance with the Clean Water Act.

[4] Review requirements for solid waste management, including: Low-Level Radioactive Wastes; Hazardous Wastes; Mixed Wastes; RCRA permitting; Underground Storage Tank regulations; Toxic Substances; conventional industrial wastes; and Pollution Prevention and/or minimization.

[5] Ensure compliance with site negotiated agreements, including the IAG, the Site Federal Facility Compliance Agreement, and other regulatory negotiations.

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[6] Determine if the project is considered a:

Type

1 RA under CERCLA, initiated by the Remedial Investigation/Feasibility Study (RI/FS).

2 Interim Measures/Interim Remedial Action Plan (IM/IRA) under IAG (CERCLA/RCRA)

3 Removal Action under CERCLA, which involve three levels of response depending on the severity and timeliness of the required action;

4 Waste site/facility Closures under RCRA, which involve actions required to close hazardous waste management units or facilities identified by a RCRA Part A or Part B permit application;

5 A non-regulatory project (in general).

[7] **IF** project is a Type 1, 2, 3 or 4 project,
THEN coordinate project actions, scope development, and Environmental/Waste requirements with the Program Environmental PM and Environmental Coordinator.

[8] Identify the Lead Agency (State for RCRA or Regional EPA for CERCLA) for the activity and coordinate and track the development of documentation.

[9] Review the project to identify sources that may require a PTO or an NOI.

Characterization and Technology Development

[1] Determine type of technology, integrations with existing systems, retrofit engineering, decontamination and decommissioning requirements, radiological considerations and other concerns of the various project participants, and type of documentation needed to document closure of these concerns and reviews required based on the complexity of the project.

[2] Arrange for and coordinate the appropriate sampling, analysis, characterization and certification of project waste to determine if such waste forms exist. Otherwise, characterization would be based upon other existing information sources; treatability studies, literature, etc. Ensure low-level waste is characterized with sufficient accuracy to permit proper segregation and waste management. Waste characterization data is to be recorded on a waste manifest in compliance with DOE Order 5820.2A and 40 CFR 262.

[3] Initiate research and development activities such as site characterization, technical, alternative analysis, feasibility studies, and develop a recommended course of action to resolve Quality, Environment/Waste Management, and other issues.

Movement of Environmentally Controlled Materials

[1] Store hazardous waste generated in a regulatory-approved storage area (additional guidance may be found in Nuclear Regulatory Commission (NRC) Regulatory Guide N-2).

[2] Coordinate proper handling, packaging, on-site movement, storage, and off-site shipment of wastes resulting from project requirements and field activities with the appropriate Program, Waste Management, On-site Traffic Committee, Product Packaging, Procurement Engineering, and Structural and Stress Mechanics Engineering.

[3] Transport Department of Transportation (DOT)/Low-Specific Activity wastes in accordance with 49 CFR and IAEA, UN Safety Series #6, and DOE Order 5480.3 as appropriate.

NOTE *Radioactive materials and hazardous, nonradioactive substances which are not wastes must not be confused with waste products when interpreting requirements. Definitions common to transportation requirements such as "free liquids" (49 CFR versus RCRA), have varied definitions and requirements. Often both sets of requirements apply.*

[4] Provide documentation of arrangements for the transportation of fissile materials. Obtain a SARP if required by Product Packaging and Facilities Safety Engineering.

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[5] Ensure radioactive waste to be accepted at a Treatment/Storage/Disposal (T/S/D) facility meets the Waste Acceptance Criteria for that facility. General guidelines are discussed in DOE Order 5820.2A.

[6] Maintain required documentation for project waste management activities.

Planning

[1] Promote waste minimization and volume reduction by considering: 1) source reduction, 2) recycle, reuse, or reclamation, and 3) treatment to reduce volumes, toxicity, or mobility.

[2] Notify the appropriate site agencies in writing of pending requirements to be investigated to verify requirements for PTIs and/or NOIs.

[3] Maintain required documentation for project waste management activities.

[4] Develop Emergency Management Plans, Waste Sampling Plans, Low-Level Waste Management Plans, and Waste Minimization Plans as required.

[5] Ensure that safety documentation and design criteria includes the consideration of Fire Protection requirements in accordance with DOE Order 5480.7 and Natural Phenomenon Hazards in accordance with DOE Standard 1020.

Project Execution

[1] Obtain PTIs, when required, approved by the Colorado Department of Health (CDH) prior to the initiation of field activities.

[2] Prepare technical content of PTO (related to previous PTI) and forward to the appropriate site group for completion.

[3] Obtain PTOs, approved by the appropriate regulatory agency, prior to operating the system or equipment that provides the source of concern.

APPENDIX 3
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NEPA CHECKLIST

DATE: _____

TO: S.M. Nesta, Manager EXT.: 6386 FAX: 6538
NEPA & NPDES/FFCA Mgmt (NNFM) Bldg

FROM: _____ EXT.: _____ FAX: _____

I request NNFM to prepare the appropriate documentation or technical support activities for the following project and authorize expenditure of the indicated number of hours to accomplish that work.

PROJECT TITLE AND SCOPE OF WORK:

BUDGET: _____ Hours allotted for NNFM, cost center 0205
_____ Charge number
_____ Work Package number

SAMPLE

SCHEDULE (when needed)

_____ _____
Work Package Manager (Print/Sign) Date

_____ _____
NEPA & NPDES/FFCA Management Manager (Print/Sign) Date

DISTRIBUTION:
Original: NNFM Project File
Copies: NNFM Responsible Engineer
NNFM Budget Tracking

Revision Date: February 23, 1995

*A current copy of this form can be obtained from the NEPA & NPDES/FFCA Management Group, T130D.

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
NEPA and NPDES/FFCA COMPLIANCE
ENVIRONMENTAL CHECKLIST

1. Project/Activity Name: _____
2. Date: _____
3. DR/NC#: _____
4. Charge Number: _____
5. Work Package Number: _____
6. EG&G Project Manager: _____
7. RFFO Project Sponsor: _____
8. Initiating Line Manager: _____
9. RFFO Line Manager: _____
10. Project Description: _____

SAMPLE

* Obtain an updated Environmental Checklist from the NEPA and NPDES/FFA Group, Bldg. T130B.

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NEPA CHECKLIST

		YES	NO	NOTES
11.	Statues applicable:			
11.1	Will the project require or potentially require an application for permit(s) or permit modification(s) under:			
	A. Clean Air Act?	____	____	
	B. Colorado Air Quality Regulations 3 - APENs?	____	____	
	C. Clean Water Act?	____	____	
11.2	Does the project involve RCRA permitting? (If no, skip to 11.3)	____	____	
	A. Will a RCRA permit or modification be required?	____	____	
	B. Does the project include a removal?	____	____	
	C. Does the project include RCRA closure?	____	____	
	– partial?	____	____	
	– full?	____	____	
	D. Does project include excavation or capping to meet RCRA requirements?	____	____	
	E. Will cost and duration stay within $2 million and 12 months?	____	____	
11.3	Does project include CERCLA removal?			
	A. Does the project involve CERCLA? (If no, skip to 11.4)	____	____	
	B. Will cost and duration stay within $2 million and 12 months? (Explain in project description.)	____	____	
11.4	Does the project threaten to violate statutory, regulatory or permit requirements, or DOE Order?	____	____	
11.5	Will the action be in or near an Individual Hazardous Substance Site (IHSS)?	____	____	
11.6	Does the project potentially impact threatened or endangered species or habitat, the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Fish and Wildlife Coordination Act, Colorado Non-Game, Endangered Species Conservation Act?	____	____	
12.	Will this project construct or require a new or expanded waste disposal, recovery, storage or treatment facility?	____	____	
13.	Is project needed for IAG, AIP, FFCA, or other federal or state agreement? (Specify and explain any schedule urgency and deadlines in project description.)	____	____	
14.	Is the project:			
	A. A new process, building, etc.?	____	____	
	B. A modification to an existing process, building, etc.?	____	____	
	C. A capital equipment/machinery installation?	____	____	
15.	Location items:			
	A. Will the project result in, or have the potential to result in long term changes to the environment?	____	____	
	B. Will the action take place in a wetland or floodplain?	____	____	
16.	Will the project result in changes and/or disturbances of the following existing considerations? (If yes, please quantify in program description.)	____	____	
	A. Noise levels	____	____	
	B. Air emissions	____	____	

SAMPLE

APPENDIX 3
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	YES	NO	NOTES
NEPA Checklist (cont'd.)			
C. Liquid effluents	____	____	
D. Solid Wastes	____	____	
E. Radioactive wastes (including contaminated soil)	____	____	
F. Hazardous waste	____	____	
G. Mixed waste (radioactive and hazardous)	____	____	
H. Chemical or petroleum product storage	____	____	
I. Water use (withdrawal of ground water or diversion or withdrawal of surface water)	____	____	
J. Drinking water system	____	____	
K. Soil movement outside facility fences or beyond SWMU boundaries	____	____	
L. Site clearing, excavation, or other physical alterations to grade	____	____	
17. Will the project threaten public health or safety?	____	____	
18. Will the project have possible effects on the environment which are likely to be highly controversial?	____	____	
19. Will the project establish a precedent for future actions that will have significant effects, or represent a decision in principle about a future consideration?	____	____	
20. Will the project be substantially related to other actions that have individually insignificant but cumulatively significant impacts?	____	____	
21. Will the project adversely affect federal, state, or locally designated natural areas, prime agricultural land, special water sources, or historic, archeological, or architectural sites?	____	____	
22. Have possible pollution prevention measures been considered?	____	____	

SAMPLE

Checklist Notes:

1.

2.

EC Prepared by: _____ (Print/Sign) _____ (Date) _____ (Organization) _____ (Ext.)

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
PROJECT SECURITY CHECKLIST
PART I

1. PROJECT TITLE: _____
2. AUTHORIZATION #: _____ 3. FUNDING TYPE: _____
4. PLANNED LOCATION - AREA/BUILDING/ROOM: _____
5. TEC: $_____ 6. PREVIOUS AUTHORIZATION #: _____
7. PROJECT/ACTIVITY DESCRIPTION (attach pages if needed):

Do not include any classified or UCNI information.
State estimated start/finish dates.
Be as specific as possible.

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CHECKLIST

		YES	NO
8.	Is project located within a secure area?	_____	_____
9.	Is project located within a MAA?	_____	_____
10.	Does this project make any modifications to MAA boundaries (temporary or permanent)?	_____	_____
11.	Does this project alter or cross security barriers (MAA, PA, EL, LA, Vault/VIR)?	_____	_____
12.	Any degradation of a security system?	_____	_____
13.	Ingress/egress which circumvents security controls?	_____	_____
14.	Use of cameras, recording devices, radio transmission or receiving devices, or other electronic equipment (other than existing plant approved equipment), explosives or other prohibited articles within RFP boundaries?	_____	_____
15.	Are contracted personnel to be used:	_____	_____
	a. in design?	_____	_____
	b. during construction?	_____	_____
16.	Are uncleared personnel to be used:	_____	_____
	a. in design?	_____	_____
	b. during construction?	_____	_____
17.	Appropriate number of uncleared personnel?	_____	_____
	a. variation in escort/uncleared ratio?	_____	_____
18.	Explain or clarify any checklist items marked "yes". Part II cannot be prepared until information is complete.	_____	_____

PROJECT ADMINISTRATOR: _____ PHONE: _____

PROJECT ENGINEER: _____ PHONE: _____

PREPARED BY: _____ DATE: _____ PHONE: _____

APPENDIX 4
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
PROJECT SECURITY CHECKLIST
PART II

1. PROJECT TITLE: _____
2. AUTHORIZATION #: _____
3. VULNERABILITY ANALYSIS REQUIRED: (Y/N) _____
4. DESIGN SECURITY CONSIDERATIONS (For Title I & II Design Package):

PREPARED BY: _____ DATE: _____

APPROVED BY SAFEGUARDS & SECURITY:

_____ DATE: _____
Facility Security Coordinator

_____ DATE: _____
Security Analysis

APPENDIX 5
Page 1 of 1

DOCUMENTATION REQUIRED BY DOE ORDER 5480.9A, CONSTRUCTION PROJECT SAFETY & HEALTH MANAGEMENT

Construction Management

1. Pre-construction meeting, including safety and health requirements for the project and initial review of Project Safety and Health Plan (SHP).
2. Review and approval of SHP by Construction Manager.
3. Review and approval of Preliminary Hazard Analysis (PHA) and Activity Hazard Analysis (AHA) by Construction Manager.
4. Monitor and evaluate effectiveness of the Subcontractor's Safety and Health Program (Project Manager, Construction Manager, Construction Coordinator).
5. All contractual actions.
6. Documented weekly worksite safety and health inspections (Construction Manager, Construction Coordinator).
7. Documented monthly worksite safety and health inspections (Project Manager).

Constructor or Construction Subcontractor

1. Establish and maintain construction safety and health program.
2. Provide and submit a site specific Safety and Health Plan (SHP) for approval.
3. Designate in writing the site superintendent and all others in authority for implementing the SHP.
4. Provide qualifications of designated Safety and Health Representative.
5. Provide and submit a Preliminary Hazard Analysis (PHA), and as required Activity Hazard Analysis (AHA) for approval.
6. Maintain documentation of employees OSHA training as required.*
7. Maintain documentation of daily pre-work safety briefings.
8. Maintain documentation of Weekly Toolbox Safety Meetings.
9. Maintain documentation of daily safety inspections.
10. Maintain OSHA 200 Log.*
11. Provide monthly report of safety statistics (Appendix C, Section 01700)*

Post Construction Submittal by Constructor or Construction Subcontractor

1. Final Report (self assessment) detailing safety and health performance, including safety and health performance of any lower-tier subcontractors or vendors.
2. Logbook maintained by designated Safety and Health Representative (daily safety and health inspections, corrective actions, etc.)
3. Copies of employees training records pertinent to work activities performed.*
4. Copies of all daily pre-work safety briefings.
5. Copies of all Weekly Toolbox Safety meetings.
6. Copies of all Accident/Incident Investigation Reports (CAIRS).*
7. Total number of First Aid cases incurred.*
8. Final Copy of OSHA 200 Log.*
9. Final cumulative report of employee hours worked for project (including all subcontractors/vendors work hours) and final OSHA Incidence Rates.

* Lower-tier subcontractors and vendors documentation also required.

Rocky Flats Environmental Technology Site

3-L88-COEM-PMG-303

REVISION 0

PROJECT INITIATION GUIDE

APPROVED BY: Leon J. McGovern /L. J. McGovern / 4-13-95
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management — Effective Date: 4-1-95

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By Charles Adams
Date 4-17-95

This guide replaces Pilot ENG-PILOT-PM-002, Revision 0.

Periodic review frequency: 4 years from the effective date.

LIST OF EFFECTIVE PAGES

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1. PURPOSE

This guidance establishes the process used by the Project Management Department for acceptance of new project work and assignment of Project Program Managers and Project Managers to that work.

2. SCOPE

This guidance applies to all new and on-going work managed by the Project Management Department.

3. OVERVIEW

This guidance contains general instructions and responsibilities for acceptance of new project work by the Project Management department and assignment of that work to department personnel.

The primary focus of assigning work to Project Management personnel is to match work assignments to the site programs they are associated with or support. All project work accepted by Project Management is related to and funded by a specific site program. Specific Project Program Managers have been assigned to manage and support each site program, as represented by an individual leg of the Site Management Control System work breakdown structure. New work accepted by Project Management will be directed to the Project Program Manager responsible for that program. The Project Program Manager will then assign an appropriate Project Manager.

4. DEFINITIONS

See the Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Director of Project Management

Ensures that work accepted by Project Management is within the scope of the department's responsibilities.

Ensures that work accepted by Project Management Department is properly approved and funded by the plant policies, procedures and Management Control System. (All work must be funded by a currently approved and funded Site Management Control System Project Management Plan/Work Package.)

Ensures work can be completed and directed in a timely manner by assigning Site Program work among sufficient and competent Project Program Managers.

Ensures that there are sufficient and competent Project Program Managers based on workload and requirements.

5.2 Project Program Manager

Coordinates the needs of the Program for new project support with Project Management and provide timely support of the program in initiating work.

Ensures that there are sufficient and competent Project Managers to assign work to based on workload and requirements.

6. INSTRUCTIONS

Project Program Manager

[1] Define the User's basic requirements, expectations, and concurrence in writing.

[2] Obtain a Charge Number Authorization Form from Central Planning and Budgets (CP&B) which describes the charge number, budget authority, and amount.

[3] Discuss the new project with the Deputy Director for Project Management.

[4] Assign a Project Manager.

Deputy Director for Project Management/designee

[5] Determine if work accepted by the Project Management Department is within the scope of the department's responsibilities.

[6] Determine if work accepted by the Project Management Department is properly approved and funded by the plant policies, procedures and Management Control System.

[7] Assign Site Program work among sufficient and competent Project Program Managers to ensure work can be completed and directed in a timely manner.

7. RECORDS

No records are created per this guide.

Rocky Flats Environmental Technology Site

3-P31-COEM-PMG-307

REVISION 0

PROJECT DATA SHEET (PDS) PREPARATION GUIDE

APPROVED BY: _____ / L. J. McGovern / 4-13-95
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management Effective Date: 4-1-95

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____
Date 4-17-95

Periodic review frequency: 4 years from the effective date.

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1. PURPOSE

This guidance reviews the steps necessary for the preparation of Project Data Sheets and the responsibilities of Project Management in its preparation.

2. SCOPE

This guidance applies to all active and planned Capital Line Item Construction projects managed by Project Management.

3. OVERVIEW

DOE is required by law to obtain Congressional authorization for the appropriation of funds. Insofar as practical, the development and review of the project to be submitted to the Congress for authorization will be undertaken as an integral part of the regular budget process, both internally and through Office of Management and Budget (OMB). Project data sheets shall be prepared and submitted for all projects requiring authorization or appropriation in the budget year.

A data sheet should be an objective document written from the standpoint of the Department as a whole rather than as one segment of the Department. Personal pronouns, building and area numbers, identification of staff personnel, and unsubstantiated value judgements should not be used. A data sheet should be self-sufficient. It should avoid the use of technical terms that have a special connotation in industry or science, and should not depend on the reader having access to other documents.

The scope of the project shall be set forth in the data sheets in detail sufficient to permit a careful review and evaluation of the project. The data sheet items should not, however, be stated so precisely as to preclude the exercise of appropriate latitude by the manager in the actual design and construction of the project, as described in the data sheet, after authorization and appropriation of the funds.

3. OVERVIEW (continued)

Project data sheets are required to explain and justify to Congress the need for project funding. They are the primary documents used to defend funding for projects throughout the budget formulation process. Project data sheets shall be developed and submitted for new project efforts and for any ongoing projects which require Congressional authorization and/or appropriation in the budget fiscal year. Data sheets and conceptual design reports are required prior to project validation. Only validated projects are considered for funding in the Internal Review Board (IRB) process. There should be no overlap in funding requested in construction project data sheets and funding in Field Work Proposals.

Project data sheets present the description, justification, cost data for all construction projects budgeted and accounted for under plant and capital equipment, and operating expenses appropriations. Include in the cost of a construction project all costs in connection with the addition and/or retirement of plant and equipment (including transferred equipment and materials), land, improvements to land, buildings (including permanently attached equipment), utilities, and initial movable equipment, such as machine tools, laboratory and office furniture, and equipment, necessary to outfit a building or group of buildings for operation. Exclude initial stocks of spare parts or other materials and supplies which are initially chargeable to inventories. Estimates for General Plant Project (GPP) shall provide only work to be authorized and appropriated annually.

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Deputy Director of Project Management

Ensures that all information provided to the Department of Energy (DOE) is accurate, timely, and of a highly professional quality.

5.2 Manager of Project Controls and Services

Ensures that all information provided to the DOE is accurate, timely, and of a highly professional quality.

5.3 Program Project Manager

Ensures that all information provided to the DOE is accurate, timely, and of a professional quality.

Supports assigned Project Managers as required to insure adequate training and preparation for project reviews.

5.4 Project Manager

Ensures that all information provided to the DOE is accurate, timely, and of a highly professional quality.

Provides accurate and up-to-date Project information for each project reported and reviewed.

Is knowledgeable and informed on the current status of assigned project, including activities, accomplishments, and problems from the last quarter and projected activities for the next quarter.

Maintains an accurate, up-to-date, and complete project file for each assigned project.

6. INSTRUCTIONS

Projeet Managers

The following detailed instructions govern the preparation of Project Data Sheets:

(a) Item 1, Title, and Location of Project.

1 Each project title must be unclassified.

2 Project titles shall be sufficiently short and descriptive to permit ready reference and shall not be changed after a project number has been assigned.

3 In typing project titles, an initial capital letter shall be used for the first word in the project title and for proper names.

4 The location of the project shall be given. For consolidated project data sheets and GPP at more than one location, the term "Various Locations" shall be used. Do not show the predominate location in such cases.

5 The funding program decision unit is indicated in the data sheet header. If the project is under consideration by more than one program, identify alternate funding programs in Item 1.

(b) Item 2a and 2b, Project Number and Funding Type. New project numbers shall be issued by the Budget Formulation Branch (CR-132) for new projects in each budget year, showing the year, the organization, and the sequential number of the project which also indicates appropriation for organizations with multi-appropriations. Project numbers shall be assigned soon after receipt of data sheets at Headquarters and prior to project validation. Only properly assigned numbers shall be used to identify projects. The type of funding for the project, either Operating Expense or Construction, will be shown in item 2b.

6. INSTRUCTIONS (continued)

(c) Items 3a and 3b, Date A-E Work Initiated (Title I design start scheduled) and A-E Work (Title I and II) Duration. Insert the fiscal quarter and year in which A-E work for Title I design began or is to be initiated and the duration of Title I and II design in months. Do not assume "start" of a budget year project prior to the start of FY 19BY. The most realistic dates possible should be shown based on the status of conceptual work, assuming availability of funds at the beginning of the budget year.

(d) Items 4a, and 4b, Date Physical Construction Starts and Ends. Insert the date (fiscal quarter) physical construction started or is to be initiated and date which construction is expected to be completed. These dates shall be the earliest start date and the last completion date of all subprojects identified. For applicable projects include; dates for beneficial occupancy; completion of final punch list; and operational start dates.

(e) Item 5, Previous Cost Estimate.

1 Insert the last Total Estimated Cost (TEC) and the Total Project Cost (TPC) which has previously been submitted to Congress. The date of previous cost estimates shall also be shown. Escalation factors approved by the Office of Procurement, Assistance and Program Management will be used in preparation of project cost estimates. TEC and TPC should reflect Federal funding only.

2 If the project has not previously been submitted to Congress, then the word "none" should be shown.

3 Enter the Non-Federal contribution as described in PR-243 Memo of Dec. 3, 1991 to PSOs.

4 EM-40 projects shall enter see TPC for TEC.

6. INSTRUCTIONS (continued)

(f) Item 6, Current Cost Estimates. Insert the current Total Estimated Cost (TEC), the current Total Project Cost (TPC) and current Non-Federal contribution. TPC is further described in Item 13 (a). For projects that contain subprojects, the TEC shall be the sum of the TEC for all subprojects less than any Non-Federal contribution(s). EM-40 projects shall enter see TPC for TEC.

(g) Item 7, Financial Schedule. For all projects, indicate, by fiscal year, the amounts for appropriations, adjustments, obligations, and costs. The tabulation should be consistent with the project schedule dates as shown in Items 3a, 3b, 4a and 4b. The total of the appropriation plus adjustments, the obligations, and the costs columns shall be equal and agree with the TEC in Item 6, "Current Cost Estimate." Where the totals of these columns are at variance with Item 6, an explanation footnote should be provided. Financial schedules should reflect all funding for the project from its beginning and must be reconciled to the Departmental Primary Accounting System (DPAS) i.e., Financial Information System (FIS) and Funds Distribution System (FDS). The Department no longer requests authorization of the total estimated project cost in advance of the appropriation requirements.

1 The following is an example of a financial schedule as required for all projects (not related to above example):

Fiscal Year	Appropriation	Adjustments		Obligations	Costs
Previous	$121,085	-1,813	a/	$91,842	$45,019
1989	72,140	-7,500	b/	70,640	41,772
1990	81,780	-15,727	c/	58,820	60,406
1991	61,750	35,243	d/	71,769	80,321
1992	36,865	4,758	e/	xx,xxx	xx,xxx
1993	11,651	-8,575	f/	8,259	36,641
1994	9,300			9,300	30,000
1995	5,700			5,700	20,000

6. INSTRUCTIONS (continued)

a/ Reflects FY 1986 sequester of $-1,100,000 and distribution of FY 1987 general reduction of $-713,000.

b/ SR reprogramming.

c/ Reflects FY 1990 $-1,277,000 sequestration and $-14,500,000 reprogramming.

d/ Reprogramming for accounting adjustment (91-R-25) and corrective action for funding irregularities (91-R-18).

e/ Reprogramming to correct funding irregularities (91-R-15).

f/ Reflects use of prior year balances as directed in Congressional action on FY 1993 request.

(h) Item 8, Brief Physical Description of Project. This item should state clearly, but concisely, the essential features of the project, indicating whether it is a new facility, of existing facilities, or addition to existing facility. In describing facilities, code words, if used, should be identified as such. Any unusual technical terms should be explained when used in project descriptions. Describe the following physical aspects as applicable. The description should read such that easy correlation can be made with the cost estimate given in Item 10. If the project contains subprojects, describe each subproject using the same aspects after a general introduction of the overall project.

1 If the data sheet shows both a previous cost estimate and a current cost estimate, explain the factors involved in determining the revised estimate. The explanation shall also be provided on the Significant Changes cover sheet. If the project contains subprojects, provide a funding profile with each subproject description and the construction start and end dates as follows:

TEC	Prev.	FY 93	FY 94	FY 95	Outyear	Constr.	Start - Comp. Dates
$61,499	$xx,xxx	$xx,xxx	$12,156	$3,700	-0-	1st Qtr	19xx - 2nd Qtr 1995

Explain any differences between the current funding profile and construction schedule and the last project data sheet transmitted to Congress.

6. INSTRUCTIONS (continued)

2 Describe improvements to land and, where this item constitutes a major portion of the project, include information such as the approximate length, width, and types of roadways, approximate capacities of parking areas, and any proposed drainage structures and fencing.

3 Describe each building or building addition, including approximate floor plan dimensions, gross area, number of stories, story heights, basement, if provided; types of construction and reason for using such if not obvious; types of heating and air-conditioning; capacities of cranes and any design, fabrication, or construction features which are unusual or specialized and have a significant impact on the cost estimate, such as shielding, protective construction, hot cells, or special ventilation systems, environmental protection systems, and fire protection systems.

4 Describe other structures, such as pits, tunnels, towers, bunkers, stacks, and other enclosures not included in subparagraph (h)2 above.

5 Describe types of utilities to be provided, such as water, sewer, and power, and where this item constitutes a major portion of the project, include information such as the length and size of the utility lines.

6 Describe any special facilities, such as accelerator components, movable shielding, vacuum systems, processing piping, power or controls, reactor vessels, inert gas, hydrogen or purging systems, or cryogenic systems.

7 Describe any standard equipment included in this project, such as office and laboratory furniture and equipment, hoists, and machine tools.

6. INSTRUCTIONS (continued)

8 Describe any computer system or component of a computer system having a total estimated purchase cost of $1,000,000 or more. A brief justification and explanation of the rationale for utilizing construction funds shall be provided.

9 For those projects not receiving full appropriation in this year's budget, provide a brief description of that portion of the scope to be accomplished with this year's appropriation.

(i) Item 9, Purpose, Justification of Need, and Scope of Project.

1 Describe the research, development, or production program which is underway or planned, including the relationship of the proposed facility (both as to need and timing) to the program objectives and schedules.

2 State the criteria which determined the size or scope of the project, such as volume of production, storage capacity, number of persons to be housed, and space requirements for research.

3 To the maximum extent feasible within security limitations, data sheets for projects involving production increases should indicate the present production rate or capacity and the change proposed. If the project is deemed to be an intermediate phase of a long-range program, indicate its relationship to the foreseeable planned capacity. If a production facility, state annual capacity and basis therefore, i.e., 1-shift, 2-shift operation, 5-day week, 6-day week. When inclusion of capacity involves "Top Secret" data, indices shall be used to the maximum extent practicable; or, if not practicable, the information shall be submitted separately to the program office concerned.

4 If the purpose of the project is to replace existing facilities, explain fully the circumstances which make replacement necessary and the disposition to be made of the replaced facilities.

6. INSTRUCTIONS (continued)

5 Indicate the existing facilities have been reviewed to determine that the need cannot be met by modification of existing facilities. This is of particular importance in the case of radioactive contaminated facilities where decontamination and decommissioning costs are factors.

6 State the reasons for the proposed timing of the completion of the project and the effect on the program if the project is deferred or not authorized.

7 To the maximum extent practicable, justifications should contain data on the economics of the project including the basis for calculating savings and payout. In computing savings, comparative cost estimates shall include the cost of depreciation of the facility. Justifications can often be strengthened by reference to alternatives and to the consequences of disapproval.

8 If costs include overhead of an off-site contract laboratory operated by a university or other institution, the reasons for including such overhead and the method by which the amount of such overhead was determined shall be stated.

9 The project data sheet shall state the estimated gross annual cost (excluding depreciation) for operating the facilities upon completion, less any offsetting reductions which are applicable. In the case of replacement facilities, include comparative data for the facilities being replaced.

a For production type facilities and power producing facilities, the first full-year's operating costs, maintenance costs, and the annual costs at equilibrium should be set forth. Gross annual costs, revenues, or other offsetting reductions, and new annual costs should be shown.

6. INSTRUCTIONS (continued)

b For research or development facilities, including new research machines, show separately the operating costs, maintenance costs, the total cost of the research or development program to be carried out, and the incremental program cost related to occupation of the new building.

c In all cases, the basis for these estimates of annual cost for operations and maintenance should be included.

10 For any project which requires the conduct of research and development directly prerequisite to its specific design and features and for which R&D funds are included in the operating expense appropriation request, the total estimated costs for the budget year and for each future year of such R&D will be included for such project.

j. Item 10, Details of Cost Estimate.

1 This section of the data sheet consists of an estimate for each of the account classifications listed in subparagraph (j)3 below. Under each of the classifications give a breakdown of the costs, indicating significant units and costs wherever possible. Include all classifications. Enter zero dollars for classifications not applicable to the project. All costs should be presented in current year dollars, escalated to the midpoint of construction.

6. INSTRUCTIONS (continued)

2 General administrative and other direct costs, properly charged to the project, shall not be shown as a line item but shall be prorated among the various elements of costs. Also, the estimated costs of construction management services by private firms shall be similarly prorated among the various elements of construction costs. All the account classifications shall be listed even if no dollar amount is applicable. If it has been determined that the project will be administered under an "off-site" contract with a university or other institution, and that the institution will be reimbursed for overhead in connection with such administration, a memorandum entry shall be included indicating the estimated amount of such overhead. The costs for preparing system design descriptions or any comparable technical documentation are to be budgeted for and costed to operating expense or construction consistent with the treatment of related expenditures, e.g., documents which are accomplished for conceptual design are charged to operating cost while those performed for Titles I and II are charged to plant and capital equipment. The costs for preparing environmental documentation shall be budgeted for and costed to operating expenses.

a Unit cost per square foot or cubic foot for buildings or other construction shall be computed on the basis of grass areas and shall exclude the amount included in the estimate for contingencies. Unit costs should not be more precise than warranted by the status of design.

b The items to be shown in this section of the data sheet should include all pertinent data on quantities and unit costs, even if this repeats some data reported in item 8 or 9. Unusual unit costs, engineering design, and inspection or contingency rates should be explained in footnotes. The total estimated cost shall agree with item 6.

6. INSTRUCTIONS (continued)

c A statement shall be included as a footnote at the end of the estimate to show the basis for the estimate, e.g., "conceptual design is complete, Title I design is 25 percent complete."

d The items to be shown in this section of the data sheet shall be listed in tabular form, wherever practicable, so that the cost data may stand out in the presentation. If explanatory notes for any of the items listed are necessary, they will be provided as a footnote to the section. Explanatory notes shall be provided to indicate reasons why certain unit costs may be out of the normal range, such as: cost for special isolation requirements; costs related to speedup of construction showing hours per week on which estimate is based; and factors affecting the contingent amount.

e Normally costs should be rounded off to the nearest $10,000 for item costs and to the nearest $100,000 for total costs.

f Escalation rates should be explicitly stated and when the rates are significantly different from the guidance provided in the Field Budget Call, a thorough explanation shall be provided.

3 The account classifications to be used, together with explanatory notes, are provided below:

a Design and Management Costs

6. INSTRUCTIONS (continued)

i. Engineering Design and Inspection Costs as an Approximate Percentage of Construction Costs. Compute costs and indicate as an approximate percentage of total construction costs, rounding off to the nearest percent. Include costs for safety analysis reviews made after completion of conceptual design report. Record the cost of design, drawings, and specifications.

ii. Construction Management Costs. Report costs for those services provided by the organization responsible for management of the construction effort during Title I and Title II design and continuing through completion of construction. Construction management services are further defined in DOE 4700.1 and DOE 6430.1A.

iii. Project Management. Report costs for those services provided to the DOE on a specific project, beginning at the start of design and continuing through the completion of construction, for planning, organizing, directing, controlling, and reporting on the status of the project.

b Land and Land Rights. Provide a breakdown identifying each site to be acquired, the acreage or square miles involved, unit cost, and total cost or the cost of each land right acquired. See DOE 4300.1B, Real Property and Site Development Planning, for regulations concerning the acquisition of real property.

6. INSTRUCTIONS (continued)

c Construction Costs.

i. Improvements to Land. Indicate the types of improvements to be made and total cost. Where this subitem constitutes a major portion of the project, it should be expressed in terms of units, unit costs, and total cost, such as _____ miles of road at $_____ per mile.

ii. Buildings. List and identify each building or building addition to be constructed or existing building to be modified, showing gross square feet, unit cost, and total cost. If the unit cost is unusually high, provide a footnote explanation.

iii. Other Structures. List and provide costs for each major other structure described in subparagraph c.(14)(h)4.

iv. Utilities. List the types of utilities described in subparagraph c.(14)(h)5 and the total cost. Where this subitem constitutes a major portion of the project, units, unit costs, and total costs should be shown.

v. Special Facilities. Identify major engineered equipment, and special systems, as described in subparagraph c(14)(h)6. Where major equipment components identified under "special facilities" appear to be standard in nature but are listed as special because, for example, they actually require special engineering and/or fabrication to meet requirements, an explanation of the special nature of the equipment should be included.

d Standard Equipment. List and provide costs for the major items of "off-the-shelf" equipment and furnishings, requiring a nominal engineering effort, as described in subparagraph c(14)(h)7. Costs shall include any engineering effort required.

6. INSTRUCTIONS (continued)

e Major Computer Items. List and provide costs for each major computer item as described in subparagraph c(14)(h)8.

f Removal Cost Less Salvage. Include removal costs less salvage incident to the replacement of plant and equipment applicable to the project. Separate projects shall be established to budget and account for removal costs and salvage incident to the retirement of plant equipment which is not to be replaced.

g Design and Project Liaison, Testing, Checkout, and Acceptance. The cost of assisting in the design and development of equipment (not to be confused with start-up costs).

h Contingency at Approximate Percentage of Above Costs. Compute and indicate a contingency amount as a percentage of all above costs, rounding to the nearest percent. This contingency is provided to cover unforeseen and unpredictable situations and shall not provide for increasing the scope of the project. The amount of contingency will depend on the status of design and complexity of the project.

i Total Line Item Cost. Add contingencies to subtotal.

j Non-Federal Contribution. Non-Federal funds from other sources that are considered capital funds contained in the TEC.

(k) Item 11, Method of Performance. Indicate the type of contracting arrangements contemplated, using the following paragraphs or combinations of parts of these paragraphs as a guide:

1 Design and inspection shall be performed under a negotiated architect or engineer contract. Construction and procurement shall be accomplished by fixed price contracts awarded on the basis of competitive bidding.

6. INSTRUCTIONS (continued)

2 Design and inspection shall be performed by the operating contractor. To the extent feasible, construction and procurement shall be accomplished by fixed price contracts and subcontracts awarded on the basis of competitive bidding.

(l) Items 12 and 13. All projects which have a total estimated cost (TEC) of $5 million or more and projects with a TEC of less than $5 million which have significant "other direct project costs" shall contain an item 12 and an item 13.

Item 12 shall contain the financial schedule and item 13 shall contain the narrative material associated with the financial schedule. These items are used to explain and justify projects on a total project cost basis. Items 12 and 13 shall be prepared using the amount of space required for presentation under each section. If items 12 and 13 are not required, write on the data sheet "items 12 and 13 are not required."

(m) Detailed Instructions In Completing Items 12 and 13. The cost estimates in item 12 are to be developed using the general guidance provided below. Item 13 shall parallel the costs detailed in item 12 with a narrative justification and explanation. The narrative shall include a brief description of each item in 12, its cost, the basis for operating expense funding and a schedule for accomplishment of the item. It should include the estimated start and completion dates and relevant project interface dates.

1 Total Project Costs.

a Total Facility Costs. This section shall contain all those costs which are directly related to construction of the facility.

6. INSTRUCTIONS (continued)

i. Line Item. The line item costs must agree with the TEC before offset for Non-Federal contribution in Section 10.i.

ii. Operating Expense Funded Equipment. Any equipment, system, component, or other item which is funded from the operating expenses appropriation for the direct use of the construction project or is required to make the facility or experiment complete and operable should be included. A narrative justification should be included to explain the reasons for such items and examples of items to be funded in this manner.

iii. Inventories. Any inventories which are necessary to put the facility into use should be included.

iv. Total Direct Cost (Federal and Non-Federal). Total items identified in i through iv above.

b Other Project Costs. All costs shall be escalated to the year of expenditure.

i. R&D Necessary to Complete Construction. Any construction project which requires the conduct of a research and development program directly prerequisite to its specific design and construction features and for which R&D funds are included in the operating expenses appropriation request, the total estimated cost by fiscal year for such R&D will be included.

ii. Conceptual Design Costs. Indicate the cost of conceptual design, escalated to the year of expenditure.

6. INSTRUCTIONS (continued)

iii. Decontamination and Decommissioning (D&D). Costs associated with removal of hazardous material (typically radioactive or chemical material) from facilities, soils, or equipment by washing, chemical action, mechanical cleaning, or other remediation techniques. Also include costs associated with decommissioning (demolition, dismantling, and removal, see DOE 2200.6, page VI-13).

iv. NEPA Documentation Costs. All costs of complying with NEPA 1969 including: EAs, EISs, permitting actions, and site characterization.

v. Other Project Related Costs. Any other costs directly related to the project that occur on a one-time basis, such as start-up costs, and training should be listed along with a narrative explaining and justifying each cost.

vi. Total Other Project Costs. Total the project costs identified in i through v above.

vii. Total Project Costs. Total the costs in a and b above including any Non-Federal contribution.

viii. Non-Federal Contribution. Non-Federal funds from other sources that are considered operating funds in the TEC.

ix. Net Federal Total Project Cost (TPC). Total project cost less Non-Federal contribution.

6. INSTRUCTIONS (continued)

2 Related Annual Costs. This section should include the ongoing costs directly associated with the operation of the facility which is not appropriate for inclusion in total project cost. An estimate of the annual costs and a narrative explanation should be included. In this portion of the data sheet, the narrative explanation shall take precedence over the cost estimates. Any significant variances in the annual cost estimates should be explained in the narrative. For example, there may be planned purchase of a major item of equipment which shall substantially change the annual costing later or make a significant change in the mode of operation. Indicate the estimated useful life of the project (years).

a A facility operating cost estimate narrative should include:

i. The annual costs (year of expenditure dollars) to operate the facility including cost of labor and materials.

ii. The staff years of effort required to operate the facility.

iii. A statement indicating whether it does or does not replace any other facility. Also, specify whether these costs are over and above (or less than) a facility it replaces.

b Facility maintenance costs include all non-construction maintenance efforts and repair. Include the staff years of effort required to maintain and repair the facility.

c Include programmatic effort which relies upon the direct and primary use of the facility. Provide a yearly estimate and narrative justification.

6. INSTRUCTIONS (continued)

d An estimate of annual capital equipment need not be related to construction but related to the programmatic effort included in subparagraph (m) 1. b. ii. should be included. The accompanying narrative should explain any expected installations of new programmatic related capital equipment.

e Include a yearly cost estimate and narrative justification of GPP or other expected construction related to programmatic effort included in subparagraph (m) 1. b. ii.

f All annual utility costs incurred to operate the facility.

g Any other expected annual costs should be listed with an accompanying narrative.

3 Any significant variations in the annual costing rates or the preceding items should be footnoted. For example, the procurement of a new nuclear reactor core on a very infrequent basis would greatly increase the annual capital equipment cost rate for a facility. These deviations in costs should be segregated from the annual cost rate.

(n) Item 14, Incorporation of Fallout Shelters in Future Federal Buildings. Executive Order 12656, Assignment of Emergency Preparedness Responsibilities, of 11-18-88 provides revised guidelines on the construction of fallout shelters. In response to this Executive Order, Section 0110-10 covering fallout shelters in DOE 6430.1A, General Design Criteria, has been revised. Executive Order 12656 does not automatically require the provision of fallout shelters, therefore, DOE 6430.1A should be referred to for fallout shelter guidance.

(o) Item 15, Federal Compliance with Pollution Control Standards. This section of the data sheet should contain a statement indicating that the total estimated cost of the project includes the cost of those measures which may be necessary to assure that the facility or building will meet the requirements of Executive Order 12088, Federal Compliance with Pollution Control Standards. A brief statement of those controls provided to assure compliance with the foregoing should also be provided for each type of pollutant. This section should normally contain one of the following paragraphs:

1 The total cost of this project includes the cost of those measures necessary to assure compliance with Executive Order 12088. Sanitary waste will be discharged into existing sewers connected to adequate sewage treatment facilities. Airborne contaminants will be collected and filtered before being released to the atmosphere. (This paragraph should be modified to reflect the type of pollutants produced by each particular project.)

2 The performance of this project will inherently assure compliance with the requirements of Executive Order 12088. (To be used for projects specifically for pollution control.)

3 As presently conceived, operation of this project will not generate any environmental pollutants; therefore, the requirements of Executive Order 12088 are not applicable.

(p) Item 16, Evaluation of Flood Hazards. This section of the data sheet should contain a statement with regard to the evaluation and consideration of flood hazards in accordance with the requirements of Executive Order 11988, Evaluation of Flood Hazard in Locating Federally Owned or Financed Buildings, Roads, and Other Facilities, and in Disposing of Federal Lands and Properties. Section 4 of the Executive order requires that, "Any requests for appropriations for Federal construction of new buildings, structures, roads or other facilities....shall be accompanied by a statement by the head of the agency on the findings of his or her agency's evaluation and consideration of flood hazards in the development of such requests."

6. INSTRUCTIONS (continued)

Reference is made to the Flood Hazard Evaluation Guidelines for Federal Executive Agencies, published by the Water Resources Council, of 5-72. If it is determined that the project site is not subject to the defined hazards, it is recommended that the following statement be used:

"This project will be located in an area not subject to flooding determined in accordance with Executive Order 11988."

(q) Item 17, Compliance with the National Environmental Policy Act, Floodplains/Wetlands Environmental Review Requirements, and Other Related Environmental Statutes. This section of the data sheet should present information on planning for compliance with the National Environmental Policy Act (NEPA), Public Law 91-190, 8-1969; DOE 5440.1C, National Environmental Policy Act, the Council on Environmental Quality Regulations (40 CFR 1500-1508); DOE's NEPA guidelines (45 FR 20694, as amended); DOE's regulations at 10 CFR 1022; and other related statutes including, but not limited to, the Clean Air Act, the Clean Water Act, the National Historic Preservation Act, and the Endangered Species Act. Examples of such information include: if a NEPA document has been completed for the proposed project, reference to that document should be made; if a NEPA document is currently under preparation for a proposed project, reference should be made to that document, its status, and its scheduled completion date; and, if a determination on the level of NEPA documentation has not been made for a proposed project, indicate when information will be provided for Headquarters use in determining the need for further documentation for those actions still requiring Headquarters determinations. In all cases, state whether or not the proposed project is located in a floodplain/wetland.

6. INSTRUCTIONS (continued)

(r) Item 18, Accessibility for the Handicapped. Provide a statement indicating that the project will be accessible to the handicapped in accordance with the Architectural Barriers Act, Public Law 90-480, and implementing instructions in the Federal Property Management Regulations (41 CFR 101-19.6).

NOTE Section 501 of the Rehabilitation Act of 1973 (Public Law 93-112), as amended, requires the development of an affirmative action plan for employment of the handicapped by Federal agencies. Affirmative action plans are also required by 41 CFR 60-250, Affirmative Action Obligations of Contractors and Subcontractors for Disabled Veterans and Veterans of the Vietnam Era; 41 CFR 60-741, Affirmative Action Obligations of Contractors and Subcontractors for Handicapped Workers; and DOE 3220.2, Equal Opportunity in Operating and Onsite Service Contractor Facilities.

(s) Item 19, Supplementary Project Data For Facility Utilization. All projects that provide new space or capacity are to include, with project data sheets, supplementary data on facility utilization. Do not complete this section if an individual project data sheet is not otherwise required, e.g., for GPP or for a project costing less than the applicable dollar threshold.

1 Facility Utilization Requirements. Provide the requested information about the project's effect on sitewide facility requirements for each GSA facility use category that is included in the project. (For large sites, area specific requirements may be shown instead of the sitewide totals.)

6. INSTRUCTIONS (continued)

a Judgment will have to be used as to whether a minor or ancillary use of a new facility warrants a separate breakout of information. For example, a light laboratory would certainly include some storage space but that would not need to be described under "warehousing." The guideline should be whether the data materially affect the site or area totals.

b Note that while the above reference is to "GSA" categories, the Real Property Inventory System (RPIS) Reference Manual is the only correct reference to use. For example, category 73 is light laboratory, etc.

c The requirements and assets information presented should utilize the same information approved by the field organization in the Site Strategic Facilities Plan.

d Note that negative amounts are shown in parentheses. In the format, the project includes 350,000 SF of demolition and 125,000 SF of construction. The projected effect on total as well as adequate assets is shown. Had the project included major work in more than one facility category, a form would be required for each category.

e Future Capabilities Assurance of This Project. Describe measures taken in this project that would serve to ensure the usefulness of the proposed facility over its design life. Include these statements with facility utilization data.

6. INSTRUCTIONS (continued)

2 Expansion Capabilities. Based on the preliminary design, state the capabilities of the proposed facility to accommodate any future expansion that may be required to accomplish strategic missions. Potential expansion or growth axis(es) for the facility as well as the expansion capabilities of the site should be identified. (Note that design flexibility to accommodate future growth does not mean approval for unwarranted incremental construction or expense.)

3 Capabilities for Change. List any features included in this project that would allow it to be modified to accommodate future changes in the needs of the site. If the proposed facility has the capability to be converted to accomplish additional or other future strategic requirements, explain these conversion capabilities.

4 Decontamination or Retirement Features. If this project includes the potential for contamination (toxic or radioactive materials), explain the capabilities that are included to allow for efficient decontamination and reuse and then eventual retirement.

5 All new projects must be sited in accordance with the site development plan. State the page number of the relevant site development plan and reference it by its date.

(t) Item 20, Safe and Healthful Workplace. Estimates for the design and construction of Federal facilities and buildings, capital investment, and the purchase of equipment will include amounts required to ensure that existing facilities provide safe and healthful workplaces consistent with the standards promulgated under section 19 of the Occupational Safety and Health Act of 1970, the provisions of Executive Order No. 12196, and the related Safety and Health Provisions for Federal Employees of the Secretary of Labor (CFR Title 29, Chapter XVII, Part 1960).

6. INSTRUCTIONS (continued)

(u) Compliance with Energy Conservation Criteria. For projects constructing new buildings or additions to existing buildings, this section of the data sheet should contain a statement indicating that the total project cost includes the cost of complying with: (1) Title 10, Code of Federal Regulations, Part 435, Performance Standards for New Commercial and Multi-Family High Rise Residential Buildings, of January 30, 1989, (2) DOE 6430.1A, General Design Criteria, which requires preparation and submission of energy conservation reports, and (3) Retirement for Private Sector Energy Expert review of design for new facilities larger than 10,000 square feet as required by the Secretary's memorandum of November 12, 1991, and inclusion of additional cost-effective energy efficient technologies.

7. REFERENCES

Clean Air Act

Clean Water Act

DOE Order 2200.6A, Financial Accounting

DOE Order 3220.2A, Equal Opportunity in Operating and On-Site Service Contractor Facilities.

DOE Order 4300.1C, Real Property Management

DOE Order 4700.1, Project Management System

DOE Order 5100.5, Office of Management and Budget - Budget Process, of 7-21-83, which provides guidance for the preparation and submission of OMB budget material.

DOE Order 5100.6A, Congressional Budget Review, of 5-18-92, which provides guidance for the preparation and submission of congressional budget material.

7. REFERENCES (continued)

DOE Order 5440.1E, National Environmental Policy Act Compliance Program

DOE Order 5700.7C, Work Authorization System, of 5-18-92, which establishes a work authorization and control process for management and operating (M&O) contractors.

DOE Order 6430.1A, General Design Criteria, which requires preparation and submission of energy conservation reports.

Endangered Species Act

Executive Order 11988, Floodplain Management

Executive Order 12088, Federal Compliance with Pollution Control Standards

Executive Order 12196, Occupational Safety and Health Programs for Federal Employees

Executive Order 12656, Assignment of Emergency Preparedness Responsibilities

National Historic Preservation Act

Public Law 90-480, Architectural Barriers Act

Public Law 91-190; 8-1969, National Environmental Policy Act (NEPA)

Public Law 93-112, Rehabilitation Act of 1973

Public Law 101-576, Chief Financial Officers Act of 1990, which provides for the production of complete, reliable, timely, and consistent financial information for use by the executive branch of Government and the Congress in financing, management, and evaluation of Federal programs.

7. REFERENCES (continued)

SEN-6 Series, Departmental Organization And Management Arrangements, which realigns Departmental organizational responsibilities and creates several new organizations.

10-CFR-435, Energy Conservation Voluntary Performance Standard

10-CFR-1022, Compliance with Floodplain/Wetlands Environmental Review Requirements

29-CFR Chapter XVII, Part 1960, Safety and Health Provisions for Federal Employees of the Secretary of Labor

40-CFR-1500, Purpose, Policy and Mandate

40-CFR-1501, NEPA and Agency Planning

40-CFR-1502, Environmental Impact Statement

40-CFR-1503, Commenting

40-CFR-1504, Predecision Referrals to the Council of Proposed Federal Actions Determined to be Environmentally Unsatisfactory

40-CFR-1505, NEPA and Agency Decision Making

40-CFR-1506, Other Requirements of NEPA

40-CFR-1507, Agency Compliance

40-CFR-1508, Terminology and Index

41-CFR-60-250, Affirmative Action Obligations of Contractors and Subcontractors for Disabled Veterans and Veterans of the Vietnam Era

7. REFERENCES (continued)

41-CFR-60-741, Affirmative Action Obligations of Contractors and Subcontractors for Handicapped Workers

41-CFR-101-19.6, Accommodations for the Physically Handicapped

54-FR-20694, DOE Guidelines for Compliance with the National Environmental Policy Act

RFPF - 1000.01 (5/95)
Formerly RF-47940

Document Modification Request

Printor Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000128

Originator

1. Name/Phone/Pager/Location: Jerry Weiser X5447/7335 Building 130 C218
2. Date: 01/29/96
3. Existing Document Number and Revision: 3-K08-COEM-PMG-309, Revision 0
4. Document Type: ■ Procedure ☐ Plan ☐ Other
5. Document Title: Operational Requirements Document (ORD)

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	7	7	Delete: 2-D57-COEM-DES-211, Project Management Process

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by the PPG
2	2-D57-COEM-DES-211 was canceled on 11/9/95

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) Thomas L. McLean (print/sign/date) [signature] 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) L. Reed Bailey (print/sign/date) [signature] 1-31-96

13. New Document/ Rev No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction [X] Nonintent Change [X] Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes [X] No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location: L. Reed Bailey X4581/1764 Building 130 C230
20. Cost Center: 3077
21. Charge Number: 820111
22. Requested Completion Date: 02/05/96
23. Prescreen/Screen/USQD Number: N/A
24. Independent Safety Review Meeting and Date: N/A
26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L. R. Bailey [signature] 2-1-96
27. Effective Date: 2/5/96
28. Expiration Date (if applicable)

Reviewed for Classification/UCNI (UNI)
BY [signature]
DATE 2-1-96

PADC-97-00094

Rocky Flats
Environmental Technology Site
3-K08-COEM-PMG-309
REVISION 0
OPERATIONAL REQUIREMENTS DOCUMENT (ORD)

APPROVED BY: /s/ Leon J. McGovern / L. J. McGovern / 09/29/94
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By /s/ D. E. Hepler

Date 09/30/94

This procedure supersedes PILOT procedure ENG-PILOT-PM-003, Revision 0.

Periodic review frequency: 4 years from the effective date

PADC-97-00094

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	10/01/94		
2	02/05/96		
3-6	10/01/94		
7	02/05/96		
8-15	10/01/94		

The following DMRs for change are active for this procedure:

96-DMR-000128

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1. PURPOSE

This procedure provides the guidance to ensure that the operational requirements for equipment and facility authorization projects are properly identified and documented before definitive design begins.

2. SCOPE

This procedure applies to all Project Management organization personnel involved with authorization projects (Charge Numbers 3XXXXX, 4XXXXX and 9XXXXX projects) including:

- Line Items,
- Major Items of Equipment,
- General Plant Projects (GPP)
- Basic Capital Equipment (BCE)
- Expense funded projects
- Deactivation, Decontamination, and Decommissioning
- Environmental Restoration
- Scope and Estimates
- Studies, optional

3. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

4. RESPONSIBILITIES

4.1 Project User/Program Manager

Prepares the Operational Requirements Document (ORD). (See Appendix 1)

Updates, revises, and approves the ORD when scope changes occur through the life of the project.

4.2 Project Manager (PM)

Be available to assist the User in developing the ORD along with other technical specialists.

Assists the User in identifying all Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), waste disposal, and other environmental issues for inclusion in the ORD.

Ensures proper coordination between Rocky Flats Field Officer (RFFO) and EG&G on waste treatment, storage, and disposal matters.

Ensures adherence to the baseline ORD.

Completes the project in accordance with the ORD.

4.3 Project Engineer (PE)

Assists the User in developing the ORD along with other technical specialists.

Maintains technical adherence to baseline ORD.

Reports to the Project Manager on any deviation from the baseline ORD.

Obtains input from other technical specialists, as required, in developing the ORD.

5. INSTRUCTIONS

5.1 Procedure Process

Project Manager

[1] **WHEN** notification of an approved project is received,
THEN:

[A] Notify the User to prepare the ORD.

[B] Send the ORD form (Appendix 1) with instructions to the User to initiate the preparation of the ORD.

Project User

[2] Prepare the ORD per Appendix 1 instructions.

Project Engineer (PE)

[3] Provide technical assistance to User in preparing the ORD, as required.

Project Manager

[4] Provide technical assistance to User in preparing the ORD, as required.

[5] Assist the User in identifying all RCRA, CERCLA, waste disposal, and other environmental issues for inclusion in the ORD.

[6] Ensure proper coordination between RFFO and EG&G on all waste treatment, storage, and disposal matters.

Project User

[7] Obtain signature approvals from the PM and PE on the ORD.

[8] Update the ORD whenever a change in scope occurs throughout the life of the project.

Project Manager

[9] Retain the original ORD as a part of permanent project file.

5.1 Procedure Process (continued)

[10] Maintain technical adherence to the baseline ORD throughout the life of the project.

6. RECORDS

Records generated as a result of this procedure are maintained in the Project History File in accordance with the retention schedule identified in 1-77000-RM-001, Records Management Guidance for Records Sources.

Project Manager

[1] Retains ORD in project records files.

96-DMR-000128

7. REFERENCES

1-F32-FPM-OVR-0110, Construction Project Management Systems

Glossary of Project Management Terms

APPENDIX 1
Page 1 of 8

OPERATIONAL REQUIREMENTS DOCUMENT (ORD)

OPERATIONAL REQUIREMENTS DOCUMENT (ORD)

Project/Job Number: _____ Date: _____

Project Title: _____

Project User: _____

Department: _____ Phone: _____ Bldg. _____

Project Manager: _____ Project Engineer: _____

Justification/Driver: _____

1. FACILITY REQUIREMENTS

1.1 NEW FACILITY

ATTACHED	N/A		
☐	☐	1.1.1	Briefly describe the purpose of this facility.
☐	☐	1.1.2	What is the proposed location? Has the proposed location been reviewed by Facility Planning? What are the reasons for proposing this location (PSZ, isolation, available land, close to other related facilities, utility availability)?
☐	☐	1.1.3	How large a facility is required (total square footage, number of offices, multi-level, etc.)
☐	☐	1.1.4	Describe each of the spaces required in the facility (offices, conference rooms, shop areas, rest and locker rooms, storage areas, process areas).
☐	☐	1.1.5	Describe additional space required other than the basic building (parking, roads, staging areas, loading dock)?
☐	☐	1.1.6	How many people will occupy this facility (full-time, part-time)?
☐	☐	1.1.7	Are there any underground (abandoned or currently used) utilities, process or waste lines, or tanks, etc. in the proposed location?
☐	☐	1.1.8	Describe any projected plans or needs for expansion or future additions.
☐	☐	1.1.9	List additional special features required for this facility.

1.2 MODIFICATIONS TO AN EXISTING FACILITY

☐	☐	1.2.1	Briefly describe the purpose of this facility.
☐	☐	1.2.2	What is the proposed location? (room number, column line, etc.) What is the reason for proposing this location (close to other related facilities, utility availability)? Will other processes or personnel be required to relocate into or out of the proposed location?
☐	☐	1.2.3	Describe the removals required. Describe the new construction. What is the proposed equipment layout? (A floor plan or glovebox layout may be helpful.)
☐	☐	1.2.4	Are there any layout requirements or restrictions (direction of material flow, overhead restrictions, etc.)?
☐	☐	1.2.5	Describe required personnel and material access into the area to be modified (double doors, loading dock, air lock).
☐	☐	1.2.6	Where is the nearest available loading dock? Describe access path from this dock to the area.
☐	☐	1.2.7	Are there any projected plans or needs for expansion or future additions?

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2. UTILITY REQUIREMENT

ATTACHED	N/A		
☐	☐	2.1	What utilities and services are required (plant air, instrument air, nitrogen, chemicals, argon, helium, steam, natural gas, press water, cooling water, sewer, process waste, ventilation, electricity, emergency and other power, LAN, chemicals, etc.)?
☐	☐	2.2	Describe special power requirements (UPS, 220V or 480V, separate circuits, etc.).
☐	☐	2.3	Are the required services and utilities available in the area? In the building? If so, where are they located?
☐	☐	2.4	Describe any special temperature or humidity requirements.

3. PROCESS REQUIREMENTS

3.1 PROCESS DESCRIPTION

☐	☐	3.1.1	Describe the major process flow sequence or steps.
☐	☐	3.1.2	Describe the characteristics of the inputs and outputs (phase, temperature, pressure, pH, composition, weight, size, etc.).

3.2 CAPACITY REQUIREMENTS

☐	☐	3.2.1	Provide the feed and product rates (lbs/hr, GPM, pieces/hr. etc.) for the overall process and individual processes. Provide normal and maximum rates.
☐	☐	3.2.2	Is excess capacity required for the overall or individual processes? How much?

3.3 STORAGE AND HANDLING REQUIREMENTS

☐	☐	3.3.1	Are there any feed, product or interim storage requirements (surge tanks, staging areas, etc.)? Describe type and capacity.
☐	☐	3.3.2	What is the residence time for storage? Are there any special handling requirements?

4. OPERATING REQUIREMENTS

4.1 OPERATING ASSUMPTIONS

☐	☐	4.1.1	How many operating shifts per week, weeks per year?
☐	☐	4.1.2	Describe planned outages (type, number, duration) for preventive maintenance or other purposes.

4.2 OPERATING PROVISIONS

☐	☐	4.2.1	Describe requirements for startup, normal operating, and shutdown conditions.
☐	☐	4.2.2	Describe requirements for standby, emergency, and infrequent operating conditions (emergency power, instrument air, etc.).
☐	☐	4.2.3	Is there a need for uninterrupted operation?

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ATTACHED	N/A		
☐	☐	4.2.4	Describe equipment accessibility requirements and locations of other items (gloveports, platforms, etc.) in relation to the equipment.
☐	☐	4.2.5	Describe any design features deemed to assist operations (viewports, platforms, etc.).
☐	☐	4.2.6	Describe required or desired operator training (manufacturer course computer training, etc.).
☐	☐	4.2.7	Describe required documentation (operations manual or operational records).

5. DESIGN REQUIREMENTS

5.1 EQUIPMENT AND CONTROLS

☐	☐	5.1.1	Provide a description of the process equipment (size, capacity, materials of construction, manufacturer, model #, etc.).
☐	☐	5.1.2	Provide a description of the types of controls required or desired (level, temperature, flow, etc.). Will the controls be remote or manual? Control room or local panel? What type of central control is required (panel, distributed control, PLC, etc.)?
☐	☐	5.1.3	Is redundant equipment or processor required?
☐	☐	5.1.4	What are the single failure points?
☐	☐	5.1.5	Are there software requirements? Who will develop and test the software?

5.2 TESTING PROVISIONS

☐	☐	5.2.1	Is sampling and testing required (type, frequency, sampling, storage, time interval for results)? Sample ports?
☐	☐	5.2.2	What types of records and verifications are required during operation?
☐	☐	5.2.3	What are the calibration requirements (tanks, instruments, etc.)?

5.3 MAINTENANCE PROVISIONS

☐	☐	5.3.1	Describe equipment accessibility requirements (gloveports, platforms, etc.).
☐	☐	5.3.2	Describe required preventive maintenance (type, frequency, inspections, etc.).
☐	☐	5.3.3	Will maintenance be performed remote or manual? What area will be allocated to maintenance (within G.B. area or special maintenance area)?
☐	☐	5.3.4	Are any special tools or unusual spare parts required for maintenance?
☐	☐	5.3.5	Describe requirements for preparing for maintenance, dismantling and repair (plastic house, crane, etc.).
☐	☐	5.3.6	Is the manufacturer's technical services expected to be required?
☐	☐	5.3.7	What is the allowable downtime for repair/preventive maintenance?

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6. INTERRELATIONSHIPS WITH OTHER PROCESSES, FACILITIES, AND SUPPORT SERVICES

6.1 INTERRELATIONSHIP WITH OTHER PROCESSES

ATTACHED N/A

☐ ☐ 6.1.1 Describe any processes which either feed into or are fed by this process.

☐ ☐ 6.1.2 What other processes/operations (besides utilities) must be operating for this process to operate?

6.2 INTERRELATIONSHIP WITH OTHER FACILITIES

☐ ☐ 6.2.1 Describe the relationships between this process/facility and other facilities.

☐ ☐ 6.2.2 What other facilities must be operating (besides utilities) for this process or facility to operate?

6.3 INTERRELATIONSHIP WITH SUPPORT SERVICES

☐ ☐ 6.3.1 What support services are required both during and after installation (laboratory support, trucking, etc.)?

☐ ☐ 6.3.2 Describe any outside (non-RFP) support services required.

7. RADIOACTIVE, HAZARDOUS AND MIXED MATERIALS (NON-WASTE)

7.1 RADIOACTIVE MATERIALS

☐ ☐ 7.1.1 Describe any radioactive materials to be generated or handled (form, type, amount).

☐ ☐ 7.1.2 Describe how it will be handled, packaged, treated, stored, transported, and disposed.

7.2 HAZARDOUS MATERIALS

☐ ☐ 7.2.1 Describe any hazardous materials (form, type, amount).

☐ ☐ 7.2.2 Describe how it will be handled, packaged, treated, stored, transported, and disposed.

7.3 MIXED MATERIALS (HAZARDOUS AND RADIOACTIVE)

☐ ☐ 7.3.1 Describe any mixed (radioactive and hazardous) materials (form, type, amount) expected to be generated during construction or final operation.

☐ ☐ 7.3.2 Describe how it will be handled, packaged, treated, stored, transported, and disposed.

8. WASTE MANAGEMENT

8.1 RADIOACTIVE WASTE

☐ ☐ 8.1.1 Describe any radioactive waste (form, type, amount).

☐ ☐ 8.1.2 Describe the disposition of this waste (storage, further processing, off plantsite, etc.).

8.2 HAZARDOUS WASTE

☐ ☐ 8.2.1 Describe any hazardous waste (form, type, amount).

☐ ☐ 8.2.2 Describe the disposition of this waste (storage, further processing, etc.).

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8.3 MIXED WASTE (HAZARDOUS AND RADIOACTIVE

ATTACHED	N/A		
☐	☐	8.3.1	Describe any mixed waste (form, type, amount).
☐	☐	8.3.2	Describe the disposition of this waste (storage, further processing, off plantsite, etc.).

8.4 REGULATORY REQUIREMENTS

☐	☐	8.4.1	What documentation is required?
☐	☐	8.4.2	What permits are needed or affected?
☐	☐	8.4.3	Are there any design features required to meet any regulatory requirements?

9. HEALTHY, SAFETY, AND ENVIRONMENT

9.1 RADIATION SAFETY

☐	☐	9.1.1	Is shielding required?
☐	☐	9.1.2	Describe any design features required for contamination control (down draft tables, SAAMS, airlocks, etc.).

9.2 NUCLEAR CRITICALITY SAFETY

☐	☐	9.2.1	Describe any nuclear criticality safety hazards (sprinkler system, etc.).
☐	☐	9.2.2	Describe any design features required for nuclear criticality safety (locked valves, HEPA filters, criticality drains, inline filters, sampling, etc.).

9.3 INDUSTRIAL HYGIENE

☐	☐	9.3.1	Describe any known Industrial Hygiene hazards (toxic materials, noise, heat, non-ionizing radiation).
☐	☐	9.3.2	Describe any design features required for Industrial Hygiene (noise-control, ventilation hoods, sanitation, etc.).

9.4 INDUSTRIAL SAFETY

☐	☐	9.4.1	Describe any Industrial Safety hazards (elevated work, working clearances, tripping hazards, etc.).
☐	☐	9.4.2	Describe any design features required for Industrial Safety (equipment guards, railings, safety showers, emergency stop buttons, etc.).

9.5 SAFETY ANALYSIS

☐	☐	9.5.1	Define the allowable exposure to personnel of radiological or toxic materials.
☐	☐	9.5.2	What are the required structural classifications?
☐	☐	9.5.3	Describe the impact to the Limiting Conditions of Operation as identified in the Building Operational Safety Requirements.
☐	☐	9.5.4	Determine need to complete a safety analysis.

9.6 FIRE PROTECTION

☐	☐	9.6.1	Describe any fire hazards (flammable liquids, solids, solvents, etc.) and their control requirements.
☐	☐	9.6.2	Describe any design features required (sprinklers, dry chemical, inerting, etc.).

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9.7 ENVIRONMENTAL PROTECTION AND POLLUTION CONTROL

ATTACHED	N/A		
☐	☐	9.7.1	Describe all required environmental protection documentation (NEPA, NPDES, Clean Air Act, etc.).
☐	☐	9.7.2	Describe expected liquid effluents or airborne emissions to the environment (type, amount, pH, concentrations, etc.).
☐	☐	9.7.3	Describe design features required for environmental protection (filtration, scrubbing, treatment, retention, sampling, and analysis, etc.).
☐	☐	9.7.4	Describe countermeasures for emissions/spill control (retention berms, process drains, ventilation control, double containment, etc.).

10. IMPACTS DURING PROJECT EXECUTION

10.1 IMPACTS TO OPERATIONS

☐	☐	10.1.1	Describe any expected impacts to operations during construction and testing (e.g., maximum allowable operations shutdown or impact on other operations).
☐	☐	10.1.2	Describe any expected impacts to operations during startup (e.g., see 10.1.1 example).

10.2 ENVIRONMENTAL CONSIDERATIONS

☐	☐	10.2.1	Describe any known unusual impacts to the environment during construction and testing.
☐	☐	10.2.2	Describe any known unusual health and safety conditions, limitations, or impacts.

11. RELATIONS TO OTHER PROJECTS

11.1 OTHER PROJECTS IN CONSTRUCTION

☐	☐	11.1.1	Describe other projects which are in design or construction in the near vicinity at the same time.
☐	☐	11.1.2	What common design features could be utilized (Glovebox exhaust, widening doors, etc.)?

11.2 FUTURE PROJECTS

☐	☐	11.2.1	Describe the relationship of this project to future projects.
☐	☐	11.2.2	Are there any design features which need to be considered with respect to future projects (larger ducts, utility upgrade, etc.)?

12. QUALITY ASSURANCE PROVISIONS

12.1 QA CONSIDERATIONS

☐	☐	12.1.1	What are the anticipated non-weapons Quality Assurance Levels (QAL) for the design, construction, startup, operation, testing, and maintenance of this project?
☐	☐	12.1.2	What are the product QA requirements (inspections, documentation, acceptance requirements)?

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13. SAFEGUARDS AND SECURITY

13.1 NUCLEAR MATERIAL PHYSICAL SAFEGUARDS

ATTACHED N/A

☐ ☐ 13.1.2 Describe requirements for locks, detection and alarm, and remote surveillance.

13.2 NUCLEAR MATERIAL ACCOUNTABILITY

☐ ☐ 13.2.1 Define the methods of measurement and recording.

☐ ☐ 13.2.2 What is the inventory frequency, method, and duration?

13.3 SECURITY

☐ ☐ 13.3.1 Describe protection of classified information and materials.

☐ ☐ 13.3.2 Describe any special security requirements or access issues.

14. COMMUNICATIONS REQUIREMENTS

14.1 LOCAL REQUIREMENTS

☐ ☐ 14.1.1 Describe the visual communication requirements (visual monitors, etc.).

☐ ☐ 14.1.2 Describe the audio communication requirements (intercom, phones, horns, etc.)

14.2 COMMUNICATION WITH PLANT

☐ ☐ 14.2.1 Describe number of telephones, LAN, phone lines for computers, guard phones, plant PA system.

NOTE *It is mandatory that a standard touch tone wall mounted telephone be installed outside the front door of each vault and vault type room.*

☐ ☐ 14.2.2 Describe all alarms required (fire, criticality, etc.) not described elsewhere.

☐ ☐ 14.2.3 Have protective force communications been considered? Adequate radio communication (circuit Merit 4, speech easily understandable, some noise), is mandatory for vaults, vault type rooms, and protective force response paths to the same. Determination of radio coverage shall be made by engineering, and areas that require upgrading shall be identified for inclusion in the project.

15. DEACTIVATION, DECONTAMINATION AND DECOMMISSIONING (DD&D)

15.1 SCOPE OF DD&D PRIOR TO CONSTRUCTION

☐ ☐ 15.1.1 Describe any DD&D work involved (equipment #'s, pipe, etc.).

☐ ☐ 15.1.2 What are the levels and type of contamination?

☐ ☐ 15.1.3 What is the expected quantity of waste generated?

☐ ☐ 15.1.4 List of equipment to be salvaged.

APPROVED BY:

User: _____ (Signature) _____ (Date)

CONCURRENCE BY:

PE: _____ (Signature) _____ (Date)

PM: _____ (Signature) _____ (Date)

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INSTRUCTIONS FOR COMPLETION OF OPERATIONAL REQUIREMENTS DOCUMENT

The preparation of the ORD is the responsibility of the User. Users shall submit ORDs to the Project Manager (PM) as approved. The assigned PM and Project Engineer (PE) shall be available for technical consultation with the User to develop the ORD. Also, the H&S Area Engineer, Hazardous Waste Coordinator, and other technical specialists will be available to assist the User in developing the ORD.

The ORD identifies a list of specific questions and statements which shall be addressed. Each section sub-number requires that the appropriate block be checked either "ATTACHED" or "N/A." "N/A" means non-applicable. If the "ATTACHED" block is checked, the section sub-number shall be referenced followed by the appropriate answer(s) on an attached sheet of paper. If "N/A" block is checked, no further action is required.

Final designs for proposed projects will be based upon information contained in the ORD. It is important that Users spend the time to anticipate all operational requirements and provide enough detail to ensure adequate designs.

The ORD must be approved and signed by the User, PM, and PE before definitive design can commence. The original ORD becomes a part of the PM's permanent project file.

Rocky Flats Environmental Technology Site

3-P32-COEM-PMG-311

REVISION 0

SCOPE AND ESTIMATE

APPROVED BY: _____ /L. J. McGovern 9-29-94
Deputy Director, Project Management Print Name Date

Responsible Organization: Project Management Effective Date: 10/1/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____ UNC
Date 9/30/94

Periodic review frequency: 4 years from the effective date.

LIST OF EFFECTIVE PAGES

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1. PURPOSE

This procedure provides the requirements to assure that project Scope and Estimate (S&E) are developed and documented before definitive design begins.

2. SCOPE

This procedure applies to development of scope and estimate information for projects as based on the developed User generated and approved Operational Requirements Document (ORD). It encompasses activities by the Project Manager and Project Engineer. It defines and coordinates activities to develop accurate and comprehensive project scope information such that a usable project cost estimate may be developed.

3. OVERVIEW

The project Scope Design provides an introduction to and overview of the project design. The scope design and Total Estimated Cost (TEC) are used to determine and acquire funding.

A S&E is required for every project to establish a project scope design, a schedule and a budget cost estimate.

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager

Coordinates with the User, Project Engineer, and other cognizant parties in establishing project technical objectives.

Assists the User, if required, in preparing the Operational Requirements Document (ORD).

5.1 Project Manager (continued)

Obtains project funding determination with Central Planning & Budgets.

Directs the Project Engineer (PE) to develop project design scope in accordance with the project ORD.

Ensures that the proper engineering support is requested by the PE.

Assists the Davis-Bacon Coordinator in processing the Davis-Bacon determination for the project.

Ensures that the design scope package and Project Design Hour Estimate (PDHE) is complete.

Develops the preliminary project schedule.

Ensures that the initial National Environmental Policy Act (NEPA) Checklist, Preliminary Safety Analysis matters and the Security Checklist are completed in conjunction with scope development in order to include those elements in the subsequent project cost estimate:

Obtains preliminary NEPA determination as input to the schedule.

Obtains all permits - RCRA, CERCLA, etc. required.

Obtains the project cost estimate from Cost Estimating.

Closes-out the project Scope & Estimate effort.

Obtains hours estimate from Construction Management (CM) for the Title 3 part of project.

5.2 Project Engineer

Assists the User and Project Manager in clarification of project definition and requirements.

5.2 Project Engineer (continued)

Determines required Engineering support.

Obtains such support from the responsible design organization(s).

Coordinates engineering efforts to develop scope information.

Develops the scope design package.

Obtains from the design organization, as part of the project scope, PDHE information.

Obtains concurrence from the Project Manager and User that the scope design package satisfactorily addresses all appropriate aspects of the project necessary to develop a usable cost estimate.

Delivers the PDHE and completed scope design package to the Project Manager.

6. INSTRUCTIONS

6.1 Scope and Estimate Oversight & Preparation

Project Manager

[1] Work closely with the User and Engineering preparing the Operational Requirements Document (ORD) in accordance with COEM-PMG-309.

[2] Manage the execution of the scope design package.

[3] Prepare the Engineering Service Request (ESR) requesting a Scope and Estimate.

[4] Issue the ESR to the PE to establish the scope design completion date.

[5] Schedule the kick-off meeting with the User, PE and other interested parties to establish the technical objectives.

[6] Assist the User in determining appropriate funding.

[7] Arrange a meeting with the User and PE when the scope design package is complete to determine if the project objectives were fulfilled.

[8] Review the completed scope design package with the User, Project Engineer, and other interested project participants.

[9] Prepare initial National Environmental Policy Act (NEPA) Checklist and Security Checklist in conjunction with the User and Project Engineer.

[10] Ensure that the initial NEPA Checklist, preliminary safety analysis matters, and the Security Checklist results, are included in the scope design package for further inclusion in the cost estimate.

[11] Develop a preliminary project schedule and Davis-Bacon determination in consultation with the Davis-Bacon Coordinator.

6.1 Scope and Estimate Oversight & Preparation (continued)

[12] Issue a Request for Estimate (RFE), preliminary funding determination preliminary Davis-Bacon determination, and schedule, to Cost Estimating.

[13] Ensure that a complete detailed cost estimate for materials, labor and other elements of cost is prepared by the project Cost Estimator.

[14] Ensure that a summary breakdown of the estimate suitable for Davis-Bacon Determination and Project Management Plan/Work Package (PMP/WP) is prepared by the project Cost Estimator.

[15] Review the cost estimate with the PE and User to validate the TEC.

[16] Compare the cost estimate to the ORD for validity.

[17] Issue the completed Scope and Estimate package with a "Letter of Transmittal" form) to the User.

[18] Ensure that Central Planning & Budgets determines the funding category from final Scope and Estimate Package.

[19] Issue the Final Project Closeout (FPCO) letter to close out the S&E.

NOTE *Generally one charge number is opened for the pre-decisional effort to account for Other Project Costs (OPC). The charge number will be opened and closed periodically depending on the stage of the pre-decisional effort.*

[20] **IF** the project has a unique charge number for the S&E effort, **THEN** issue a letter to CP&B closing the charge number to further charges.

Project Engineer

[21] Attend the kick-off meeting with the Project Manager and User to clarify project requirements provided in ORD.

6.1 Scope and Estimate Oversight & Preparation (continued)

[22] Issue Internal Design Support Request to all disciplines required to complete scope design.

[23] Set up and coordinate design team activities and meetings.

[24] Develop the scope design package.

[25] Compile the PDHE from all design disciplines.

[26] Review scope design package.

[27] Review the scope design package with the Project Manager and User to determine if the project objectives have been fully satisfied.

[28] Deliver the PDHE and completed scope design package to the Project Manager.

[29] Review cost estimates with Project Manager and Cost Estimator, if required, to ensure the estimate reflects project scope and NEPA considerations.

7. RECORDS

Engineering Documentation (or responsible party)

[1] Records generated as a result of this procedure are maintained in the Project History File in accordance with the retention schedule identified in 1–77000–RM–001, Records Management Guidance for Records Sources.

8. REFERENCES

2-K08-COEM-PMG-309, Operational Requirements Document (ORD)
Glossary of Project Management Terms

Rocky Flats Environmental Technology Site

3-L82-COEM-PMG-315

REVISION 0

LINE ITEM BUDGET PROCESS GUIDE

APPROVED BY: _____ / L. J. McGovern / 4-13-95
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management — Effective Date: 4-14-95

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By Charles Adams
Date 4-17-95

Periodic review frequency: Annually from the effective date.

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1. PURPOSE

The purpose for this guidance is to describe the process for maintaining Line Item project baseline documentation as defined by the Project Data Sheet (PDS). This guide changes and will be revised on an annual basis.

2. SCOPE

This guide should be used in the Line Item Validation Review, which started initial activities in November, 1994, culminating in the Project Data Sheet and Activity Data Sheet submissions in April 1995. This guide has been updated for FY95 based on the latest instructions from the DOE, Headquarters.

3. OVERVIEW

The baseline for scope, schedule and budget is defined by various PDS documents depending on the status of the project in the funding cycle. See Appendix 1 for an explanation of the Congressional funding cycle and Appendix 2 for a flowchart of the budget process. The following table forms the basis for further clarification of Line Item Funding and assumes that the current budget year is FY95.

Baseline Document	FY94 & Prior	FY95	FY96	FY97
FY 94 or Prior Year Congressionally approved PDS	Scope, Sch., TEC/TPC on fully funded projects			
FY Congressional PDS		Scope, Sch., TEC/TPC, and FY95 new BA		
FY96 OMB PDS			FY96 new BA when approved	
FY97 ADS/PDS				FY97 new BA when approved

4. DEFINITIONS

See COEM Glossary and Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager

Coordinates and oversees all activities in the Scope Development, Planning and Funding phase of the project.

Develops a Project Data Sheet (for Line Item projects only) and submits to DOE Headquarters as required by DOE-RFFO.

Requests KD-1 and/or KD-2 as appropriate for Title I and II Design.

Coordinates with Central Planning, supports annual validation review, and coordinates with DOE to obtain funding and KD-1 approval for the project.

6. DESCRIPTION OF PDS SUBMISSIONS AND BASELINES

The approved FY95 Congressional PDS establishes the scope, schedule, and Total Estimated Cost/Total Project Cost (TEC/TPC) for the project. If a project was fully funded prior to FY95, then the last Congressional PDS established the baseline. The Congressional PDS only baselines the funding profile for the year of the submission (FY95 in this case). The FY96 and outyear funding profile in the FY95 PDS is only a forecast of requirements, and does not represent a commitment by Congress to fund to the level requested Subsequent budget submittals will be processed through the outyear budgeting process with no guarantee of matching the FY95 PDS funding profile for those years.

The FY96 Office of Management and Budget PDS is not officially approved by Congress at this time and may include changes to the FY95 Congressional PDS scope, schedule or TEC/TPC. The FY96 funding request will become the official Congressional PDS once it is approved and will establish the new baseline for scope, schedule and TEC/TPC. Again, the FY97 and outyear funding profile represents a forecast of funding requirements, with no commitment by Congress. FY95 and prior year budget authority (BA) must agree with the FY95 Congressional PDS. If a project was fully funded prior to FY95, then the last approved Congressional PDS established the baseline.

6. DESCRIPTION OF PDS SUBMISSIONS AND BASELINES (continued)

The FY97 ADS/PDS submittal governs the FY96 funding request. During the course of the next 1 1/2 years (through October 1996), this submittal will go through OMB review and them become the new FY97 Congressional PDS upon approval. At that time it will supersede previous submittals. For any project that is not asking for new funding in the budget formulation year (in FY96 the budget formulation year is FY97), the last approved Congressional PDS will be the baseline. FY96 and prior year funding profiles must agree with the FY95 Congressional PDS, and the FY96 funding profile must agree with the latest version of the FY96 OMB PDS.

7. BASELINE CHANGE PROPOSAL (BCP) BASELINE REQUIREMENTS

The three elements of a project baseline (scope, schedule, TEC/TPC) are controlled by different requirements and thresholds which must be individually evaluated to determine the need for a Baseline Change Proposal (BCP). It is essential that the BCPs be processed to establish an auditable trail that documents changes between year-to-year PDS submissions.

7.1 TEC/TPC Change

Any change will require a BCP. The level of approval will depend on the percent of change and the funding source (i.e. EM-30, EM-60, SS[1], etc.). See Table II (Appendix 3) for details. The PDS will be updated in the next budget cycle.

7.2 Schedule Change

Any Schedule slip greater than three (3) months requires a BCP. The level of approval will depend on the funding source. See Table II (Appendix 3) for details. Any improvement in schedule does not require a BCP.

7.3 Scope Change

The scope description within a PDS should generally be written to establish the boundaries of the project without being so specific as to preclude flexibility to adjust the scope to meet the purpose of the project. If the magnitude of a scope change is sufficient to change the purpose or overall approach to the project, and a change in the PDS scope description would also be required, then a DOE/HQ BCP must be processed (see Table II, Appendix 3). The PDS will be updated at the next Line Item budget cycle. If the scope change only modifies the current Rocky Flats work package and not the PDS scope description, then a Rocky Flats Field Office (RFFO) BCP is required to incorporate the work package changes.

8. PDS SUBMISSION REQUIREMENTS

The PDS is primarily a budget request document that establishes an agreement between DOE and Congress. As a budget document, it is requested on an annual basis, either as a first time submission for a new start project, or as an annual request for new funding for the budget year under development. Any submission outside of the annual budget call is likely to create confusion and should be avoided unless requested by DOE/HQ. A BCP that changes any of the baseline elements does not have to be accompanied by an updated PDS. The annual budget call will provide an opportunity to update the PDS to include all Rocky Flats Field Office (RFFO) approved BCP changes processed during the previous year.

A change to scope, schedule or TEC/TPC that is the direct result of the budgeting process (e.g. budget limitation resulting in modified costing profiles, reduced work scope, schedule slip, etc.) can be documented in the ADS and PDS to satisfy the budget cycle deliverables. However, a formal BCP must be submitted soon thereafter to establish the change documentation that bridges between the prior year and budget year PDS.

NOTE *The BCP process cannot be used to accomplish reprogramming of approved BA in FY95 or earlier years or a budget amendment for FY96. A separate reprogramming action is necessary to re-allocate BA between Line Items or to reduce funding.*

Chart 1
Line Item Project Congressional Funding Cycle

Funding Year:	FY-3	FY-2	FY-1	FY-0	FY+1	FY+2	FY+N
Funding Documentation	Short Form PDS	First ADS/PDS requesting FY-0 funding	ADS/PDS Update requesting FY+1 funding	ADS/PDS Update requesting FY+2 funding	ADS/PDS Update requesting FY+N+1 funding	ADS/PDS Update requesting FY+N funding	None required
Project Development Documentation	Scope and Estimate	Conceptual Design Report	Design Criteria	Title I and II Design & Construction as scheduled	Continuing Design & Construction	Continuing Design & Construction	Completion of Project
Funding Type	Expense Predecisional	Expense Predecisional	Expense Predecisional	Capital Funding Authorized	New Capital BA as requested	New Capital BA as requested	Final Capital BA as requested
Approvals	KD-0 (note 1)	Validation (note 2)		KD-1	KD-2 & KD-3 as required	KD-2 & KD-3 as required	KD-4

Notes

1. KD-0 requires DOE/HQ approval to start predecisional design.

2. Validation is shown only for the first year of a new start project for FY-0. Validation and ADS review is required every year for which a project requests outyear funding.

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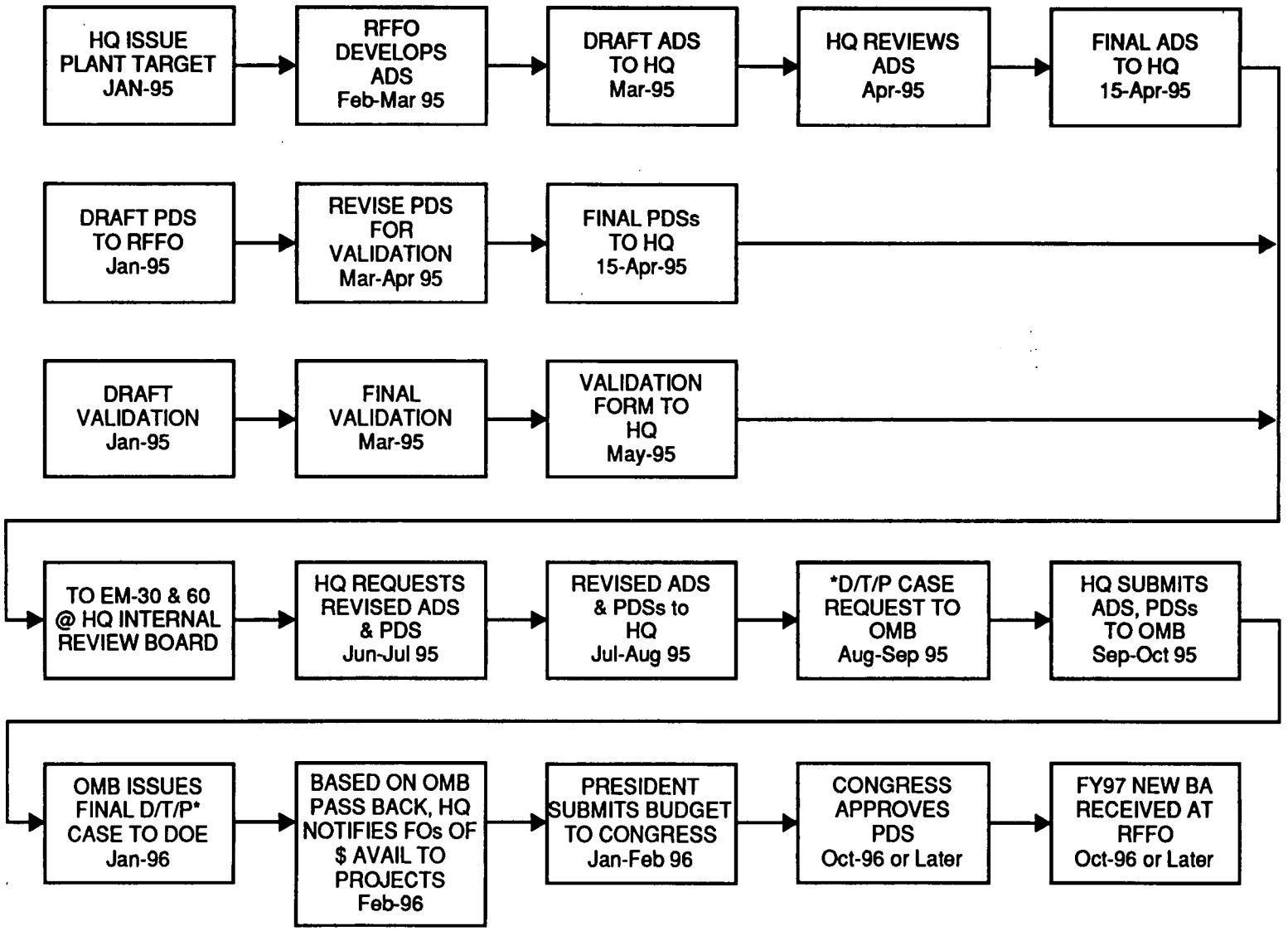
LINE ITEM BUDGET FLOW CHART
(Example for FY97 Budget Year)



* Decrement/Target/Planning

APPENDIX 3
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TABLE II - PDS BCP THRESHOLDS (APPROVAL AUTHORITY)

Baseline Element	M&O Internal	RFFO SCCB	EM30	EM60	S S
Scope	None	Deviation from PDS (endorses)	Deviation from PDS (approves)	Deviation from PDS (approves)	Deviation from PDS (approves)
Schedule (see note 1 & 2)	Approves less than 3 months	EM30 & SS approves >3 mo., <6 mo. EM60 endorses >3 months	Approves greater than 6 months	Approves greater than 3 months	Approves greater than 6 months
TEC/TPC (see note 2)	None	EM30 & SS approves <15% EM60 approves <10%	Approves TPC change greater than 15%	Approves TPC change greater than 10%	Approves TPC change greater than 15%

Notes:

1. Schedule changes at DOE/HQ levels are those addressed in the PDS, namely the Design start/completion dates and the Construction start/completion dates.

2. Schedule and TEC/TPC changes are cumulative for DOE/RFFO and DOE/HQ approval. Any change affecting Management Reserve funding requires approval of the PCCB.

Rocky Flats Environmental Technology Site

3-L01-COEM-PMG-317

REVISION 0

WORK BREAKDOWN STRUCTURE

APPROVED BY: /L. J. McGovern / 9-29-94

Deputy Director, Project Management | Print Name | Date

Responsible Organization: Project Management

Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By UNC

Date 9/30/94

This procedure supersedes PILOT procedure ENG-PILOT-PM-004, Revision 0

Periodic review frequency: 4 years from the effective date.

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1. PURPOSE

This procedure provides guidelines for the development and utilization of Work Breakdown Structures (WBSs) for Project Management (PM) Construction Projects at the Rocky Flats Environmental Technology Site (Site). Its purpose is to ensure that all work is identified and defined within a common framework for the orderly and effective execution of Construction Projects. It also provides information concerning levels in the Site WBS (see Appendix 1, Work Breakdown Structure Examples).

2. SCOPE

This procedure applies to all Construction Projects managed by PM.

NOTE *Use a graded approach in determining the need for a WBS. If the predecisional effort is significant, then develop a WBS.*

3. OVERVIEW

This procedure contains general instructions regarding the development and use of the WBS for planning, organizing, leading, and control of Construction Projects.

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager (PM)

Ensures that project scope and technical objectives are clearly defined and integrated with program and subprogram requirements and objectives and in accordance with the project Operational Requirements Document (ORD).

5.1 Project Manager (PM) (continued)

Develops the project Work Breakdown Structure (WBS) to the level of manageable tasks using a graded approach and manages it throughout the life of the project ensuring that it reflects the products to be delivered.

Ensures that the project WBS integrates and rolls up into the Plant Summary WBS (See Appendix 2, Plant Summary WBS).

Ensures that project schedules, estimates, and budgets are developed from the project WBS.

Ensures that the lower level products and WBSs that are incorporated into the project WBS are integrated with respect to goals of the project and the final project deliverable.

Includes the project WBS beginning at a minimum of Level P-2 (see definition of Work Breakdown Structure in Glossary of Project Management Terms) in the Project Management Plan/Work Package.

5.2 Key Personnel

Provides assistance and coordination in the development and management of the project WBS.

5.3 Program Manager/Subprogram Manager

Ensures that the project WBS is compatible with overall program or subprogram objectives.

6. INSTRUCTIONS - WBS DEVELOPMENT & MAINTENANCE

A WBS can only be developed if there is a clear understanding and statement of the technical objectives of the project. It is developed by first identifying the project end product, item, or system to be structured, and then successfully dividing it into increasingly detailed and manageable subsidiary work products or elements. The WBS, as it becomes better defined and more detailed, serves as the basis for development of the integrated project schedule, cost estimate, and budget.

The evolution of the WBS is to be managed throughout the life of the project through an iterative analysis of project objectives, functional design criteria, project scope, technical performance requirements, and proposed methods of performance.

Project Manager (PM)

[1] Review project scope to ensure that the technical objectives are clearly defined and stated.

[2] Ensure that project scope integrates with upper level program or subprogram objectives.

[3] Structure the project work scope into a Work Breakdown Structure (WBS) that is:

- Product oriented.
- Comprised of elements that are relatively independent at each level.
- A reflection of an integrated system effort.
- Broken down until the performing organization methods are reached.
- A graphic depiction of all work in the project.

[4] Coordinate closely with key personnel on the project team to ensure the deliverables and products in each project support area roll-up and integrate into overall project objectives.

[5] Review lower level WBSs that will roll-up into the project WBS to ensure they comply with the objectives of the project in delivering their individual products.

6. INSTRUCTIONS - WBS DEVELOPMENT & MAINTENANCE (continued)

[6] Ensure that the WBS is used as a baseline for development of subsequent project schedules, estimates, and budgets.

[7] Include the project WBS as a section of the Project Management Plan/Work Package (PMP/WP).

Key Personnel

[8] Assist the PM in the development of the project WBS, including preparing lower level support WBSs, as required.

[9] Coordinate with other support areas in preparing the project WBS.

Program Manager/Subprogram Manager

[10] Review the project WBS periodically throughout the life of the project to ensure it supports and integrates with overall program or subprogram objectives and needs.

7. RECORDS

Records generated as a result of this procedure are maintained in the Project Records File in accordance with the retention schedule identified in 1–77000–RM–001, Records Management Guidance for Records Sources.

Project Manager

[1] Store all records related to the development of the WBS in the Project Records File.

8. REFERENCES

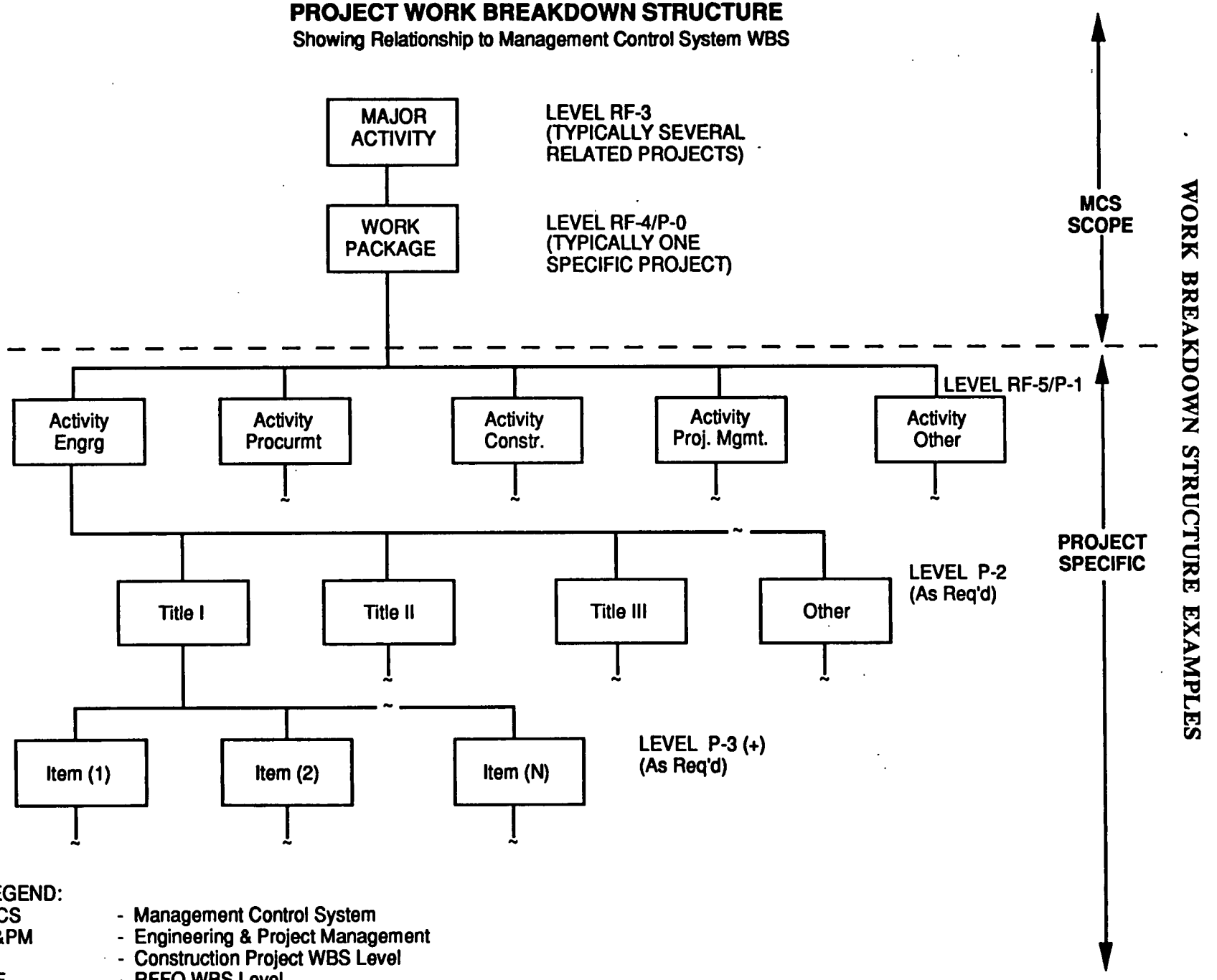
1–77000–RM–001, Records Management Guidance for Records Sources

Glossary of Project Management Terms

PROJECT MANAGEMENT

PROJECT WORK BREAKDOWN STRUCTURE

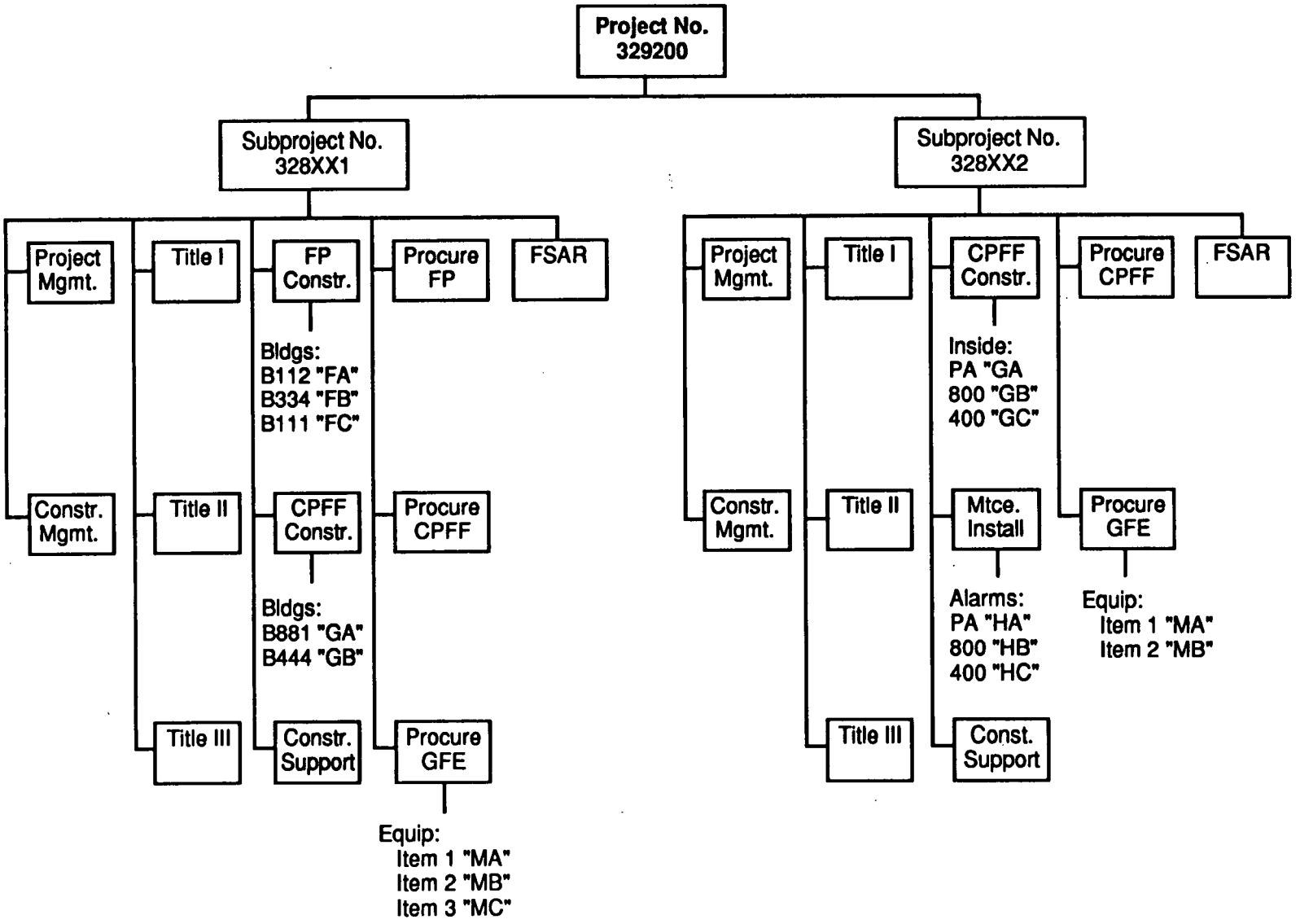
Showing Relationship to Management Control System WBS



LEGEND:

MCS	- Management Control System
E&PM	- Engineering & Project Management
P	- Construction Project WBS Level
RF	- RFFO WBS Level

SAMPLE WBS
SHOWING LINE ITEM WITH SUBPROJECTS
AND COST COLLECTION NUMBERING



APPENDIX 2
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SAMPLE PLANT SUMMARY WORK BREAKDOWN STRUCTURE

PROJECT: BUDCALL
PLANT SUMMARY WORK BREAKDOWN STRUCTURE LISTING

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PSWBS ELEMENT / WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
00001				ROCKY FLATS ENVIRONMENTAL TECH SITE	RURL	BURLINGAME, A.H	DEBOER, V.A.	SILVERMAN,	
A				WASTE MANAGEMENT	HEDA	HEDAHL, T.G.	DEBOER, D.J.	ROBERSON, J	
AA				WASTE MANAGEMENT OPERATIONS	HEDA	SCHUBERT, A.L.	FLA HAVHAN, H.	SCHASSBURGE	
AAA				WASTE REGULATORY PROGRAMS	HEDA	SCHUBERT, A.L.	FLA HAVHAN, H.		
13101	3812	PI1	EW3120090	RCRA REGULATORY PROGRAMS	HEDA	PETER, K.G.	STOUGHTON, G.D	PRYHAK, W.	
13106	3210-2B	PI3	EW3120090	FFC ACT PROGRAM	HEDA	EDGINGTON, J.D.	RIEGAL, R.J.	PRYHAK, W.	
13110	3812		EW3120090	REGULATORY LIAISON	HEDA	POTTER, G.L.	STOUGHTON, G.D	LEIFER, J.	
13206	3821	03	EW3120090	CTMP TREATMENT SYSTEM - SALTCRETE	HEDA	GARCIA, E.C.	ZARRET, J..	PRYHAK, W.	
31102	3812	PI10	EW3120090	WM PROGRAM INTEGRATION AND CONTROL	HEDA	GLOE, H.L.	BOGENSCHUTZ, L	SCHNEIDER,	
31106	3812	PI10	EW3120090	COMPREHENSIVE WASTE MANAGEMENT PLAN	STOU	SHEPARD, H.D.	FLA HAVHAN, H.	VARGAS, M.	
31201	3814		EW3110039	RFP PERMITTING FEES	HEDA	PETER, K.G.	STOUGHTON, G.D		
31202	3814		EW3110039	RFP PERMITTING FEES	HEDA	PETER, K.G.	STOUGHTON, G.D	MAUER, D.	
32201	3812	PI1A	EW3120090	WASTE REGULATORY PROGRAMS	HEDA	CHURCH, A.A.	STOUGHTON, G.D	COTE, P.	
32402	3812	PI3	EW3120090	LDR COMPLIANCE ACTIVITIES	HEDA	EDGINGTON, J.D.	STANLEY, T.T.	PRYHAK, W.	
61120	6730	DC14	EW3100000	WM PROCEDURE SUPPORT	HEDA	THOMAS, P.V.	BOGENSCHUTZ, L	LUKOW, T.	
AAC				LOW-LEVEL WASTE MANAGEMENT	HEDA	HICKLE, G.L.	FLA HAVHAN, H.		
32601	3812	PI17	EW3120090	PLANTSITE LOW-LEVEL WASTE PROGRAM	HEDA	AGUILAR, P.G.	FLA HAVHAN, H.	VARGAS, M.	
62201	6730	DC8	EW3100000	WASTE CERTIFICATION	GLOV	VALENZUELA, F.J	RICHMOND, J.K.	LUKOW, T.	
AAD				TRU WASTE MANAGEMENT	HEDA	HICKLE, G.L.	FLA HAVHAN, H.		
32710	3812	PI19	EW3120090	TRU WASTE MANAGEMENT	HEDA	OLEARY III, G.A	FLA HAVHAN, H.	BELL, A.	
AAF				WASTE MINIMIZATION PROGRAM	HEDA	ANDERSON, S.C.	STOUGHTON, G.D		
13301	3813	WM1	EW3110021	WASTE MINIMIZATION ADMINISTRATION	HEDA	ANDERSON, S.C.	STOUGHTON, G.D	PRYHAK, W.	
13302	HQ3530	----	EW3110021	WASTE MINIMIZATION PROGRAM EVALUATI	HEDA	ANDERSON, S.C.	STOUGHTON, G.D	PRYHAK, W.	
13303	HQ3530		EW3110021	WASTE MINIMIZATION HQ SUPPORT	HEDA	ANDERSON, S.C.	STOUGHTON, G.D	PRYHAK, W.	
62307	6730	DC5	EW3100000	WASTE MINIMIZATION IMPLEMENTATION	HEDA	ANDERSON, S.C.	STOUGHTON, G.D	PRYHAK, W.	
AAG				FUTURE LINE ITEMS MAJOR	HEDA	ANDERSON, S.A.	GALLIMORE, J.E		
71403	3822		39EW31309	FUTURE CEMENTATION LINE ITEM	HEDA	DORR, K.A.	GALLIMORE, J.E		
71404	3822		39EW31309	SOLVENT CONTAM WST TRMT LINE ITEM	HEDA	DORR, K.A.	GALLIMORE, J.E		
71405	3822		39EW31309	SURFACE CONTAMINANT REMOVAL LINE IT	HEDA	DORR, K.A.	GALLIMORE, J.E		
71406	3822		39EW31309	TRU MIXED WASTE TRMT SYS LINE ITEM	HEDA	DORR, K.A.	GALLIMORE, J.E		
72222	3822		EW3130090	CEMENTATION EXP SPT	HEDA	DORR, K.A.	GALLIMORE, J.E	PRYHAK, W.	
72223	3822		EW3130090	SOLVENT CONTAM WST TRMT EXP SPT	HEDA	DORR, K.A.	GALLIMORE, J.E		
72224	3822		EW3130090	SURFACE CONTAMINANT REMOVAL EXP SPT	HEDA	DORR, K.A.	GALLIMORE, J.E		
72225	3822		EW3130090	TRU MIXED WASTE TRMT SYS EXP SPT	HEDA	DORR, K.A.	GALLIMORE, J.E		
79105	3822		EW3130090	SUPPORT FOR FUTURE PROJECTS	HEDA	PINSON, G.M.	GALLIMORE, J.E	BOSTIC, R.	
AAH				WIPP SUPPORT	HEDA	HICKLE, G.L.	FLA HAVHAN, H.		
13204	RFWP32	----	EW3155000	WIPP TRU & TRH WASTE CHARACTERIZATI	HEDA	OLEARY III, G.A	FLA HAVHAN, H.	BELL, H.	
AAJ				PAYMENTS & GRANTS	RFFO	RFFO, ..	DEBOER, D.J.		
13104	3814	A1	EW3110039	PAYMENTS TO THE STATE AIP - RFFO MA	RFFO	RFFO, ..	DEBOER, D.J.	HOWARD, A.	
91001	3812	----	EW3110010	ADS 3812 - RFFO MANAGED CONTRACTS	RFFO	RFFO, ..	DEBOER, D.J.	SCHNEIDER,	

PROJECT: BUDCALL
PLANT SUMMARY WORK BREAKDOWN STRUCTURE LISTING

PSWBS ELEMENT / WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
AAJ				CTMP 374/744 SLUDGE IMM LINE ITEMS	HEDA	ANDERSON, S.A.	GALLIMORE, J.E		
71401	3830		39EW31309	B-774 SLUDGE IMMOBILIZATION LINE IT	HEDA	DORR, K.A.	GALLIMORE, J.E		
72215	3830		EW3130090	B-774 SLUDGE IMMOBILIZATION EXP SPT	HEDA	DORR, K.A.	GALLIMORE, J.E	PRYMAK, W.	
AAK				CTMP 776 MIS. WASTE LINE ITEMS	HEDA	ANDERSON, S.A.	GALLIMORE, J.E		
71402	3831		39EW31309	IMMOBILIZATION OF MISC WASTES LINE	HEDA	DORR, K.A.	GALLIMORE, J.E		
72216	3831	F11	EW3130090	IMMOBILIZATION OF MISC WASTES EXP S	HEDA	DORR, K.A.	GALLIMORE, J.E	PRYMAK, W.	
AB				SOLID WASTE OPERATIONS	HEDA	CIUCCI JR, J.A.	BULLOCK, R.R.	WITHERILL,	
ABA				RADIOACTIVE STORAGE & OPERATIONS	HEDA	CIUCCI JR, J.A.	SMITH, R.R.		
13203	3821	03	EW3120090	SALTCRETE PAD STORAGE & OPERATIONS	HEDA	FERRIER, D.R.	PENNELL, J.E.	VARGAS, M.	
13400	3821	05	EW3120090	CWSF / MIXED WASTE STORAGE & OPERAT	HEDA	ALLISON, K.K.	BULLOCK, R.R.		
13401	3821	04	EW3120090	B-664 OPERATIONS	HEDA	WOLFE, J.D.	SMITH, R.R.	BIRRENBACH,	
13512	3821		EW3120090	90-DAY AREA MANAGEMENT - PA	HEDA	SHAW, G.I.	KENTON, J.T.		
ABB				NON-RADIOACTIVE STORAGE & OPERATION	HEDA	CIUCCI JR, J.A.	BULLOCK, R.R.		
13405	3821	05	EW3120090	NON-RAD WASTE STORAGE & OPERATIONS	HEDA	ALLISON, K.K.	BULLOCK, R.R.	COTE, P.	
13408	3821	04	EW3120090	BROOMFIELD WAREHOUSE OPERATIONS	HEDA	ADDINGTON, K.T.	SMITH, R.R.	HEAVILIN, K	
13513	3821		EW3120090	90-DAY AREA MANAGEMENT- NON-PA	HEDA	GARCIA, S.R.	BULLOCK, R.R.		
ABC				WASTE PROCESSING	HEDA	FRANZ JR, W.A.	KENTON, J.T.		
13207	3821	03	EW3120090	SALTCRETE PROJECT SUPPORT	HEDA	RINGLE, D.A.	ZARRET, J..	BOSTIC, R.	
13209	3821	03	EW3120090	SALTCRETE REMIX ENGINEERING	HEDA	BECKMAN, T.D.	PENNELL, J.E.		
13210	3821	03	EW3120090	SALTCRETE REMIX CONSTRUCTION	HEDA	ORELL, M.D.	PENNELL, J.E.		
13211	3821		EW3120090	SALTCRETE TESTING & OPS.	HEDA	SCHMIDT, T.D.	PENNELL, J.E.		
13510	3821	014	EW3120090	WASTE PROCESS OPERATIONS & SUPPORT	HEDA	KRANKER, S.W.	KENTON, J.T.	BOSTIC, R.	
13511	3821	015	EW3120090	CO2 DECONTAMINATION	HEDA	GILLESPIE, R.D.	BULLOCK, R.R.		
ABD				WASTE SHIPPING	HEDA	CIUCCI JR, J.A.	BULLOCK, R.R.		
13208			EW3100000	SALTCRETE SHIPPING	HEDA	FERRIER, D.R.	PENNELL, J.E.		
13402	3821	05	EW3120090	NON-RAD WASTE SHIPPING	HEDA	MOLTER, R.J.	BULLOCK, R.R.	COTE, P.	
13409	3821	04	EW3120090	B-664 SHIPPING	HEDA	WOLFE, J.D.	SMITH, R.R.		
ABE				BLDG. 664 MAINTENANCE & SURVEILLANC	HEDA	TROP, B.P.	SMITH, R.R.		
13403	3821	04	EW3120090	B-664 Maintenance & Surveillance	HEDA	BENA, C.E.	SMITH, R.R.	BIRRENBACH,	
ABF				BLDG. 776/777 MAINTENANCE & SURVEIL	HEDA	FRANZ JR, W.A.	KENTON, J.T.		
25101	6710	SM1	EW7002000	B-776/777 SURVEILLANCE	HEDA	DYE, A.A.	ROJAS, R.F.	RING, B.	
25201	6710	SM1	EW7002000	B-776/777 MAINTENANCE	HEDA	DYE, A.A.	ROJAS, R.F.	RING, B.	
25203	6710		EW7002000	B-776/777 EXPENSE PROJECTS	HEDA	WILLIAMSON, R.E	GALLIMORE, J.E	RING, B.	
25301	6710	SM1	EW7002000	B-776/777 BUILDING SUPPORT	HEDA	DYE, A.A.	ROJAS, R.F.	RING, B.	
ABG				NEW SANITARY LANDFILL LINE ITEM	HEDA	DREW, V.G.	BOGNAR, E.S.		
71210	3828		39EW31309	NEW SANITARY LANDFILL LINE ITEM	HEDA	MITTLESTADT, D.	BOGNAR, E.S.	COTE, P.	
72207	3828	SL1	EW3130090	NEW SANITARY LANDFILL EXP SPT	HEDA	MITTLESTADT, D.	BOGNAR, E.S.	COTE, P.	
ABH				CENTRALIZED WASTE STORAGE LINE ITEM	HEDA	HICKLE, G.L.	BOGNAR, E.S.		
74001	6754		39EW70300	CENTRALIZED WASTE STORAGE FACILITY	HEDA	ANHOLD, R.R.	BOGNAR, E.S.	VARGAS, M.	

PROJECT: BUDCALL
PLANT SUMMARY WORK BREAKDOWN STRUCTURE LISTING

PSWBS ELEMENT / WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
75116	6754		EW7030000	CWSF EXPENSE SUPPORT	HEDA	ARNOLD, R.R.	BOGNAR, E.S.		
ABI				SW CAPITAL EQUIPMENT	HEDA	STEINAUER, A.T.	MESZAROS, S.E.		
71204	3826		35EW31209	B-776 IMPROVE ASRF	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	RING, B.	
71213	3826		35EW31209	BUYOUT OF POND WATER TREATMENT	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	ROW, C.	
71214	3826		35EW31209	METAL & GLOVE CLEANING	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71215	3826		35EW31209	B-776 WASTE CEMENTATION UPGRADE	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71217	3826	----	35EW31209	PENDING ACO - LIQUID CO2 CLEANING	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71218	3827		35EW31309	STP AERATION BASIN IMPROVEMENTS	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	HARTUNG, P.	
71219	3826		35EW31209	TRAC MODEL SYSTEM COMPUTER UPGRADE	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	CRIST, B.	
71220	3826		35EW31209	TRAC MODEL ACOUSTIC SOUNDER	HEDA	KRAMER, T.E.	MESZAROS, S.E.	CRIST, B.	
71221	3826		35EW31209	PREDICTIVE PLUME TRACKING SYSTEM	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	CRIST, B.	
71222	3827		35EW31309	STP AUTO CHLORINATION/DECHLORINATIO	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	HARTUNG, P.	
71223	3827		35EW31309	STP EFFLUENT INSTRUMENTATION	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	HARTUNG, P.	
71233	3826		35EW31209	ADVANCED SIZE REDUCTION FACILITY	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	RING, B.	
71251	3826		35EW31101	EW PENDING CLOSEOUT CAPITAL EQUIPME	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71252	3826		35EW31209	EW PENDING CLOSEOUT CAPITAL EQUIPME	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71253	3827		35EW31309	EW PENDING CLOSEOUT CAPITAL EQUIPME	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	HARTUNG, P.	
71254			35EW40200	ICP ATOMIC SPECTROMETER	HEDA	ALEXANDER, R.G.	MESZAROS, S.E.	RUDOLPH, S.	
71255	3826		35EW31209	PASSIVE/ACTIVE DRUM COUNTER	HEDA	GUTHRIE, C.L.	MESZAROS, S.E.	PRYMAK, W.	
71256	3826		35EW31210	SANITARY LANDFILL HORIZONTAL COMPAC	HEDA	MITTLESTADT, D.	MESZAROS, S.E.	SPRINGER, J	
71259	3826		35EW31211	WASTE MINIMIZATION COMPACTOR TRUCK	HEDA	MILLETTE, R.L.	MESZAROS, S.E.		
71260	3826		35EW31209	MISC. CAPITAL EQUIP - EW30	HEDA	STEINAUER, A.T.	MESZAROS, S.E.	SHULSE, J.	
71261	3826		35EW31209	WASTE CERTIFICATION INTERIM WASTE F	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71262	3826		35EW31209	HEPA FILTER TEST STATION	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	RING, B.	
71298	3826	CP14	EW3120090	WM CAPITAL EQUIPMENT EXPENSE SUPPOR	HEDA	PINSON, G.M.	MESZAROS, S.E.	SHULSE, J.	
71300	3826		EW3120090	P/A DRUM COUNTER EXPENSE SUPPORT	HEDA	GUTHRIE, C.L.	MESZAROS, S.E.	PRYMAK, W.	
75462			EW3120090	SUPERCOMPACTOR	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	POSLUSZNY,	
75463	3826		35EW31209	STEAM CLEANING/STRIPPING	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
ABJ				SW GPP	HEDA	STEINAUER, A.T.	TIPPIN, C.G.		
71201	3823		39EW10200	RECYCLE C-2 POND	HEDA	KINNEY, J.G.	TIPPIN, C.G.	ROW, C.	
71203	3823		39EW31309	GPP - CAPITAL PROJECT CLOSEOUT	HEDA	WILLIAMSON, R.E	TIPPIN, C.G.	SCHNEIDER,	
71245	3823		39EW31309	B-889 BALER PHASE II	HEDA	WILLIAMSON, R.E	TIPPIN, C.G.	SCHNEIDER,	
71299	3823		39EW31309	HEATED SAFETY STORAGE UNITS	HEDA	WILLIAMSON, R.E	TIPPIN, C.G.	COTE, P.	
72202	3823	G2	EW3130090	WM GPP EXPENSE SUPPORT	HEDA	PINSON, G.M.	TIPPIN, C.G.	SCHNEIDER,	
AC				LIQUID WASTE OPERATIONS	FRAY	DUNN, R.P.	MCCORD, R.D.	ROSE, H.	
ACA				LIQUID WASTE OPERATIONS	FRAY	DUNN, R.P.	DENNIS, E..		
13501	3821	07	EW3120090	B-374 LIQUID WASTE OPERATIONS	FRAY	WILLIAMS, R.G.	DENNIS, E..	VARGAS, M.	
13502	3821	08	EW3120090	B-774 LIQUID WASTE OPERATIONS	FRAY	WILLIAMS, R.G.	DENNIS, E..	VARGAS, M.	
13503	3821		EW3120090	WASTE COLLECTION AND TRANSFER	FRAY	WILLIAMS, R.G.	DENNIS, E..		
62111			EW3120090	VALVE VAULT UPGRADE	FRAY	WILLIAMSON, R.E	GALLIMORE, J.E		
79215	3821	017	EW3120090	REPLACE B-374 2ND EFFECT HEAT EXCHA	FRAY	CHATTERJI, P..	GALLIMORE, J.E	BOSTIC, R.	
79216			EW3120090	REPLACE B-374 1ST EFFECT HEAT EXCHA	FRAY	HICKMAN, M.E.	GALLIMORE, J.E		
ACB				BLDG. 374 MAINTENANCE & SURVEILLANC	FRAY	MORGAN, E.L.	DENNIS, E..		
13504	3821	07	EW3120090	B-374 SURVEILLANCE	FRAY	DUNN, R.P.	DENNIS, E..	BOSTIC, R.	

Re

PROJECT: BUDCALL
PLANT SUMMARY WORK BREAKDOWN STRUCTURE LISTING

PSWBS ELEMENT WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
13505	3821	O7	EW3120090	B-374 MAINTENANCE	FRAY	DUNN, R.P.	DENNIS, E..	BOSTIC, R.	
13506	3821	O7	EW3120090	B-374 BUILDING SUPPORT	FRAY	DUNN, R.P.	DENNIS, E..	BOSTIC, R.	
ACC				BLDG. 774 MAINTENANCE & SURVEILLANC	FRAY	HENSLEY, D.B.	MCCORD, R.D.		
13507	3821	O7	EW3120090	B-774 SURVEILLANCE	FRAY	HO, B.S.	MORGAN, M..	BOSTIC, R.	
13508	3821	O8	EW3120090	B-774 MAINTENANCE	FRAY	PARKER, M.R.	MORGAN, M..	BOSTIC, R.	
13509	3821	O8	EW3120090	B-774 BUILDING SUPPORT	FRAY	HAEG, T.M.	MORGAN, M..	BOSTIC, R.	
ACD				BLDG. 374 TREATMENT FACILITY LINE I	FRAY	DUNN, R.P.	BOGNAR, E.S.		
71234	3829		39EW31309	B-374 LIQUID WASTE TREATMENT FACILI	FRAY	CHATTERJI, P..	BOGNAR, E.S.	VARGAS, M.	
72203	3829	LW1	EW3130090	EXPENSE SUPPORT TO B-374 LIQUID WAS	FRAY	CHATTERJI, P..	BOGNAR, E.S.	VARGAS, M.	
ACE				STP UPGRADE LINE ITEM	HEDA	CHURCH, A.A.	BOGNAR, E.S.	HARTUNG, P.	
71209	3827		39EW31309	STP UPGRADE LINE ITEM	HEDA	BENTZEN, K..	BOGNAR, E.S.	HARTUNG, P.	
72206	3827		EW3130090	STP EXPENSE SUPPORT	HEDA	BENTZEN, K..	BOGNAR, E.S.	HARTUNG, P.	
ACF				LW CAPITAL EQUIPMENT	FRAY	DUNN, R.P.	MESZAROS, S.E.		
75461	6746		35EW70000	WASTE SYSTEM EVAPORATOR	FRAY	FLORA, B.S.	MESZAROS, S.E.	POSLUSZNY,	
75492	3826	CP14	EW3120090	WASTE EVAPORATOR EXPENSE SUPPORT	FRAY	FLORA, B.S.	MESZAROS, S.E.	SHULSE, J.	
ACG				LW GPP	FRAY	DUNN, R.P.	TIPPIN, C.G.		
AD				WASTE CHARACTERIZATION	HEDA	SCHUBERT, A.L.	TBD, T..		
ADA				SAMPLING & ANALYSIS	HEDA	DUREL, F.M.	HOFFMAN, M.A.		
32303	3812	PI16	EW3120090	EM/SAMPLE MANAGEMENT OFFICE	HEDA	DICK, J.R.	GANCE, R.A.	PRYMAK, W.	
32306	3812		EW3120090	ANALYTICAL METHOD DEVELOPMENT	HEDA	SCHOEN, J.M.	TBD, T..		
ADB				WASTE CHARACTERIZATION	HEDA	DUREL, F.M.	HOFFMAN, M.A.		
13102	3812	PI2	EW3120090	WEMS PROJECT	HEDA	FRAWLEY, D.J.	SMITH, R.R.	DOYLE, G.	
62105	6723		EW7003000	RESIDUE WASTE CHARACTERIZATION	FRAY	PLAUTZ, R.L.	DEBOER, D.J.	DOYLE, G.	
ADC				NDA OPERATIONS	HEDA	AGUERO, G.L.	KENTON, J.T.		
13103	6730	DC7	EW7003000	WEMS OPERATIONS	HEDA	MC GLOCHLIN, S.	SMITH, R.R.		
62110	6730	DC7	EW7003000	NDA OPERATIONS	HEDA	AGUERO, G.L.	KENTON, J.T.	BOSTIC, R.	
ADD				WASTE CHARACTERIZATION CAPITAL EQUI	HEDA	DUREL, F.M.	MESZAROS, S.E.		
71224	3826		35EW31209	B-569 REAL-TIME RADIOGRAPHY	HEDA	GUTHRIE, C.L.	MESZAROS, S.E.	VARGAS, M.	
71225	3826		35EW31209	B-881 CONTRACT LAB PROTOCOL CERTIFI	HEDA	WEINGARDT, D..	MESZAROS, S.E.	SHULSE, J.	
71226	3826		35EW31209	ALPHA BETA COUNTING EQUIPMENT	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71227	3826		35EW31209	B-559/371 TCLP MICROWAVE DIGEST	HEDA	WEINGARDT, D..	MESZAROS, S.E.	SHULSE, J.	
71228	3826		35EW31209	B-559 GAS CHROM/MASS SPECTROMETER	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71229	3826		35EW31209	B-559 INDUCTIVELY COUPLED PLASMA	HEDA	DORR, K.A.	MESZAROS, S.E.	SHULSE, J.	
71230	3826		35EW31209	B-559 ION CHROMATOGRAPH	HEDA	DORR, K.A.	MESZAROS, S.E.	SHULSE, J.	
71231	3826		35EW31209	B-559 ALPHA SPECTROMETER	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71247	3826		35EW31209	B-881 GAMMA SPECTROSCOPY WORKSTATIO	HEDA	GRIFFIN, K.M.	MESZAROS, S.E.	SHULSE, J.	
71248	3826		35EW31209	PURGE TRAP AUTOSAMPLER	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71249	3826		35EW31209	B-559 GAS CHROM/MASS SPEC DET	HEDA	WILLIAMSON, R.E	MESZAROS, S.E.	SHULSE, J.	
71250	3826		35EW31209	B-559 GAS CHROM/IR DET	HEDA	GRIFFIN, K.M.	MESZAROS, S.E.	SHULSE, J.	

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PSWBS ELEMENT / WORK PACKAGE	ADS	TOD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
71257	3826		35EW31209	ALPHA INSTRUMENTATION	HEDA	ALEXANDER, R.G.	MESZAROS, S.E.	SPRINGER, J	
71258	3826		35EW31209	RADIOCHEMISTRY INSTRUMENTATION	HEDA	ALEXANDER, R.G.	MESZAROS, S.E.	SPRINGER, J	
71263	3826		35EW31209	WASTE STANDARD CERTIFICATION PROGRA	HEDA	WEINGARDT, D..	MESZAROS, S.E.	SPRINGER, J	
71264	3826		35EW31209	CONTRACT LAB PROTOCOL CERT PHASE II	HEDA	WEINGARDT, D..	MESZAROS, S.E.	SPRINGER, J	
71265	3826		35EW31209	LIQUID CONFIRMATION MESUREMENT	HEDA	O NEILL, K.K.	MESZAROS, S.E.		
77403	3826		35EW31209	B-881 CONTRACT LAB CERTIFICATION	HEDA	WEINGARDT, D..	MESZAROS, S.E.	POSLUSZNY,	
ADE				WSRIC PROGRAM	HEDA	DUREL, F.M.	TBD, T..		
32302	3812	P116	EW7003000	ANALYTICAL METHOD DEVELOPMENT/IMPLE	HEDA	SCHOEN, J.M.	DEBOER, D.J.	DOYLE, G.	
62106	6730	DC3	EW7003000	BUILDING BOOK DOCUMENTATION	HEDA	HOFFMAN, M.A.	TBD, T..	DOYLE, G.	
62304	6730	DC2	EW7003000	WSRIC SAMPLING & ANALYSIS	HEDA	HOFFMAN, M.A.	TBD, T..	LUKOW, T.	
79153	6730	DC6	EW7003000	STRIPOUT/SITE PREP FOR WASTE ANALYS	HEDA	O NEIL, D.E.	GALLIMORE, J.E	LUKOW, T.	
AE				ACTINIDE SOLUTION STABILIZATION	HILB	HILBIG, J.G.	MCCORD, R.D.		
AEA				BLDG. 371 LIQUIDS STABILIZATION	FRAY	HILBIG, J.G.	MORGAN, M..		
35321	6720	SM7	EW7003000	PIPE AND TANK DRAINING - 371	FRAY	LARSEN, B.D.	MORGAN, M..		
35326	6720	SM7	EW7003000	CATEGORY B SOLUTION REMOVAL	FRAY	SCHMIDT, R.S.	MORGAN, M..	NISHIMOTO,	
79500	6720		EW7003000	B-371 CAUSTIC WASTE SYSTEM	FRAY	SPROWLS, D.R.	GALLIMORE, J.E	NISHIMOTO,	
79501	6720		EW7003000	B-371 VACUUM SYSTEM UPGRADE	FRAY	SPROWLS, D.R.	GALLIMORE, J.E	NISHIMOTO,	
AEB				BLDG.771 LIQUIDS STABILIZATION	FRAY	FRAY, R.E.	MCCORD, R.D.		
34315	6720		EW7003000	B-771 LIQUID STABILIZATION PROGRAM	FRAY	SCHMIDT, R.S.	MORGAN, M..	NISHIMOTO,	
34702	6720		EW7003000	B-771 LIQUID STABILIZATION SAFETY	FRAY	ZUREY, F.T.	MORGAN, M..	OLINGER, S.	
34703	6720		EW7003000	B-771 PIPE AND TANK DRAINING	FRAY	LARSEN, B.D.	MORGAN, M..		
AEC				BLDG. 771 MAINTENANCE & SURVEILLANC	FRAY	HO, B.S.	MORGAN, M..		
34112	6710	SM2	EW7002000	OTHER SURVEILLANCE	FRAY	BAILEY, D.C.	MORGAN, M..	RING, B.	
34113	6710	SM2	EW7002000	ADMINISTRATIVE SUPPORT & REGULATORY	FRAY	HAEG, T.H.	MORGAN, M..	RING, B.	
34202			EW7002000	EXPENSE PROJECTS	FRAY	WILLIAMSON, R.E	GALLIMORE, J.E		
34203			EW7002000	B-771 EXPENSE PROJECTS	FRAY	WILLIAMSON, R.E	GALLIMORE, J.E		
34222	6710	SM2	EW7002000	MAINTENANCE	FRAY	PARKER, M.R.	MORGAN, M..	RING, B.	
34301	6710	SM2	EW7002000	FACILITIES SUPPORT	FRAY	SZOZDA, R.M.	MORGAN, M..	RING, B.	
34302	6710		EW7002000	B-771 UTILITIES	FRAY	SZOZDA, R.M.	MORGAN, M..		
34305	6710	SM2	EW7002000	TECHNICAL SUPPORT	FRAY	WARD, J.G.	MORGAN, M..	RING, B.	
34308	6710	SM2	EW7002000	ENVIRONMENTAL COMPLIANCE MANAGEMENT	FRAY	SIMON, C.M.	MORGAN, M..	RING, B.	
AED				ACT. SOL. CAPITAL EQUIPMENT	FRAY	HILBIG, J.G.	MESZAROS, S.E.		
AEE				ACT. SOL. GPP	FRAY	HILBIG, J.G.	TIPPIN, C.G.		
AEF				RENOVATE Pu BLDGS UTILITY SYSTEM LI	FRAY	HILBIG, J.G.	GALLIMORE, J.E		
73301			39GB03010	B-771 MAIN FILTER PLENUM	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73302			39GB03010	PU UTIL: ELECTRICAL POWER SYSTEM	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73303			39GB03010	B-771 VENTILATION	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73304			39GB03010	B-774 VENTILATION	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73305			39GB03010	B-771 FU-1 FILTER PLENUM	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73306			39GB03010	B-771 FU-2B PLENUM	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73307			39GB03010	B-771 PIPING SYSTEM	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	

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73308			39GB03010	EG&G SUPPORT	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73309			39GB03010	PU UTILITIES: B-771 FU-2 FILTER PLE	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73310			39GB03010	INCINERATOR PLENUM	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
73311			39GB03010	RENOVATION OF PU BLDG UTILITIES	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	POSLUSZNY,	
75150			GB0305042	PU UTILITIES EXPENSE SUPPORT	FRAY	BENTZEN, K.L.	GALLIMORE, J.E	SPRINGER, J	
AF				TECHNOLOGY DEVELOPMENT	FRAY	RISING, T.L.	MCCORD, R.D.		
AFA				ENVIRONMENTAL TECHNOLOGY DEVELOPMEN	FRAY	RISING, T.L.	DENNIS, E..		
14305	RF1420	----	EW4020000	ROCKY FLATS COMPLIANCE PROGRAM	FRAY	HNATH, D.G.	DENNIS, E..	RUDOLPH, S.	
14308	RF1320	----	EW4020000	EXPEDITED TECHNOLOGY DEMONSTRATION	FRAY	PHILLIPS, D.E.	DENNIS, E..	RUDOLPH, S.	
14318	RF0250	----	EW4050000	TPM DETAILEE	FRAY	PETERSON, J.L.	DENNIS, E..	RUDOLPH, S.	
14320	RF1381	----	EW4080100	SAMPLE MANAGEMENT OFFICE	FRAY	DICK, J.R.	DENNIS, E..	PRYMAK, W.	
14409	RF1341	----	EW4040200	INDUSTRY INTEGRATION	GOLA	WESTPHAL, D.A.	DENNIS, E..	RUDOLPH, S.	
AFB				TECHNOLOGY INVESTMENT	FRAY	FRAY, R.E.	MCCORD, R.D.		
14402	RF1042	----	EW4040100	OUTREACH PROGRAM - RFFO MANAGED	FRAY	RFFO, ..	DENNIS, E..	SCHACHTER,	
14403	RF1042		EW4040100	EDUCATION OUTREACH	FRAY	JEMISON, E..	DENNIS, E..	SCHACHTER,	
14407	RF1141	----	EW4040200	CCEH - RFFO MANAGED CONTRACTS	RFFO	RFFO, ..	DENNIS, E..	RUDOLPH, S.	
91004		----	EW4020000	TTP 1112-02 - RFFO MANAGED CONTRACT	RFFO	RFFO, ..	DENNIS, E..	RUDOLPH, S.	
91005	RF0360		EW4060205	TTP 03600 - RFFO MANAGED CONTRACT	RFFO	RFFO, ..	DENNIS, E..	RUDOLPH, S.	
91006	RF036001		EW4050000	TTP 03600 - RFFO MANAGED CONTRACT	RFFO	RFFO, ..	DENNIS, E..		
91007	RF0250	----	EW4050000	PRDA - RFFO MANAGED	RFFO	RFFO, ..	DENNIS, E..	PEPE, J.	
AG				RESIDUE MANAGEMENT	FRAY	BALL, J.M.	MCCORD, R.D.		
AGA				RESIDUE MANAGEMENT	HEDA	KALLAS, A.J.	DEBOER, D.J.		
35325	6720	SM3	EW7003000	RESIDUE COMPLIANCE PROGRAM MANAGEME	HEDA	KALLAS, A.J.	DEBOER, D.J.	TYLER, R.	
62401	6720	SM1	EW7003000	RESIDUE PERMITTING	HEDA	KALLAS, A.J.	DEBOER, D.J.	TYLER, R.	
AGB				RESIDUE ELIMINATION PROJECT	FRAY	BALL, J.M.	HEGY, K.C.		
76111	6723		EW7003000	LECO CRUCIBLES REPACKAGING	FRAY	BALL, J.M.	HEGY, K.C.	TYLER, R.	
76112	6723		EW7003000	REPACKAGING SYSTEMS	FRAY	JOSSART, P.J.	HEGY, K.C.	TYLER, R.	
76113	6723		EW7003000	REPACKAGING FACILITIES	FRAY	THIEN, M.G.	HEGY, K.C.	TYLER, R.	
76114	6723		EW7003000	ACTINIDE RESIDUE TREATMENT FACILITI	FRAY	GEER, J.L.	HEGY, K.C.	TYLER, R.	
76115	6723		EW7003000	ACTINIDE RESIDUE TREATMENT PROCESSE	FRAY	SENDELWECK, V.S	HEGY, K.C.	TYLER, R.	
76116	6723		EW7003000	LDR/DNFSB 94-1 TREATMENT	FRAY	MURRAY, A.M.	HEGY, K.C.	TYLER, R.	
76117	6723		EW7003000	RESIDUE ELIMINATION LINE ITEM/CDR C	FRAY	MEYER, F.G.	HEGY, K.C.	TYLER, R.	
76118	6723		EW7003000	RESIDUE STORAGE STANDARDS	FRAY	BURDEAUX, P.A.	HEGY, K.C.	TYLER, R.	
76119	6723		EW7003000	TREATMENT STRATEGIES	FRAY	THORP, D.T.	HEGY, K.C.	TYLER, R.	
76120	6723		EW7003000	HANDLING/PACKAGING STRATEGIES	FRAY	SCHIERLOH, J.B.	HEGY, K.C.	TYLER, R.	
76121	6723		EW7003000	SOLID RESIDUE CHARACTERIZATION	FRAY	PLAUTZ, R.L.	HEGY, K.C.	TYLER, R.	
76122	6723		EW7003000	SAFE STORAGE ISSUE STRATEGIES	FRAY	HOPPER JR, M.P.	HEGY, K.C.	TYLER, R.	
76123	6723		EW7003000	RESIDUE SUPPORT SERVICES	FRAY	WILGERS, P.D.	HEGY, K.C.	TYLER, R.	
AGC				RESIDUE ELIMINATION PROJECT	FRAY	BALL, J.M.	HEGY, K.C.		
AH				PROGRAM DIRECTION DOE/RFFO - WM	RFFO	RFFO, ..	DEBOER, D.J.		

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PSWBS ELEMENT WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
AIA				PROGRAM DIR. DOE EW31 WASTE MGMT.	RFFO	RFFO, ..	DEBOER, D.J.		
AIB				PROGRAM DIR. DOE EW40 TECH. DEV.	RFFO	RFFO, ..	DEBOER, D.J.		
AIC				PROGRAM DIR. DOE EW70 TRANS.	RFFO	RFFO, ..	DEBOER, D.J.		
AI				TREATMENT, STORAGE & DISPOSAL	STIG	BROUSSARD, M.C.	COWEN, D.J.		
AIA				SITEWIDE OPERATIONS	STIG	BROUSSARD, M.C.	COWEN, D.J.		
12191	1271	----	EW2010301	ER TECHNICAL OPERATIONS	STIG	ANDERSON, K.D.	COWEN, D.J.	WILLIAMSON,	
12193	1271	----	EW2010301	FIELD OPERATIONS	STIG	WISEHART SR, R.	COWEN, D.J.	WILLIAMSON,	
12950	1271	----	EW2010301	OPERATIONS OF ALL DECON FACILITIES	STIG	SCHMIECHEN, A.K	COWEN, D.J.	WILLIAMSON,	
12951	1271	----	EW2010301	PROJECT SUPPORT SITEWIDE OPS	STIG	GREGORY FROST,	COWEN, D.J.	WILLIAMSON,	
12952	1271	----	EW2010301	WASTE HANDLING IDM	STIG	MYRICK, S.L.	COWEN, D.J.	WILLIAMSON,	
12955	1271	----	EW2010301	SITEWIDE OPS CONTINGENCY	STIG	STIGER, S.G.	COWEN, D.J.	WILLIAMSON,	
12956	1271		EW2010301	BUILDING OPERATIONS SUPPORT	STIG	MCQUILLAN, D.F.	COWEN, D.J.	WILLIAMSON,	
AIB				DESIGN & CONSTRUCTION	STIG	BROUSSARD, M.C.	COWEN, D.J.		
12102	1011	----	EW2010101	CONSTRUCTION	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12190	1271	----	EW2010301	ER TECHNICAL SUPPORT	STIG	HOPKINS, J.K.	COWEN, D.J.	WILLIAMSON,	
12801	1271	----	EW2010301	ER DATA ASSESSMENT (GEOCHEMISTRY)	STIG	SINGER, S.H.	COWEN, D.J.	WILLIAMSON,	
12802	1271	----	EW2010301	G/W MONITORING AND CHARACTERIZATION	STIG	SMITH JR, R.G.	COWEN, D.J.	CASTANEDA,	
12803	1271	----	EW2010301	GEOLOGICAL CHARACTERIZATION	STIG	DODGE, C.J.	COWEN, D.J.	WILLIAMSON,	
12954	1272		EW2010302	DESIGN/CONSTRUCT PROJECT SUPPORT	STIG	BURMEISTER, M.C	COWEN, D.J.		
12960	1272	----	EW2010302	DESIGN DECON PAD UPGRADES	STIG	LINDSAY, T.M.	COWEN, D.J.	WILLIAMSON,	
12961	1272	----	EW2010302	CONSTRUCTION DECON PAD UPGRADES	STIG	LINDSAY, T.M.	COWEN, D.J.	WILLIAMSON,	
12962	1272	----	EW2010302	INTERIM BULK STORAGE FACILITY	STIG	LINDSAY, T.M.	COWEN, D.J.	WILLIAMSON,	
12964	1272	----	EW2010302	DESIGN (RETRIEVEABLE SOILS STORAGE)	STIG	BENNETT, K.E.	COWEN, D.J.	WILLIAMSON,	
12965	1272	----	EW2010302	CONSTRUCTION (RETRIEVEABLE SOILS ST	STIG	BENNETT, K.E.	COWEN, D.J.	WILLIAMSON,	
12966	1272	----	EW2010302	DESIGN (SOILS SOLIDIFICATION FACILI	STIG	BENNETT, K.E.	COWEN, D.J.	WILLIAMSON,	
12967	1272	----	EW2010302	CONSTRUCTION (SOILS SOLIDIFICATION	STIG	BENNETT, K.E.	COWEN, D.J.	WILLIAMSON,	
12968	1272	----	EW2010302	DESIGN/CONSTRUCT IDM STORAGE FACILI	STIG	MCKEOWN, J.R.	COWEN, D.J.	WILLIAMSON,	
12972	1272	----	EW2010302	DESIGN (DECON WATER TREATMENT FACIL	STIG	BENNETT, K.E.	COWEN, D.J.	WILLIAMSON,	
12973	1272	----	EW2010302	CONSTRUCTION (DECON WATER TREATMENT	STIG	BENNETT, K.E.	COWEN, D.J.	WILLIAMSON,	
AIC				BLDG 865 DECON FACILITY	STIG	BROUSSARD, M.C.	COWEN, D.J.		

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B				NUCLEAR MATERIALS MANAGEMENT	VOOR	VOORHEIS, G.M.	CARPENTER, M.C	RUSCITTO, D	
BA				SNM PROGRAM MANAGEMENT	VOOR	ERFURDT, R.J.	CARPENTER, M.C	PRYHAK, W.	
BAA				SNM CONSOLIDATION	VOOR	ERFURDT, R.J.	STORRER, W.S.		
24601	6725		EW7003000	SNM PROCESSING 371	VOOR	BROWN, C.M.	STORRER, W.S.	RASK, W.	
24604	6725	SF1	EW7003000	SOLID PLUTONIUM REMEDIATION	VOOR	WING, S.C.	STORRER, W.S.	CHRIST, J.	
35555	6725		EW7003000	SNM CONSOLIDATION	VOOR	PASTORE, J.L.	STORRER, W.S.	CHRIST, J.	
35557	6725		EW7003000	NUCLEAR MATERIAL MANAGEMENT	VOOR	JAMES, W.H.	STORRER, W.S.	CHRIST, J.	
50190	6725	SF1	EW7003000	B-371 FSAR REVIEW FOR CONSOLIDATION	VOOR	HARDIN, S.A.	STORRER, W.S.	RASK, W.	
BAB				SNM SHIPPING	VOOR	ERFURDT, R.J.	CARPENTER, M.C		
44103			GB0305042	PRODUCT PACKAGING	VOOR	SMITH, L.J.	STORRER, W.S.	REECE, R.	
44104			GB0305042	SNM SHIPPING	VOOR	HILL, R.L.	STORRER, W.S.	REECE, R.	
44106			GB0305042	STOCKPILE RELIABILITY EVALUATION PR	VOOR	TBD, T..	STORRER, W.S.	REECE, R.	
44107			GB0305042	SURPLUS FISSILE MATERIAL	VOOR	BROWDY, S.L.	STORRER, W.S.	RASK, W.	
BAC				BLDG. 371 MAINTENANCE & SURVEILLANC	VOOR	MORGAN, E.L.	BROWN JR, G.W.		
35101	6710		EW7000000	B-371 SURVEILLANCES	VOOR	DAGGY, D.N.	BROWN JR, G.W.	RING, B.	
35201	6710		EW7000000	B-371 MAINTENANCE	VOOR	GALLEGOS, T.J.	BROWN JR, G.W.	RING, B.	
35204	6710		EW7000000	B-371 EXPENSE PROJECTS	VOOR	FRANZ JR, W.A.	GALLIMORE, J.E	RING, B.	
35301	6710		GB0307040	B-371 OPERATIONS MANAGEMENT	VOOR	VAN TYNE, H..	BROWN JR, G.W.	RING, B.	
35308	6710		EW7000000	B-371 ENVIRONMENTAL COMPLIANCE MANA	VOOR	HENDERSON, J.L.	BROWN JR, G.W.	RING, B.	
BAF				STABILIZATION & CLOSURE PROJECTS	FRAY	KARAS, T.M.	CARPENTER, M.C		
24536	6720		EW7003000	PU IN THE DUCTS	FRAY	DUGUALE, J..	HEGY, K.C.	BAKKE, P.	
50165	6725	SF1	EW7003000	URANIUM SOLUTION SHIPMENT (B-886)	FRAY	KARAS, T.M.	HEGY, K.C.	REECE, R.	
50166	6720		EW7003000	MANAGEMENT OF RASCHIG RING TANK	FRAY	SMITH, A.W.	HEGY, K.C.		
50167	6720		EW7003000	RCRA CLOSURE PROJECT PLANNING & FAC	FRAY	SMITH, A.W.	HEGY, K.C.		
62404	6720		EW7003000	MIXED RESIDUE TANK CLOSURE	FRAY	GORMAN, D.L.	HEGY, K.C.	NISHIMOTO,	
BAG				BLDG. 886 MAINTENANCE & SURVEILLANC	FRAY	MO, B.S.	CARPENTER, M.C		
49100			EW7003000	B-886 SURVEILLANCE	FRAY	CORLE, R.R.	CARPENTER, M.C		
49200			EW7003000	B-886 MAINTENANCE	FRAY	PARKER, M.R.	CARPENTER, M.C		
49300			EW7003000	B-886 BUILDING SUPPORT	FRAY	HAEG, T.H.	CARPENTER, M.C		
BAH				SNM CAPITAL EQUIPMENT	VOOR	ERFURDT, R.J.	MESZAROS, M.P.		
71305	RF1211		35EW40101	B-991 GC/MS	HEDA	O NEIL, D.E.	MESZAROS, M.P.	RUDOLPH, S.	
75610	6746		35GB03010	MISC. CAPITAL EQUIP PROJECTS	VOOR	MESZAROS, M.P.	MESZAROS, M.P.	SPRINGER, J	
BAI				SNM GPP	VOOR	ERFURDT, R.J.	TIPPIN, C.G.		
BAK				BLDG. 707 MAINTENANCE & SURVEILLANC	PIZZ	HOLIFIELD, A.J.	ROBINSON, S.J.		
24101	6710		EW7002000	COMPLIANCE SURVEILLANCE	PIZZ	SORENSON, L.S.	COLLINS, R.V.	RING, B.	
24201	6710		EW7002000	BASELINE MAINTENANCE	PIZZ	SCHMIDT, R.L.	ROBINSON, S.J.	RING, B.	
24203			EW7002000	B-707 EXPENSE PROJECTS	PIZZ	WILLIAMSON, R.E	GALLIMORE, J.E		
24301	6710		EW7002000	BUILDING OPERATIONS MANAGEMENT	PIZZ	ENGE N.L.	JORDAN, D.D.	RING, B.	
24305	6710		EW7002000	OPERATIONS TECHNICAL SUPPORT	PIZZ	ENGE N.L.	JORDAN, D.D.	RING, B.	

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BAL				BLDG. 991 MAINTENANCE & SURVEILLANC	PIZZ	WILSON, S.L.	JORDAN, D.D.		
26101	6710	SM5	EW7002000	COMPLIANCE SURVEILLANCE	PIZZ	SORENSON, L.S.	COLLINS, R.V.	RING, B.	
26201	6710	SM5	EW7002000	BASELINE MAINTENANCE	PIZZ	SCHMIDT, R.L.	ROBINSON, S.J.	RING, B.	
26203			EW7002000	B-991 EXPENSE PROJECTS	PIZZ	WILLIAMSON, R.E	WILLIAMSON, R.		
26301	6710	SM5	EW7002000	BUILDING OPERATION: MANAGEMENT	PIZZ	ENGEL, N.L.	JORDAN, D.D.	RING, B.	
26305	6710	SM5	EW7002000	OPERATIONS TECHNICAL SUPPORT	PIZZ	ENGEL, N.L.	JORDAN, D.D.	RING, B.	
BB				SAFEGUARDS & SECURITY	KELL	CARNIVAL, G.J.	BERG, E.J.	PRYMAK, W. I	
BBA				SAFEGUARDS	KELL	CARNIVAL, B.J.	BERG, E.J.		
58101			GB0305042	SAFEGUARDS & SECURITY SYSTEMS	KELL	GARDNER, K.N.	ELMORE, L.E.	HICKS, D.	
58102			GB0305042	SNM INVENTORY AND CONTROL	KELL	GIACOMINI, J.J.	ELMORE, L.E.	HICKS, D.	
58103			GB0305042	SNM SAFEGUARDS MEASUREMENT	KELL	GIACOMINI, J.J.	ELMORE, L.E.	HICKS, D.	
58104			GB0305042	PSAP	KELL	CARNIVAL, G.J.	ELMORE, L.E.	HEIDEMANN,	
81207	6750		GB0305042	SAFEGUARDS & SECURITY EXPENSE PROJE	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
BBB				ELECTRONIC MAINTENANCE	FERR	MARSHALL, K.G.	CURRIER, L.J.	BENNETT, W.	
57601	6750		EW7000000	ELECTRONIC MAINTENANCE	FERR	MARSHALL, K.G.	CURRIER, L.J.	BENNETT, W.	
BBC				SECURITY (WSI DIRECT)	GILL	GILLISON, W.R.	BERG, E.J.		
58201			GB0305042	WSI DIRECT ALLOCATION	GILL	GILLISON, W.R.	ELMORE, L.E.	HOLIFIELD,	
BBD				S&S CAPITAL EQUIPMENT	KELL	LEONARD, R.C.	MESZAROS, M.P.		
75692	6746		EW7030000	EW70 CAPITAL EQUIPMENT EXPENSE SUPP	KELL	CUTLIP, D.A.	MESZAROS, M.P.	POSLUSZNY,	
77542			35GB03010	S&S PENDING CLOSEOUT CAPITAL EQUIPM	KELL	WILLIAMSON, R.E	MESZAROS, M.P.	POSLUSZNY,	
BBE				S&S MODIFICATION LINE ITEM	KELL	OPPEDAL, P.W.	TIPPIN, C.G.		
73292	6759		39EW70300	I&E PROJECT CONSTRUCTION CLOSEOUT	KELL	THOMSON, J.R.	TIPPIN, C.G.	POSLUSZNY,	
73295	6759	----	39EW70300	SAFEGUARDS AND SECURITY MODIFICATIO	KELL	THOMSON, J.R.	TIPPIN, C.G.	POSLUSZNY,	
73401			39GB03010	S&S UPGRADE PHASE II LINE ITEM	KELL	THOMSON, J.R.	TIPPIN, C.G.	POSLUSZNY,	
75114	6759		EW7030000	I&E EXPENSE SUPPORT	KELL	THOMSON, J.R.	TIPPIN, C.G.	POSLUSZNY,	
BBF				MSSA/MSTF LINE ITEM	KELL	CARNIVAL, G.J.	CORDILLA, M.A.		
74301	6757	----	39EW70300	MSSA/MSTF CAPITAL PROJECTS	KELL	THOMPSON, D.S.	CORDILLA, M.A.	POSLUSZNY,	
75120	6757	----	EW7030000	MSSA/MSFT SECURITY UPGRADES EXPENSE	KELL	THOMPSON, D.S.	CORDILLA, M.A.	POSLUSZNY,	
BBG				S&S GENERAL PLANT PROJECTS	KELL	WILLIAMSON, R.E	TIPPIN, C.G.		
75347			39GB03010	SUPERVISOR STS BATT CHARGER	KELL	WILLIAMSON, R.E	TIPPIN, C.G.	POSLUSZNY,	
75348			39GB03010	STORAGE VAULT 779A	KELL	WILLIAMSON, R.E	TIPPIN, C.G.	POSLUSZNY,	
75350			39GB03010	PEDESTRIAN WALK/WAIT LIGHT	KELL	WILLIAMSON, R.E	TIPPIN, C.G.	POSLUSZNY,	

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PSWHS ELEMENT / WORK PACKAGE	ADS	TDD/ BUD	R&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
C				ENVIRONMENTAL RESTORATION PROGRAM	STIG	STIGER, S.G.	PIBURN, R.H.	ROBERSON, J	
CA				REMEDIAL ACTIONS	STIG	STIGER, S.G.	PIBURN, R.H.	LOCKHART, F	
CAA				OU#1 881 HILLSIDE	STIG	PRIMROSE, A.L.	FROECHTENIGT F		
12002	1001	----	EW2010102	DESIGN	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12003	1001	----	EW2010102	TESTING AND OPS	STIG	CIRILLO, J.R.	FROECHTENIGT F	GRACE, S.	
12005	1001	----	EW2010101	REMEDIAL INVESTIGATION	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12006	1001	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12007	1001	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12008	1001	----	EW2010102	REMEDIAL ACTION PLAN	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12009	1001	----	EW2010102	RECORD OF DECISION	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12010	1001	----	EW2010102	SAFETY ANALYSIS REPORT	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12012	1001	----	EW2010102	PERFORMANCE MONITORING	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12013	1001	----	EW2010101	PROJECT SUPPORT	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12016	1001	----	EW2010101	WETLANDS	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12017	1001	----	EW2010101	CONTINGENCY	STIG	PRIMROSE, A.L.	FROECHTENIGT F	GRACE, S.	
12018	1001	----	EW2010102	CONCEPTUAL DESIGN - OU#1	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12019	1001	----	EW2010102	TITLE I DESIGN - OU#1	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12020	1001	----	EW2010102	TITLE II DESIGN - OU#1	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12021	1001	----	EW2010102	TITLE III DESIGN - OU#1	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12022	1001	----	EW2010102	PRE-CONSTRUCTION - OU#1	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12023	1001	----	EW2010102	CONSTRUCTION - OU#1	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12024	1001	----	EW2010102	TESTING - OU#1	STIG	HOUK, R.Z.	FROECHTENIGT F	GRACE, S.	
12979	1001		EW2010102	ACCLE CLEANUP - OU#1 HOT SPOT REMOV	STIG	SPROLES, W.R.	FROECHTENIGT F	GRACE, S.	
CAB				OU#2 903 PAD	STIG	BUSBY, W.S.	GRANT, T.A.		
12050	1002	----	EW2010102	OU#2 OPERATIONS AND MAINTENANCE	STIG	VESS, N..	GRANT, T.A.	GRACE, S.	
12053	1002	----	EW2010102	OU#2 SOIL VAPOR EXTRACTION TEST SIT	STIG	KLEIN, M.D.	GRANT, T.A.	GRACE, S.	
12054	1002	----	EW2010102	OU#2 SOIL VAPOR EXTRACTION TEST SIT	STIG	KLEIN, M.D.	GRANT, T.A.	GRACE, S.	
12057	1002	----	EW2010101	REMEDIAL INVESTIGATION	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12058	1002	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	LONG, A.M.	GRANT, T.A.	GRACE, S.	
12059	1002	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12060	1002	----	EW2010102	REMEDIAL ACTION PLAN	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12062	1002	----	EW2010102	RECORD OF DECISION	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12063	1002	----	EW2010102	SAFETY ANALYSIS REPORT	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12064	1002	----	EW2010102	PERFORMANCE MONITORING	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12065	1002	----	EW2010101	PROJECT SUPPORT	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12066	1002	----	EW2010102	CONTINGENCY	STIG	BUSBY, W.S.	GRANT, T.A.	GRACE, S.	
12067	1002	----	EW2010102	CONCEPTUAL DESIGN -OU#2	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12068	1002	----	EW2010102	TITLE I DESIGN - OU#2	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12069	1002	----	EW2010102	TITLE II DESIGN - OU#2	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12070	1002	----	EW2010102	TITLE III DESIGN - OU#2	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12071	1002	----	EW2010102	PRE-CONSTRUCTION - OU#2	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12072	1002	----	EW2010102	CONSTRUCTION - OU#2	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12073	1002	----	EW2010102	TESTING - OU#2	STIG	LAURIN, P.J.	GRANT, T.A.	GRACE, S.	
12192	1002	----	EW2010301	SITEWIDE TREATABILITY STUDIES	STIG	EHLICH, O..	GRANT, T.A.	GRACE, S.	
12800	1002	----	EW2010301	SUPFICIAL SOILS	STIG	JAUHARAJS, S.R.	GRANT, T.A.	GRACE, S.	
12804	1002		EW2010301	SOIL MONITORING/ASSESSMENT PROGRAM	STIG	LITAOR, M.Z.	GRANT, T.A.	GRACE, S.	

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PBWBS ELEMENT / WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
12805	1002		EW2010301	RADIOLOGICAL CHARACTERIZATION	STIG	OERTEL, C.P.	GRANT, T.A.	GRACE, S.	
CAC				OU#3 OFFSITE	STIG	PRIMROSE, A.L.	FROECHTENIGT F		
12100	1011	----	EW2010101	IRA PLAN	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12103	1011	----	EW2010101	DESIGN	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12104	1011	----	EW2010101	TESTING AND OPS	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12106	1011	----	EW2010101	REMEDIAL INVESTIGATION	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12107	1011	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12108	1011	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	BUDDY, M.S.	FROECHTENIGT F	GRACE, S.	
12109	1011	----	EW2010101	REMEDIAL ACTION PLAN	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12110	1011	----	EW2010101	RECORD OF DECISION	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12112	1011	----	EW2010101	SAFETY ANALYSIS REPORT	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12113	1011	----	EW2010101	PERFORMANCE MONITORING	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12114	1011	----	EW2010101	PROJECT SUPPORT	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12115	1011	----	EW2010101	CONTINGENCY	STIG	PRIMROSE, A.L.	FROECHTENIGT F	BIRK, R.	
12116	1011	----	EW2010101	CONCEPTUAL DESIGN - OU#3	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12117	1011	----	EW2010101	TITLE I DESIGN - OU#3	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12118	1011	----	EW2010101	TITLE II DESIGN - OU#3	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12119	1011	----	EW2010101	TITLE III DESIGN - OU#3	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12120	1011	----	EW2010101	PRE-CONSTRUCTION - OU#3	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12121	1011	----	EW2010101	CONSTRUCTION - OU#3	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
12122	1011	----	EW2010101	TESTING - OU#3	STIG	BUDDY, M.S.	FROECHTENIGT F	BIRK, R.	
CAD				OU#4 SOLAR PONDS	STIG	KEITH, S.R.	PENNELL, J.E.	LOCKHART, F	
12130	1258		EW2010202	CONCEPTUAL DESIGN	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12131	1258		EW2010202	TITLE I DESIGN	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12132	1258		EW2010202	TITLE II DESIGN	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12133	1258		EW2010202	PRE-CONSTRUCTION	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12134	1258		EW2010202	CONSTRUCTION	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12135	1258		EW2010202	TESTING	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12147	1258		EW2010204	CONSTRUCTION - SLUDGE	STIG	ORELL, M.D.	PENNELL, J.E.	LOCKHART, F	
12148	1258		EW2010204	TESTING - OPS	STIG	SCHMIDT, T.D.	PENNELL, J.E.	LOCKHART, F	
12152	1258	----	EW2010204	WASTE DISPOSAL	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12153	1258	----	EW2010204	WASTE STORAGE	STIG	ORELL, M.D.	PENNELL, J.E.	LOCKHART, F	
12157	1258	----	EW2010204	TESTING AND OPS	STIG	BOYLE, R.M.	PENNELL, J.E.	LOCKHART, F	
12159	1258	----	EW2010201	RCRA FACILITY INVESTIGATION	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12162	1258	----	EW2010204	INTERIM MEASURE DECISION	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12165	1258	----	EW2010201	PHASE II RCRA FACILITY INVESTIGATIO	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12166	1258	----	EW2010201	CORRECTIVE MEASURE STUDY	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12167	1258	----	EW2010201	FINAL ACTION PLAN	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12168	1258	----	EW2010201	FINAL ACTION DECISION	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12173	1258	----	EW2010204	PERFORMANCE MONITORING (IM/IRA)	STIG	OGG, R.T.	ZARRET, J..	LOCKHART, F	
12174	1258	----	EW2010204	PROJECT SUPPORT	STIG	RINGLE, D.A.	ZARRET, J..	LOCKHART, F	
12175	1258	----	EW2010204	CONTINGENCY	STIG	KEITH, S.R.	PENNELL, J.E.	LOCKHART, F	
12176	1258	----	EW2010204	CONCEPTUAL DESIGN - OU#4	STIG	BECKMAN, T.D.	PENNELL, J.E.	LOCKHART, F	
12178	1258	----	EW2010204	TITLE II DESIGN - OU#4	STIG	BECKMAN, T.D.	PENNELL, J.E.	LOCKHART, F	
12179	1258	----	EW2010204	TITLE III DESIGN - OU#4	STIG	BECKMAN, T.D.	PENNELL, J.E.	LOCKHART, F	
12180	1258	----	EW2010204	PRE-CONSTRUCTION - OU#4	STIG	ERICKSON, D.S.	ZARRET, J..	LOCKHART, F	
12181	1258	----	EW2010204	CONSTRUCTION - OU#4	STIG	ERICKSON, D.S.	PENNELL, J.E.	LOCKHART, F	

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12183	1258	----	EW2010204	CONCEPTUAL DESIGN - OU#4	STIG	ERICSON, D.R.	ZARRET, J..	LOCKHART, F	
12185	1258	----	EW2010204	TITLE II DESIGN - OU#4	STIG	ERICSON, D.R.	ZARRET, J..	LOCKHART, F	
12187	1258		EW2010204	TESTING AND OPS - SLUDGE CONSOLIDAT	STIG	BOYLE, R.W.	PENNELL, J.E.	LOCKHART, F	
12188	1258		EW2010204	SAFETY ANALYSIS DOCUMENT - SLUDGE C	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12189			EW2010204	TREATABILITY - SLUDGE	STIG	SCHMIDT, T.D.	PENNELL, J.E.		
12500	1258		EW2010204	CONCEPTUAL DESIGN - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12501	1258		EW2010204	TITLE I DESIGN - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12502	1258		EW2010204	TITLE II DESIGN - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12503	1258		EW2010204	TITLE III DESIGN - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12504	1258		EW2010204	PRE-CONSTRUCTION - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12505	1258		EW2010204	CONSTRUCTION - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12506	1258		EW2010204	OPERATIONS - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.	LOCKHART, F	
12507	1258		EW2010204	TESTING CLEANUP/TRANSFER - REMIX	STIG	FERRIER, D.R.	PENNELL, J.E.		
CAE				OU#5 WOMAN CREEK	STIG	MAST, E.C.	PEPER, K.E.		
12200	1005	----	EW2010101	IRA PLAN	STIG	MAST, E.C.	PEPER, K.E.	PEPE, J.	
12203	1005	----	EW2010101	CONSTRUCTION	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12204	1005	----	EW2010101	DESIGN	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12205	1005	-+-	EW2010101	TESTING AND OPS	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12207	1005	----	EW2010101	REMEDIAL INVESTIGATION	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12208	1005	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12209	1005	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12210	1005	----	EW2010101	REMEDIAL ACTION PLAN	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12215	1005	----	EW2010101	RECORD OF DECISION	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12216	1005	----	EW2010101	SAFETY ANALYSIS REPORT	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12217	1005	----	EW2010101	PERFORMANCE MONITORING	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12218	1005	----	EW2010101	PROJECT SUPPORT	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12219	1005	----	EW2010101	CONTINGENCY	STIG	MAST, E.C.	PEPER, K.E.	PEPE, J.	
12220	1005	----	EW2010101	CONCEPTUAL DESIGN - OU#5	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12221	1005	----	EW2010101	TITLE I DESIGN - OU#5	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12222	1005	----	EW2010101	TITLE II DESIGN - OU#5	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12223	1005	----	EW2010101	TITLE III DESIGN - OU#5	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12224	1005	----	EW2010101	PRE-CONSTRUCTION - OU#5	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12225	1005	----	EW2010101	CONSTRUCTION - OU#5	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
12226	1005	----	EW2010101	TESTING - OU#5	STIG	BICHER, C.A.	PEPER, K.E.	PEPE, J.	
CAF				OU#6 WALNUT CREEK	STIG	MAST, E.C.	PEPER, K.E.	PEPE, J.	
12250	1014	----	EW2010101	IRA PLAN	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12251	1014	----	EW2010101	CONSTRUCTION	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12252	1014	----	EW2010101	DESIGN	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12253	1014	----	EW2010101	TESTING AND OPS	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12255	1014	----	EW2010101	REMEDIAL INVESTIGATION	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12256	1014	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12257	1014	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12258	1014	----	EW2010101	REMEDIAL ACTION PLAN	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12259	1014	----	EW2010101	RECORD OF DECISION	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12260	1014	----	EW2010101	SAFETY ANALYSIS REPORT	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12261	1014	----	EW2010101	PERFORMANCE MONITORING	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12262	1014	----	EW2010101	PROJECT SUPPORT	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	

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PSWBS ELEMENT WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
12263	1014	----	EW2010101	CONTINGENCY	STIG	MAST, E.C.	PEPER, K.E.	PEPE, J.	
12264	1014	----	EW2010101	CONCEPTUAL DESIGN - OU#6	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12265	1014	----	EW2010101	TITLE I DESIGN - OU#6	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12266	1014	----	EW2010101	TITLE II DESIGN - OU#6	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12267	1014	----	EW2010101	TITLE III DESIGN - OU#6	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12268	1014	----	EW2010101	PRE-CONSTRUCTION - OU#6	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12269	1014	----	EW2010101	CONSTRUCTION - OU#6	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12270	1014	----	EW2010101	TESTING - OU#6	STIG	HOLSTEEN, N.A.	PEPER, K.E.	PEPE, J.	
12850	1014	----	EW2010102	IM/IRA PLAN & IMPLEMENTATION	STIG	PORTER, G.V.	PEPER, K.E.	PEPE, J.	
12976	1014		EW2010101	ACCELERATED CLEAN UP - OU#6 - 964 Y	STIG	WILSON, E.L.	PEPER, K.E.	SARTER, R.	
12978			EW2010101	ACCELERATED CLEANUP FILTER SOCK SHI	STIG	KINNEY, J.G.	PEPER, K.E.		
CAG				OU#7 LANDFILL	STIG	MAST, E.C.	PEPER, K.E.	PEPE, J.	
12300	1255	----	EW2010201	RCRA FACILITY INVESTIGATION/IM	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12301	1255		EW2010201	CORRECTIVE MEASURES STUDY/IM	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12302	1255	----	EW2010201	INTERIM MEASURE DECISION	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12303	1255		EW2010201	SAFETY ANALYSIS REPORT	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12304	1255	----	EW2010201	PERFORMANCE MONITORING	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12305	1255	----	EW2010201	RCRA FACILITY INVESTIGATION/FINAL A	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12306	1255	----	EW2010201	CORRECTIVE MEASURES STUDY/FINAL ACT	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12307	1255	----	EW2010201	FINAL ACTION PLAN	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12308	1255	----	EW2010201	LEACHATE EXCELLERATED ACTION MEMORA	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12310	1255	----	EW2010201	PERFORMANCE MONITORING	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12311	1255	----	EW2010201	PROJECT SUPPORT	STIG	PETERSON WRIGHT	PEPER, K.E.	SARTER, R.	
12314	1255	----	EW2010201	CONTINGENCY	STIG	MAST, E.C.	PEPER, K.E.	PEPE, J.	
12316	1255		EW2010201	TITLE I DESIGN - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12317	1255		EW2010201	TITLE II DESIGN - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12318	1255		EW2010201	TITLE III DESIGN - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12319	1255		EW2010201	PRE-CONSTRUCTION - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12320	1255	----	EW2010201	CONSTRUCTION - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12321	1255	----	EW2010201	TESTING - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12323	1255		EW2010201	TITLE I DESIGN - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12324	1255		EW2010201	TITLE II DESIGN - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12325	1255		EW2010201	TITLE III DESIGN - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12326	1255		EW2010201	PRE-CONSTRUCTION - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12327	1255	----	EW2010201	CONSTRUCTION - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
12328	1255	----	EW2010201	TESTING - OU#7	STIG	PETERSON WRIGHT	PEPER, K.E.	PEPE, J.	
CAH				OU#8 700 AREA	STIG	PETERMAN, B.D.	VAN DORE, D.P.		
12196	1006	----	EW2010302	INDUSTRIAL AREA IM/IRA	STIG	BUDDY, M.S.	VAN DORE, D.P.	SARTER, R.	
12350	1006	----	EW2010101	IRA PLAN	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12351	1006	----	EW2010101	CONSTRUCTION	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12352	1006	----	EW2010101	DESIGN	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12353	1006	----	EW2010101	TESTING AND OPS	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12355	1006	----	EW2010101	REMEDIAL INVESTIGATION	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12356	1006	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12357	1006	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12358	1006	----	EW2010102	REMEDIAL ACTION PLAN	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12359	1006	----	EW2010102	RECORD OF DECISION	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	

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12360	1006		---- EW2010102	SAFETY ANALYSIS REPORT	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12361	1006		---- EW2010102	PERFORMANCE MONITORING	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12362	1006		---- EW2010101	PROJECT SUPPORT	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12363	1006		---- EW2010101	CONTINGENCY	STIG	PETERMAN, B.D.	VAN DORE, D.P.	SARTER, R.	
12364	1006		---- EW2010102	CONCEPTUAL DESIGN - OU#8	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12365	1006		---- EW2010102	TITLE I DESIGN - OU#8	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12366	1006		---- EW2010102	TITLE II DESIGN - OU#8	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12367	1006		---- EW2010102	TITLE III DESIGN - OU#8	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12368	1006		---- EW2010102	PRE-CONSTRUCTION - OU#8	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12369	1006		---- EW2010102	CONSTRUCTION - OU#8	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
12370	1006		---- EW2010102	TESTING - OU#8	STIG	FULLER, W.A.	VAN DORE, D.P.	SARTER, R.	
CAI				OU#9 PROCESS WASTE LINES	STIG	PETERMAN, B.D.	VAN DORE, D.P.	SARTER, R.	
12400	1251		---- EW2010201	RCRA FACILITY INVESTIGATION/IM	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12401	1251		---- EW2010101	CORRECTIVE MEASURES STUDY/IM	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12402	1251		---- EW2010102	INTERIM MEASURE DECISION	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12403	1251		---- EW2010102	SAFETY ANALYSIS REPORT/IM	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12404	1251		---- EW2010102	PERFORMANCE MONITORING	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12405	1251		---- EW2010101	RCRA FACITILY INVESTIGATION/FINAL A	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12406	1251		--+- EW2010101	CORRECTIVE MEASURES STUDY/FINAL ACT	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12407	1251		---- EW2010102	FINAL ACTION PLAN	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12408	1251		---- EW2010102	FINAL ACTION DECISION	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12409	1251		---- EW2010102	SAFETY ANALYSIS REPORT	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12410	1251		---- EW2010102	PERFORMANCE MONITORING/FINAL ACTION	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12411	1251		---- EW2010101	PROJECT SUPPORT	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12412	1251		---- EW2010101	CONTINGENCY	STIG	PETERMAN, B.D.	VAN DORE, D.P.	SARTER, R.	
12413	1251		---- EW2010102	CONCEPTUAL DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12414	1251		---- EW2010102	TITLE I DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12415	1251		---- EW2010102	TITLE II DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12416	1251		---- EW2010102	TITLE III DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12417	1251		---- EW2010102	PRE-CONSTRUCITON - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12418	1251		---- EW2010102	CONSTRUCTION - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12419	1251		---- EW2010102	TESTING - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12420	1251		---- EW2010102	CONCEPTUAL DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12421	1251		---- EW2010102	TITLE I DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12422	1251		---- EW2010102	TITLE II DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12423	1251		---- EW2010102	TITLE III DESIGN - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12424	1251		---- EW2010102	PRE-CONSTRUCTION - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12425	1251		---- EW2010102	CONSTRUCTION - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
12426	1251		---- EW2010102	TESTING - OU#9	STIG	COWDERY, C.D.	VAN DORE, D.P.	SARTER, R.	
CAJ				OU#10 OUTSIDE CLOSURES	STIG	PETERMAN, B.D.	VAN DORE, D.P.		
12450	1231		---- EW2010201	RCRA FACILITY INVESTIGATION/IM	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12451	1231		---- EW2010201	CORRECTIVE MEASURES STUDY/IM	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12452	1231		---- EW2010202	INTERIM MEASURE DECISION	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12453	1231		---- EW2010202	SAFETY ANALYSIS REPORT	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12454	1231		---- EW2010202	PERFORMANCE MONITORING/IM	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12455	1231		---- EW2010202	RCRA FACILITY INVESTIGATION/FINAL A	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12456	1231		---- EW2010202	CORRECTIVE MEASURES STUDY/FINAL ACT	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	

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12457	1231	----	EW2010202	FINAL ACTION PLAN	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12458	1231	----	EW2010202	FINAL ACTION DECISION	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12459	1231	----	EW2010202	SAFETY ANALYSIS	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12460	1231	----	EW2010202	PERFORMANCE MONITORING/FINAL ACTION	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12461	1231	----	EW2010201	PROJECT SUPPORT	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12462	1231	----	EW2010201	CONTINGENCY	STIG	PETERMAN, B.D.	VAN DORE, D.P.	SARTER, R.	
12463	1231	----	EW2010202	CONCEPTUAL DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12464	1231	----	EW2010202	TITLE I DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12465	1231	----	EW2010202	TITLE II DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12466	1231	----	EW2010202	TITLE III DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12467	1231	----	EW2010202	PRE-CONSTRUCTION - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12468	1231	----	EW2010202	CONSTRUCTION - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12469	1231	----	EW2010202	TESTING - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12470	1231	----	EW2010202	CONCEPTUAL DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12471	1231	----	EW2010202	TITLE I DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12472	1231	----	EW2010202	TITLE II DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12473	1231	----	EW2010202	TITLE III DESIGN - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12474	1231	----	EW2010202	PRE-CONSTRUCTION - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12475	1231	----	EW2010202	CONSTRUCTION - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
12476	1231	----	EW2010202	TESTING - OU#10	STIG	ANDERSON, G.A.	VAN DORE, D.P.	SARTER, R.	
CAK				OU#11 WEST SPRAY FIELD	STIG	PRIMROSE, A.L.	BLAKESLEE, D.J		
12510	1261	----	EW2010201	RCRA FACILITY INVESTIGATION/IM	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12511	1261	----	EW2010201	CORRECTIVE MEASURES STUDY/IM	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12512	1261	----	EW2010201	INTERIM MEASURE DECISION	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12513	1261		EW2010201	SAFETY ANALYSIS REPORT	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12514	1261	----	EW2010201	PERFORMANCE MONITORING	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12515	1261	----	EW2010201	RCRA FACILITY INVESTIGATION/FINAL A	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12516	1261	----	EW2010201	CORRECTIVE MEASURES STUDY/FINAL ACT	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12517	1261	----	EW2010201	FINAL ACTION PLAN	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12518	1261	----	EW2010201	FINAL ACTION DECISION	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12520	1261	----	EW2010201	PERFORMANCE MONITORING	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12521	1261	----	EW2010201	PROJECT SUPPORT	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12522	1261	----	EW2010201	CONTINGENCY	STIG	PRIMROSE, A.L.	BLAKESLEE, D.J	PEPE, J.	
12524	1261		EW2010201	TITLE I DESIGN - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12525	1261		EW2010201	TITLE II DESIGN - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12526	1261		EW2010201	TITLE III DESIGN - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12527	1261		EW2010201	PRE-CONSTRUCTION - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12528	1261	----	EW2010201	CONSTRUCTION - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12529	1261	----	EW2010201	TESTING - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12531	1261		EW2010201	TITLE I DESIGN - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12532	1261		EW2010201	TITLE II DESIGN - OU #11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12533	1261		EW2010201	TITLE III DESIGN - #11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12534	1261		EW2010201	PRE-CONSTRUCTION - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12535	1261	----	EW2010201	CONSTRUCTION - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
12536	1261	----	EW2010201	TESTING - OU#11	STIG	O NEILL, K.K.	BLAKESLEE, D.J	PEPE, J.	
CAL				OU#12 400/800 AREA	STIG	PETERMAN, B.D.	VAN DORE, D.P.		
12550	1007	----	EW2010101	IRA PLAN	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	

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PSWBS ELEMENT WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
12551	1007	----	EW2010101	CONSTRUCTION	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12552	1007	----	EW2010101	DESIGN	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12553	1007	----	EW2010101	TESTING AND OPS	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12555	1007	----	EW2010101	REMEDIAL INVESTIGATION	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12556	1007	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12557	1007	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12558	1007	----	EW2010102	REMEDIAL ACTION PLAN	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12559	1007	----	EW2010102	RECORD OF DECISION	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12560	1007	----	EW2010102	SAFETY ANALYSIS REPORT	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12561	1007	----	EW2010102	PERFORMANCE MONITORING	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12562	1007	----	EW2010101	PROJECT SUPPORT	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12563	1007	----	EW2010101	CONTINGENCY	STIG	PETERMAN, B.D.	VAN DORE, D.P.	SLATEN, S.	
12564	1007	----	EW2010102	CONCEPTUAL DESIGN - OU#12	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12565	1007	----	EW2010102	TITLE I DESIGN - OU#12	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12566	1007	----	EW2010102	TITLE II DESIGN - OU#12	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12567	1007	----	EW2010102	TITLE III DESIGN - OU#12	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12568	1007	----	EW2010102	PRE-CONSTRUCTION - OU#12	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12569	1007	----	EW2010102	CONSTRUCTION - OU#12	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
12570	1007	----	EW2010102	TESTING - OU#12	STIG	SMITH, S.B.	VAN DORE, D.P.	SARTER, R.	
CAM				OU#13 100 AREA	STIG	PETERMAN, B.D.	VAN DORE, D.P.		
12611	1008	----	EW2010101	IRA PLAN	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12612	1008	----	EW2010101	CONSTRUCTION	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12613	1008	----	EW2010101	DESIGN	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12614	1008	----	EW2010101	TESTING AND OPS	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12616	1008	----	EW2010101	REMEDIAL INVESTIGATION	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12617	1008	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12618	1008	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12619	1008	----	EW2010102	REMEDIAL ACTION PLAN	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12620	1008	----	EW2010102	RECORD OF DECISION	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12621	1008	----	EW2010102	SAFETY ANALYSIS REPORT	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12622	1008	----	EW2010102	PERFORMANCE MONITORING	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12623	1008	----	EW2010101	PROJECT SUPPORT	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12624	1008	----	EW2010101	CONTINGENCY	STIG	PETERMAN, B.D.	VAN DORE, D.P.	SARTER, R.	
12625	1008	----	EW2010102	CONCEPTUAL DESIGN - OU#13	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12626	1008	----	EW2010102	TITLE I DESIGN - OU#13	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12627	1008	----	EW2010102	TITLE II DESIGN - OU#13	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12628	1008	----	EW2010102	TITLE III DESIGN - OU#13	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12629	1008	----	EW2010102	PRE-CONSTRUCTION - OU#13	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12630	1008	----	EW2010102	CONSTRUCTION - OU#13	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12631	1008	----	EW2010102	TESTING - OU#13	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
CAM				OU#14 RAD SITES	STIG	PETERMAN, B.D.	VAN DORE, D.P.		
12650	1010	----	EW2010101	IRA PLAN	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12651	1010	----	EW2010101	CONSTRUCTION	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12652	1010	----	EW2010101	DESIGN	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12653	1010	----	EW2010101	TESTING AND OPS	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12655	1010	----	EW2010101	REMEDIAL INVESTIGATION	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12656	1010	----	EW2010101	TREATABILITY/FEASIBILITY STUDY	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	

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12657	1010	----	EW2010101	ENVIRONMENTAL ASSESSMENT (NEPA)	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12658	1010	----	EW2010102	REMEDIAL ACTION PLAN	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12659	1010	----	EW2010101	RECORD OF DECISION	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12660	1010	----	EW2010102	SAFETY ANALYSIS REPORT	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12661	1010	----	EW2010102	PERFORMANCE MONITORING	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12662	1010	----	EW2010101	PROJECT SUPPORT	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12663	1010	----	EW2010101	CONTINGENCY	STIG	PETERMAN, B.D.	VAN DORE, D.P.	SARTER, R.	
12664	1010	----	EW2010102	CONCEPTUAL DESIGN - OU#14	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12665	1010	----	EW2010102	TITLE I DESIGN - OU#14	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12666	1010	----	EW2010102	TITLE II DESIGN - OU#14	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12667	1010	----	EW2010102	TITLE III DESIGN - OU#14	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12668	1010	----	EW2010102	PRE-CONSTRUCTION - OU#14	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12669	1010	----	EW2010102	CONSTRUCTION - OU#14	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
12670	1010	----	EW2010102	TESTING- OU#14	STIG	MCHUGH, M.F.	VAN DORE, D.P.	SARTER, R.	
CAO				OU#15 INSIDE BUILDING CLOSURES	STIG	PRIMROSE, A.L.	BLAKESLEE, D.J		
12700	1018	----	EW2010201	RCRA FACILITY INVESTIGATION/IM	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12701	1018	----	EW2010201	CORRECTIVE MEASURES STUDY/IM	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12703	1018	----	EW2010201	SAFETY ANALYSIS REPORT	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12704	1018	----	EW2010201	PERFORMANCE MONITORING	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12705	1018	----	EW2010201	RCRA FACILITY INVESTIGATION/FINAL A	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12706	1018	----	EW2010201	CORRECTIVE MEASURES STUDY/FINAL ACT	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12707	1018	----	EW2010201	FINAL ACTION PLAN	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12708	1018	----	EW2010201	FINAL ACTION DECISION	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12709	1018	----	EW2010201	SAFETY ANALYSIS REPORT	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12710	1018	----	EW2010201	PERFORMANCE MONITORING	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12711	1018	----	EW2010201	PROJECT SUPPORT	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12712	1018	----	EW2010201	CONTINGENCY	STIG	PRIMROSE, A.L.	BLAKESLEE, D.J	FITCH, W.	
12713	1018	----	EW2010201	CONCEPTUAL DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12714	1018	----	EW2010201	TITLE I DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12715	1018	----	EW2010201	TITLE II DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12716	1018	----	EW2010201	TITLE III DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12717	1018	----	EW2010201	PRE-CONSTRUCTION - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12718	1018	----	EW2010201	CONSTRUCTION - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12719	1018	----	EW2010201	TESTING - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12720	1018	----	EW2010201	CONCEPTUAL DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12721	1018	----	EW2010201	TITLE I DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12722	1018	----	EW2010201	TITLE II DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12723	1018	----	EW2010201	TITLE III DESIGN - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12724	1018	----	EW2010201	PRE-CONSTRUCTION - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12725	1018	----	EW2010201	CONSTRUCTION - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
12726	1018	----	EW2010201	TESTING - OU#15	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	FITCH, W.	
CAP				OU#16 LOW PRIORITY SITES	STIG	PRIMROSE, A.L.	BLAKESLEE, D.J		
12750	1009	----	EW2010101	IRA PLAN	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	BIRK, R.	
12751	1009	----	EW2010101	CONSTRUCTION	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	BIRK, R.	
12752	1009	----	EW2010101	DESIGN	STIG	SCHUBBE, D.L.	BLAKESLEE, D.J	BIRK, R.	
CAR				SITEWIDE PROGRAMS	STIG	STIGER, S.G.	PIBURN, R.H.		

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91002	1012		EW2010301	RFFO Managed Contract for Sitewide	STIG	STIGER, S.G.	PIBURN, R.H.	ROSE, H.	
CAS				ON-SITE/WATER MANAGEMENT	STIG	DEMASS, T.R.	BERG, J.D.	ROH, C.	
12852	1264	----	EW2010302	ON-SITE H20 CONTROL	STIG	YASHAN, D..	BERG, J.D.	ROH, C.	
12854	1264		EW2010302	FFM ENVIRONMENTAL MONITORING STATIO	STIG	ERLICH, O..	BERG, J.D.	GRACE, S.	
CB				DECONTAMINATION & DECOMMISSIONING	STIG	DEMASS, T.R.	BERG, J.D.	WITHERILL,	
CBA				PU BUILDINGS	STIG	DEMASS, T.R.	BERG, J.D.		
13002	1030		EW2010401	D&D PILOT PROJECT #6	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
13004	1030		EW2010401	BLDG 707 MODULE D&E D&D	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
13006	1030		EW2010401	BLDG 707 MODULE F,G&H D&D	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
13007	1030		EW2010401	886 D&D	STIG	BOURGEOIS, T.G.	BERG, J.D.	WITHERILL,	
13008	1030		EW2010401	BLDG 779 100 AREA D&D	STIG	ALEXANDER, R.G.	BERG, J.D.	WITHERILL,	
13010	1030		EW2010401	D&D TANK 207	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
13011	1030		EW2010401	B-776 D&D RM 160, 155, 157	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
13012	1030		EW2010401	D&D PILOT PROJECT #7	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
CBB				NON PU BUILDINGS	STIG	DEMASS, T.R.	BERG, J.D.	WITHERILL,	
13003	1031		EW2010401	D&D PILOT PROJECT #5	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
CBC				GENERAL SUPPORT BUILDINGS	STIG	DEMASS, T.R.	BERG, J.D.	WITHERILL,	
13001	1032		EW2010401	D&D PILOT PROJECT #4	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
13009	1030		EW2010401	MISC D&D PROJECTS	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
CC				PROGRAM MANAGEMENT SUPPORT	STIG	BENTZEN, K..	MCELROY, M.J.	HARTMAN, J.	
CCA				ER PROGRAM MANAGEMENT	STIG	BENTZEN, K..	MCELROY, M.J.	WITHERILL,	
12197	1233	----	EW2010301	RFEDS - EPM	STIG	GANCE, R.A.	MCCOO, P.A.	GRACE, S.	
12198	1233	----	EW2010301	RECORDS MANAGEMENT & DOCUMENT CONTR	STIG	TYLER, L.L.	MCELROY, M.J.	ROSE, H.	
12199	1233	----	EW2010301	ANALYTICAL SUPPORT SERVICES	STIG	GANCE, R.A.	GRANT, T.A.	GRACE, S.	
12900	1233	----	EW2010301	PROJECT MANAGEMENT CONTROLS	STIG	BENTZEN, K..	MCELROY, M.J.	ROSE, H.	
12901	1233		EW2010301	ENVIRONMENTAL QUALITY SUPPORT	STIG	BROOKS, M.C.	MCELROY, M.J.	LOCKHART, F	
12905	1233	----	EW2010301	STRATEGIC PLANNING	STIG	HUTCHINS, N.M.	MCCOO, P.A.	FITCH, W.	
12907	1233		EW2010301	ENVIRONMENTAL PROJECT MANAGEMENT TR	STIG	BROWN, C.M.	BERG, J.D.	GRACE, S.	
12908	1233		EW2010301	IAG RENEGOTIATIONS	STIG	O ROURKE, T.P.	MCELROY, M.J.	SCHASSBURGE	
12910	1233		EW2010301	PROJECT SERVICES	STIG	BREEN, J.H.	MCCOO, P.A.		
12911	1233		EW2010301	SPEC. EXCELLERATED CLEANUP PROJECTS	STIG	PIBURN, R.H.	TBD, T..		
90031	1007		EW2010101	ADS 1007 ASSESS FINANCIAL COMMITMEN	STIG	STIGER, S.G.	PIBURN, R.H.	ROBERSON, J	
CCB				D&D PROJECT SUPPORT	STIG	DEMASS, T.R.	BERG, J.D.		
12903	1233		EW2010301	D&D PROJECT SUPPORT	STIG	TOME, A..	BERG, J.D.	WITHERILL,	
CD				SURVEILLANCE & MAINTENANCE	STIG	STIGER, S.G.	PIBURN, R.H.	ROBERSON, J	
CDA				SURVEILLANCE & MAINTENANCE	STIG	BROUSSARD, M.C.	COWEN, D.J.		
CF				PROGRAM DIRECTION (DOE/RFFO) - ER	RFFO	RFFO, ..	PIBURN, R.H.	ROBERSON, J	

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CFA				PROGRAM DIRECTION (DOE/RFFO) - ER	TBD,	TBD, T..	TBD, T..		
CG				PAYMENTS TO EXTERNAL GROUPS	RFFO	RFFO, ..	BERG, J.D.	ROSE, H.	
CGA				OFF-SITE H2O MANAGEMENT	RFFO	RFFO, ..	BERG, J.D.	BIRK, R.	
12853			EW2010302	OFFSITE H2O MANAGEMENT	RFFO	RFFO, ..	BERG, J.D.	BIRK, R.	
CGB				PAYMENTS TO EXTERNAL GROUPS	RFFO	RFFO, ..	MCCOO, P.A.		
12851	1233	----	EW2010301	PAYMENTS TO THE STATE - RFFO MANAGE	RFFO	RFFO, ..	MCELROY, M.J.	ROSE, H.	
91003	1233	----	EW2010301	ADS 1233 - RFFO Managed Contracts	RFFO	RFFO, ..	PIBURN, R.H.	ROSE, H.	

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D				FACILITY CONVERSION	GOLA	GOLAN, P.M.	CARPENTER, M.C	RUSCITTO, D	
DB				ECONOMIC DEVELOPMENT	GOLA	GOLAN, P.M.	GARMATZ, J.C.	LUKOW, T.	
DBA				ECONOMIC DEVELOPMENT SUPPORT	GOLA	CHAVEZ, B.J.	TBD, T..		
50120			GG0300000	TECHNOLOGY TRANSFER	GOLA	DORR, D.J.	TBD, T..		
50121			GG0300000	ECONOMIC DEVELOPMENT PLANNING & BUD	GOLA	BURKHARDT, S.C.	TBD, T..		
50122			GG0300000	BUSINESS DEVELOPMENT	GOLA	BUTLER, D.M.	TBD, T..		
50124			GG0300000	MARKETING	GOLA	SANDT, C.V.	TBD, T..		
DBB				NCPP	RFFO	RFFO, ..	CARPENTER, M.C		
50200	HQ6002		GG9900000	NATIONAL CONVERSION PILOT PROJECT	GOLA	TBD, T..	TBD, T..	BRAKKEN, K.	
DBC				NCPP SUPPORT - M&O SUPPORT	GOLA	HAN, G..	GARMATZ, J.C.		
50302			GG0300000	NCPP SUPPORT	GOLA	HAN, G..	TBD, T..		
DC				WORKFORCE RESTRUCTURING	MARX	FERRIS, L.R.	STROBEL, G.L.	LUKOW, T.	
DCA				WORKFORCE RESTRUCTURING - FY94	MARX	FERRIS, L.R.	STROBEL, G.L.		
50116			GG0300000	STAKEHOLDERS COMMUNICATION PLAN	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50117			GG0300000	ECONOMIC DEVELOPMENT	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50119			GG0300000	LOCAL IMPACTS INITIATIVE	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50201			GG0100000	TRAINING PROGRAM	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50202			GG0500000	OUTPLACEMENT SERVICES	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50203			GG0100000	TUITION REIMBURSEMENT	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50204			GG0500000	ALL EMPLOYEE ASSISTANCE	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50211			GG0100000	TRAINING PROGRAM, WSI	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50212			GG0500000	OUTPLACEMENT SERVICES, WSI	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50213			GG0100000	TUITION REIMBURSEMENT, WSI	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50214			GG0500000	ALL EMPLOYEE ASSISTANCE, WSI	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50221			GG0400000	BENEFITS	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50222			GG0100000	TRAINING	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50223			GB0405000	SEVERANCE COSTS, VOLUNTARY	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50224			GG0500000	IMPACTED WORKER ASSISTANCE	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50225			GG0400000	SEVERANCE COSTS, INVOLUNTARY	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50226			GG0200000	RELOCATION EXPENSE	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50231			GG0400000	BENEFITS, WSI	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50232			GG0100000	TRAINING, WSI	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
50233			GB0405000	SEVERANCE COSTS, WSI	MARX	DONDELINGER, M.	DEBOER, V.A.	WADE, B.	
50234			GG0500000	IMPACTED WORKER ASSISTANCE, WSI	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
87001			GG0500000	IMPACTED WORKER ASSISTANCE	MARX	CHAVEZ, N.R.	DEBOER, V.A.	WADE, B.	
87003			GG0500000	ALL EMPLOYEE ASSISTANCE	MARX	CHAVEZ, N.R.	DEBOER, V.A.		
DCB				WORKFORCE RESTRUCTURING - FY95	MARX	FERRIS, L.R.	STROBEL, G.L.		
DD				SUPPORT ACTIVITIES	GOLA	GOLAN, P.M.	CARPENTER, M.C	HARTMAN, J.	
DDA				WORK FOR OTHERS	GOLA	GOLAN, P.M.	CARPENTER, M.C		
54101			YN1901000	LLNL	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	

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PSWBS ELEMENT WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
54102			YN1901000	LANL	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54103			YN1901000	MISCELLANEOUS CLIENTS	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54104			YN1901000	SNLL	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54105			YN1901000	SNL/NM	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54106			YN1901000	DOE-ALO	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54107			YN1901000	DOE-OTHER	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54108			820201000	NON-CASH INTRA-AL	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54109			400403000	NON-CASH DOD	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54110			400100000	NON-CASH WP&A	GOLA	GOLAN, P.M.	CASE, L.E.	REECE, R.	
54111			820202000	SITE DEMONSTRATION	GOLA	HUTCHINS, N.M.	CASE, L.E.		
DOB				OTHER PROGRAMS	BURL	GOLAN, P.M.	CARPENTER, M.C		
24403	HQ6002		EW7020000	WASHINGTON DETAILEES	HEAL	HEALY, T.J.	STROBEL, G.L.		
49301			GC0103000	INTERNATIONAL INSPECTIONS	KELL	GIACOMINI, J.J.	ELMORE, L.E.	HICKS, D.	
50170	HQ6002		EW7020000	WASHINGTON, D.C. DETAILEES LEASE	HEAL	HEALY, T.J.	STROBEL, G.L.	MCBRIDE, M.	
52109			GB0103011	PU SIMULATION MODELING	FRAY	CUMMINGS, K.G.	DENNIS, E..	REECE, R.	
52110			GB0103011	SURFACE STUDIES OF PU CORROSION	FRAY	SANTI, D.J.	DENNIS, E..	REECE, R.	
52111			GB0103011	BERYLLIUM TECHNOLOGY	FRAY	HAMMETTER, J.R.	DENNIS, E..	REECE, R.	
55801			WB0000000	IN-HOUSE ENERGY MANAGEMENT	KELL	STEIN, D.E.	KENNEDY, M.H.	HARTUNG, P.	
55809			GB0106010	PRECISION JOINING CENTER	GOLA	WESTPHAL, D.A.	TBD, T..		
55810			GB0106010	PRECISION JOINING CENTER EXTENSION	GOLA	WESTPHAL, D.A.	TBD, T..		
55811			GB0106010	ACCELERATED MATERIAL TESTING	GOLA	WESTPHAL, D.A.	TBD, T..		
55814			HR0150000	BERYLLIUM HEALTH SURVEILLANCE	FERR	HILMAS, D.E.	ZOBEL, G.S.	GRETHEL, T.	
55815			HA0117000	HEALTH SURVEILLANCE AND MONITORING	FERR	HILMAS, D.E.	ZOBEL, G.S.	GRETHEL, T.	
55816			HA0117000	RADIONUCLIDE-BURDENED FORMER WORKER	FERR	HILMAS, D.E.	ZOBEL, G.S.	GRETHEL, T.	
55819			HA0111000	CLINICAL SURV. PILOT STUDY	FERR	ENOCKSON, P.G.	ZOBEL, G.S.	GRETHEL, T.	
55820			HA0117000	NEUTRON FILM BADGE REEVALATION	FERR	HILMAS, D.E.	ZOBEL, G.S.	GRETHEL, T.	
59001			GB0513206	CAPITAL ASSET MANAGEMENT PROCESS	HEAL	KIRBY, S.L.	JONES, J.M.	RAU, J.	
91008			GB0106020	AMERICAN WELDING SOCIETY - RFFO MAN	RFFO	RFFO, ..	TBD, T..	REECE, R.	
DE				FACILITY DEACTIVATION	PIZZ	LEHEW III, J.G.	CARPENTER, M.C		
DEA				DEACTIVATION PU - BUILDINGS	PIZZ	LEHEW III, J.G.	JORDAN, D.D.		
51101			000000000	DEACTIVATION OF PU-BUILDINGS	PIZZ	POWELL, C.R.	JORDAN, D.D.		
DEB				DEACTIVATION NON-PU BLDGS.	PIZZ	LEHEW III, J.G.	JORDAN, D.D.		
51102			000000000	DEACTIVATION OF NON-PU BLDGS.	PIZZ	POWELL, C.R.	JORDAN, D.D.		
DEC				DEACTIVATION GENERAL SUPPORT BLDGS.	PIZZ	LEHEW III, J.G.	JORDAN, D.D.		
51103			000000000	DEACTIVATION OF GENERAL SUPPORT	PIZZ	POWELL, C.R.	JORDAN, D.D.		
DED				NON-D&D DEACTIVATION	PIZZ	LEHEW III, J.G.	JORDAN, D.D.		
51104			000000000	NON D&D DEACTIVATION	PIZZ	POWELL, C.R.	JORDAN, D.D.		

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PSWBS ELEMENT / WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
E				SITE SUPPORT OPERATIONS	FERR	FERRERA, D.W.	STILES, J.P.	HARTMAN, J.	
EA				SUPPORT BLDG. OPERATIONS	FERR	CABLE, J.R.	CURRIER, L.J.	ANDERSON, T	
EAA				SUPPORT SERVICES	FERR	FERRERA, D.W.	CURRIER, L.J.		
25401	6710		EW7000000	FM&O SUPPORT	FERR	TASSET, G.W.	GARMATZ, J.C.	RING, B.	
25402	6710		EW7000000	QUALIFICATION	MCDO	PIKE, B.E.	RICHARDSON, R.	RING, B.	
25403	6710		EW7000000	CONDUCT OF OPERATIONS AND MENTOR PR	MCDO	MCDONALD, M.M.	MOWERY, C.A.	RING, B.	
57304	6750	L2	EW7003000	PLANT FACILITIES EXPENSE PROJECTS	FERR	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
57307	6750	L7	EW7030000	CAPITAL ASSET MANAGEMENT PROCESS	HEAL	KIRBY, S.L.	JONES, J.M.	CRAUN, R.	
57410	6750	L4	EW7030000	FILTER TEST FACILITY	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
57411	6750	L9	EW7030000	NITROGEN PLANT	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
57412	6750		EW7030000	CENTRAL PMO PROGRAM	FERR	SERGESON, S.C.	ROOT, R.J.	BENNETT, W.	
61406	6750	L17	EW7030000	REAL PROPERTY MANAGEMENT	FERR	MOORE, W.A.	HOSSLER, S.E.	SCHIESSWOHL	
81602	6750		EW7030000	MAINTENANCE PLANNING & SCHEDULING	FERR	RAWLINGS, B.L.	ROOT, R.J.	BENNETT, W.	
81603	6750		EW7030000	SITEWIDE MAINTENANCE PLANNING & SUP	FERR	FLODSTROM, J.A.	ROOT, R.J.	BENNETT, W.	
81706	6750	L10	EW7030000	INVENTORY CHANGES	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
81711	6750	L10	EW7003000	INVENTORY ADJUSTMENTS	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
81713	6750	L10	EW7030000	MATERIALS IDENTIFICATION & DISPOSIT	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
EAB				BLDG 559 MAINTENANCE & SURVEILLANCE	GEIS	SCHEUERMAN, W.D	RASMUSSEN, D.T		
36101	6710		EW7002000	SURVEILLANCE	GEIS	SCHMACHTENBERGE	RASMUSSEN, D.T	RING, B.	
36102	6710		EW7002000	MAINTENANCE	GEIS	CLARK, P.B.	RASMUSSEN, D.T	RING, B.	
36103	6710		EW7002000	BUILDING SUPPORT	GEIS	DIKEMAN, R.C.	RASMUSSEN, D.T	RING, B.	
36104	6710		EW7002000	ENVIRONMENTAL COMPLIANCE	GEIS	ROCK, L.C.	RASMUSSEN, D.T	REECE, R.	
36203	6710		EW7002000	B-559 EXPENSE PROJECTS	GEIS	WILLIAMSON, R.E	GALLIMORE, J.E	RING, B.	
79502	6710	SM4	EW7002000	B-887 ROOF REPAIR	GEIS	WILLIAMSON, R.E	GALLIMORE, J.E	BIRRENBACH,	
EAD				OTHER 800 AREA MAINTENANCE & SURVEI	FERR	CABLE, J.R.	STILES, J.P.		
EAE				SITE SUPPORT GPP	PIZZ	STOVALL, S.K.	TIPPIN, C.G.		
71208			39GB03000	B-561 PAVE UNIT 10	PIZZ	WILLIAMSON, R.E	TIPPIN, C.G.		
71240			39GB03000	RCRA UNIT #1 EXPANSION (RSSU'S)	PIZZ	WILLIAMSON, R.E	TIPPIN, C.G.		
75341			39GB03010	B-121 UPGRADES	PIZZ	STOVALL, S.K.	TIPPIN, C.G.	POSLUSZNY,	
75376			39GB03010	SECONDARY MONITORING EQUIP B-779	PIZZ	WILLIAMSON, R.E	TIPPIN, C.G.	POSLUSZNY,	
75391	6750	L5	EW7030000	GPP EXPENSE SUPPORT - EW70	PIZZ	CUTLIP, D.A.	TIPPIN, C.G.	RAU, J.	
EAF				SITE SUPPORT CAPITAL EQUIPMENT	FERR	STOVALL, S.K.	MESZAROS, M.P.		
75705			35GB05060	NUCLEAR SELF-ASSESSMENT & EMERGENCY	FERR	MESZAROS, M.P.	MESZAROS, M.P.	POSLUSZNY,	
75706			35GB03010	RADIATION ASSISTANCE TEAM	FERR	MESZAROS, M.P.	MESZAROS, M.P.	POSLUSZNY,	
77507			35GB03010	B-443 UPS	FERR	KRAMER, T.E.	MESZAROS, M.P.	POSLUSZNY,	
77543			35GB03010	HIGH SPEED COPIER	FERR	SCHUMACHER, S.R	MESZAROS, M.P.	POSLUSZNY,	
77545			35GB03010	STREET SWEEPER	FERR	KRAMER, T.E.	MESZAROS, M.P.	POSLUSZNY,	
77831			35GB03010	TELEPHONE SYSTEMS UPGRADES	FERR	CUTLIP, D.A.	MESZAROS, M.P.	SPRINGER, J	
77924			35GB03010	PAGING SYSTEM UPGRADE	KELL	WEINGARDT, D..	MESZAROS, M.P.		
EAG				UNDERGROUND STORAGE TANKS L.I	KELL	PETER, K.G.	JACKSON, S.M.		
74501	6748	----	39EW70310	UNDERGROUND STORAGE TANKS LINE ITEM	KELL	KINNEY, J.G.	JACKSON, S.M.	COTE, P.	
75122	6748	----	EW7030000	UNDERGROUND STORAGE TANKS EXPENSE S	KELL	KINNEY, J.G.	JACKSON, S.M.	COTE, P.	

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PCWBS ELEMENT WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
EAH				CAPASU LINE ITEM	KELL	SGRIGNOLI, R.D.	CORDILLA, M.A.		
74101	6756		---- 39EW70300	CAPASU LINE ITEM	KELL	VASQUEZ, R.J.	CORDILLA, M.A.	POSLUSZNY,	
75112	6756		---- EW7030000	CAPASU EXPENSE SUPPORT	KELL	VASQUEZ, R.J.	CORDILLA, M.A.	POSLUSZNY,	
EAI				PLANT FIRE/SECURITY LINE ITEM	KELL	CARNIVAL, G.J.	CORDILLA, M.A.		
75106	6755		---- EW7030000	PLANT FIRE/SECURITY SYS REPLACEMENT	KELL	GOMER, W.G.	CORDILLA, M.A.	POSLUSZNY,	
76201	6755		---- 39EW70300	PLANT FIRE/SECURITY SYSTEM REPLACEM	KELL	GOMER, W.G.	CORDILLA, M.A.	POSLUSZNY,	
EAJ				INFRASTRUCTURE LINE ITEM	KELL	BAUER, E.J.	BOGNAR, E.S.		
73802	6751		39EW70030	ROOF REPLACEMENT	KELL	WILLIAMSON, R.E	GALLIMORE, J.E		
73803	6751	FB1	39EW70300	FCAP: BUILDING ELECTRICAL REHAB. LI	KELL	CUTLIP, D.A.	TIPPIN, C.G.	POSLUSZNY,	
73804			39EW70300	ROOF REPLCMT IN PROCESS PU STG. VAU	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73805	6751	FB3	39EW70300	CENTRAL STEAM PLANT RENOVATION	KELL	KRAMER, T.E.	JACKSON, S.M.	POSLUSZNY,	
73806	6751		39EW70300	SUPPORT OFFICE BUILDING 117	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73807	6751	FB4	39EW70300	ELECTRICAL DIST: OVERHEAD PRO	KELL	CUTLIP, D.A.	TIPPIN, C.G.	POSLUSZNY,	
73808	6751	FB4	39EW70300	ELECTRICAL DIST: TRANSFORMER	KELL	CUTLIP, D.A.	TIPPIN, C.G.	POSLUSZNY,	
73809	6751	FB4	39EW70300	ELECTRICAL DIST: SUBSTATION 6	KELL	CUTLIP, D.A.	TIPPIN, C.G.	POSLUSZNY,	
73820	6751	FB2	39EW70300	PU FACILITIES HVAC RESTORATION LINE	KELL	BENTZEN, K.L.	JACKSON, S.M.	POSLUSZNY,	
73840	6750		39EW70300	FCAP: UTILITIES REFURBISHMENT LINE	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73860	6750		39EW70300	PLANT DRAINAGE RENOVATION LIN	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
75184			39EW70300	CENTRAL STEAM PLANT RENOVATION EXP	KELL	KRAMER, T.E.	JACKSON, S.M.		
75185	6758		---- EW7030000	CRITICAL SAFETY SYSTEMS REFURBISH E	KELL	COELHO, W.H.	JACKSON, S.M.	POSLUSZNY,	
75186	6750		EW7030000	UTILITIES REFURBISHMENT EXPEN	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
75188	6751	FB2	EW7030000	PU FACILITIES HVAC RESTORATION EXPE	KELL	BENTZEN, K.L.	JACKSON, S.M.	CRAUN, R.	
75190	6750		EW7030000	PLANT DRAINAGE RENOVATION EXP	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
79999	6750		39EW70300	CONSTRUCTION START/STOP	KELL	BOGNAR, E.S.	BOGNAR, E.S.	POSLUSZNY,	
EAK				CONSOLIDATED UTILITIES RESTORATION	KELL	WILLIAMSON, R.E	GALLIMORE, J.E		
73101			39GB03010	B-771 HP PIPING & STORAGE FACILITY	KELL	WILLIAMSON, R.E	GALLIMORE, J.E		
73102			39GB03010	B-123 FUME HOODS	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73103			39GB03010	UR PHASE II DESIGN	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73105			39GB03010	B-881 EXHAUST PLENUM MOD	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73109			39GB03010	FILTER PLENUM UPGRADE	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73110			39GB03010	PREC. CALC. SYS. PHASE I	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73111			39GB03010	REDUCTION BBO	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73112			39GB03010	HSE SALT PROC.	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
73150			39GB03010	B-707 REPLACE REGENERATOR UNITS	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
EAL				RECORDS STORAGE FACILITY LINE ITEM	KELL	WILLIAMSON, R.E	GALLIMORE, J.E		
74601	6761		39EW70300	RECORDS STORAGE FACILITY LINE ITEM	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
75123	6761		EW7003000	RECORDS STORAGE FACILITY EXPENSE SU	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
EAM				STRUCTURAL UPGRADES LINE ITEM	KELL	WILLIAMSON, R.E	GALLIMORE, J.E		
73501			39GB03010	STRUCTURAL UPGRADES LINE ITEM	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
EAN				BLDG. 779 MAINTENANCE & SURVEILLANC	PIZZ	KNEALE, P.A.	COLLINS, R.V.		
37001	6710	SM3	EW7002000	COMPLIANCE & DEACTIVATION SURVEILLA	PIZZ	SORENSON, L.S.	COLLINS, R.V.	RING, B.	
37021	6710	SM3	EW7002000	BASELINE MAINTENANCE	PIZZ	SCHMIDT, R.L.	ROBINSON, S.J.	RING, B.	

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PSWBS ELEMENT / WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
37031	6710	SM3	EW7002000	BUILDING OPERATIONS MANAGEMENT	PIZZ	ENGEL, N.L.	JORDAN, D.D.	RING, B.	
37035	6710	SM3	EW7002000	OPERATIONS TECHNICAL SUPPORT	PIZZ	ENGEL, N.L.	JORDAN, D.D.	RING, B.	
37203	6710	SM3	EW7002000	B-779 EXPENSE PROJECTS	PIZZ	WILLIAMSON, R.E	GALLIMORE, J.E	RING, B.	
EAO				BLDG 123 & 881 MAINTENANCE & SURV.	PIZZ	WILLIAMSON, R.E	JORDAN, D.D.		
EB				ENVIRONMENTAL MONITORING	HEDA	SETLOCK, G.H.	DEBOER, D.J.	ANDERSON, T	
EBA				AIR PERMITTING, MONITORING, ASSESS	HEDA	NININGER, R.C.	HOSSLER, S.E.	ROW, C.	
61102	6740	EM7	EW7030000	STRATOSPHERIC OZONE PROTECTION	HEDA	RAMSEY, R.S.	TBD, T..	ROW, C.	
61103	6740	EM6	EW7030000	METEOROLOGICAL MONITORING	HEDA	MAXWELL, D.R.	TBD, T..	ROW, C.	
61104	6740	EM5	EW7030000	EFFLUENT AIR MONITORING	HEDA	PAUL, S..	TBD, T..	DION, J.	
61113	6740	EM9	EW7030000	AMBIENT AIR MONITORING	HEDA	PAULEY, B.J.	JOHNSON, J.L.	ROW, C.	
61115	6740	EM10	EW7030000	FEDERAL/STATE AIR PERMITTING	HEDA	PATNOE, C.A.	TBD, T..	ROW, C.	
61116	6740	EM11	EW7030000	RAD NESHAPS COMPLIANCE ACTIVITIES	HEDA	OSBORNE, W.E.	TBD, T..	ROW, C.	
61117	6740		EW7030000	COMMUNITY RAD. MONITORING	HEDA	PAULEY, B.J.	JOHNSON, J.L.	ROW, C.	
EBB				WATER PMA	HEDA	MARSHALL, S.A.	HOSSLER, S.E.	ROW, C.	
61201	6740	EM12	EW7030000	WATER MONITORING & CONTROL ENHANCEM	HEDA	GOODWIN, W.L.	BOGENSCHUTZ, L	ROW, C.	
61207	6740	EM12	EW7030000	SURFACE WATER MONITORING & UPGRADE	HEDA	WETHERBEE, G.A.	BOGENSCHUTZ, L	ROW, C.	
61211	6740	EM12	EW7030000	POND EFFLUENT MANAGEMENT	HEDA	MORITZ, E.J.	BOGENSCHUTZ, L	ROW, C.	
61213	6740	EM12	EW7030000	CLEAN WATER ACT IMP./COMPLIANCE	HEDA	MCCARTHY, P.L.	BOGENSCHUTZ, L	ROW, C.	
61215	6740	EM12	EW7030000	WATER COMPLIANCE MONITORING	HEDA	PORTER, G.V.	BOGENSCHUTZ, L	ROW, C.	
EBC				GROUNDWATER AND SOIL PMA	STIG	BROUSSARD, M.C.	COWEN, D.J.		
61203	6740	EM13	EW7030000	GROUNDWATER MONITORING/ASSESSMENT	STIG	SINGER, S.H.	COWEN, D.J.	ROW, C.	
61216	6740	EM13	EW7030000	CSM ENVIRONMENTAL TRAINING	STIG	BROOKS, N.L.	COWEN, D.J.	CANNODE, G.	
61309	6740	EM13	EW7030000	GROUNDWATER/SOIL ANALYTICAL AND DAT	STIG	SINGER, S.H.	COWEN, D.J.	ROW, C.	
EBD				ECOLOGY AND WATERSHED MANAGEMENT	HEDA	LEE, P.A.	HOSSLER, S.E.	ROW, C.	
61204	6740	EM12	EW7030000	WATERSHED MANAGEMENT & DAM SAFETY	HEDA	STEVENS, R.J.	HOSSLER, S.E.	ROW, C.	
61404	6740	EM17	EW7030000	NATURAL RESOURCE PROTECTION & COMPL	HEDA	KRAUSE, J.D.	HOSSLER, S.E.	ROW, C.	
61405	6740	EM18	EW7030000	ECOLOGICAL MONITORING PROGRAM	HEDA	BAKEMAN, M.E.	HOSSLER, S.E.	ROW, C.	
EBE				OPERATIONS SUPPORT	STIG	BROUSSARD, M.C.	COWEN, D.J.	ROW, C.	
61304	6740	EM23	EW7030000	ANALYTICAL SUPPORT SERVICES	STIG	GANCE, R.A.	MCCOO, P.A.	ROW, C.	
61305	6740	EM23	EW7030000	BUFFER ZONE MANAGEMENT	STIG	WISEHART SR, R.	COWEN, D.J.	ROW, C.	
61501	6740	EM22	EW7030000	ROCKY FLATS ENVIRONMENTAL DATA BASE	STIG	GANCE, R.A.	MCCOO, P.A.	ROW, C.	
EBF				ENVIRONMENTAL POLICY IMPLEMENTATION	HEDA	NESTA, S.M.	HOSSLER, S.E.	ROW, C.	
61401	6740	SF1	EW7030000	DP/EM RFP EIS SUPPORT	HEDA	NESTA, S.M.	HOSSLER, S.E.	POWELL, P.	
61402	6740		EW7030000	NPDES - FFCA MANAGEMENT	HEDA	THOMPSON, J.S.	HOSSLER, S.E.	ROW, C.	
61403	6740	EM16	EW7030000	RFETS NEPA COMPLIANCE	HEDA	ANDERSON, C.M.	HOSSLER, S.E.	POWELL, P.	
EBG				ENVIRONMENTAL REPORTING	HEDA	GLOE, H.L.	BOGENSCHUTZ, L	ROW, C.	
61107	6740	EM2	EW7030000	ENVIRONMENTAL HEALTH PHYSICS	HEDA	DAUGHERTY, N.M.	HOSSLER, S.E.	ROW, C.	
61108	6740	EM21	EW7030000	ENVIRONMENTAL REPORTING	HEDA	RENO, C.D.	BOGENSCHUTZ, L	ROW, C.	
61504	6740	EM21	EW7030000	QUALITY ASSURANCE COORDINATION	HEDA	REYNOLDS, J.I.	BOGENSCHUTZ, L	HILL, G.	

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EC				HEALTH & SAFETY	KELL	SPEARS, M.S.	BERG, E.J.	RUSCITTO, D	
ECA				NUCLEAR SAFETY	KELL	SATTERWHITE, D.	BERG, E.J.		
57305	6750		EW7003000	SYSTEMATIC EVALUATION PROGRAM	KELL	BADWAN, F.M.	BERG, E.J.	OLINGER, S.	
57501	6750	L16	EW7030000	NUCLEAR SAFETY	KELL	CATHEY, H.G.	BERG, E.J.	OLINGER, S.	
57503	6750	L16	EW7030000	FACILITY SAFETY ENGINEERING	KELL	BEAULIEU, R.A.	BERG, E.J.	OLINGER, S.	
57504	6750	L16	EW7030000	SAFETY ANALYSIS ENGINEERING I	KELL	SWANSON, D.R.	BERG, E.J.	OLINGER, S.	
57505	6750	L16	EW7030000	CRITICALITY ANALYSIS ENGINEERING	KELL	SATTERWHITE, D.	BERG, E.J.	OLINGER, S.	
57506	6750	L16	EW7030000	OVERSIGHT AND QUALITY ASSURANCE PRO	KELL	SATTERWHITE, D.	BERG, E.J.	OLINGER, S.	
57507	6750		EW7030000	SITE SAFETY ANALYSIS REPORT	KELL	SWANSON, D.R.	BERG, E.J.	OLINGER, S.	
ECB				EMERGENCY MANAGEMENT	FERR	KOPPLIN, R.E.	ZOBEL, G.S.		
81501			EW7030000	EMERGENCY OPERATIONS	FERR	SPEIGEL, W.P.	ZOBEL, G.S.	SELAN, J.	
81502			EW7030000	EMERGENCY PLANNING	FERR	BURNS JR, C..	ZOBEL, G.S.	SELAN, J.	
ECC				H&S PROGRAMS	KELL	SULLIVAN, M.T.	BERG, E.J.		
82401			EW7030000	RADIOLOGICAL HEALTH	KELL	VAUGHN, T.L.	ELMORE, L.E.	WALLIN, B.	
82402			EW7030000	RADIOLOGICAL OPERATIONS	KELL	TBD, T..	ELMORE, L.E.	WALLIN, B.	
82403			EW7030000	RADIOLOGICAL ENGINEERING	KELL	LITTLETON, M.L.	ELMORE, L.E.	WALLIN, B.	
82406			EW7030000	RADIATION CONTROL MANUAL IMPLEMENTA	KELL	QUILLIN, J.G.	ELMORE, L.E.	WALLIN, B.	
ECD				DOMESTIC/FIRE WATER REFURB. LI	KELL	PARKER, T.J.	JACKSON, S.M.		
72210	6760	----	EW7030000	DOMESTIC & FIRE WATER REFURBISHMENT	KELL	TIERNEY III, W.	JACKSON, S.M.	POSLUSZNY,	
73830	6760	----	39EW70310	DOMESTIC & FIRE WATER REFURBISHMENT	KELL	TIERNEY III, W.	JACKSON, S.M.	POSLUSZNY,	
ECE				AIR MONITORING IMPROVEMENT LI	KELL	SGRIGNOLI, R.D.	JACKSON, S.M.		
74002	6754	AM1	39EW70300	AIR MONITOR IMPROVEMENTS LINE ITEM	KELL	MICHEL JR, W.B.	JACKSON, S.M.	POSLUSZNY,	
74003			39EW70300	NEW MEDICAL FACILITY	KELL	WILLIAMSON, R.E	BOGNAR, E.S.		
75117	6754	AM1	EW7030000	AIR MONITOR IMPROVEMENTS EXPENSE SU	KELL	MICHEL JR, W.B.	JACKSON, S.M.		
75119	6754		EW7030000	NEW MEDICAL FACILITY EXPENSE SUPPOR	KELL	WILLIAMSON, R.E	JACKSON, S.M.		
ECF				HEALTH PHYSICS/ENV. PROGRAMS LINE I	KELL	GRIFFIN, K.M.	GALLIMORE, J.E		
74201	6749	----	39EW70300	EXPANDED SAAM'S IMPROVEMENT LINE IT	KELL	GRIFFIN, K.M.	GALLIMORE, J.E	POSLUSZNY,	
74202	6749	----	39EW70300	AA PARTICULATE SAMPLING SYSTEM LINE	KELL	GRIFFIN, K.M.	GALLIMORE, J.E	POSLUSZNY,	
74203	6749	----	39EW70300	REPRESENTATIVE EFFLUENT SAMPLERS LI	KELL	SCHUMACHER, S.R	GALLIMORE, J.E	POSLUSZNY,	
75113	6749	----	EW7030000	HEALTH PHYSICS EXPENSE SUPPORT	KELL	GRIFFIN, K.M.	GALLIMORE, J.E	POSLUSZNY,	
ECG				H&S CAPITAL EQUIPMENT	KELL	SPEARS, B.J.	MESZAROS, M.P.		
77808			35GB03010	B-123 LUNG COUNTER UPGRADE	KELL	KRAMER, T.E.	MESZAROS, M.P.	POSLUSZNY,	
77809			35GB03010	UPGRADE CONTAMINATION RADIATION MEA	KELL	KRAMER, T.E.	MESZAROS, M.P.	POSLUSZNY,	
ECH				H&S GPP	KELL	WILLIAMSON, R.E	TIPPIN, C.G.		
75377			39GB03010	COMMUNITY RADIATION MONT. NETWORK	KELL	WILLIAMSON, R.E	TIPPIN, C.G.	POSLUSZNY,	
ECI				PROTECTIVE CLOTHING DECON FACILITY	KELL	WILLIAMSON, R.E	GALLIMORE, J.E		
73701			39GB03010	PROTECTIVE CLOTHING DECON FACILITY	KELL	WILLIAMSON, R.E	GALLIMORE, J.E	POSLUSZNY,	
ECJ				PERSONNEL RADIATION MONITORING CNTL	KELL	VAUGHN, T.L.	GALLIMORE, J.E		
73902			39GB03010	PERSONAL RAD MONITORING CONTROL LIN	KELL	THOMSON, J.R.	GALLIMORE, J.E	POSLUSZNY,	

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ED				HAZARDOUS NON-NUCLEAR MATL. CNTL.	KELL	SPEARS, M.S.	DEBOER, D.J.	RUSCITTO, D	
EDA				CHEMICAL INVENTORY & CONTROL	KELL	TRUJILLO, L.E.	TBD, T..		
47404	6725		EW7003000	B-400/800 AREA HAZARD I.D.	KELL	TRUJILLO, L.E.	KENNEDY, M.H.	RASK, W.	
50210	6725		EW7003000	COMPLIANCE TO CHWA	KELL	TRUJILLO, L.E.	TBD, T..		
61601	6740	EM1	EW7030000	CHEMICAL INVENTORY MANAGEMENT	KELL	COSTAIN, D.B.	TBD, T..	COTE, P.	
EDB				ASBESTOS MANAGEMENT PROGRAM	KELL	SPEARS, M.S.	BERG, E.J.		
79950	6750	L1	EW7030000	ASBESTOS ABATEMENT PROGRAM MANAGEME	KELL	STILES, C.W.	ELMORE, L.E.	GRETHEL, T.	
EE				SURPLUS BUILDING MAINTENANCE & SURV	GOLA	GOLAN, P.M.	COLLINS, B.J.		
EEA				BLDG. 440/439 MAINTENANCE & SURVEIL	GOLA	SEDLMAYR JR, K.	COLLINS, B.J.		
45310			GB0305042	BLDG. 440/439 OPERATIONS	GOLA	PADRON, H.B.	COLLINS, B.J.		
EEB				BLDG. 883 MAINTENANCE & SURVEILLANC	GOLA	SEDLMAYR JR, K.	COLLINS, B.J.		
47112			GB0305042	BLDG. 883 OPERATIONS	GOLA	PADRON, H.B.	COLLINS, B.J.	REECE, R.	
47332			GB0305042	BLDG. 883 MAINTENANCE	GOLA	MCCAIN, G.E.	COLLINS, B.J.	REECE, R.	
EEC				BLDG. 444/447 MAINTENANCE & SURVEIL	GOLA	SEDLMAYR JR, K.	COLLINS, R.V.		
45204			GB0305042	BLDG. 444/447 EXPENSE PROJECTS	GOLA	WILLIAMSON, R.E	GALLIMORE, J.E	VINESKI, R.	
47340			GB0305042	BLDG. 444/447 SURVEILLANCE	GOLA	KOELMEL, J.A.	COLLINS, B.J.		
47341			GB0305042	BLDG. 444/447 OPERATIONS	GOLA	PADRON, H.B.	COLLINS, B.J.		
47342			GB0305042	BLDG. 444/447 UTILITIES	GOLA	MCCAIN, G.E.	COLLINS, B.J.		
47343			GB0305042	BLDG. 444/447 MAINTENANCE	GOLA	STECKLINE, R.J.	COLLINS, B.J.		
EED				BLDG. 865 MAINTENANCE & SURVEILLANC	GOLA	SEDLMAYR JR, K.	COLLINS, B.J.		
47401			EW7030000	BLDG. 865 OPERATIONS	GOLA	SEDLMAYR JR, K.	COLLINS, B.J.		
47402			GB0305042	BLDG. 865 MAINTENANCE	GOLA	MCCAIN, G.E.	COLLINS, B.J.		
EEE				SURPLUS BLDG. CAPITAL EQUIPMENT	GOLA	SEDLMAYR JR, K.	CARPENTER, M.C		
EF				DEFENSE PROGRAM SUPPORT	GOLA	GOLAN, P.M.	GARMATZ, J.C.		
EFA				NON-NUCLEAR SHUTDOWN	GOLA	MILLS, M.C.	GARMATZ, J.C.		
44401			GB0305042	WR FACILITIES AND EQUIPMENT CESSATI	GOLA	MILLS, D.M.	GARMATZ, J.C.	REECE, R.	
44402			GB0305042	WR INVENTORY DISPOSITION	GOLA	MILLS, D.M.	GARMATZ, J.C.	REECE, R.	
44403			GB0305042	WR TOOLING DISPOSITION	GOLA	MILLS, D.M.	GARMATZ, J.C.		
44404			GB0305042	WR DOCUMENTS DISPOSITION	GOLA	MILLS, D.M.	GARMATZ, J.C.		
44405			GB0305042	WR CESSATION PROJECT MANAGEMENT	GOLA	MILLS, D.M.	GARMATZ, J.C.		
EFB				NON-NUCLEAR PRODUCTION	GOLA	PERRY, R.D.	GARMATZ, J.C.		
42307			GB0302020	WR MISC. MANUFACTURING AND SUPPORT	GOLA	MILLS, D.M.	GARMATZ, J.C.	REECE, R.	
43109			GB0304000	FORGINGS PREBUILD - OXNARD	GOLA	MILLS, D.M.	GARMATZ, J.C.		
43110			GB0304000	ACORN MFG. AND SUPPORT - OXNARD	GOLA	MILLS, D.M.	GARMATZ, J.C.		
EFC				OXNARD MAINTENANCE & SURVEILLANCE	GOLA	PERRY, R.D.	GARMATZ, J.C.		
48201			GB0305042	OXNARD MAINTENANCE	GOLA	PERRY, R.D.	GARMATZ, J.C.		

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48301			GB0305042	OXNARD OPERATIONS	GOLA	PERRY, R.D.	GARMATZ, J.C.		
48302			GB0305042	OXNARD UTILITIES	GOLA	PERRY, R.D.	GARMATZ, J.C.		
EFD				BLDG. 460 MAINTENANCE & SURVEILLANC	GOLA	SEDLMAYR JR, K.	CARPENTER, M.C		
45111			GB0305042	SURVEILLANCE	GOLA	KOELMEL, J.A.	COLLINS, B.J.		
45201			GB0305042	MAINTENANCE	GOLA	MCCAIN, G.E.	COLLINS, B.J.		
45301			GB0305042	OPERATIONS	GOLA	PADRON, H.B.	COLLINS, B.J.		
45302			GB0305042	UTILITIES	GOLA	STECKLINE, R.J.	COLLINS, B.J.		
45303			GB0305042	BASELINE PLANNING & BUDGETS	GOLA	LANE, D.L.	COLLINS, B.J.		
45304			GB0305042	ECONOMIC DEVELOPMENT MANUFACTURING	GOLA	SANDT, C.V.	COLLINS, B.J.		
45305			GB0305042	ENGINEERING SUPPORT	GOLA	RILEY, G.L.	GARMATZ, J.C.		
46204			GB0305042	B-460 EXPENSE PROJECTS	GOLA	WILLIAMSON, R.E	GALLIMORE, J.E		
EFE				DP CAPITAL EQUIPMENT	GOLA	SEDLMAYR JR, K.	CARPENTER, M.C		
75401			35GB03010	B-707 LIQUID CO-CLEANING SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75481			35GB03010	B-775 DRUM COUNTER	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75482			35GR03010	B-569 DRUM COUNTER	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75483			35GB03010	B-390 PA DRUM COUNTER	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75484			35GR03010	B-771 PA DRUM COUNTER	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75505			35GR03010	DATA COLLECTION NETWORK	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75607			35GB03010	B-775 TRU WASTE REPLACE/1	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75701			39WB00000	PONY ENCDP COMPRESSOR	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75702			35GB01031	FIREBIRD TESTING	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75703			35GD00000	NUCLEAR MATERIALS SAFEGUARD	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75704			35GD00000	NUCLEAR MATERIAL	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
75712			35GR03010	MEDICAL MONITORING & CLINICAL SURVE	GOLA	ENOCKSON, P.G.	MESZAROS, M.P.		
77101			35GB03010	GB03 CAPITAL EQUIPMENT CLOSE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77102			35GB03010	AIR COMPRESSOR	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77104			35GB03010	B-779 DOR GLOVEBOX	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77105			35GB03010	B-775 SAFE GEOMETERY WASTE OIL TANK	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77208			35GB03010	TILT POUR FURNACE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77211			35GB03010	PNEUMATIC TRANSFER CHEM SAMPLE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77214			35GB03010	B-707 BRIQUETTING SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77215			35GB03010	B-776 STATIONARY ER FURNACE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77217			35GB03010	B-776 YRO CHEM PROCESS CONTROL	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77220			35GB03010	DISSOLUTION LINE 3 B-771	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77221			35GB03010	POSL EQUIPMENT UPGRADE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77224			35GB03010	AUTOMATION OF FIDICOM INS	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77225			35GB03010	CAUSTIC FILTRATION SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77226			35GB03010	PROCESS OPTIMAZATION	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77229			35GB03010	REPLACE ORALLOY SPARY LEACH	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77231			35GB03010	REPLACE ORALLOY LEACH FAC. EVAP.	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77232			35GB03010	SAMPLING GLOVEBOX RM 181	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77233			35GB03010	REPLACE CONDENSATE TANKS	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77240			35GB03010	VACUUM LINE 5A	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77242			35GB03010	HIGH LEVEL GAMMA RADIATION	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77243			35GB03010	CALIBRATION FACILITY X-RAY	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77271			35GB03010	B-777 SYSTEM 3 COMPUTER CONTROL	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77301			35GB03010	B-460 HYPERBARIC WELDING SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		

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77304			35GB03010	B-865 HOT ISOTATIC PRESS	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77306			35GB03010	B-444 AQUESOUS ULTRA CLEAR	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77315			35GB03010	HHC 2&3	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77316			35GB03010	HANDLING ACID RINSE WATER	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77409			35GB03010	RTR IMAGING SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77413			35GB03010	SURVEILLANCE LAB GLOVEBOX	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77415			35GB03010	POSL LAB HOOD B-771	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77502			35GB03010	LAN SUPPORT HARDWARE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77508			35GB03010	B-556 NEW LAUNDRY EQUIPMENT	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77509			35GB03010	B-556 400LB WASHER	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77510			35GB03010	B-111 MEDIA PROD UPGRADE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77524			35GB03010	B-750 PORTABLE AIR COMPRESSOR	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77526			35GB03010	B-881 IGS WORK STATION	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77529			35GB03010	EUC FILE SERVER	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77533			35GB03010	PRINTING EQUIPMENT FOR PROGRAM MGMT	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77536			35GB03010	LIGHTINING PROTECTION SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77537			35GB03010	PSZ PUBLIC ADDRESS SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77539			35GB03010	PHOTOGRAPHIC PRINT PROCESSING	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77541			35GB03010	PROCUREMENT OF JONES TRAILERS T771H	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77704			35GB03010	B-374 LAUNDRY REVERSE OSM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77705			35GB03010	B-774 A /VACUMN FILTER SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77706			35GB03010	HOUSE VACUUM SYSTEM REPLACEMENT	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77707			35GB03010	REPLACE ORGANIC LIQUID WASTE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77710			35GB03010	B-460 X-OMATIC WASH RECYCLE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77711			35GB03010	B-774 WASTE TREATMENT UPGRADE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77712			35GB03010	MICROWAVE MELTING	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77720			35GB03010	TANK EVALUATION SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77721			35GB03010	PROVE CONTROL SYSTEM SIMULATOR	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77801			35GB03010	TRITIUM MONITOR	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77805			35GB03010	REPLACEMENT OF OCCUPATION HEALTH	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77806			35GB03010	SELF-MONITORING EQUIPMENT	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77807			35GB03010	CONTAMINATION/RADIATION ENHANCEMENT	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77812			35GB03010	DOSIMETER DATA REDUCTION SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77818			35GB03010	SAAM BUILDING 707 - FY94 ACTUALS	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77830			35GB03010	REPLACE EMERGENCY MEDICAL UNIT	GOLA	COELHO, W.H.	MESZAROS, M.P.		
77901			35GB03010	SAAM CONVERSION	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77902			35GB03010	B-371 TURNTABLE UPGRADE DRUM COUNTE	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77914			35GB03010	LIFE SAFETY DISASTER WARNING SYSTEM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77915			35GB03010	B-119 CAMPBELL SECURITY ROOM	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77916			35GB03010	RFP HOLDUP MEASUREMENT DETECTION SY	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77922			35GB03010	SECURITY TRAINING EVAL.	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
77923			35GB03010	EOC COMMUNICATIONS EQUIPMENT	GOLA	WILLIAMSON, R.E	MESZAROS, M.P.		
RFF				DP GPP	GOLA	SEDLMAYR JR, K.	CARPENTER, M.C		
75204			39GB03000	PENDING ACO - TUBE WELD HEAD	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75205			39GB03000	HVAC SYSTEM UPGRADE	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75301			39GB03000	B-776 GB OVERHEAT ALARM DETECTOR SY	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75303			39GB03000	B-707 EXHAUST PLENUM UPGRADE	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75304			39GB03000	B-776 CRATE COUNTER	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		

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75306			39GB03000	LOCKER ROOM EXPANSION B-121	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75311			39GB03000	B-771 GB OVERHEAT ALARMS-A, PHASE 1	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75312			39GB03000	B-771 HVAC CONTROL RENOVATION	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75313			39GB03000	B-771 FUME SCRUBBER SYSTEM REPLACEM	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75314			39GB03000	B-771 LOCKER ROOM EXPANSION	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75316			39GB03000	B-771 OY LEACH STAGING VAULT	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75318			39GB03000	B-771 GB OVERHEAT ALARMS, PHASE III	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75319			39GB03000	B-771 STORAGE SHIPPING AREA	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75323			39GB03000	BE SHOP IMPROVEMENT B-444	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75324			39GB03000	MEZZ BUILDING 460	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75351			39GB03000	LAN PHASE II - GROUP 1	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75353			39GB03000	GPP-CAPITAL PROJECT CLOSEOUT	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75355			39GB03000	CHILLED WATER SYSTEM B-881	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75356			39GB03000	B-551 RENOVATION	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75358			39GB03000	PLANT PAVING IMPROVEMENTS, FY92	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75359			39GB03000	PUMP PIT ROOF B-520	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75372			39GB03000	PROCUREMENT OF J. A. JONES - T690M	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75373			39GB03000	B-889 HVAC RENOVATION	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75374			39GB03000	TRUPACT SHIPPING FACILITY	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75378			39GB03000	CDH AIR SAMPLING STATIONS	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75379			39GB03000	WAREHOUSE STORAGE STRUCTURES	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75381			39GB03000	B-122 MEDICAL FACILITY ADDITION	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75382			39GB03000	EVAPORATOR PRODUCT H20 B-374	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75383			39GB03000	PROC. WASTE WATER TANK B-374	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75384			39GB03000	950,000 GAL. PROC. TANK B-374	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75385			39GB03000	HSE BARRIER CONCEPT B-883	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
75386			39GB03000	DRUM STORAGE ATB B-371	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
76388			39GB03000	TEMPORARY TRAILER FACILITY T117A	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
81904			39GB03000	SUPPORT AREAS I & II EXPENSE PROJEC	GOLA	WILLIAMSON, R.E	TIPPIN, C.G.		
EG				RECONFIGURATION SUPPORT	GOLA	GOLAN, P.M.	GARMATZ, J.C.		
EGA				TRANSFER TO KCP/LANL	GOLA	THORVALDSON, W.	GARMATZ, J.C.		
49102			GB0604030	ACTIVITY TRANSFER-LANL	GOLA	CORLE, R.R.	GARMATZ, J.C.	REECE, R.	
49104			GB0604050	RECONFIGURATION MANAGEMENT-LANL	GOLA	CORLE, R.R.	GARMATZ, J.C.	REECE, R.	
49202			GB0604030	ACTIVITY TRANSFERS - KCP	GOLA	FISHER, J.K.	GARMATZ, J.C.	REECE, R.	
49204			GB0604050	RECONFIGURATION MANAGEMENT - KCP	GOLA	FISHER, J.K.	GARMATZ, J.C.	REECE, R.	
EGB				PU RECONFIGURATION	GOLA	CORLE, R.R.	GARMATZ, J.C.		
58401			000000000	RECONFIGURATION LIASON	GOLA	CORLE, R.R.	GARMATZ, J.C.	REECE, R.	
EGC				EQUIPMENT RELOCATION LINE ITEM	GOLA	THORVALDSON, W.	BOGNAR, E.S.		
79201			39GB06010	KANSAS CITY EQUIPMENT RELOCATION LI	GOLA	TIERNEY III, W.	BOGNAR, E.S.		
79301			39GB06010	LANL ENGINEERING AND CONSTRUCTION	GOLA	TIERNEY III, W.	BOGNAR, E.S.		
EH				PROGRAM DIRECTION (DOE-RFFO) - DP	RFFO	RFFO, ..	CARPENTER, M.C		
EHA				PROGRAM DIRECTION (DOE-RFFO) - DP	RFFO	RFFO, ..	CARPENTER, M.C		

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PSWBS ELEMENT WORK PACKAGE	ADS	TDD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
G				ADMINISTRATIVE SUPPORT	MARX	MARX, G.E.	STROBEL, G.L.	HARTMAN, J.	
GA				DIRECT RECOVERY	MARX	MARX, G.E.	STROBEL, G.L.	KAROL, M.	
GAA				TELECOMMUNICATIONS	MARX	WYANT, R.D.	CLAVEL, V.I.		
85101			YN0100000	TELECOMMUNICATIONS - COST	MARX	GWINN, R.K.	CLAVEL, V.I.	JENSEN, D.	
85199			YN0100000	TELECOMMUNICATIONS - RECOVERY	MARX	WYANT, R.D.	JACOBS, A.D.		
GAB				MEDIA ARTS	MARX	WILKINSON, N..	JACOBS, A.D.		
84201			YN0100000	MEDIA ARTS - COST	MARX	WILKINSON, N..	JACOBS, A.D.	KRUHM, J.	
84299			YN0100000	MEDIA ARTS - RECOVERY	WILK	WILKINSON, N..	JACOBS, A.D.		
GAC				CENTRAL COMPUTING FACILITY	MARX	WYANT, R.D.	CLAVEL, V.I.		
83601			YN0100000	CENTRAL COMPUTING FACILITY - COST	MARX	JOHNS, H.E.	CLAVEL, V.I.	JENSEN, D.	
83699			YN0100000	CCF - RECOVERY	WYAN	WYANT, R.D.	JACOBS, A.D.		
GAD				COMPUTER TRAINING	MARX	ORTIZ, R.J.	CLAVEL, V.I.		
84101			YN0100000	COMPUTER TRAINING - COST	MARX	ORTIZ, R.J.	CLAVEL, V.I.	JENSEN, D.	
84199			YN0100000	COMPUTER TRAINING - RECOVERY	MARX	ORTIZ, R.J.	CLAVEL, V.I.		
GAE				ANALYTICAL LABS	GEIS	ZARRET, J..	TBD, T..		
86101			YN0100000	ANALYICAL LABS - COST	GEIS	GANCE, R.A.	TBD, T..		
86199			YN0100000	ANALYTICAL LABS - RECOVERY	GEIS	GANCE, R.A.	TBD, T..		
GAF				PROCUREMENT	MARX	SANDLIN, N.B.	DEBOER, D.J.		
83701			YN0100000	PROCUREMENT - COST	MARX	SANDLIN, N.B.	DEBOER, V.A.	RAILSBACK,	
83702			YN0100000	PROCUREMENT QUALITY ASSURANCE - COS	DAVI	WARD, R.G.	RICHMOND, J.K.	ROBBINS, E.	
83703			YN0100000	RECEIVING	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
83799			000000000	PROCUREMENT RECOVERY	MARX	SANDLIN, N.B.	DEBOER, D.J.	BUTLER, R.	
GB				SITE LANDLORD SUPPORT	MARX	MARX, G.E.	STROBEL, G.L.	ANDERSON, T	
GBA				RFFO	MARX	MARX, G.E.	STROBEL, G.L.		
82201			YN0100000	COMMON SUPPORT/CHARGE BACKS	MARX	MARX, G.E.	TRENT, V.M.	PIETSCH, E.	
82202			YN0100000	SUBCONTRACTOR SUPPORT	MARX	MARX, G.E.	TRENT, V.M.	MILLER, H.	
82203			YN0100000	ADMINISTRATIVE SUPER CONTRACT	MARX	MARX, G.E.	TRENT, V.M.	RAILSBACK,	
82204			YN0100000	TECHNICAL SUPER CONTRACT	MARX	MARX, G.E.	TRENT, V.M.	WILSON, E.	
82205			YN0100000	SECURITY SUPER CONTRACT	MARX	MARX, G.E.	TRENT, V.M.	WALLACE, R.	
82207			YN0100000	COMPUTER BUYS	MARX	MARX, G.E.	TRENT, V.M.	JENSEN, D.	
GBB				WSI	GILL	GILLISON, W.R.	BERG, E.J.		
81211			YN0100000	PROTECTIVE FORCE OPERATIONS	GILL	GILLISON, W.R.	ELMORE, L.E.	CASEY, W.	
81212			YN0100000	ACCESS CONTROLS	GILL	GILLISON, W.R.	ELMORE, L.E.	CASEY, W.	
81213			YN0100000	ENVIRONMENT, SAFETY & HEALTH	GILL	GILLISON, W.R.	ELMORE, L.E.	EMCH, D.	
81214			YN0100000	MANAGEMENT	GILL	GILLISON, W.R.	ELMORE, L.E.		
81215			YN0100000	ADMINISTRATION	GILL	GILLISON, W.R.	ELMORE, L.E.		
81216			YN0100000	PLANNING	GILL	GILLISON, W.R.	ELMORE, L.E.		
81217			YN0100000	TRAINING	GILL	GILLISON, W.R.	ELMORE, L.E.		
81218			YN0100000	WSI DIRECT ALLOCATION	KELL	GILLISON, W.R.	ELMORE, L.E.		

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GBC				TRAINING SERVICES	MCDO	DURST, D.P.	RICHARDSON, R.		
01101			YN0100000	TRAINING SERVICES SUPPORT	MCDO	DURST, D.P.	RICHARDSON, R.	OBA, D.	
01102			YN0100000	SAFETY, HEALTH & ENVIRONMENTAL TRAI	MCDO	EINIG, K.J.	RICHARDSON, R.		
01103			YN0100000	OPERATING & MAINTENANCE TRAINING	MCDO	HYDEN, S.A.	RICHARDSON, R.	DEMBINSKI,	
01110			YN0100000	ROCKY FLATS INSTITUTE	MCDO	GUENTHER, D.B.	RICHARDSON, R.	DEMBINSKI,	
02014			YN0100000	DOCUMENT SERVICES	MCDO	DOLE, D.L.	JONES, J.H.	MARQUEZ, S.	
GBD				HEALTH & SAFETY	FERR	FERRERA, D.W.	CURRIER, L.J.		
02302			YN0100000	OCCUPATIONAL HEALTH	FERR	FURMAN JR, F.J.	ZOBEL, G.S.	GRETHEL, T.	
02303			YN0100000	HEALTH EFFECTS	FERR	HILMAS, D.E.	ZOBEL, G.S.	GRETHEL, T.	
03201			YN0100000	INDUSTRIAL SAFETY & HEALTH	MARX	BOYLE, R.W.	TRENT, V.H.	GARRIS, L.	
GBE				SECURITY PROGRAMS	KELL	CARNIVAL, G.J.	BERG, E.J.		
01201			YN0100000	TECHNICAL SECURITY	KELL	OLDIS, P.E.	ELMORE, L.E.	CASEY, W.	
01202			YN0100000	PERSONNEL SECURITY	KELL	KELL, R.E.	ELMORE, L.E.	CASEY, W.	
01203			YN0100000	SECURITY OPERATIONS	KELL	JAKUBOWSKI, J.H	ELMORE, L.E.	CASEY, W.	
01204			YN0100000	PROGRAM MANAGEMENT & PLANNING	KELL	KAPPES, G.M.	ELMORE, L.E.	CASEY, W.	
01205			YN0100000	INFORMATION SECURITY	KELL	KELL, R.E.	ELMORE, L.E.	CASEY, W.	
GBF				PLANT SUPPORT	FERR	FERRERA, D.W.	CURRIER, L.J.	BENNETT, W.	
01404			YN0100000	QUALITY SERVICES	FERR	KAWAMOTO, T.R.	MEYERS, J.R.	BENNETT, W.	
01601			YN0100000	MAINTENANCE PROGRAM SUPPORT	FERR	MOHR, K.E.	CURRIER, L.J.	BENNETT, W.	
01604			YN0100000	APPRENTICESHIP PROGRAM	FERR	MOHR, W.F.	CURRIER, L.J.	BENNETT, W.	
01606			YN0100000	TRAINING AND QUALIFICATIONS	FERR	POPE, F.M.	CURRIER, L.J.	DEMBINSKI,	
01701			YN0100000	EMERGENCY SERVICES	FERR	PARKER, T.J.	ZOBEL, G.S.	SELAN, J.	
01702			YN0100000	LOGISTICS/WAREHOUSE	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
01703			YN0100000	LAUNDRY	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
01704			YN0100000	ON-SITE TRANSPORTATION SERVICES & F	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
01712			YN0100000	NDA STANDARDS	FERR	KAWAMOTO, T.R.	MEYERS, J.R.	BENNETT, W.	
01714			YN0100000	VEHICLE FLEET	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
02107			YN0100000	TRAFFIC	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
02109			YN0100000	SHIFT SUPERINTENDANTS	FERR	FERRERA, D.W.	CURRIER, L.J.		
GBG				PLANT SERVICES	MARX	BECK, P.D.	JACOBS, A.D.		
02101			YN0100000	COST PER COPY CONTRACT	MARX	WILKINSON, M..	JACOBS, A.D.	KRUHM, J.	
02103			YN0100000	CAFETERIA	MARX	NEAL, N.D.	JACOBS, A.D.	WADE, B.	
02501			YN0100000	RECORDS MANAGEMENT	MARX	SWENSON, B.A.	JACOBS, A.D.	KRUHM, J.	
02503			YN0100000	DOCUMENT CONTROL/CONFIGURATION	MARX	CAPRA, T.J.	JACOBS, A.D.	KRUHM, J.	
02504			YN0100000	CENTRAL LIBRARY AND SUPPORT	MARX	LANG, S.D.	JACOBS, A.D.	KRUHM, J.	
GBH				ADMINISTRATIVE SUPPORT AREA BASELIN	FERR	FERRERA, D.W.	CURRIER, L.J.	HARTUNG, P.	
01912			YN0100000	CORRECTIVE MAINTENANCE	FERR	BOYES, W.R.	MEYERS, J.R.	BENNETT, W.	
01913			YN0100000	ENVIRONMENTAL COMPLIANCE MANAGEMENT	FERR	HOLSTEIN, K.A.	MEYERS, J.R.	HARTUNG, P.	
01921			YN0100000	OPERATIONS MANAGEMENT	FERR	TONI, F.M.	MEYERS, J.R.	HARTUNG, P.	
01925			YN0100000	ENVIRONMENTAL CORRECTIVE ACTIONS	FERR	BOYES, W.R.	MEYERS, J.R.	BENNETT, W.	
GBI				ENGINEERING & SAFETY SUPPORT	KELL	RAPPENECKER, G.	BERG, E.J.		
02003			YN0100000	INDUSTRIAL ENGINEERING	MCDO	BEGGANE, K.M.	JONES, J.H.	MARQUEZ, S.	

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82009			YN0100000	ENGINEERING TECHNICAL SUPPORT	KELL	ENGLISH, J.W.	KENNEDY, M.H.	MARQUEZ, S.	
82010			YN0100000	ENGINEERING PROCUREMENT SUPPORT	KELL	REINHART, W.D.	KENNEDY, M.H.	MARQUEZ, S.	
82011			YN0100000	ENGINEERING STANDARDS	KELL	BAILEY, J.M.	KENNEDY, M.H.	MARQUEZ, S.	
82012			YN0100000	ENGINEERING & SAFETY SUPPORT SERVIC	KELL	RAPPENECKER, G.	KENNEDY, M.H.	MARQUEZ, S.	
82015			YN0100000	IR CAD/CAE DATABASE SUPPORT	KELL	BRUEGGER, R.D.	KENNEDY, M.H.	MARQUEZ, S.	
82301			YN0100000	INDUSTRIAL SAFETY AND HEALTH	KELL	CORDOVA, R.C.	ELMORE, L.E.	GRETHEL, T.	
GBJ				UTILITIES	FERR	STOVALL, S.K.	CURRIER, L.J.	HARTUNG, P.	
81801			YN0100000	UTILITIES SURVEILLANCE	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
81802			YN0100000	UTILITIES MAINTENANCE	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
81803			YN0100000	UTILITIES OPERATIONS SUPPORT	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
81804			YN0100000	UTILITIES SERVICES	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
81805			YN0100000	GAS SERVICES	FERR	STOVALL, S.K.	ROOT, R.J.		
81808			YN0100000	UTILITIES EXPENSE PROJECTS	FERR	WILLIAMSON, R.E	GALLIMORE, J.E	HARTUNG, P.	
81809			YN0100000	FILTER SERVICES	FERR	CAULFIELD, R.A.	ROOT, R.J.	BENNETT, W.	
GBK				WASTE SERVICES	HEDA	HEDAHL, T.G.	DEBOER, D.J.	HARTUNG, P.	
81708			YN0100000	LANDFILL	HEDA	HEDAHL, T.G.	DEBOER, D.J.	ROW, C.	
81709			YN0100000	SEWAGE TREATMENT PLANT	HEDA	HEDAHL, T.G.	DEBOER, D.J.	HARTUNG, P.	
GBL				REAL PROPERTY MANAGEMENT	TBD,	TBD, T..	TBD, T..		
84001			YN0100000	FACILITY PLANNING & LEASING	MARX	ANDERSON, C.D.	TRENT, V.M.	SCHIESSWOHL	
GBM				PROPERTY MANAGEMENT	TBD,	TBD, T..	TBD, T..		
82105			YN0100000	PROPERTY MANAGEMENT	FERR	THOMPSON, J.D.	CURRIER, L.J.	JAMESON, G.	
GBX				RECOVERY	MARX	MARX, G.E.	STROBEL, G.L.		
82999			YN0100000	LANDLORD SUPPORT - RECOVERY	MARX	MARX, G.E.	TRENT, V.M.	GARRIS, L.	
GE				GENERAL MANAGEMENT	BURL	BURLINGAME, A.H	STROBEL, G.L.	KAROL, M.	
GEA				GENERAL MANAGEMENT	BURL	BURLINGAME, A.H	JONES, J.M.		
83101			YN0100000	EG&G-RFP MANAGEMENT	BURL	SCHWARTZ, J.K.	JONES, J.M.	GARRIS, L.	
83103			YN0100000	TQM	MCDO	SCOTT, M.K.	JONES, J.M.	HALE, J.	
83407			YN0100000	INTERNAL AUDIT	JACK	JACKSON, D.T.	JONES, J.M.	DUFFY, G.	
83801			YN0100000	LEGAL COUNSELING	MC K	MCKENNA, F.G.	JONES, J.M.	IZELL, K.	
GEB				INTERNAL/EXTERNAL COMMUNICATION	BURL	WILSON, J.M.	STROBEL, G.L.		
83102			YN0100000	COMMUNITY SERVICE ACTIVITIES	BURL	WILSON, J.M.	JONES, J.M.	DUFFY, G.	
83405			YN0100000	EXTERNAL INTERFACE	GLOV	ROMAN, R.A.	RICHMOND, J.K.	XUAN, L.	
83901			YN0100000	COMMUNICATIONS	WILS	PIKE, B.E.	RICHARDSON, R.	BRAINARD-JO	
GEC				HUMAN RESOURCES	MARX	AMARAL, M.E.	JONES, J.M.		
83501			YN0100000	HUMAN RESOURCES SERVICES	MARX	AMARAL, M.E.	JACOBS, A.D.	WADE, B.	
83502			YN0100000	LABOR RELATIONS	MCKE	MCKENNA, F.G.	JONES, J.M.	WADE, B.	
83503			YN0100000	EMPLOYEE SERVICES	MARX	LEWIS, J..	JACOBS, A.D.	WADE, B.	
GED				STRATEGIC PLANNING	HEAL	HEALY, T.J.	JONES, J.M.		
24401			YN0100000	TRANSITION TECHNICAL SUPPORT	HEAL	EHLER, W.D.	JONES, J.M.	HUFFMAN, G.	

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24402			YN0100000	INTEGRATED PLANNING	HEAL	MINELLI, C.K.	JONES, J.M.	HUFFMAN, G.	
50160			YN0100000	SYSTEMS ENGINEERING ANALYSIS	HEAL	SHAIN, D.I.	JONES, J.M.	HUFFMAN, G.	
GEE				STANDARDS & ASSESSMENTS	GLOV	GLOVER, R..	RICHMOND, J.K.		
83303			YN0100000	PLANT ACTION TRACKING SYSTEM	GLOV	STOVALL, K.D.	RICHMOND, J.K.	ROBBINS, E.	
83402			YN0100000	ASSESSMENTS	GLOV	WHITE, B.L.	RICHMOND, J.K.	XUAN, L.	
83403			YN0100000	STANDARDS PROGRAM	GLOV	CANNON, C.Y.	RICHMOND, J.K.	XUAN, L.	
83406			YN0100000	INTEGRATED ACTIVITIES	GLOV	ROMANO, S.E.	RICHMOND, J.K.	XUAN, L.	
83408			YN0100000	QUALITY PROGRAMS	GLOV	HADACEK, M.W.	RICHMOND, J.K.	ROBBINS, E.	
83414			YN0100000	ISSUES MANAGEMENT/LESSONS LEARNED	GLOV	STOVALL, K.D.	RICHMOND, J.K.	WESTBROOK,	
83415			YN0100000	MEASUREMENT AND ANALYSIS	GLOV	STOVALL, K.D.	RICHMOND, J.K.	XUAN, L.	
83416			YN0100000	PLANTWIDE INTEGRATION	GLOV	STOVALL, K.D.	RICHMOND, J.K.	XUAN, L.	
GEF				FINANCIAL/PROJECT MANAGEMENT	MARX	MARX, G.E.	TRENT, V.M.		
82108			YN0100000	TRAVEL	MARX	ZAHN, W.B.	TRENT, V.M.	GARRIS, L.	
83104			YN0100000	M&O ACCOUNTABILITY	MARX	DOLES, J.T.	TRENT, V.M.	LAWLER, T.	
83204			YN0100000	OTHER (TAXES, SPECIAL STUDIES, ETC.	MARX	BOVIO, J.R.	TRENT, V.M.	ADAMS, J.	
83205			YN0100000	FINANCIAL SYSTEMS MANAGEMENT	MARX	MARTINEZ, T.M.	TRENT, V.M.	GARRIS, L.	
83206			YN0100000	PAYROLL ACCOUNTING	MARX	TAN, R.T.	TRENT, V.M.	GARRIS, L.	
83207			YN0100000	ELECTRONIC TIMECARD	MARX	NORMAN, J.L.	TRENT, V.M.	GARRIS, L.	
83208			YN0100000	PROPERTY ACCOUNTING	MARX	ZAHN, W.B.	TRENT, V.M.		
83301			YN0100000	PROGRAM PLANNING SERVICES	MARX	STEWART, D.L.	DEBOER, V.A.	HOLIFIELD,	
83302			YN0100000	PROJECT CONTROL SYSTEMS	MARX	SCHOENBAUER, C.	DEBOER, V.A.	HOLIFIELD,	
83602			YN0100000	MANAGEMENT INFORMATION SYSTEMS	MARX	KAPLAN, L.D.	CLAVEL, V.I.	JENSEN, D.	
83603			YN0100000	IR TECHNOLOGY SYSTEMS & SERVICES	MARX	PRESTIEN, R.L.	CLAVEL, V.I.	JENSEN, D.	
83604			YN0100000	INFORMATION ENGINEERING & IR SERVIC	MARX	ORTIZ, R.J.	CLAVEL, V.I.	JENSEN, D.	
GEX				G&A RECOVERY	MARX	STROBEL, G.L..	STROBEL, G.L..		
84999			YN0100000	G&A - RECOVERY	MARX	STROBEL, G.L.	STROBEL, G.L.		
GG				BENEFITS	MARX	MARX, G.E.	STROBEL, G.L.	KAROL, M.	
GGA				BENEFITS	MARX	MARX, G.E.	STROBEL, G.L.		
89101			YN0100000	EMPLOYEE BENEFITS	MARX	ELENBAAS, M.S.	JACOBS, A.D.	PEACOCK, E.	
89102			YN0100000	PAYROLL TAXES	MARX	HANNI, B.J.	TRENT, V.M.	PEACOCK, E.	
89199			YN0100000	BENEFITS AND PAYROLL TAXES - RECOVE	MARX	HANNI, B.J.	JACOBS, A.D.	GARRIS, L.	
GH				ORGANIZATIONAL OVERHEAD	MARX	MARX, G.E.	STROBEL, G.L.	RING, B.	
GHA				OFFICE OF PRESIDENT - ORG BURDEN	MARX	BURLINGAME, A.H	STROBEL, G.L.		
95001			YN0100000	GENERAL MANAGER & SUPPORT - COSTS	BURL	BURLINGAME, A.H	JONES, J.M.	GARRIS, L.	
95002			YN0100000	GENERAL MANAGER & SUPPORT - LABOR V	BURL	BURLINGAME, A.H	JONES, J.M.	GARRIS, L.	
95009			YN0100000	GENERAL MANAGER & SUPPORT - RECOVER	BURL	BURLINGAME, A.H	JONES, J.M.	GARRIS, L.	
95011			YN0100000	ORGANIZATIONAL EFFECTIVENESS - COST	BURL	MCDONALD, R.C.	JONES, J.M.	OBA, D.	
95012			YN0100000	ORGANIZATION EFFECTIVENESS - LABOR	BURL	MCDONALD, R.C.	JONES, J.M.	OBA, D.	
95019			YN0100000	ORGANIZATIONAL EFFECTIVENESS - RECO	BURL	MCDONALD, R.C.	JONES, J.M.	OBA, D.	
95301			YN0100000	STANDARDS, ASSURANCE & AUDITS - COS	BURL	GLOVER, W.S.	RICHMOND, J.K.	SARGENT, D.	
95302			YN0100000	STANDARDS, ASSURANCE & AUDITS - LAB	BURL	GLOVER, W.S.	RICHMOND, J.K.	SARGENT, D.	
95309			YN0100000	STANDARDS, ASSURANCE & AUDITS - REC	BURL	GLOVER, W.S.	RICHMOND, J.K.	SARGENT, D.	

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GHB				ENVIRONMENTAL RESTORATION - ORG BUR	MARX	STIGER, S.G.	PIBURN, R.H.		
95701			YN0100000	ENVIRONMENTAL RESTORATION MGT - COS	STIG	STIGER, S.G.	DICKINSON, L.L	LOCKHART, F	
95702			YN0100000	ENVIRON RESTORATION MGT - LABOR VAR	STIG	STIGER, S.G.	DICKINSON, L.L	LOCKHART, F	
95709			YN0100000	ENVIRON RESTORATION MGT - RECOVERY	STIG	STIGER, S.G.	DICKINSON, L.L	LOCKHART, F	
95711			YN0100000	ERM REMEDIATION PROJECT - COSTS	STIG	BUSBY, W.S.	DICKINSON, L.L	LOCKHART, F	
95712			YN0100000	ERM REMEDIATION PROJECT - LABOR VAR	STIG	BUSBY, W.S.	DICKINSON, L.L	LOCKHART, F	
95719			YN0100000	ERM REMEDIATION PROJECT - RECOVERY	STIG	BUSBY, W.S.	DICKINSON, L.L	LOCKHART, F	
95721			YN0100000	ERM ENV SCIENCE & ENGINEERING - COS	STIG	HUTCHINS, H.M.	DICKINSON, L.L	LOCKHART, F	
95722			YN0100000	ERM ENV SCIENCE & ENGINEERING - LAB	STIG	HUTCHINS, H.M.	DICKINSON, L.L	LOCKHART, F	
95729			YN0100000	ERM ENV SCIENCE & ENGINEERING - REC	STIG	HUTCHINS, H.M.	DICKINSON, L.L	LOCKHART, F	
95731			YN0100000	ERM SOLAR PONDS PROJECT - COSTS	STIG	KEITH, S.R.	DICKINSON, L.L	LOCKHART, F	
95732			YN0100000	ERM SOLAR PONDS PROJECT - LABOR VAR	STIG	KEITH, S.R.	DICKINSON, L.L	LOCKHART, F	
95739			YN0100000	ERM SOLAR PONDS PROJECT - RECOVERY	STIG	KEITH, S.R.	DICKINSON, L.L	LOCKHART, F	
95741			YN0100000	ERM FACILITY OPERATIONS - COSTS	STIG	BROUSSARD, M.C.	DICKINSON, L.L	LOCKHART, F	
95742			YN0100000	ERM FACILITY OPERATIONS - LABOR VAR	STIG	BROUSSARD, M.C.	DICKINSON, L.L	LOCKHART, F	
95749			YN0100000	ERM FACILITY OPERATIONS - RECOVERY	STIG	BROUSSARD, M.C.	DICKINSON, L.L	LOCKHART, F	
95761			YN0100000	ERM SAMPLE MGT - COSTS	STIG	STAGG, D.D.	DICKINSON, L.L	LOCKHART, F	
95762			YN0100000	ERM SAMPLE MGT - LABOR VARIANCE	STIG	STAGG, D.D.	DICKINSON, L.L	LOCKHART, F	
95769			YN0100000	ERM SAMPLE MGT - RECOVERY	STIG	STAGG, D.D.	DICKINSON, L.L	LOCKHART, F	
GHC				WASTE STABILIZATION - ORG BURDEN	MARX	FRAY, R.E.	MCCORD, R.D.		
95241			YN0100000	TECHNOLOGY DEVELOPMENT - COSTS	FRAY	RISING, T.L.	MCCORD, R.D.	RAMPE, J.	
95242			YN0100000	TECHNOLOGY DEVELOPMENT - LABOR VARI	FRAY	RISING, T.L.	MCCORD, R.D.	RAMPE, J.	
95249			YN0100000	TECHNOLOGY DEVELOPMENT - RECOVERY	FRAY	RISING, T.L.	MCCORD, R.D.	RAMPE, J.	
95261			YN0100000	Waste Stabilization Management - Co	FRAY	FERRERA, K.P.	MCCORD, R.D.		
95262			YN0100000	WASTE STABILIZATION MGMT - LABOR VA	FRAY	FERRERA, K.P.	MCCORD, R.D.		
95269			YN0100000	Waste Stabilization Management - Re	FRAY	FERRERA, K.P.	MCCORD, R.D.		
95431			YN0100000	LIQUID WASTE PROCESSING - COSTS	FRAY	DUNN, R.P.	MCCORD, R.D.	HARTMAN, J.	
95432			YN0100000	LIQUID WASTE PROCESSING - LABOR VAR	FRAY	DUNN, R.P.	MCCORD, R.D.	HARTMAN, J.	
95439			YN0100000	LIQUID WASTE PROCESSING - RECOVERY	FRAY	DUNN, R.P.	MCCORD, R.D.	HARTMAN, J.	
95511			YN0100000	BLDG 771/774 OPERATIONS - COSTS	FRAY	HENSLEY, D.B.	MCCORD, R.D.	RUSCITTO, D	
95512			YN0100000	BLDG 771/774 OPERATIONS - LABOR VAR	FRAY	HENSLEY, D.B.	MCCORD, R.D.	RUSCITTO, D	
95519			YN0100000	BLDG 771/774 OPERATIONS - RECOVERY	FRAY	HENSLEY, D.B.	MCCORD, R.D.	RUSCITTO, D	
95531			YN0100000	Residue Stabilization - Costs	FRAY	BALL, J.M.	MCCORD, R.D.	THATCHER, B	
95532			YN0100000	Residue Stabilization - Labor Varia	FRAY	BALL, J.M.	MCCORD, R.D.	KAROL, M.	
95539			YN0100000	Residue Stabilization - Recovery	FRAY	BALL, J.M.	MCCORD, R.D.	THATCHER, B	
GHD				WASTE MANAGEMENT - ORG BURDEN	MARX	HEDAHL, T.G.	DEBOER, D.J.		
95201			YN0100000	ENVIRON & WASTE MGT - COSTS	HEDA	HEDAHL, T.G.	KENTON, J.T.	RUSCITTO, D	
95202			YN0100000	ENVIRON & WASTE MGT - LABOR VARIANC	HEDA	HEDAHL, T.G.	KENTON, J.T.	RUSCITTO, D	
95209			YN0100000	ENVIRON & WASTE MGT - RECOVERY	HEDA	HEDAHL, T.G.	KENTON, J.T.	RUSCITTO, D	
95221			YN0100000	WASTE REDUCTION & ASSAY - COSTS	HEDA	FRANZ JR, W.A.	KENTON, J.T.	RING, B.	
95222			YN0100000	WASTE OPERATIONS - LABOR VARIANCE	HEDA	FRANZ JR, W.A.	KENTON, J.T.	RING, B.	
95229			YN0100000	WASTE OPERATIONS - RECOVERY	HEDA	FRANZ JR, W.A.	KENTON, J.T.	RING, B.	
95231			YN0100000	WASTE PROGRAMS - COSTS	HEDA	SCHUBERT, A.L.	FLA HAVHAN, H.	COTE, P.	
95232			YN0100000	WASTE PROGRAMS - LABOR VARIANCE	HEDA	SCHUBERT, A.L.	FLA HAVHAN, H.	COTE, P.	
95239			YN0100000	WASTE PROGRAMS - RECOVERY	HEDA	SCHUBERT, A.L.	FLA HAVHAN, H.	COTE, P.	
95251			YN0100000	ENVIRONMENTAL PROTECTION MANAGEMENT	HEDA	SETLOCK, G.H.	JOHNSTON, A.L.	ROW, C.	

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95252			YN0100000	ENVIRONMENTAL PROTECTION MANAGEMENT	HEDA	SETLOCK, G.H.	JOHNSTON, A.L.	ROW, C.	
95259			YN0100000	ENVIRONMENTAL PROTECTION MGMT - REC	HEDA	SETLOCK, G.H.	JOHNSTON, A.L.	ROW, C.	
95271			YN0100000	WASTE STORAGE & DISPOSAL - COSTS	HEDA	CIUCCI JR, J.A.	BULLOCK, R.R.		
95272			YN0100000	WASTE STORAGE DISPOSAL - LABOR	HEDA	CIUCCI JR, J.A.	BULLOCK, R.R.		
95279			YN0100000	WASTE DISPOSAL - RESOURCE	HEDA	CIUCCI JR, J.A.	BULLOCK, R.R.		
GHE				SHM MANAGEMENT - ORG BURDEN	MARX	VOORHEIS, G.M.	STORRER, W.S.		
95411			YN0100000	SHM PROGRAMS - COSTS	VOOR	PATTERSON, J.B.	STORRER, W.S.	ANDERSON, T	
95412			YN0100000	SHM PROGRAMS - LABOR VARIANCE	VOOR	PATTERSON, J.B.	STORRER, W.S.	ANDERSON, T	
95419			YN0100000	SHM PROGRAMS - RECOVERY	VOOR	PATTERSON, J.B.	STORRER, W.S.	ANDERSON, T	
95451			YN0100000	SHM MANAGEMENT - COSTS	VOOR	PATTERSON, J.B.	STORRER, W.S.	ANDERSON, T	
95452			YN0100000	SHM MANAGEMENT - LABOR VARIANCE	VOOR	PATTERSON, J.B.	STORRER, W.S.	ANDERSON, T	
95461			YN0100000	B371 OPERATIONS - COST	VOOR	PATTERSON, J.B.	STORRER, W.S.		
95462			YN0100000	B371 OPERATIONS - LABOR VARIANCE	VOOR	PATTERSON, J.B.	STORRER, W.S.		
95469			YN0100000	B371 OPERATIONS - RECOVERY	VOOR	PATTERSON, J.B.	STORRER, W.S.		
GHF				ECONOMIC DEVELOPMENT - ORG BURDEN	MARX	GOLAN, P.M.	CARPENTER, M.C		
95421			YN0100000	PRODUCT PROGRAM MGT - COSTS	GOLA	THORVALDSON, W.	GARMATZ, J.C.		
95422			YN0100000	PRODUCT PROGRAM MGT - LABOR VARIANC	GOLA	THORVALDSON, W.	GARMATZ, J.C.		
95429			YN0100000	PRODUCT PROGRAM MGT - RECOVERY	GOLA	THORVALDSON, W.	GARMATZ, J.C.		
95521			YN0100000	400 AREA OPERATIONS - COSTS	GOLA	MC ELHINNEY, G.	COLLINS, B.J.	THATCHER, B	
95522			YN0100000	400 AREA OPERATIONS - LABOR VARIANC	GOLA	MC ELHINNEY, G.	COLLINS, B.J.	THATCHER, B	
95529			YN0100000	400 AREA OPERATIONS - RECOVERY	GOLA	MC ELHINNEY, G.	COLLINS, B.J.	THATCHER, B	
96001			YN0100000	OXNARD OPERATIONS - COSTS	GOLA	PERRY, R.D.	GARMATZ, J.C.	HOLIFIELD,	
96002			YN0100000	OXNARD OPERATIONS - LABOR VARIANCE	GOLA	PERRY, R.D.	GARMATZ, J.C.	HOLIFIELD,	
96009			YN0100000	OXNARD OPERATIONS - RECOVERY	GOLA	PERRY, R.D.	GARMATZ, J.C.		
GHG				BUILDING DEACTIVATION - ORG BURDEN	MARX	PIZZUTO, V.M.	CARPENTER, M.C		
95501			YN0100000	FACILITY MGT & OPS - COSTS	PIZZ	ROWZEE, D.L.	COLLINS, R.V.	RUSCITTO, D	
95502			YN0100000	FACILITY MGT & OPS - LABOR VARIANCE	PIZZ	ROWZEE, D.L.	COLLINS, R.V.	THATCHER, B	
95509			YN0100000	FACILITY MGT & OPS - RECOVERY	PIZZ	PATTERSON, J.B.	COLLINS, R.V.		
GHH				ENGINEERING & SAFETY - ORG BURDEN	MARX	KELL, R.E.	BERG, E.J.		
95441			YN0100000	CONSTRUCTION MGT - COSTS	KELL	COLES, G.W.	BERG, E.J.	BENNETT, W.	
95442			YN0100000	CONSTRUCTION MGT - LABOR VARIANCE	KELL	COLES, G.W.	BERG, E.J.	BENNETT, W.	
95449			YN0100000	CONSTRUCTION MGT - RECOVERY	KELL	COLES, G.W.	BERG, E.J.	BENNETT, W.	
95801			YN0100000	ENGINEERING & SAFETY	KELL	SHUMWAY, W.K.	ELMORE, L.E.	LEVERNIER,	
95802			YN0100000	ENGINEERING & SAFETY	KELL	SHUMWAY, W.K.	ELMORE, L.E.	LEVERNIER,	
95809			YN0100000	ENGINEERING & SAFETY	KELL	SHUMWAY, W.K.	ELMORE, L.E.		
95811			YN0100000	RADIOLOGICAL PROTECTION - COSTS	KELL	SULLIVAN, M.T.	ELMORE, L.E.	WALLIN, B.	
95812			YN0100000	RADIOLOGICAL PROTECTION - LABOR VAR	KELL	SULLIVAN, M.T.	ELMORE, L.E.	WALLIN, B.	
95819			YN0100000	RADIOLOGICAL PROTECTION - RECOVERY	KELL	SULLIVAN, M.T.	ELMORE, L.E.	WALLIN, B.	
95821			YN0100000	HYGIENE & SAFETY - COSTS	KELL	CORDOVA, R.C.	ELMORE, L.E.		
95822			YN0100000	HYGIENE & SAFETY - LABOR VARIANCE	KELL	CORDOVA, R.C.	ELMORE, L.E.		
95829			YN0100000	HEGIENE & SAFETY - RECOVERY	KELL	CORDOVA, R.C.	ELMORE, L.E.		
95831			YN0100000	SAFEGUARDS & SECURITY - COSTS	KELL	CARNIVAL, G.J.	ELMORE, L.E.	LEVERNIER,	
95832			YN0100000	SAFEGUARDS & SECURITY - LABOR VARIA	KELL	CARNIVAL, G.J.	ELMORE, L.E.	LEVERNIER,	
95839			YN0100000	SAFEGUARDS & SECURITY - RECOVERY	KELL	CARNIVAL, G.J.	ELMORE, L.E.	LEVERNIER,	
95911			YN0100000	ELECTRICAL ENGINEERING - COSTS	KELL	COULTER, W.L.	KENNEDY, M.H.	CRAUN, R.	

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95912			YN0100000	ELECTRICAL ENGINEERING - LABOR VARI	KELL	COULTER, W.L.	KENNEDY, M.H.	CRAUN, R.	
95919			YN0100000	ELECTRICAL ENGINEERING - RECOVERY	KELL	COULTER, W.L.	KENNEDY, M.H.	CRAUN, R.	
95941			YN0100000	CRITICALITY SAFETY ENGINEERING - CO	KELL	FERRIER, D.R.	KENNEDY, M.H.	CRAUN, R.	
95942			YN0100000	CRITICALITY SAFETY ENG. - LABOR VAR	KELL	FERRIER, D.R.	KENNEDY, M.H.	CRAUN, R.	
95949			YN0100000	CRITICALITY SAFETY ENGR. - RECOVERY	KELL	FERRIER, D.R.	KENNEDY, M.H.	CRAUN, R.	
95951			YN0100000	NUCLEAR SAFETY ENGR - COSTS	KELL	SATTERWHITE, D.	BERG, E.J.	ANDERSON, T	
95952			YN0100000	NUCLEAR SAFETY ENGR - LABOR VARIANC	KELL	SATTERWHITE, D.	BERG, E.J.	OLINGER, S.	
95959			YN0100000	NUCLEAR SAFETY ENGR - RECOVERY	KELL	SATTERWHITE, D.	BERG, E.J.	OLINGER, S.	
95971			YN0100000	E&S TECH. PROGRAMS - COSTS	KELL	BALL, J.M.	BERG, E.J.	POSLUSZNY,	
95972			YN0100000	E&S TECH. PROGRAMS - LABOR VARIANCE	KELL	BALL, J.M.	BERG, E.J.	POSLUSZNY,	
95979			YN0100000	E&S TECH. PROGRAMS - RECOVERY	KELL	BALL, J.M.	BERG, E.J.	POSLUSZNY,	
95991			YN0100000	ENGR SUPR SVCS - COSTS	KELL	WHITING JR, J.W	BERG, E.J.	BENNETT, W.	
95992			YN0100000	ENGR SUPR SVCS - LABOR VARIANCE	KELL	WHITING JR, J.W	BERG, E.J.	BENNETT, W.	
95999			YN0100000	ENGR SUPR SVCS - RECOVERY	KELL	WHITING JR, J.W	BERG, E.J.	BENNETT, W.	
96101			YN0100000	FACILITY PROJ MGT - COSTS	KELL	JOHNSTON, B.C.	BERG, E.J.	RAU, J.	
96102			YN0100000	FACILITY PROJ MGT - LABOR VARIANCE	KELL	JOHNSTON, B.C.	BERG, E.J.	RAU, J.	
96109			YN0100000	FACILITY PROJ MGT - RECOVERY	KELL	JOHNSTON, B.C.	BERG, E.J.		
GHI				ADMINISTRATIVE SERVICES - ORG BURDE	MARX	MARX, G.E.	STROBEL, G.L.		
95101			YN0100000	ADMIN & PLANNING - COSTS	MARX	MARX, G.E.	TRENT, V.M.	GARRIS, L.	
95102			YN0100000	ADMIN & PLANNING - LABOR VARIANCE	MARX	MARX, G.E.	TRENT, V.M.	GARRIS, L.	
95109			YN0100000	ADMIN & PLANNING - RECOVERY	MARX	MARX, G.E.	TRENT, V.M.		
95111			YN0100000	CENTRAL PLANNING & BUDGETS - COSTS	MARX	STEWART, D.L.	DEBOER, D.J.	GARRIS, L.	
95112			YN0100000	CENTRAL PLANNING & BUDGETS - LABOR	MARX	STEWART, D.L.	DEBOER, V.A.	GARRIS, L.	
95119			YN0100000	CENTRAL PLANNING & BUDGETS - RECOVE	MARX	STEWART, D.L.	DEBOER, V.A.	GARRIS, L.	
95121			YN0100000	INFORMATION RESOURCES - COSTS	MARX	HARMAN, L.K.	CLAVEL, V.I.	JENSEN, D.	
95122			YN0100000	INFORMATION RESOURCES - LABOR VARIA	MARX	HARMAN, L.K.	CLAVEL, V.I.	JENSEN, D.	
95129			YN0100000	INFORMATION RESOURCES - RECOVERY	MARX	HARMAN, L.K.	CLAVEL, V.I.	JENSEN, D.	
95131			YN0100000	HUMAN RESOURCES - COSTS	MARX	AMARAL, M.E.	JACOBS, A.D.	HARGREAVES,	
95132			YN0100000	HUMAN RESOURCES - LABOR VARIANCE	MARX	AMARAL, M.E.	JACOBS, A.D.	HARGREAVES,	
95139			YN0100000	HUMAN RESOURCES - RECOVERY	MARX	AMARAL, M.E.	JACOBS, A.D.	HARGREAVES,	
95141			YN0100000	PROCUREMENT - COSTS	MARX	SANDLIN, N.B.	DEBOER, V.A.	RAILSBACK,	
95142			YN0100000	PROCUREMENT - LABOR VARIANCE	MARX	SANDLIN, N.B.	DEBOER, V.A.	PIETSCH, E.	
95149			YN0100000	PROCUREMENT - RECOVERY	MARX	SANDLIN, N.B.	DEBOER, V.A.	PIETSCH, E.	
95151			YN0100000	FINANCE/FACIL - COSTS	MARX	HANNI, B.J.	TRENT, V.M.	GARRIS, L.	
95152			YN0100000	FINANCE/FACIL - LABOR VARIANCE	MARX	HANNI, B.J.	TRENT, V.M.	GARRIS, L.	
95159			YN0100000	FINANCE/FACIL - RECOVERY	MARX	HANNI, B.J.	TRENT, V.M.	GARRIS, L.	
95171			YN0100000	DOC MGT & MEDIA ARTS - COSTS	MARX	BECK, P.D.	JACOBS, A.D.	PIETSCH, E.	
95172			YN0100000	DOC MGT & MEDIA ARTS - LABOR VARIAN	MARX	BECK, P.D.	JACOBS, A.D.	PIETSCH, E.	
95179			YN0100000	DOC MGT & MEDIA ARTS - RECOVERY	MARX	BECK, P.D.	JACOBS, A.D.	PIETSCH, E.	
95181			YN0100000	COMP & TELECOM OPS - COSTS	MARX	WYANT, R.D.	CLAVEL, V.I.	JENSEN, D.	
95182			YN0100000	COMP & TELECOM OPS - LABOR VARIANCE	MARX	WYANT, R.D.	CLAVEL, V.I.	JENSEN, D.	
95189			YN0100000	COMP & TELECOM OPS - RECOVERY	MARX	WYANT, R.D.	CLAVEL, V.I.	JENSEN, D.	
GHJ				ANALYTICAL SERVICES - ORG BURDEN	MARX	GEIS, J.A.	STILES, J.P.		
95211			YN0100000	ANALYTICAL LABS - COSTS	HEDA	POWERS, J.S.	RASMUSSEN, D.T	CASTANEDA,	
95212			YN0100000	ANALYTICAL LABS - LABOR VARIANCE	HEDA	POWERS, J.S.	RASMUSSEN, D.T	CASTANEDA,	
95219			YN0100000	ANALYTICAL LABS - RECOVERY	HEDA	POWERS, J.S.	RASMUSSEN, D.T	CASTANEDA,	

PROJECT: BUDCALL
PLANT SUMMARY WORK BREAKDOWN STRUCTURE LISTING

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10-Aug-1994 12:12

PSWBS ELEMENT WORK PACKAGE	ADS	TBD/ BUD	B&R CODE	DESCRIPTION	RESP ORG	EG&G MANAGER	CENTRAL PLANNING REPRESENTATIVE	DOE REP.	C / D
GHK				SUPPORT SERVICES - ORG BURDEN	HARX	FERRERA, D.W.	CURRIER, L.J.	ANDERSON, T	
95541			YN0100000	FACILITY & SITE OPERATIONS - COSTS	FERR	CABLE, J.R.	MEYERS, J.R.	KAROL, M.	
95542			YN0100000	FACILITY & SITE OPERATIONS - LABOR	FERR	FERRERA, D.W.	MEYERS, J.R.	KAROL, M.	
95549			YN0100000	FACILITY & SITE OPERATIONS - RECOVE	FERR	FERRERA, D.W.	MEYERS, J.R.	KAROL, M.	
95601			YN0100000	SUPPORT SERVICES - COSTS	FERR	FERRERA, D.W.	CURRIER, L.J.	BENNETT, W.	
95602			YN0100000	SUPPORT SERVICES - LABOR VARIENCE	FERR	FERRERA, D.W.	CURRIER, L.J.	BENNETT, W.	
95609			YN0100000	SUPPORT SERVICES - RECOVERY	FERR	FERRERA, D.W.	CURRIER, L.J.	BENNETT, W.	
95611			YN0100000	FIRE/SECURITY & SUPPORT MAINTENANCE	FERR	MARSCHALL, J.R.	ROOT, R.J.	BENNETT, W.	
95612			YN0100000	FIRE/SECURITY & SUPPORT MAINTENANCE	FERR	STETSON JR, W.D	ROOT, R.J.	BENNETT, W.	
95619			YN0100000	FIRE/SECURITY & SUPPORT MAINTENANCE	FERR	FERRERA, D.W.	ROOT, R.J.	BENNETT, W.	
95631			YN0100000	MAINT PLANNING - COSTS	FERR	DESIMONE JR, R.	ROOT, R.J.	BENNETT, W.	
95632			YN0100000	MAINT PLANNING - LABOR VARIANCE	FERR	FERRERA, D.W.	ROOT, R.J.	BENNETT, W.	
95639			YN0100000	MAINT PLANNING - RECOVERY	FERR	FERRERA, D.W.	ROOT, R.J.	BENNETT, W.	
95641			YN0100000	LOGISTICS - COSTS	FERR	THOMPSON, J.D.	CURRIER, L.J.	HEAVILIN, K	
95642			YN0100000	LOGISTICS - LABOR VARIANCE	FERR	FERRERA, D.W.	CURRIER, L.J.	HEAVILIN, K	
95649			YN0100000	LOGISTICS - RECOVERY	FERR	FERRERA, D.W.	CURRIER, L.J.	HEAVILIN, K	
95651			YN0100000	METROLOGY - COSTS	FERR	KAWAMOTO, T.R.	MEYERS, J.R.	BENNETT, W.	
95652			YN0100000	METROLOGY - LABOR VARIANCE	FERR	FERRERA, D.W.	MEYERS, J.R.	BENNETT, W.	
95659			YN0100000	METROLOGY - RECOVERY	FERR	FERRERA, D.W.	MEYERS, J.R.	BENNETT, W.	
95661			YN0100000	UTILITY OPERATIONS - COSTS	FERR	STOVALL, S.K.	ROOT, R.J.	HARTUNG, P.	
95662			YN0100000	UTILITY OPERATIONS - LABOR VARIANCE	FERR	FERRERA, D.W.	ROOT, R.J.	HARTUNG, P.	
95669			YN0100000	UTILITY OPERATIONS - RECOVERY	FERR	FERRERA, D.W.	ROOT, R.J.	HARTUNG, P.	
95671			YN0100000	PLANS & INTEGRATION - COSTS	FERR	MOTT, D.L.	CURRIER, L.J.	BENNETT, W.	
95672			YN0100000	PLANS & INTEGRATION-LABOR VARIENCE	FERR	FERRERA, D.W.	CURRIER, L.J.	BENNETT, W.	
95679			YN0100000	PLANS & INTEGRATION - RECOVERY	FERR	FERRERA, D.W.	CURRIER, L.J.	BENNETT, W.	
95841			YN0100000	EMERGENCY PREPAREDNESS - COSTS	FERR	KOPPLIN, R.E.	ZOBEL, G.S.	OSTMEYER, R	
95842			YN0100000	EMERGENCY PREPAREDNESS - LABOR VARI	FERR	FERRERA, D.W.	ZOBEL, G.S.	STOVALL, C.	
95849			YN0100000	EMERGENCY PREPAREDNESS - RECOVERY	FERR	FERRERA, D.W.	ZOBEL, G.S.	STOVALL, C.	
95851			YN0100000	EMERGENCY SERVICES - COSTS	FERR	PARKER, T.J.	ZOBEL, G.S.	SELAN, J.	
95852			YN0100000	EMERGENCY SERVICES - LABOR VARIANCE	FERR	FERRERA, D.W.	ZOBEL, G.S.	OLINGER, S.	
95859			YN0100000	EMERGENCY SERVICES- RECOVERY	FERR	FERRERA, D.W.	ZOBEL, G.S.	OLINGER, S.	
95861			YN0100000	OCCUPATIONAL MEDICINE - COSTS	FERR	FURMAN JR, F.J.	ZOBEL, G.S.	GRETHEL, T.	
95862			YN0100000	OCCUPATIONAL MEDICINE - LABOR VARIA	FERR	FERRERA, D.W.	ZOBEL, G.S.	OLINGER, S.	
95869			YN0100000	OCCUPATIONAL MEDICINE-RECOVERY	FERR	FERRERA, D.W.	ZOBEL, G.S.	OLINGER, S.	

Rocky Flats Environmental Technology Site

3-L76-COEM-PMG-319

REVISION 0

SCHEDULING

APPROVED BY: _____ / L. J. McGovern / 9-29-94

Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management — Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By _____ UNC

Date 9/30/94

This procedure supersedes PILOT procedure ENG-PILOT-PM-014, Revision 0.

Periodic review frequency: 4 years from the effective date.

PADC-97-00098

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-20	10/01/94	

TOTAL NUMBER OF PAGES: 20

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1. PURPOSE

This procedure establishes the process for developing resource-loaded, integrated schedules for Rocky Flats Environmental Technology Site (Site) facility projects. It combines Site specific project management requirements with standard project management techniques to:

- Specify data format and conventions
- Specify schedule format
- Determine level of required detail
- Determine roll-up and summarization requirements in support of programmatic and strategic plans.
- Establish key-decision points/milestones
- Establish schedule maintenance and analysis methods

2. SCOPE

This procedure applies to personnel involved in the development of Site project schedules for the Project Management organization.

3. OVERVIEW

To ensure all project schedules meet both Project Management's requirements and the plant's Project Control System (PCS) data transfer parameters, each project schedule must be developed using standards as outlined below:

3.1 Data Format

Proper data format is essential for efficient PCS data transfer, and to establish/maintain a sitewide integrated schedule which incorporates summary information from project schedules and other plant activities. To ensure proper data format, all project schedules must conform to the structure provided in Central Planning and Budgets' (CP&B's) Scheduling Standards Book. This book provides detailed information regarding:

- Activity Identifiers
- Activity Code Structure
- Resource Dictionary (including current rate information)
- Tabular and Graphical Output

The information provided in the Scheduling Standards Book is provided as a source for developing new schedules and for reconciling previously developed schedules to meet the required format. In addition to this book, CP&B's PCS Group has put together a project template which was developed per the book's standards. The template is maintained with current rates, resource descriptions, cost centers, etc., and an electronic copy of the template is available from the PCS Group upon request. In addition, both resource and activity code dictionaries can be easily updated on existing project schedules via the use of the template.

3.2 Activity Descriptions

PM's Project Schedule Activity Template, identifies the majority of the activities that will be performed under most projects at the Site. This template must be used to assign standard activity identifiers (as also provided in CP&B's Scheduling Standards Book) and activity descriptions, for the appropriate activities at each level of detail. Any activities not identified on the template must be assigned a unique activity identifier which conforms to the template's structure (i.e. Level 1, 2, etc.). Newly identified activities should be added to the template as necessary, for future use. Activity descriptions should match the Plant Work Breakdown Structure (see 3-COEM-PMG-317, Work Breakdown Structure). The template is maintained by CP&B's PM support team.

3.2 Activity Descriptions (continued)

- Each project to be executed at Rocky Flats requires, at a minimum, a Level 2 schedule with the following activities and milestones:

Activities

- Pre-decisional
- Title I Design
- Title II Design
- Title III Construction

Milestones (Request for)

- Key Decision 1 (KD-1) - Approval to Commence Title I Design
- KD-2 - Approval to Commence Title II Design
- KD-3 - Approval to Commence Title III Construction
- KD-4 - Approval to Commence Production/Operations

NOTE *KD points are not required for Basic Capital Equipment (BCE) projects (non-Davis-Bacon) or certain expense projects (<1.2M).*

The use of increasing levels of detail is left to the discretion of the project manager, with input from both customer and members of the project team. It should be noted, however, that increased detail helps to identify potential risks to the project, and provides the manager with the tools to successfully plan and manage the project. Resource assignments at the lowest level of detail provides a more accurate prediction of resource usage and costs for the project.

A Level 4 schedule (see Appendix 1, Description of Project Scheduling) is to be developed for projects having significant design and construction effort or activities.

3.3 Output Format

Output standardization provides management with the tools to evaluate and communicate project status quickly and effectively - both internally and externally. PM has developed certain tabular and graphical output requirements to meet management's needs. Standardized output has been developed for:

- Gantt Charts
- Logic Diagrams
- Time-scaled logic diagrams
- Resource Histograms
- Cost Curves
- Tabular reports (both Cost and Resource Usage)

4. DEFINITIONS

See Glossary of Project Management Terms, for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager

Prepares project Work Breakdown Structure (WBS).

Provides data and information to the Central Planning & Budgets (CP&B) Project Scheduler for the development of project schedule.

Ensures schedules are developed in accordance with Appendix 1, Description of Project Scheduling.

Provides baselines, dates and milestones to the Project Scheduler for inclusion in the project schedule.

Oversees development of project schedules.

Ensures that schedules include all significant activities and deliverables within the project.

5.1 Project Manager (continued)

- Ensures that all schedules roll-up into higher level schedules for the project.

Ensures schedules are updated, as required.

Processes changes, as required, to baselines and ensures they are incorporated in the project schedule when approved.

Oversees the maintenance of schedules throughout the life of the project to ensure data is consistent and accurate.

Analyzes information and reports provided by the Project Scheduler to identify potential risks, critical path problems, and scheduling and resource loading options.

Corrects deficiencies or problems identified in the project scheduling reports.

Ensures that all key personnel, such as the Project Engineers, Budget Analyst, Scheduler, and Cost Estimator have appropriate input in the schedule development process.

6. INSTRUCTIONS

Project Manager

[1] Develop the Work Breakdown Structure (WBS) in sufficient detail to prepare project schedule.

[2] Ensure that project schedules are developed and updated for all active construction projects per this procedure. These schedules must include input from both users and project team members.

[3] Ensure that all aspects of the project, including pre-authorization, design, project and construction management, procurement, installation/ construction, and post-construction activities are incorporated into the schedule. (The schedule must be developed using input from all project team members and users.)

[4] Assemble and provide to the cognizant Central Planning & Budgets Project Scheduler all scheduling data, including a list of activities, durations, relationships, project start date, constraints and resource requirements.

[5] Provide "roll-up" requirements to the cognizant Central Planning & Budgets Project Scheduler for development of required summarization schedules, commensurate to project evolution.

NOTE *As the project evolves, more detailed elements of work and additional summarization requirements will be incorporated into the schedule. Short term look ahead schedules should be developed in sufficient detail to allow identification of interface points, critical and near critical activities, and potential risk or problem areas.*

[6] Ensure baseline and current schedule dates for summary level activities match baseline and current information stored in the plant's Project Control System (PCS).

6. INSTRUCTIONS (continued)

[7] Ensure all schedules provide an accurate depiction of each project's critical path, and include milestones for all DOE Key Decision (KD) points.

[8] Review schedule with project team members and obtain project team concurrence.

[9] Review and approve the project schedule prior to its official release.

[10] Provide the schedule status to the cognizant Central Planning & Budgets Project Scheduler on a monthly basis for schedule updating. If requested by upper management or DOE, updates may be made more frequently.

[11] Provide to the cognizant Central Planning & Budgets Project Scheduler any changes to the baseline schedule approved by the Plant Change Control Board (PCCB).

[12] Ensure an approved baseline schedule is provided for each project against which actual progress will be compared. (Baseline schedules shall be changed only after approval by the Plant Change Control Board, or by direction of the Project Manager within the approved thresholds.)

[13] Ensure schedules have capability to "roll-up" lower level detail into higher level summarization schedules.

[14] Update schedules, as required, providing copies of updated schedules to the Project Team.

[15] Review reports and graphics (e.g., logic diagrams, bar charts, resource histograms, cost reports) as required.

[16] Ensure that schedules maintain continuity with the approved project WBS.

6. INSTRUCTIONS (continued)

[17] Review schedule analysis for identification of potential risks, critical path concerns, scheduling and resource-loading options, and other important factors.

[18] Review and approve each project schedule prior to distribution.

7. RECORDS

Copies of project records associated with the development of project schedules and associated reports are to be maintained and stored in the Project Records File. Upon project closeout, Project Records Files are to be retained in accordance with 1-77000-RM-001, Records Management Guidance for Records Sources.

Program Project Manager & Project Manager

[1] Ensure that all records associated with project schedules are stored in the project records file.

8. REFERENCES

Central Planning and Budgets' (CP&B's) Scheduling Standards Book

3-L01-COEM-PMG-317, Work Breakdown Structure

1-77000-RM-001, Records Management Guidance for Records Sources

APPENDIX 1
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DESCRIPTION OF PROJECT SCHEDULING

Schedule Development and Maintenance

Project management for any project can be broken down into three phases:

Planning - involves careful examination of the project goal, laying out the steps to meet that goal, and identifying the required resources to accomplish each step. This phase produces the project's plan: a detailed description documenting the project's scope, costs, schedule, and resource requirements.

Control - involves performance measurement, assessment and evaluation, identification of potential delays to project completion, and development of workarounds. This phase represents the execution of the project plan.

Managing - Plan, organize, direct, and control the project. This includes communication with the project team, supporting organizations and upper management. Managing ensures all involved are well-informed of project status, current and potential problems, upcoming resource needs, etc.

One of the key tools that project managers use to successfully plan, control and manage a project is the schedule - a calculated prediction of the start and finish times for the project, and each activity in the project. Proper schedule development helps management identify the steps required to meet project goals; proper schedule maintenance helps implement the project plan, and provides management with the means to accurately assess project status.

PLANNING

Schedule development is accomplished during the planning phase of project management.

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Work Scope

The purpose of a work scope is to clearly define the products or services to be provided to the customer. The work scope forms the foundation of the project schedule; without a accurate definition of the work scope, no real plan can be developed, hence no schedule baseline can be established.

The key to identifying the activities to be performed in a project is the finalization and approval of the work scope as defined in the Scope and Estimate. It is at this point that the project's work breakdown structure (WBS) should be developed. The WBS is used to represent how the work is organized, and provides important information to help determine who will perform the work.

Defining Activities - Using a WBS

A WBS is developed by first identifying the major end products to be produced in order to provide the deliverables listed in the work scope. These are then subdivided into increasingly detailed and manageable subsidiary products. Most subsidiary products are the direct result of work, while others are simply the aggregation of selected products into a logical set for management control purposes. In either case, detailed activities are eventually identified for each product in the WBS at the level where the work will be performed.

Depicted graphically, a WBS illustrates a product-oriented hierarchical breakdown of the work scope organized in a logical manner. It should be prepared in conjunction with the work scope, and developed to the level of detail where responsibility for performance of the work can be assigned.

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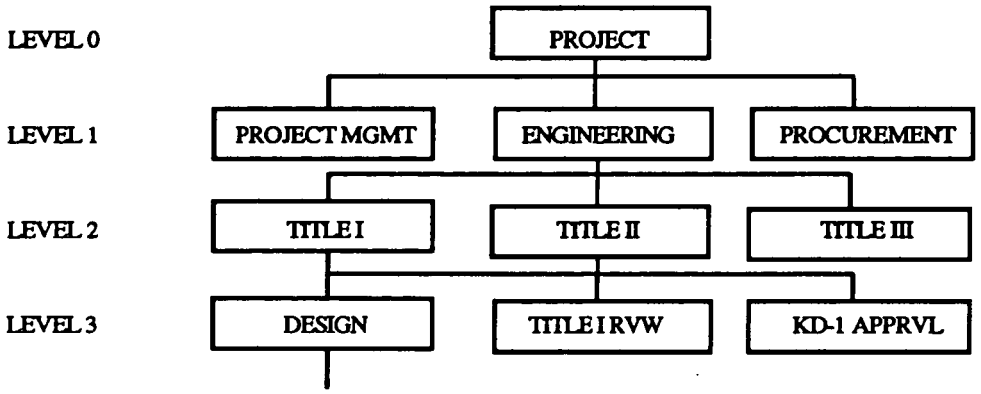
Defining Activities - Using a WBS (continued)



NOTE *Level 4 activities in the WBS will be sub-elements of the level 3 activities. Typically, these level 4 activities may be constrained by the Project Manager to some maximum time limit for performance - say 80 hours or 3 weeks.*

This sample WBS illustrates how each level is labeled. This labeling convention matches the various levels shown in PM's Project Schedule Activity Template. PM's Project Schedule Activity Template represents the standard WBS (in tabular form) for projects at the Site. This template should be used as a guide for identifying activities at the various levels, and to assign proper descriptions and activity identifiers to those activities. This template is not all-inclusive; many projects will require additional activities not found in the template. However, each project's schedule must adhere to the structure provided in the template, which provides the means to summarize at each level of the WBS.

NOTE *During the initial, pre-decisional phase of a project, many specific details about the project are unknown and only general activities can be identified. It is in the pre-decisional phase that the true scope of the project is identified, allowing more detail to be added to the schedule. Normally, a Level 2 schedule can be developed during the pre-decisional phase. For larger projects, a level 3 schedule is to be developed at the end of the conceptual stage. After completion of the pre-decisional phase and upon agreement with the customer on final work scope, more (Levels 3 through 5, as determined by the project manager) detail is added to the schedule, and, upon approval, the schedule is baselined. All lower level activities must be coded to summarize to Level 3; the Level 3 activities are then loaded in the PCS for performance measurement purposes.*

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Sequencing the Activities

After identifying the activities to be performed in the project, the next step is to arrange them in the logical order in which they will be performed. At the Site, the standard scheduling software packages use the Precedence Diagramming Method (PDM) to illustrate interrelationships between activities. PDM offers four relationship types:

- Finish-to-start (FS)
- Start-to-start (SS)
- Finish-to-finish (FF)
- Start-to-finish (SF)

When sequencing activities, it is important to understand the true relationship between the predecessor and successor, and then assign the appropriate relationship type and any associated lag (delay). (Note: at this point, resource limitations should not be considered; this process is only concerned with what must be done and in what order it must done.) Proper identification of interrelationships between activities will result in a "real-life" illustration (via logic-diagrams) of the project execution plan, and will ultimately produce a valid picture of the project's critical path.

NOTE *In order to obtain a true picture of the project's critical path, each activity must have at least one predecessor and one successor. This is done by establishing "Start" and "Finish" milestones to designate the beginning and end of the project.*

Assigning Activity Durations

After activity sequencing is complete, the next step is to assign durations to each activity. When assigning durations, each activity should be examined out of context (that is, taken out of the network), and evaluated independently. Duration estimates can be derived in several ways:

- Research past history
- Expert opinion
- Standards
- Reasonable assumption

Regardless of the method used, durations should factor in any known down-times, delays, and risks to arrive at the most realistic estimate. When initially assigning activity durations, resource limitations should not be considered; adjustments can be made after evaluation of resource requirements given durations based on unlimited resource availability.

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Assigning Resources

The next step in developing a schedule is to assign resources to the activities. Again, it is important to examine each activity out of context, and evaluate resource requirements independent of other activities. Like durations estimates, resources estimates are derived through:

- Research past history
- Expert opinion
- Standards
- Reasonable assumption

The official estimate of resource usage comes from the cost estimate assembled by CP&B's Cost Estimating Group for the Project Management Plan.

NOTE *It is important that the resources be assigned to the activities at the lowest level of the WBS. This provides the most accurate picture of both resource and cost distribution over the life of the project, and establishes accurate resource distribution curves for assigning resources to the summary level activities loaded in the PCS. All project estimated costs/resource usage are loaded and baselined in the PCS; resource loading detailed schedules are used only to help establish the applicable curves to be used in the PCS. The PCS is the only official system at the Site in which baselined project costs/resource usage are compared to actual costs/resource usage.*

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Other Considerations

Prior to processing the network (calculating start and finish dates for activities), two other items of information must be supplied: (1) the working calendar, and (2) any additional known constraints on either the project itself or the activities within the project.

[A] The Project Calendar

The project calendar specifies on what days work will be performed over the life of the project. The number of workdays per week, any holidays, vacations, etc., must be specified in order to accurately calculate the project's total duration.

[B] Constraints

In addition to knowing the project calendar, the project manager must also understand any constraints that may affect activities within the project, or the start or finish of the project itself. All known constraints, such as resource availability, material delivery dates, compliance dates, etc., should be documented in the Project Management Plan, and assigned to the appropriate activities or milestones.

NOTE *Use of constraints in lieu of schedule logic often produces an inaccurate picture of a project's critical path. Assignment of constraints to activities should only be used to identify situations where certain project events must occur. Wherever possible, proper sequencing of activities and milestones through schedule logic should be applied.*

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Schedule Analysis

After the project manager has provided the scheduler with all relevant activity and project data, the scheduler enters the information into the project management software, and then processes the network. Processing the network produces the early and late dates for each activity, analyzes resource and cost distribution, and identifies the project's critical path and finish date. This process allows the scheduler to produce the tools the project manager needs to analyze the schedule - Gantt Charts, Logic Diagrams, and Resource/Cost reports and graphics.

At this point the project manager must review these outputs with the Project Team, the User, and Program Manager to determine if the schedule is satisfactory:

- Examine the project finish date to ensure compliance with customer requirements.
- Examine milestone completion dates for compliance with regulatory and customer requirements.
- Examine resource distribution for inefficient usage (uneven loading), and for exceeding availability.
- Compare project cost distribution/total with the Project Management Plan and PCS data for disconnects.

If examination of the outputs reveals unsatisfactory results, the project manager can revisit the appropriate steps to reconcile the problem. An unsatisfactory critical path or project finish date may require adjusting activity durations and logic; unsatisfactory resource/cost distribution may require adjusting resource assignments against activities.

At the point in which the project manager in satisfied with the scheduling results, the outputs must be reviewed by the rest of the project team for concurrence. Upon approval by the project team, senior project management must review and approve the schedule, then it is presented to the customer for final approval. With customer concurrence, the schedule becomes a baseline, by which project performance is tracked.

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Schedule Analysis (continued)

To make comparisons to the original project plan, the project scheduler is responsible for maintaining two versions of each project schedule - a baseline version, and a current version. The baseline version remains unchanged throughout the life of the project (unless changes are formally approved via formal change control); the current version is used to obtain actual dates and progress as the project evolves.

CONTROL

Monitoring progress and schedule maintenance is performed during the control phase.

Schedule Maintenance

In order to obtain an accurate picture of project status (from a schedule perspective), the current project schedule should be updated a minimum of once a month. During each update period, the project manager works with the project scheduler to obtain actual start and finish dates for activities and milestones, and any applicable percent complete for started but unfinished activities. After this information is entered and the network is re-processed, the scheduler generates the appropriate reports and graphics and forwards them to the project manager.

At this point, the project manager uses the outputs to evaluate project status, highlighting activities and milestones with significant variances between baseline and current dates, particularly those on the critical path. This information will identify potential delays to the project completion, and assist the project manager in developing workarounds to reconcile those delays.

NOTE *The information collected should be summarized to Level 3 of the WBS to match the activities loaded in the PCS. The information can then be used to calculate the earned value for the summary activities loaded in the PCS.*

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MANAGING WITH THE SCHEDULE

The schedule is a tool by which the project manager plans and executes the project. Initial concurrence and on-going support to the schedule by all project team members and participants is vitally important for project success.

Ideally, the baselined schedule and the current schedule will be identical throughout the life of the project. More often than not, however, this is not the case. Even the most carefully devised project can experience unforeseen events which can jeopardize the timely completion of the project.

Proper development and use of the schedule, however, can help identify potential problem areas, identify the responsible organizations, and provide the project manager with a picture of potential impacts on managerial decisions. To be successful, the project manager must:

- Develop the project schedule to the lowest practical level of detail, identifying all potential obstacles, risks, and responsible performing organizations
- Use the schedule to plan work, organize resources, and allocate funds
- Carry out the schedule as planned
- Monitor project progress as often as practical
- Use the progress to identify problem areas
- Contact those responsible for work slippage to develop workaround plans
- Update / change the schedule as necessary to incorporate work scope changes and workaround plans

Rocky Flats Environmental Technology Site

2-H36-COEM-PMG-321

REVISION 0

PROJECT RISK MANAGEMENT

APPROVED BY: R E Kell / R. E. Kell / 6/1/95
Director, Engineering & Safety Services — Print Name — Date

Responsible Organization: Project Management Effective Date: 7-18-95

CONCURRENCE BY THE FOLLOWING DISCIPLINES ~~WILL BE~~ 6/1/95 IS DOCUMENTED IN THE PROCEDURE HISTORY FILE

Engineering and Safety Support
Central Engineering
Nuclear Safety
Project Management
All PCEs

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By W M Hm
Date 6/1/95 (UNC)

This procedure supersedes procedure ENG-PILOT-PM-005, Revision 0.

Periodic review frequency: 4 years from the effective date.

PADC-97-00099

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1. PURPOSE

This procedure establishes the process to be used for risk management including identifying, assessing, controlling and documenting project risks within the Engineering and Safety Services (E&SS) organization. The intent of the project risk management process is to identify and mitigate risks associated with hazards, failures, or concerns that could adversely impact one or more of the following:

- The health and safety of plant personnel and the public.
- The environment, both on and off-site.
- The technical scope, budget, or schedule baselines of the project.
- The constructability, operability, and maintainability of the project within legal, regulatory, and corporate compliance and commitment boundaries.
- The economics of operation site wide.
- Government or private property.

2. SCOPE

This procedure applies to all project personnel and projects managed within E&SS, but excludes Work Control Form (WCF) activities.

3. OVERVIEW

This procedure contains the general instructions to guide the risk-based, graded approach to project management and control as set forth in DOE Order 4700.1, Project Management System, and DOE Order 4700.5, Project Control System Guidelines.

4. DEFINITIONS

See COEM Glossary for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager (PM)

Initiates the project risk management process in the conceptual and planning phases of the project in order to identify potential risks early in the life of the project.

Uses a graded approach based on project size, complexity, and other factors in developing a plan to manage risk in the project.

Prepares the project Work Breakdown Structure (WBS) in sufficient detail to aid in the identification, assessment, and response to project risk.

Ensures that preliminary and Final Safety Analysis Reports (FSARs) are conducted in a timely manner so that the resulting information can be used in identifying, assessing, and responding to project risk.

Prepares and includes Risk Assessments in the Justification of Mission Need and in the Project Plan for MSAs and MPs.

Identifies critical systems, subsystems, and other factors in the Risk Assessment that require focused work and resolution.

Addresses risks such as technical, schedule, cost, safeguards and security, environmental, health and safety, regulatory, utility, and institutional impediments not covered in other sections in the Risk Assessment.

Address each project risk in the Risk Assessment giving consideration to the following information:

- The assessed level of risk (high, moderate, low).
- The basis for this assessment (reliability, availability, and maintainability analyses; study results; proven or unproven technology; well established or unproven construction procedures).
- The critical project elements contributing to risk.
- Implications of the risk.
- Activities or alternatives planned to minimize risk.
- The stage of the project in which the risk exists (e.g., conceptual, planning, design, construction, closeout, operations, etc.).

5.1 Project Manager (PM) (continued)

Ensures that project risks are identified and quantified during the conceptual design process.

6. REQUIREMENTS

The risk management process is to be conducted for all projects undertaken in the E&SS organization. A graded approach is to be used with consideration given to project size, complexity, and other factors to determine the extent of the risk management effort required for each specific project.

In accordance with DOE Order 4700.1, Risk Assessments must be prepared and included as major sections of the Justification of Mission Need and of the Project Plan for MSAs and MPs. Additionally, the PMP/WP shall address the risk plan and general considerations for risk management on specific projects.

7. INSTRUCTIONS

A graded approach is to be used in the project risk management process. Certain projects using existing and proven technologies and methods may require very little analysis for risk. However, projects with significant risks due to new technologies, high cost, or complexity require a more formal, in-depth risk management process.

The project risk management process begins early in the life of the project in order to guide decisions from project inception.

7.1 Project Risk Identification

PM

[1] Prepare a project Work Breakdown Structure (WBS) in sufficient detail to identify risks associated with the project.

[2] Ensure that all risks associated with the project including, but not limited to the following, are identified:

- Safety and health risks.
- Environmental risks.
- Regulatory risks.
- National Environmental Policy Act (NEPA) determination risks
- Stakeholder risks.
- Site related risks.
- Natural hazards risks.
- Project management risks.
- Project interface risks.
- Scope risks.
- Schedule risks.
- Cost risks.
- Technical risks.
- Contractual risks.
- Constructability risks.
- Quality risks.

7.1 Project Risk Identification (continued)

- Funding risks.
- Training risks
- Procedural risks
- Operational risks.
- Resource related risks.
- Property loss risks.
- Political risks.
- Cost sharing risks.
- Public acceptance/involvement risks.
- Legal risks.

[3] Document the risks associated with the project.

7.2 Project Risk Assessment

PM

[1] Ensure that the individual elements of the project are examined using the WBS to begin the process of a detailed risk assessment with specific consideration given to the potential impacts on:

- Scope
- Schedule, Milestones, and Key Decision Points
- Budget and Budget Profiles

[2] Ensure that the risk assessment is conducted considering the following factors:

- Each risk event.
- The probability associated with each risk event.
- The consequences or severity of each risk event.

NOTE *It is recommended that project risk assessment be conducted according to the steps set forth in Appendix 1, Risk Management Matrix.*

7.2 Project Risk Assessment (continued)

[3] Provide resources for in-depth, detailed risk assessment and analysis where substantial uncertainty requires complex analysis to manage the joint impacts and effects of multiple risks.

[4] Ensure that the proper risk assessment tools are used to analyze the overall impact of project risks.

NOTE *It is recommended that the PM make use of a risk assessment checklist such as Appendix 2, Project Risk Grading Checklist Example. Additionally, the complexity of risks in the project may require that tools such as influence diagrams, risk contribution analysis, probability distributions, probability trees, risk models, sensitivity analysis, and other techniques be employed.*

[5] Perform planning to mitigate the likelihood of the risk events identified above.

[6] Document the results of the project risk assessment.

7.3 Project Risk Response System

PM

[1] Perform project baseline management throughout the life of the project to ensure new risks are not introduced without careful analysis and approval.

[2] Monitor, review, and update project risk throughout the life of the project to respond to changing risks.

[3] Ensure that project risks are mitigated and controlled through a process of risk avoidance, sharing, reducing, transferring, eliminating, or any combination that minimizes project risk and uncertainty throughout the life of the project.

7.3 Project Risk Response System (continued)

[4] Ensure that contracts for equipment or material and subcontracts for services incorporate provisions to share, reduce, eliminate, or transfer risks as appropriate.

[5] Develop work-arounds, contingency plans, schedule alternatives, and emergency response plans to respond to risk events which have been identified and assessed.

7.4 Project Risk Documentation

PM

[1] Ensure that documentation prepared as part of the project risk management process is distributed properly and stored in the project file for reference.

[2] Ensure that the project risk documentation is current and available for review when critical decisions are made regarding the project.

[3] Ensure that project risk management documentation is consolidated with other project records at close-out per COEM-PMG-331, Project Closeout and Turnover.

8. RECORDS

PM

[1] The Risk Assessments which must be completed for projects that require a Justification of Mission Need and a Project Plan are included as sections in the Justification of Mission Need and the Project Plan and stored in accordance with DOE Order 1324.2A, Records Disposition.

Any additional project specific risk documents that are developed are to be processed and maintained in accordance with plant policies and procedures. All project risk related documents shall be maintained in the project file during the life of the project.

9. REFERENCES

DOE Order 1324.2A, Records Disposition

DOE Order 4700.1, Project Management System

DOE Order 4700.5, Project Control System Guidelines

3-J68-COEM-PMG-331, Project Closeout and Turnover

APPENDIX 1
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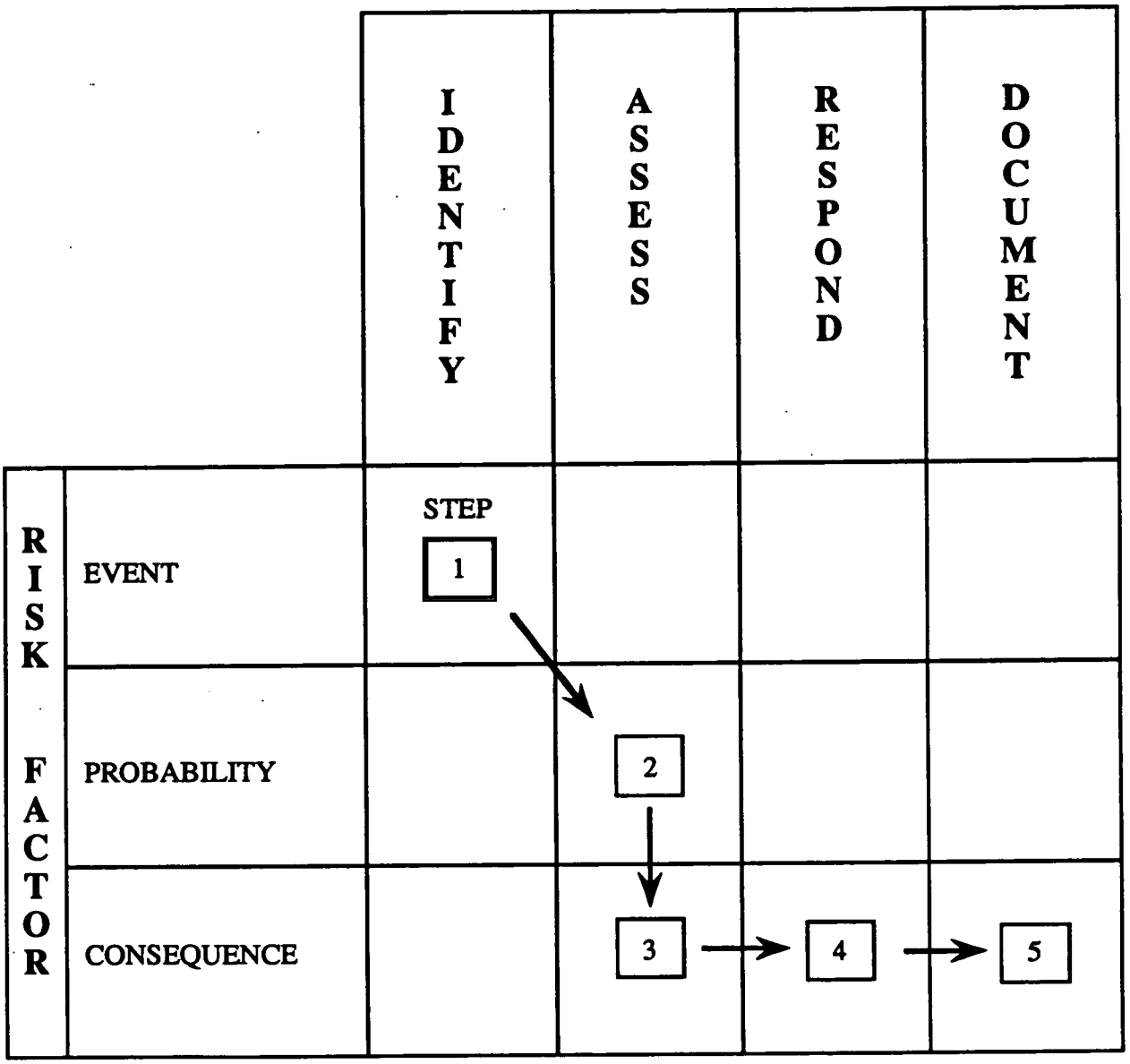
RISK MANAGEMENT MATRIX



STEP 1 - Identify risk events to be examined.

STEP 2 - Assess the probability associated with the risk event(s).

STEP 3 - Assess the consequences and severity of the risk event(s).

STEP 4 - Plan to mitigate the likelihood of the risk event(s).

STEP 5 - Document the results of the assessment.

APPENDIX 2
Page 1 of 5

PROJECT RISK GRADING CHECKLIST EXAMPLE

This checklist is intended to be used early in the life of the project and throughout all stages of the project to assess risks and changes in risks that may occur. The purpose of the checklist is to assist in analyzing specific project risks for impact, as well as providing project management with an overview of the cumulative risk in the project. The checklist should be modified to meet the needs of the specific project being analyzed.

After the checklist is completed, an analysis should be done to determine the areas of low, medium, and high risk in order to continue the risk assessment process of assigning risk probabilities and estimating the consequences.

RISK AREA	LOW RISK	√	MEDIUM RISK	√	HIGH RISK	√
Safety & Health	Routine methods		Previously proven methods		Untried Methods	
	Standard procedures		Modifications to standard procedures		New, complex procedures	
					Work in SNM areas Deep excavations	
					Hazardous areas	
Environ-mental	Fully characterized hazardous/low level waste		Moderately characterized hazardous/low level waste		High level or mixed waste, regardless of characterization.	
	Categorical exclusion		Environmental Assessment required		Environmental Assessment or Impact Statement required	
	No permits		Ordinary permitting required		Unique permits	
Regulatory	None		EPA, NRC, CDH		EPA, NRC, CDH	
Natural Hazards	Fair weather or fair season expected		Moderately disruptive weather expected		Disruptive weather such as hurricanes, tornadoes, torrential rains	
	Minimal or no seismic activity		Some seismic activity recorded in past		Seismic, volcanic, or other disastrous activity predicted	
Interface	No major impact on site operations, other contractors, projects, programs, etc.		Possible impact on site operations, other contractors, projects, programs, etc.		Major impact on site operations, other contractors, projects, programs, etc. is likely	

APPENDIX 2
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RISK AREA	LOW RISK	√	MEDIUM RISK	√	HIGH RISK	√
Project Manage-ment	Projectized organized		Medium strength matrix organization		Weak matrix, project coordinator or project expediter organization	
	Strong matrix organization		Project Manager fairly well experienced		Inexperienced Project Manager	
	Experienced, proven Project Manager		Top management committed to the project management method		Top management not committed to the project management method	
	Top management commitment to strong project management		Functional managers agree to the matrix organization		Functional managers not committed to the matrix organization	
	Functional managers concur and commit to the matrix organization					
Scope	Straight forward and easily understood		Somewhat technical or complex		Complex, technical or new	
	Readily measurable		Can be measured		Not quantifiable or measurable	
	Used previously		Modification of previously established scope		New scope	
	Clearly defined and not complex		Fairly clearly defined		Not clearly defined	
Schedule	Ample time		Enough time, but none to spare		Tight schedule	
	High confidence in activity durations		Fair amount of confidence in activity durations		Activity durations not achievable without many concurrent activities	
	No long lead equipment items		Some long lead equipment items		Critical long lead equipment items	
	No concurrent activities required		Some concurrent activity may be required		Many critical milestones and commitments	

APPENDIX 2
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RISK AREA	LOW RISK	√	MEDIUM RISK	√	HIGH RISK	√
Cost Sharing	Relatively inexpensive		Average cost		Expensive	
	Not complex		Somewhat technical		Extremely complex	
	High confidence in estimates		Estimates are adequate		Accurate estimates not available	
	Financing readily available		Financing available		Financing questionable	
Technology	Common/off-the shelf		Proven technology		Unproven technology	
	Conventional Construction		State-of-the-art technology		R&D or investigative requirements	
	Easily constructible		Engineered equipment		New system	
			Normal testing		Highly engineered equipment	
			Probably constructible		Extensive testing	
					Nuclear facility	
					Constructability doubtful	
Contractual	Vendor or contractor has proven track record		Contractor has limited experience		Contractor has no experience	
	Fair risk sharing		Risk sharing is questionable		Risk sharing is out of balance	
	Concise, understandable contract		Adequate contract		Poor contract	
	Excellent Statement of Work		Fair Statement of Work		Unclear Statement of Work	
	Form of contract fits the work perfectly		Form of contract fits the work		Form of contract does not fit the work	

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RISK AREA	LOW RISK	√	MEDIUM RISK	√	HIGH RISK	√
Funding	Stable agency mission and goals		Fairly stable agency mission and goals		Agency mission and goals unstable	
	Acceptable funding profiles		Funding profiles adequate		Funding profiles poorly done	
	Well defined and achievable Key Decision points		Adequate definition for Key Decision points		Key Decision points not well established	
	Well defined project justification		Adequate project justification		Poor project justification	
	Less than one year in duration		Two to three years duration		Three or more years duration	
	Small GPP or Expense project		Other line Item Project, larger Expense Project		Other Line Item, Major Project, Major System Acquisition	
Political	Public acceptance and approval		Public acceptance questionable		Not accepted by the public	
	Very stable entrenched administration		Stable administration		Outgoing or unstable administration	
	Low visibility		Some visibility		High visibility	
Cost Sharing	No cost shares		One cost sharer		Two or more cost sharers	
Resource	Plenty of manpower machinery, or subcontractor support available		Adequate man-power, machinery, or subcontractor support probably available		Shortage of man-power, machinery, or subcontractor support	
	Very stable labor agreements		Fairly stable labor agreements		Unstable labor agreements	
	No special manpower, machinery, or subcontractor requirements		Some special man-power, machinery, subcontractor support is required		Special requirements for manpower, machinery, or sub-contractor support	
	Standard materials		Mostly standard materials		Nonstandard materials are required	
	Resource leveling is easily accomplished		Resource leveling appears achievable		Resource leveling cannot be achieved	

APPENDIX 2
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RISK AREA	LOW RISK	√	MEDIUM RISK	√	HIGH RISK	√
Site/ Property Loss	Site is easily accessible at all times		Site is accessible most of the time		Site is not easily accessed	
	One site		Two sites		More than two sites	
	Few existing facilities will be impacted by the project		Some impact on existing facilities is possible		Impact on existing facilities is imminent	
	Project is remote from other facilities		Project is near or adjacent to other facilities		Project is located in existing facilities	
	No ground water or hidden conditions		Some hidden conditions may exist		Site has ground water or other hidden conditions	
Legal	No patents or license infringements involved		Some infringement possible, but can be resolved		Major patent or license infringement issues are likely	
	Excellent subcontracts		Adequate subcontracts		Poor subcontracts	
	Very low possibility of lawsuits by insiders or outsiders		Some possibility of lawsuits by insiders or outsiders		High probability of lawsuits by insiders or outsiders	
Operational	Technology is well defined and stable for the finished product		Technology is fairly stable for the finished product		Technology is changing for the finished product	
	Operating requirements are well defined and achievable		Operating requirements are fairly well defined		Operating requirements will likely change	
	Training is easily accomplished		Training can be done adequately		Training is very difficult to do	

ROCKY FLATS PLANT

3-K78-COEM-PMG-323

REVISION 0

PREPARATION OF PROJECT MANAGEMENT PLAN/WORK PACKAGE

APPROVED BY: _____ / L. J. McGovern / 9-29-94

Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management

Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By _____ UNC

Date 9/30/94

This procedure supersedes PILOT procedure ENG-PILOT-PM-006

Periodic review frequency: 4 years from the effective date.

PADC-97-00100

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1. PURPOSE

This procedure is intended to provide instructions and direction to be used by Project Management personnel in the preparation of the Project Management Plan/Work Package (PMP/WP).

2. SCOPE

This procedure applies to management of projects within the Operating Contractor's Project Management group. This document also provides directions and instructions for certain subprojects which are parts of larger projects or programs, but which are individually smaller than Major Projects (MPs) and are managed individually as "Other Projects," as defined in the Section 3, Overview.

3. OVERVIEW

3.1 Department of Energy (DOE) Requirements

The PMP/WP is the primary document requesting DOE Rocky Flats Field Office (RFFO) approval to proceed with a project, and it fulfills the requirements of the DOE Orders for adequate planning and documentation prior to the start of a project. The guidelines and instructions contained herein are in compliance with the Department of Energy/Rocky Flats Field Office (DOE RFFO), implementation requirements established for "Other Projects" (Capital Projects less than $50 million or Expense Projects less that $15 million) as defined in Chapter 1, Part E, DOE Order 4700.1, Project Management System.

Projects larger than $50 million are designated as "Major Projects" or "Major System Acquisitions" and require a more detailed PMP. See the detailed instructions in DOE Order 4700.1, Project Management System, Chapter 1, Part D.

3.1 Department of Energy (DOE) Requirements (continued)

A PMP/WP is required for the following projects:

- All Line Item and Major Item of Equipment (MIE) projects.
- All General Plant Projects (GPP).
- All In House Energy Management (IHEM) Projects.
- Basic Capital Equipment (BCE) projects, if Davis-Bacon covered. If not covered, no submittal is required.
- Expense projects exceeding $1.2M any time during the life of the project.

NOTE *For expense projects less than $1.2M and BCE projects not covered by the Davis-Bacon Act, a "Letter of Information" is to be sent to DOE giving Project Title, Authorization number, Budget & Reporting (B & R) Code, brief description of work, method of performance (who will perform design, construction, etc.), and estimated cost. The letter is for information only and is to be sent prior to beginning work on the project. DOE approval is not required as long as the project falls within the above limits. Projects for which a Letter of Information is used must also have a Work Package prepared for input and interface with the Site Management Control System (MCS).*

Office of Management and Budget (OMB) Circular A-109 specifies the following Key Decision Points for Major System Acquisitions and Major Projects. Other Projects are not subject to A-109; however, DOE Order 4700.1 states that Other Projects of significant value or complexity should adhere to similar management conditions. Key Decision points KD-0 through KD-4 are as follows:

KD-0 - Approval by RFFO to initiate predecisional activities, including conceptual development [required for Line Items and Major Items of Equipment (MIE) projects only]. [A DOE Headquarters (HQ) decision to seek Capital Funding.]

KD-1- Approval to begin Title I, Preliminary Design.

KD-2 - Approval to begin Title II, Final/Detailed Design.

3.1 Department of Energy (DOE) Requirements (continued)

KD-3 - Approval to award and commence construction or enter full scale development, including Construction and Title III Inspection Services.

KD-4 - Approval to operate the facility (generally applies to startup of a major facility or modification). Project Acceptance and Transfer (PA&T) may constitute KD-4 on smaller projects [General Plant Projects (GPP), Expense, Basic Capital Equipment (BCE)].

NOTE *A Pre Decisional Project Management Plan (PPMP) is required for KD-0 approval for Line Item Projects. The PPMP has the same sections as the PMP/WP and identifies scope, schedule, budget, and methods of accomplishment for pre decisional activities (Conceptual Design Report, Design Criteria, and Architect/Engineer selection). The PPMP does not address activities after KD-1 approval. Generally, PPMP should follow the instructions in this document, and should integrate and roll up into the PMP/WP that is prepared later.*

3.2 EG&G Rocky Flats Requirements

The PMP/WP format has been approved by Central Planning and Budgets (CP&B) to serve as the Management Control System (MCS) Work Package. It establishes the baselines for a project against which RFFO and EG&G Program Managers monitor progress.

The PMP/WP provides documentation of the project baselines: Scope, Schedule and Budget. The PMP/WP must be updated to maintain accurate baselines in accordance with the Baseline Change Control System (BCCS). Revisions to the PMP/WP that constitute a baseline change must be submitted to the Plant Change Control Board (PCCB) in accordance with BCCP procedures. Changes are coordinated by the CP&B Representative. PMP/WP integrates all previous planning efforts for the project including ORD, S&E, Conceptual Design Rept, Design Criteria, etc.

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager

Prepares a PMP/WP for each assigned project in sufficient detail to establish the project baselines and define the project with respect to execution, assignment of responsibility, project work breakdown structure and organizational breakdown structure, schedules and milestones, and reporting and control requirements.

Coordinates with the project team and other support people and organizations to provide an integrated plan, to include a summary of the lower level planning documents, and to include Management Control System (MCS) reports that enhance and add value and consistency to the PMP/WP.

Integrates and focuses the efforts of project support personnel and the project team, including the Project Engineer, the Project Budget Analyst, the Construction Engineer, the Construction Coordinator, the Subcontract Administrator/Buyer, and other key personnel and support organizations.

Manages the PMP/WP through the proper concurrence and approval signature process.

Revises the PMP/WP, as required, to include approved changes in the project baselines.

6. INSTRUCTIONS

6.1 Preparation of Project Management Plan/Work Package (PMP/WP)

Project Manager (PM)

[1] Begin preparation of the PMP/WP for each project less than $50 million prior to receipt of the funding authorization for the subject project.

[2] Provide sufficient detail in the PMP/WP so that it establishes clearly the project scope, schedule, and cost baselines, as well as defining:

- Methods of execution
- Responsibility assignments
- Project work breakdown structure and associated budgets
- Schedules and Major Milestones
- Project organization
- Project reporting and review requirements

[3] Prepare PMP/WP such that it is consistent with the format and content instructions as provided in Appendix 1 of this document.

NOTE *Variations to the format and content are permitted and are dependent on the scope, complexity, and cost of the project. The extent of departure from Appendix 1 is at the discretion of the Project Manager (PM) and is concurred with by the PM Manager and CP&B Representative through their review and approval of the PMP/WP. (See Appendix 1, PMP/WP Cover Sheet and Approvals Sheet, for review and approval signature designations.).*

[4] Coordinate with the project team and support organizations to incorporate information in the PMP/WP provided in lower tier documents such as the Engineering Work Plan, Construction Management Plan, and the Procurement Plan.

6.1 Preparation of Project Management Plan/Work Package (PMP/WP) (continued)

[5] Incorporate existing Management Control System (MCS) reports and information by referencing and attaching to the PMP/WP to ensure accuracy and consistency of the data and information.

[6] Reference and attach:

- MCS Project Management Plan/Work Package Section 0.0, Cover Sheet, with project charge number filled-in in the appropriate place.
- MCS 2-7A(Y), Summary Project Budget and Cost Plan, for Section 2.0, Project Budget and Cost Plan.
- Project Key Personnel Matrix or a list of Key Personnel with responsibilities, as appropriate, for Section 7.0, Key Personnel and Responsibilities.
- Project Work Breakdown Structure (WBS) with cost data in the elements that matches the MCS data, and Project Organizational Breakdown Structure (OBS) to add clarity to Section 8.0, Project Execution Summary.
- MCS 035, Milestones List, MCS Level 2 Bar Chart Schedule, and Primavera Level 3 Schedule that rolls-up to the Level 2 bar Chart, all to support Section 9.0, Schedules/Master Milestone Schedule/Key Decision Points.
- Project Reporting and Progress Review Matrix for Section 10.0, Project Documents, Reporting, and Reviews.
- Other supporting information that adds clarity or definition to any section of the PMP/WP.

[7] Include in Section 9.0, Schedules/Master Milestone Schedule/Key Decision Points.

[8] Obtain necessary review, approval, and concurrence signatures, as required, on the PMP/WP Cover Sheet, the Approval Sheet, and the Performing Organization Concurrence Sheet.

6.1 Preparation of Project Management Plan/Work Package (PMP/WP) (continued)

[9] Submit the internally approved PMP/WP along with a Transmittal Cover Letter to DOE RFFO for review and approval.

NOTE *DOE RFFO approval of the initial issue (Rev. 0) of the PMP/WP, along with the DOE Project Authorization, constitutes the authorization and limits of activity to fund the project. DOE RFFO approval of the initial issue (Rev. 0) of the PMP/WP constitutes Key Decision-1 (KD-1), approval to begin work on Title I, Preliminary Design. For PPMP, RFFO approval constitutes KD-0, approval to initiate conceptual development.*

6.2 Revisions and Changes to PMPs/WPs

Project Manager

[1] **IF** a project baseline threshold will be exceeded,
THEN process a Baseline Change Proposal (BCP) in accordance with 1-40ADM-MCS-1003, Work Breakdown Structure/Baseline Change Control.

[2] Revise and update the PMP/WP, as required, to reflect a change to the scope, a change to the schedule outside variance guidelines, or a change to the cost/budget baseline of the project that has been approved for implementation.

[3] Identify and delineate changes in the revised PMP/WP.

[4] Prepare a Transmittal Cover Letter with the Revision Number in the subject line to accompany the revised PMP/WP.

NOTE *The Transmittal Letter is to include information summarizing the project and changes to the PMP/WP.*

[5] Submit the revised PMP/WP along with a Transmittal Cover Letter to EG&G management and DOE RFFO management for approval.

7. RECORDS

Project records are to be maintained and stored in the Project Records File. Upon project close out, Project Records Files are to be retained in accordance with 1-77000-RM-001, Records Management Guidance for Records Sources.

8. REFERENCES

1-40-ADM-MCS-1003, Work Breakdown Structure/Baseline Change Control.

DOE Order 4700.1, Project Management System

Glossary of Project Management Terms

1-77000-RM-001, Records Management Guidance for Record Sources

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PROJECT MANAGEMENT PLAN

EG&G ROCKY FLATS, Inc. Work Package #_____
Fiscal Year 1995 Work Package Documentation BCP #_____

0.0 PROJECT MANAGEMENT PLAN/WORK PACKAGE COVER SHEET

0.1 DESCRIPTION SUMMARY:

Work Package Number: _____ Title: _____
MAD Number: _____ Title: _____
Sub Program Number: _____ Title: _____

ADS Number: _____ Title: _____
B&R Code: _____
DOE/RFETS Contact: _____
CHARGE #: *fill in*

0.2 SCHEDULE SUMMARY:

Start Date: _____ End Date: _____

0.3 BUDGET SUMMARY:

Fiscal Year	Labor Hours	Direct Labor	Direct Non-Labor	Tot. Indirect Burden Cost	Total Dollars
PY					
1995					
1996					
1997					
1998					
1999					
2000					
2001					
Out Years					
Total					

0.4 REVIEWED BY:

Work Package Manager _____/_____
Name

MAD Manager: _____/_____
Name

ADS Manager: _____/_____
Name

Central Planning & Budgets: _____/_____
Name

DOE/RFFO Counterpart: _____/_____
Name

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0.4 REVIEWED BY (Continued):

Classification:_____ Reviewed By: _____
Date: _____

[Directions:

Obtain the PMP/WP Cover Sheet from your Central Planning & Budgets (CP&B) Representative. It is a standard Management Control System (MCS) report.]

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APPROVALS SHEET

Approved By: _____ Date:
EG&G Program/Project Manager

Approved By: _____ Date:
DOE User

Approved By: _____ Date:
DOE, RFFO Project Managment & Engineering Director

[Directions:

List the levels of approval required for the specific project on this page. Delete or use "N/A" for positions where no approval is needed.]

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Section 0.0 Project Management Plan/Work Package Cover Sheet.....
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Section 2.0 Project Budget and Cost Plan.....
Section 3.0 Project Summary.....
Section 4.0 Project Justification.....
Section 5.0 Assumptions and Basis of Estimate.....
Section 6.0 Relationship to Other Projects.....
Section 7.0 Key Personnel and Responsibilities.....
Section 8.0 Project Execution Summary (WBS & Organization Chart).....
Section 9.0 Schedules and Milestones.....
Section 10.0 Project Document Reporting and Reviews.....

[Directions:

Use as many attachments as necessary to clarify the PMP/WP and help establish definite baselines.]

Attachments

Attachment XX Project Cost Plan - MCS 2-7A(Y).....
Attachment XX Key Project Personnel.....
Attachment XX Work Breakdown Structure.....
Attachment XX Project Specific Organization Breakdown Structure.....
Attachment XX MCS Level 2 Bar Chart, Primavera Level 4 Schedule, & MCS 035 Milestones Report.....
Attachment XX Project Reporting & Progress Review Matrix.....
Attachment XX Additional sketches, drawings, information that clarifies.....

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PERFORMING ORGANIZATION CONCURRENCE SHEET

The undersigned Project Support Organizations and other interested parties have reviewed the cost, schedule and scope commitments established by the referenced Project Management Plan/Work Package and agree to meet these commitments by assignment of resources and applying an appropriate level of management attention to project execution:

Concurrence By: _____ Dated:
EG&G Engineering

Concurrence By: _____ Dated:
EG&G Construction Management

Concurrence By: _____ Dated:
EG&G Purchasing

Concurrence By: _____ Dated:

Concurrence By: _____ Dated:

Concurrence By: _____ Dated:

Concurrence By: _____ Dated:

[Directions:

List all supporting organizations where concurrence or buy-in is required on this page.]

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RECORD OF REVISIONS SHEET

Revision Level	Purpose of Revision	Date

[Directions:

Include the revision number in the PMP transmittal letter subject line when transmitting to DOE.

Also, provide information in the transmittal letter concerning the current revision and previous revisions and whether or not they were or are administrative.

In table above, include BCP Number behind revision level number, if applicable.]

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SAMPLE FORMAT

Section 1.0 Project Identification

See Section 0.0, Project Management Plan/Work Package (PMP/WP) Cover Sheet, for all project identification information.

Section 2.0 Project Budget and Cost Plan

The standard, integrated Management Control System will be used for scheduling, estimating, budgeting and cost control during the life of the project.

[Directions:

Make reference to all attachments related to cost collection charge numbers, resource loads and cost plans.

Summarize the authorized budget. Reference the project specific Work Breakdown Structure which includes charge number suffixes, costs, and percentages of each key WBS element.. A copy of the project's fiscal year cost plan (MCS 2-7A(Y)) should be included as an attachment to the PMP/WP and referenced in this section.

The Budget for the project for prior, present, and future years, as well as the source of funding (capital or expense) shall also be included. An acceptable format for presenting the breakdown follows.]

Project Title:

Fund Type	Profile Type	Prior Years	FYXX	FYXX	FYXX	FYXX	FYXX	TOTAL
	TEC Budget							
	Other Budget							
	TPC Budget							

State Fund Type = expense or capital (LI, GPP, BCE, MIE, etc.).

If additional information is needed, make notes at this point which add clarity.

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Section 3.0 Project Summary

[Directions:

The intent of this section is to provide an easy-to-read description of the technical scope of the project in terms of what it is, where it will be located and how it will be accomplished. It is also intended to establish the technical baseline.

Using clear, concise language, provide on one page or less (if possible) the following:

1. A description adequate enough to determine the validity of the estimate (e.g. units of measure or overall size to the extent possible).

2. Attached documents which will help clarify the scope such as layout drawings, detail sections or other scoping documents. Include references to those documents.

3. Reference to the date and title of design criteria which has been prepared and issued.

4. A brief paragraph on the current schedule status of the project if this is a revision to an existing PMP/WP.

For projects greater than $ 5M, briefly describe the major technical objectives of the project. Address major design criteria issues and objectives that affect the scope. These might include people, hazard class, major structural components, major electrical/mechanical features and other important items. Make reference to important environmental , health and safety requirements, codes, standards, government specifications and other technical criteria for project design and construction. Using a graded approach, less information is required on projects under $ 5M or projects that are significantly less complex.

For projects larger than $ 5M, provide a summary description of the project which identifies the salient performance requirements (e.g. number of people to be housed, gallons per minute, etc.) and the resulting design description. List the KD deliverables and, if the project is multi-phased, describe the phases and deliverables.]

Section 4.0 Project Justification

[Directions:

Provide a brief summary of the need for the project as it relates to the RFETS mission. Describe "why" the project is necessary and what benefits will be derived from its successful completion. The intent is to convey the current undesirable condition that exists and the final more desirable condition that will result in conjunction with this project. Identify any deficiencies and nonconformances which are being corrected by the implementation of the project.

Describe in succinct terms the important economic considerations. These would include items such as value engineering and other project elements which address beneficial trade-offs, cost or energy savings issues, penalty and compensatory measures avoidance and other economic objectives.

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List other driving elements which can be referenced for comparison and review when analyzing scope or change. This would include CSA and TSA objectives and other commitments which justify the project.]

Section 5.0 Assumptions and Basis of Estimate

[Directions:

Provide a brief summary of any assumptions which were made during the development of the project schedule, scope or budget.]

Section 6.0 Relationship to Other Projects

[Directions:

Identify and describe in succinct terms any interface(s) between the subject project and other projects that may affect a decision regarding the technical scope, schedule or cost/budget or either project. If there are no significant ties to other projects, then "none" should be indicated in this section. Be sure to identify in this section any decisional/predecisional projects, their authorization numbers and work packages which are related to this project.]

Section 7.0 Key Personnel and Responsibilities

See Attachment X, Project Key Personnel Matrix with responsibilities.
See Attachment X, Organization Breakdown Structure.

[Directions:

Include in the Project Key Personnel Matrix the role, name, phone number, and responsiblities of the key personnel involved in the subject project. Include Program/User personnel and DOE oversight and responsible people. Make note of any known changes in key personnel which will occur in the future. Add other key personnel as needed.

Also attach the project specific Organization Breakdown Structure.]

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Section 8.0 Project Execution Summary

8.1 Method of Performance

[Provide information concerning who will be performing the work, major procurement actions (for instance, who has responsibility for GFE), make versus buy decisions and other large dollar or high impact items. Identify all performing agencies.

Provide a brief summary of the method of performance and sequence of events to be utilized in completing the engineering, procurement and construction related activities associated with the project. Several particular items of interest in this regard that should be addressed (as applicable) are as follows:

- *Use of consultants, architectural/engineering firms and basic order agreement (BOA) contractors. Provide a brief justification statement explaining the design execution approach.*
- *Type of construction contracts(s) - fixed price, cost plus fixed fee, etc. Provide a justification for the construction contracting method(s) proposed.*
- *Procurement Proposed - identify major items of equipment (greater than 10% of TEC) and vendor selection process (sole source, competitive bid, etc.).]*

[Tailor a description of Procurement's role to fit the project's needs. See example below:]

The Procurement Department, in conjunction with the Contractor's Technical Representative (CTR), is responsible for all subcontract administration on subcontracted portions of the project (such as engineering or construction). Procurement has provided guidance for acquisition planning in the project initiation phase. Additionally, Procurement will obtain and award subcontracts, track procurement actions received in Procurement in accordance with Level One plant procedures, provide subcontractor status in conjunction with the CTR and expedite equipment delivery.

8.2 Work Breakdown Structure (WBS)

[A project specific Work Breakdown Structure (WBS) and project specific Organization Breakdown Structure (OBS) identifying the major tasks/activities and principle support organizations, respectively, involved in the project shall be prepared and included as attachments to the Project Management Plan/Work Package (PMP/WP).

On typical Non-Line Item projects, the WBS shall pick up at level 4 (Work Package Level) in the EG&G RFP Management Control System (MCS) Work Breakdown Structure (WBS) Documentation and continue as applicable at least to one more level, Level 5 (Task Level)(Charge Number).

On Capital Line Item projects, the WBS shall begin at an appropriate level of the Plant WBS (e.g. Level 3 for larger Capital Line Items) and devolve (to levels 4, 5, & 6 if necessary) according to the specific technical and management requirements of the project, for example, based on a risk assessment of the consequences of a failure to perform.

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The project execution summary should specifically refer to, briefly expand upon and correlate the WBS and OBS.

For projects greater than $5M, include a list of WBS elements along with the definitions of the cost collection elements (dictionary).]

8.3 Risk Management

Project risks shall be identified, assessed, and controlled using a graded approach, as appropriate. The levels and types of risks shall be identified and a plan set forth within the Project Management Plan for controlling/mitigating significant risks. Where significant risks exist in a project, separate risk management documentation may be required.

8.4 Quality Assurance (QA)

[For projects larger than $ 15M, a quality assurance discussion shall be included which relates quality assurance to the project and sets forth the status of the development of QA. Provide information regarding the overall QA program and its related elements along with a description of how coordination and interaction among various QA controls and functions will be provided. Include a paragraph which references quality plans. State that the project will be in compliance with standards and procedures such as 6430-1A or the QC Program. Also, list the general QC measures which will be used in the various stages of the project (e.g. drawing checks, receipt comparisons, inspection). If applicable, state which quality levels apply to the various stages and discuss any on-going QA reviews.

For projects smaller than $ 15M, standard QA will suffice. For example.]

A standard quality assurance (QA) plan will be developed in accordance with plant policies and procedures as a part of the design effort. The plan will be updated and revised to reflect the most recent plans with regard to levels of quality which must be maintained as the project progresses.

8.5 Davis-Bacon (D-B) Projects

[Provide information on the status of the project or parts of the project with respect to D-B. If there is any significant impact related to D-B, discuss these matters. For expample:]

The project is currently being evaluated, and it is expected that it will be covered under the Davis-Bacon Act.

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8.6 National Environmental Policy Act (NEPA) Documentation

[Include information on the project as it relates to NEPA. Discuss the status of any ongoing reviews and list other information along with any project requirements relating to NEPA. State the level of NEPA documentation and the status of any determinations. If the project is not affected, state so:]

The NEPA document checklist has been completed and a categorical exclusion has been granted.

8.7 Safeguards and Security Plans

[Provide information concerning the project's relations/interface with plant safeguards and security. Discuss the impact of these matters on the conduct of the project. If a security plan or vulnerability analysis is required, discuss the status of these items and their impact on the project. If no plan is required, state so:]

A Security Checklist has been submitted to Safeguards and Security. The Safeguards and Security Area Operations Manager has determined no specific plan is required. No further documentation is required.

8.8 Safety Documentation - USQD, FSAR

[Discuss any unreviewed safety questions or matters and their impact on the project. Provide information on related determinations and safety analysis reports. Discuss the impact of any Operational Safety Requirements (OSRs) on the project schedule, budget and scope.

Example:]

There are no unreviewed safety matters or questions associated with this project at this date. Beginning with project inception, an ongoing safety analysis for hazard identification and elimination has been in process. During the forthcoming design phase a safety plan will be prepared for use during the construction phase. The plan will emphasize identification and control or elimination of hazards in Engineering and Construction. The Subcontractor will be required to submit for approval a Comprehensive Safety Plan along with the other construction contract related submittals.

8.9 Project Controls

[Make reference to the Project Reporting and Progress Review Matrix (which is attached).

Also, discuss any special management monitoring or control measures which are planned for the project.

Example:]

The attached Project Reporting and Progress Review Matrix sets forth the schedule for meetings, presentations, reports and distribution for monitoring and control of the project. Also, the Primavera schedule, which will be updated periodically to reflect the most current information, will be used on a day-to-day basis for managing the project.

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Section 9.0 Master Milestone Schedule/Key Decision Points

See Attachment X, MCS Level 2 Bar Chart
See Attachment X, Level 4 Primavera Schedule
See Attachment X, MCS 035 Milestones Report

[Directions:

Schedules:

Along with the P2 Level 2 schedule, attach an approved Level 3 or 4 schedule with critical path. Ensure that the schedules are in agreement and that the detailed schedule and activity descriptions make sense and that all significant elements of schedule concern are included. Be certain the schedules are signed.

Make reference to the attached schedules and their use in managing the project:

The Level 4 schedule will be used for the day-to-day management and control of the project. Its internal details will be expanded as the project progresses to accommodate the latest information and provide an adequate level of detail to maintain project control.

Milestones:

Do not use events such as Mid Year Review or Construction Management Review (CMR) as milestones. Also, make sure the milestones listed are able to be controlled by EG&G; e.g. use "Request for KD-1 Approval", not "KD-1 Approval".

Section 10.0Project Reporting & Reviews

[Directions:

Summarize the activities (meetings, presentations, etc.) and reports/documents that will be used to communicate information relative to the technical scope, schedule and cost/budget performance of the project. As necessary, a detailed project reporting and progress matrix shall be provided as an attachment to the PMP/WP. This matrix identifies the specific activities and reports/documents to be utilized and their timing/frequency and the organizations or individuals involved relative to the specific project.]

Reporting will be in compliance with standard project reporting under Project Management procedures and as set for in the attached Project Reporting and Progress Reveiw Matrix.

(Attachment 1 pg. 1) Project Cost Plan pg. 1

MCS 2-7A-YEARS
PROJECT: DETAIL

WORK PACKAGE DOCUMENT
FIVE YEAR PLAN
(Dollars in 000's)

Run Date: 07/07/94 18:31
Page: 1
Rev. No: _____

1 Work Package No: 71257 Title: Alpha Beta Instrumentation

2 Cost Estimate Summary (Generated by PCS from Logic Diagram Inputs)

Activity # / Activity Desc. Cost Center Cost Element	Prior Years	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	TOTAL
01100 Project Management Support								
00444 PM Waste Characterization								
750 S/T Base Hours	0	44	61	0	0	0	0	105
Direct Dollars								
750 S/T Base Labor	0	1	2	0	0	0	0	3
Total Direct Dollars	0	1	2	0	0	0	0	3
Indirect Dollars								
755 Benefits	0	0	1	0	0	0	0	1
756 Overhead	0	2	3	0	0	0	0	5
Total Indirect Dollars	0	2	3	0	0	0	0	6
Act ** 01100 ** Tot Doll	0	4	5	0	0	0	0	9
01200 Project Management Contingency								
00444 PM Waste Characterization								
Direct Dollars								
A5H Subcontracted Service	0	0	17	0	0	0	0	17
Total Direct Dollars	0	0	17	0	0	0	0	17
Indirect Dollars								
Total Indirect Dollars								
Act ** 01200 ** Tot Doll	0	0	17	0	0	0	0	17
02200 Engineering Activities								
00280 Electrical Engineering								
750 S/T Base Hours	0	23	57	0	0	0	0	80
Direct Dollars								
750 S/T Base Labor	0	0	1	0	0	0	0	2
Total Direct Dollars	0	0	1	0	0	0	0	2
Indirect Dollars								
755 Benefits	0	0	0	0	0	0	0	1
756 Overhead	0	0	1	0	0	0	0	2

(Attachment 1 pg. 2)

MCS 2-7A-YEARS
PROJECT: DETAIL

WORK PACKAGE DOCUMENT
FIVE YEAR PLAN
(Dollars in 000's)

Run Date: 07/07/94 18:31
Page: 2
Rev. No: _____

1 Work Package No: 71257 Title: Alpha Beta Instrumentation

2 Cost Estimate Summary (Generated by PCS from Logic Diagram Inputs)

Activity # / Activity Desc. Cost Center Cost Element	Prior Years	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	TOTAL
02200 Engineering Activities								
00280 Electrical Engineering								
Indirect Dollars								
Total Indirect Dollars	0	1	2	0	0	0	0	2
Act ** 02200 ** Tot Doll	0	1	3	0	0	0	0	4
03100 Government Furnished Equipment								
00283 PM Project Devel, Support & Perform								
750 S/T Base Hours	0	0	10	0	0	0	0	10
Direct Dollars								
750 S/T Base Labor	0	0	0	0	0	0	0	0
Total Direct Dollars	0	0	0	0	0	0	0	0
Indirect Dollars								
755 Benefits	0	0	0	0	0	0	0	0
756 Overhead	0	0	0	0	0	0	0	0
Total Indirect Dollars	0	0	1	0	0	0	0	1
00355 Central Planning & Budgets								
750 S/T Base Hours	0	1	23	0	0	0	0	24
Direct Dollars								
750 S/T Base	0	0	0	0	0	0	0	0
Total Direct Dollars	0	0	0	0	0	0	0	0
Indirect Dollars								
755 Benefits	0	0	0	0	0	0	0	0
756 Overhead	0	0	0	0	0	0	0	0
Total Indirect Dollars	0	0	0	0	0	0	0	1
00444 PM Waste Characterization								
Direct Dollars								
45D Procurement Direct R	0	0	12	0	0	0	0	12
A5K Capital Equipment	0	0	289	0	0	0	0	289

MCS 2-7A-YEARS
PROJECT: DETAIL

WORK PACKAGE DOCUMENT
FIVE YEAR PLAN
(Dollars in 000's)

Run Date: 07/07/94 18:31
Page: 3
Rev. No: _____

1 Work Package No: 71257 Title: Alpha Beta Instrumentation

2 Cost Estimate Summary (Generated by PCS from Logic Diagram Inputs)

Activity # / Activity Desc. Cost Center Cost Element	Prior Years	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	TOTAL
03100 Government Furnished Equipment								
00444 PM Waste Characterization								
Direct Dollars								
Total Direct Dollars	0	0	301	0	0	0	0	301
Indirect Dollars								
Total Indirect Dollars								
Act ** 03100 ** Tot Doll	0	0	302	0	0	0	0	302
03150 GFE Inspection								
00444 PM Waste Characterization								
Direct Dollars								
A5M Travel	0	0	2	0	0	0	0	2
Total Direct Dollars	0	0	2	0	0	0	0	2
Indirect Dollars								
Total Indirect Dollars								
Act ** 03150 ** Tot Doll	0	0	2	0	0	0	0	2
07100 Install Equipment								
00280 Electrical Engineering								
750 S/T Base Hours	0	0	20	0	0	0	0	20
Direct Dollars								
750 S/T Base Labor	0	0	0	0	0	0	0	0
Total Direct Dollars	0	0	0	0	0	0	0	0
Indirect Dollars								
755 Benefits	0	0	0	0	0	0	0	0
756 Overhead	0	0	0	0	0	0	0	0
Total Indirect Dollars	0	0	1	0	0	0	0	1

0044 PM Waste Characterization

MCS 2-7A-YEARS
PROJECT: DETAIL

WORK PACKAGE DOCUMENT
FIVE YEAR PLAN
(Dollars in 000's)

Run Date: 07/07/94 18:31
Page: 4
Rev. No: _____

1 Work Package No: 71257 Title: Alpha Beta Instrumentation

2 Cost Estimate Summary (Generated by PCS from Logic Diagram Inputs)

Activity # / Activity Desc. Cost Center Cost Element	Prior Years	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	TOTAL
07100 Install Equipment								
00444 PM Waste Characterization								
750 S/T Base Hours	0	0	35	0	0	0	0	35
Direct Dollars								
750 S/T Base Labor	0	0	1	0	0	0	0	1
Total Direct Dollars	0	0	1	0	0	0	0	1
Indirect Dollars								
755 Benefits	0	0	0	0	0	0	0	0
756 Overhead	0	0	2	0	0	0	0	2
Total Indirect Dollars	0	0	2	0	0	0	0	2
ACT ** 07100 ** Tot Doll	0	0	4	0	0	0	0	4
WP ** 71257 ** Tot Doll	0	5	333	0	0	0	0	337

KEY PROJECT PERSONNEL MATRIX

Direct Project Participants & Responsibilities:

Position	Name	Phone #	Responsibilities
Program Manager	Name	Phone	Designated by the user to be the contractual and technical liaison between the User and Project Management. Serves as the interface with regulatory agencies and other outside driving organizations that affect the Program/Project. Program Manager is responsible for defining requirements of a project to be executed by Project Management and providing ongoing oversight. Program manager is the pathway between the User and Project Management for reporting of project schedules, budget and status. Ensures throughout the life of the project that the project meets or fulfills program mission needs. When a Program Manager is not assigned or available for a project, the designated user will be the contact for information.
User	Name	Phone	Project owner, sponsor, and champion. Serves as the spokesperson and single-point contact for the project in terms of project advocacy, justification, validation, coordination, and funding. Owns the need or requirement for the project, and provides ongoing justification, sponsorship, and support for fulfilling the need or requirement throughout the life of the project. Serves as Program Manager when one has not been assigned to the project.
Project Manager	Name	Phone	Has overall, first-line responsibility for the successful execution of a project. In this capacity the Project Manager takes the lead in defining those activities necessary for the project, coordinates and facilitates their execution by others, and reports on project status and performance throughout. Serves as the project interface and integrator among DOE, the User, Program Management, and project participants. Project Manager is totally knowledgeable and up-to-date on the project in terms of technical scope, schedule, and budget. Controls the approved project funds and charge numbers, and provides authorization concerning who can charge and when to charge. Anticipates and identifies problem areas early-on, and ensures that corrective measures are initiated to address the situation.
Project Engineer	Name	Phone	Has lead responsibility for the technical scope and engineering support activities associated with a project. The Project Engineer reports to the Project Manager as part of the project effort. The Project Engineer reviews User needs identified for the project, translates them into appropriate engineering criteria and technical requirements, and then coordinates or performs the engineering effort necessary to successfully complete the project. Attends project meetings as deemed appropriate by the Project Manager.

KEY PROJECT PERSONNEL MATRIX (continued)

Direct Project Participants & Responsibilities:

Position	Name	Phone #	Responsibilities
Construction Engineer	Name	Phone	Has lead responsibility for the construction (or installation) related activities associated with the project. This responsibility begins early in the evolution of the project and continues through construction to project completion and operation. Reports to the Project Manager as part of the project effort. Construction Engineer actively participates in the Title I and II Engineering Review efforts by identifying potential constructibility concerns. During construction, the Construction Engineer assumes the lead in interface activities involving Engineering and Construction, reports on construction progress, anticipates construction related problems, initiates corrective measures. Attends project meetings as deemed appropriate by the Project Manager.
Construction Coordinator	Name	Phone	Construction Coordinator works very closely with the Construction Engineer in support of any construction activity associated with the project. The Construction Coordinator receives technical direction from the Construction Engineer and is primarily responsible for daily work control, reporting and interface activities relative to the construction contractor. Works directly with the construction subcontractor to ensure a successful and efficient construction effort and serves as the primary interface between EG&G and the subcontractor regarding work safety requirements, site rules and DOE regulations. Attends project meetings as deemed appropriate by the Project Manager or Construction Engineer.
Subcontract Administrator/Buyer	Name	Phone	Reports to the Project Manager as part of the project effort. Responsible to confirm that the project schedule reflects Procurement's published time(s) and that it includes milestones for the procurement process. Additionally, the SA/Buyer will provide the Project Manager status of the procurements and other procurement-related information as requested in support of the project. If the procurement is deemed to require a single point of contact, SA/Buyer may be appointed by the Procurement Department to coordinate all the procurement action and provide status as above to the Project Manager. Attends project meetings as deemed appropriate by the Project Manager.
CP&B Representative	Name	Phone	Assists the Project Manager in the preparation of the PMP/WP. Reports to the Project Manager on funding and budget related matters as part of the project effort. Coordinates and verifies MCS and PCS data, information, reports, performance analysis, and coordinates the change control process for the project. Attends project meetings as deemed appropriate by the Project Manager.

KEY PROJECT PERSONNEL MATRIX (continued)

Direct Project Participants & Responsibilities:

Position	Name	Phone #	Responsibilities
Scheduler	Name	Phone	Reports to the Project Manager as part of the project effort. Develops and maintains an approved project baseline schedule with critical path from Work Breakdown Structure (WBS) activities and resource data provided by the Project Manager and project support personnel. Ensures that all associated project schedules roll-up properly to higher level schedules. Produces or prepares reports such as logic diagrams, bar charts, precedence diagrams, resource histograms, cost reports, critical path analysis, and other reports requested by the Project Manager. Maintains all schedule development documentation. Attends project meetings as deemed appropriate by the Project Manager.
Cost Estimator	Name	Phone	Reports to the Project Manager as part of the project effort. Prepares project cost estimates from the WBS, resources information, project schedules, historical and commercial information, and data provided by the Project Manager and project support personnel. Develops increasingly precise and accurate estimates as the project matures and becomes better defined. Provides project contingency fund levels from statistical probabilities or historical data, and revises the levels as the becomes better defined. Assists with data and justification information during the project Validation Review. Attends project meetings as deemed appropriate by the Project Manager.
Contractors Technical Representative (function)	Varies	N/A	Reports to the Buyer/SA and Project Manager as part of the project effort. Provides technical direction to the subcontractor for services, work, or materials to be performed or furnished under a specific subcontract within the project. Provides technical review and approval of timecards and invoices and verification of completed work or materials as provided under a specific subcontract. Attends project meetings as deemed appropriate by the Project Manager or Buyer/SA.

KEY PROJECT PERSONNEL MATRIX (continued)

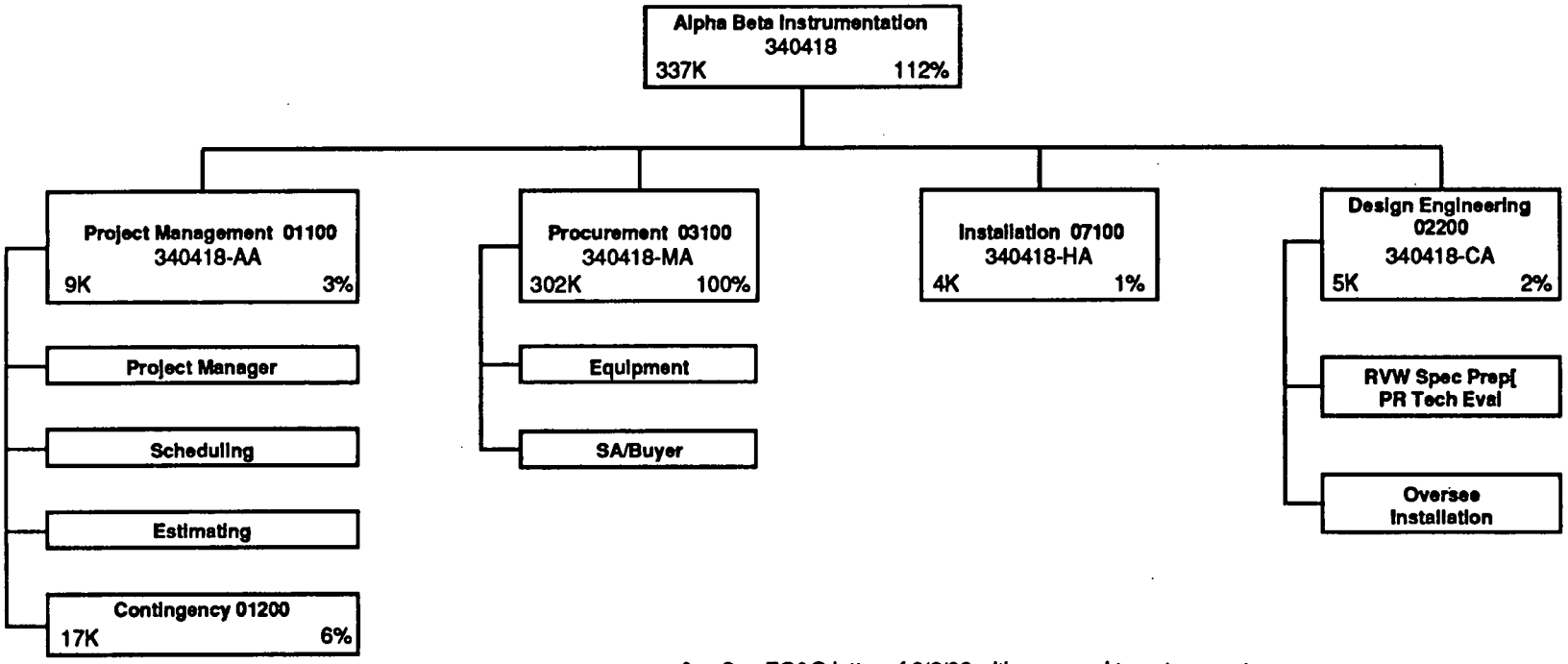
Direct Project Participants & Responsibilities:

Position	Name	Phone #	Responsibilities
Deputy Director, Project Management	Name	Phone	Manages and oversees the Project Management organization. Ensures that the organization is properly supported in terms of training, adequate procedures, reporting, control, and resources. Assigns projects to the appropriate Program Project Managers for execution. Maintains constant communication with the program organizations to keep them informed about Project Management's needs and to ensure that Project Management is fulfilling the needs of the programs.
Program Project Manager	Name	Phone	Manages and oversees projects in a specific program area. Assesses project work loads in the specific program area and assigns Project Managers to specific projects. Ensures that Project Managers have adequate resources for successful completion of projects.

DOE:

Organization	Contact	Phone #	Responsibilities
RFFO	N/A	N/A	Provides program and project oversight and approval of Key Decision requests.

WORK BREAKDOWN STRUCTURE*



* See EG&G letter of 8/6/93 with proposed target percentages for major project activities. Percentages here are of the major project activity, Procurement.

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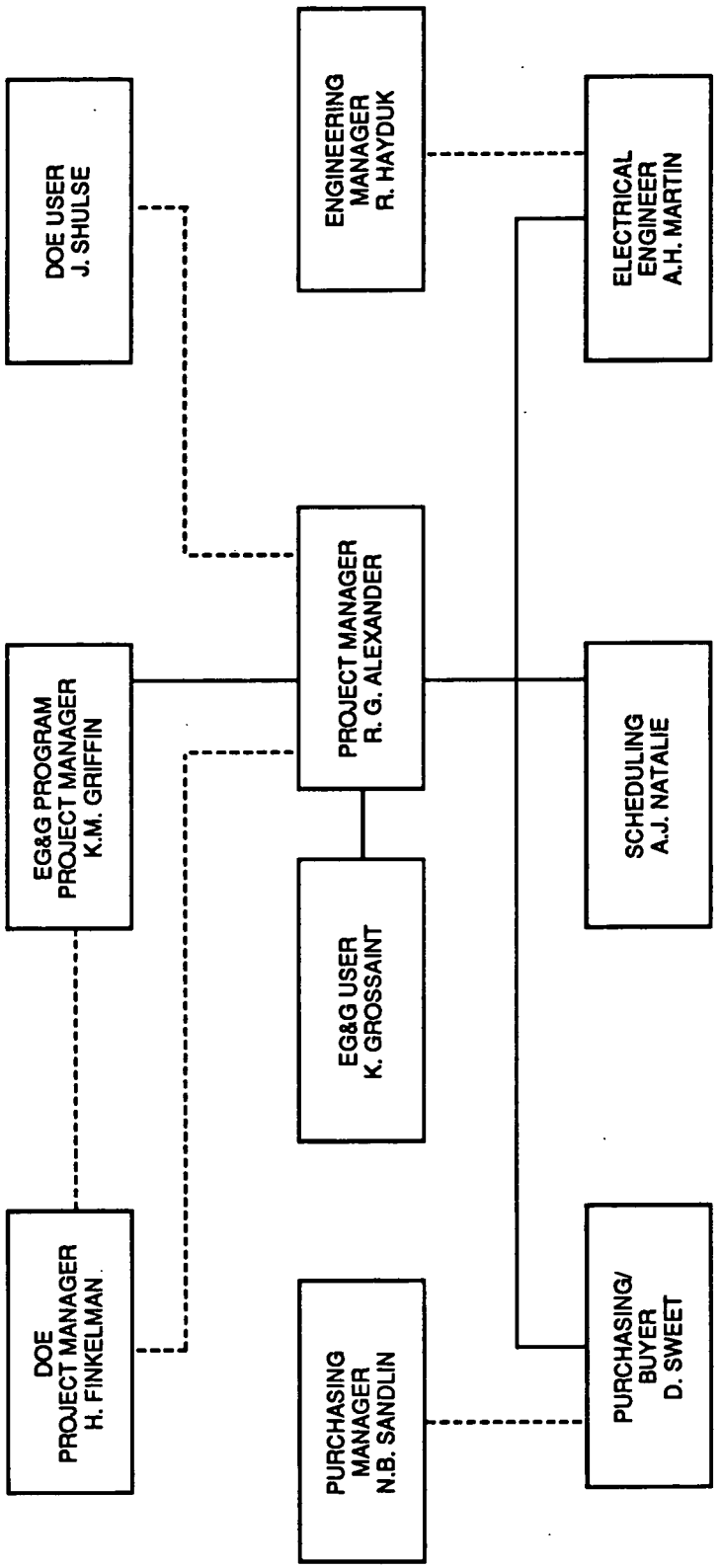
(Attachment 4)

PROJECT SPECIFIC ORGANIZATION BREAKDOWN STRUCTURE (ODS)
ALPHA BETA INSTRUMENTATION
AUTHORIZATION NO. 340418



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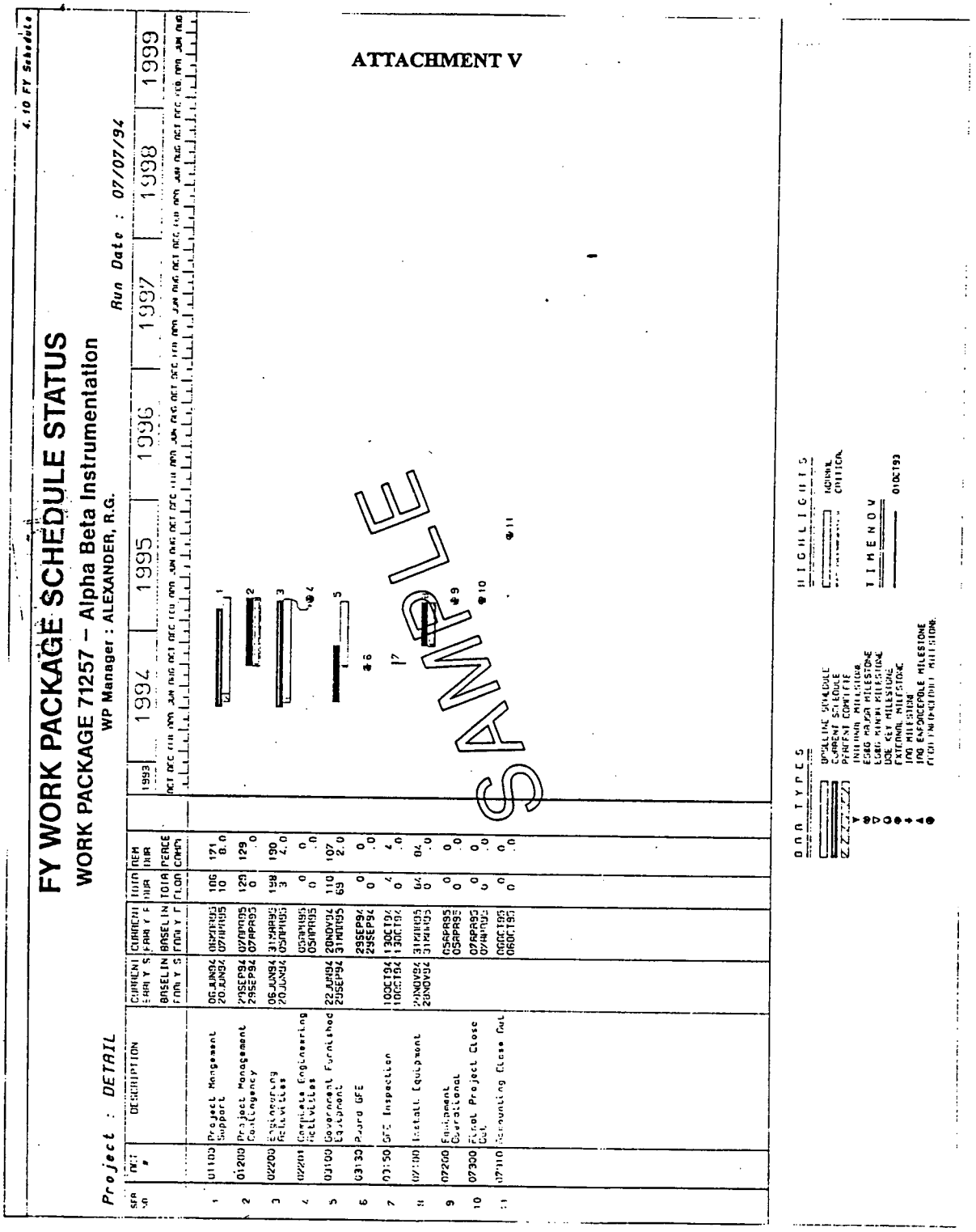
(Attachment 5 pg. 1)

ATTACHMENT V



APPENDIX 1
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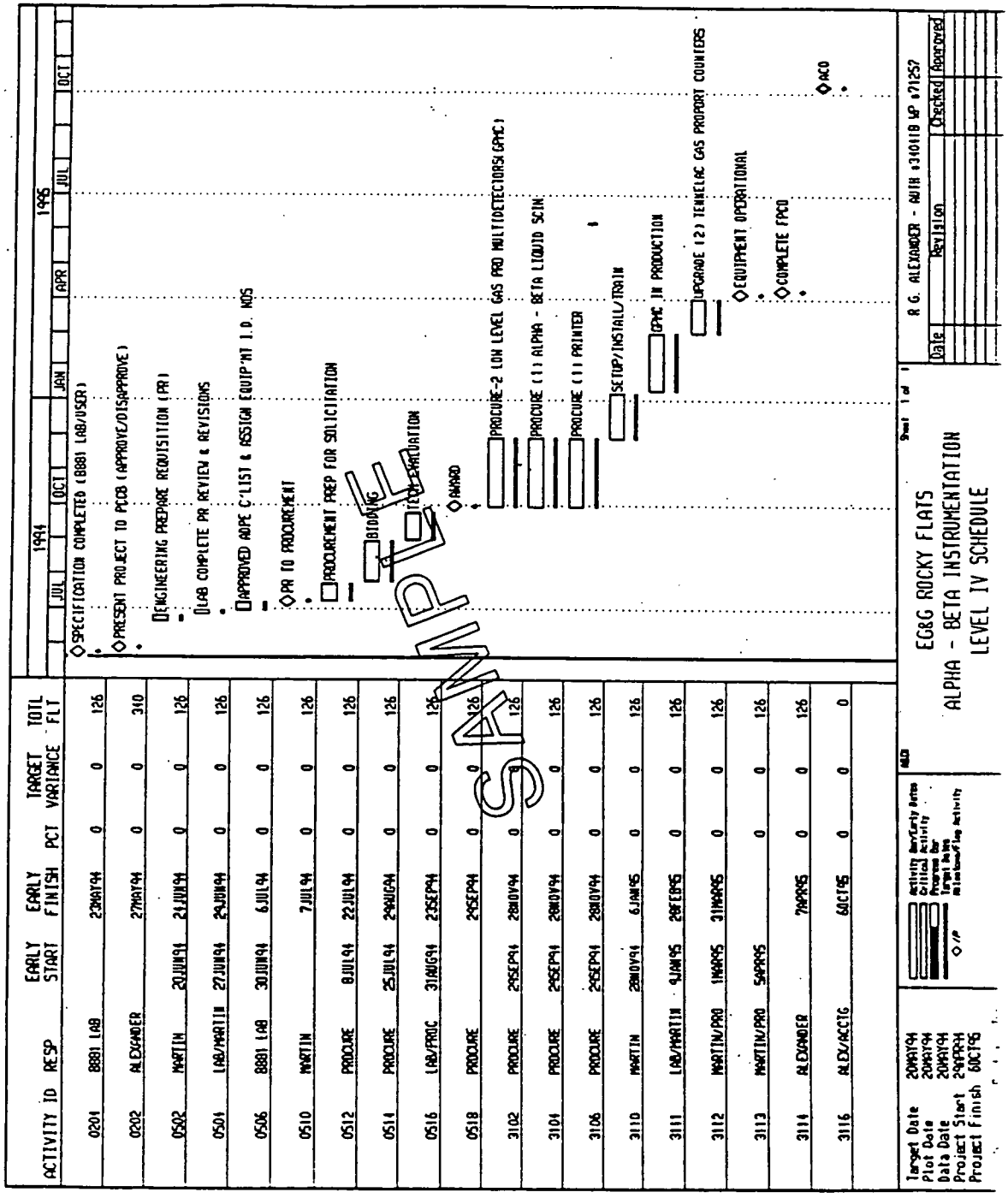
(Attachment 5 pg. 2)

ATTACHMENT V



(Attachment 5 pg. 3)

Period Start Date: 02-MAY-1994
Period End Date: 29-MAY-1994
Project: DETAIL

STATUS THOUGH 29-MAY-1994
ROCKY FLATS PLANT
SECTION 4.8 - WORK PACKAGE MILESTONES REPORT
FISCAL YEAR 1994

Run Date: 17-Jun-1994 07:32
Report: PCS-035-6
Page: 52

Program Subprogram Cost Account Work Pkg	Activity Number	WP Manager	Type	Milestone Description	Baseline Schedule Date	Current Early Finish	Day's Behind
00001	Rocky Flats Plant						
M	Capital Program - Capital Equipment						
MB	Waste Management Capital Equipment - EW Funded						
MB01	Waste Management Capital Equipment						
71257	Alpha Beta Instrumentation						
	03130	ALEXANDER, R	External Milestone	Award GFE	29-SEP-94	29-SEP-94	0

Number of Milestones originally scheduled to complete in current accounting month	0
Number of Milestones originally scheduled to complete in current accounting month actually completed	0
Number of Milestones baselined before current month which were completed in the current month	0
Number of Milestones baselined before current month which are still not complete	0
Number of Milestones originally scheduled to complete in current fiscal year to date	0
Number of Milestones originally scheduled to complete in current fiscal year to date actually completed	0

• Actual Finish

APPENDIX 1
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(Attachment 6)

PROJECT REPORTING & PROGRESS REVIEW MATRIX*

MEETINGS & REVIEWS	BASIS OF REQUIREMENT	INITIATOR	FREQ.	DISTRIBUTION DOE HQ	DOE AL	DOE RFFO	EG&G	REQ'D FOR PROJECT TYPE
Quarterly Construction Management Review		DOE	Q	X		X	X	CLI
Validation Review	4700.1	DOE	Y	X		X	X	CLI, EXP>$2M
Mid Year Review	MCS	EG&G	Y	X		X	X	ALL
Project Team Meeting	EG&G, OVR-110	PM	A			X	X	ALL
PTS Meeting	(1)	DOE	M			X	X	CLI, EXP>$2M
Project Action Center	(2)	EG&G	W			X	X	ALL
REPORTS & DOCUMENTS								
Project Summary Report (PSR)	EG&G	PM	M, A (3)	X		X	X	All
Monthly PATS/PTS Report	(1)	PM	M	X		X	X	CLI, EXP>$2M
4700.1 Quarterly Report	4700.1 (4)	PM	Q	X		X	X	CLI, EXP>$2M
Project Data Sheet	4700.1	PM	Y,A	X		X	X	CLI, EXP>$2M
Activity Data Sheet (ADS)	(5)	PM	Y,A	X		X	X	All
Baseline Change Proposal (BCP)	4700.1/MCS	PM	A	X		X	X	All
Project Management Plan/Work Package (PMP/WP)	4700.1/MCS	PM	Y,A	X		X	X	All
Cost/Benefit Analysis	(6)							

PROJECT FUNDING TYPES	FREQUENCY CODES
ALL = All Project Types	A = As Required
CLI = Construction Line Items	W = Weekly
EXP = Expense	B = Biweekly
	M = Monthly
	Q = Quarterly
	Y = Yearly

* This matrix represents the baseline level of reporting required for projects as agreed upon by EG&G and DOE. Written requests for additional meetings, reviews, reports, or documents will be reviewed on a case-by-case basis for each specific project to determine if additional funding is required.

NOTES;

(1) RFFO has verbally directed EG&G to conduct this monthly meeting, but no written direction has been sent.
(2) Certain projects with baseline variances beyond established limits may be reviewed at Project Action Center (PAC) meetings.
(3) This report is reviewed/updated weekly and published monthly.
(4) This report is not required for OLIs by 4700.1 - need letter from DOE establishing reqmt. for OLIs.
(5) This report is required by HQ EM.
(6) There is no written requirement for this report from DOE.

RFPF - 1000.01 (5/95)
Formerly RF-47940

Page 1 of 1

Document Modification Request

25. DMR No. 96-DMR-000129

Originator

Printor Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

1. Name/Phone/Pager/Location
Jerry Weiser X5447/7335 Building 130 C218

2. Date
01/29/96

3. Existing Document Number and Revision
2-P33-COEM-PMG-325, Revision 0

4. Document Type: ■ Procedure ☐ Plan ☐ Other

5. Document Title
Engineering Subcontracting Guide

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	6	3	Change the second sentence in the second paragraph: From: "..COEM-DES-223, Classification of Systems, Components, and Parts..." To: "..1-V51-COEM-DES-210, Design Process Requirements..."
3	12	8	Change the reference: From: "2-C93-COEM-DES-223, Classification of Systems, Components, and Parts" To: "1-V51-COEM-DES-210, Design Process Requirements"

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by PPG
2	SSC classification performed in 1-V51-COEM-DES-210.
3	See the change in (2) above.

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) 1-31-96

13. New Document/Rev. No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☒ Nonintent Change ☒ Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval) ☐ Editorial Correction

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes ☒ No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location
L. Reed Bailey X458171764 Building 130 C230

20. Cost Center: 3077

21. Charge Number: 820111

22. Requested Completion Date: 02/05/96

23. Prescreen/Screen/USQD Number: N/A

24. Independent Safety Review Meeting and Date: N/A

26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L.R. Bailey 2-1-96

27. Effective Date: 2/5/96

28. Expiration Date (if applicable)

Reviewed for Classification/UCNI JWD
BY R.A. Norman
DATE 2-1-96

Routing/Review/Approval

PADC-97-00101

Rocky Flats
Environmental Technology Site
2-P33-COEM-PMG-325
REVISION 0
ENGINEERING SUBCONTRACTING GUIDE

APPROVED BY: /s/ R. E. Kell / R. E. Kell / 06/01/95
Director, Engineering and Safety Services — Print Name — Date

Responsible Organization: Project Management Effective Date: 07/18/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Engineering and safety Support
Central Engineering
Project Management
All PCEs

USE CATEGORY 4

Reviewed for Classification/UCNI

By _____

Date _____

This procedure replaces 2-F36-COEM-DES-275, Revision 0, and 2-L98-COEM-DES-289, Revision 1.

Periodic review frequency: 4 years from the effective date

PADC-97-00101

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	07/18/95		`2
2	02/05/96		
3-5	07/18/95		
6	02/05/96		
7-11	07/18/95		
12	02/05/96		
13-16	07/18/95		

The following DMRs for change are active for this procedure:

96-DMR-000129

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1. PURPOSE

This procedure defines responsibilities and provides guidance for the management of engineering subcontracts for commodities and services. It establishes necessary and appropriate controls consistent with the technical design basis documents, statements of work (SOWs), Project Management Plan/Work Package (WP) and identifies the liabilities associated with the Subcontractor's performance.

2. SCOPE

This procedure applies to all engineering activities, as defined by Plant Policy 9–8, Plant Engineering Program, when engineering requirements are to be provided by subcontract.

This procedure describes the process for determining engineering subcontract needs. It emphasizes pre-decisional assessments, scoping the work, selecting the type of subcontract, initiating the Requisition or Service Request (SR), subcontract administration, and completion activities.

3. OVERVIEW

The decision to subcontract for engineering supplies and services, as an alternative to performance by the Operating Contractor (OC)/Integrator or Subcontractor personnel, is made by Central Engineering Management after considering the schedule impact, cost requirements and available in-house expertise.

For the acquisition of Engineering Services (ES), a SR is approved by the Functional Manager responsible for the discipline. See Appendix 1 for the Functional Managers with the approval authority to issue SRs. For other types of requirements (commodities, construction and Architect & Engineering [A&E] Services and other services), requisitions are issued and approved by the requesting manager as properly designated on the Requisition. The latter are governed by the Standing Order 30, Acquisition Guideline for Commodities and Services. A team approach is often used in formulating an acquisition strategy relying on the recommendations from the Project Engineer (PE) Project Team, and Procurement Engineering as needed. The Project Manager (PM) will consider the schedule, cost requirements and available in-house expertise when formulating an optimum acquisition strategy.

3. OVERVIEW (continued)

Generally, the PM, PE and the Engineers work together to develop a SOW which describes the tasks, deliverables, cost, and schedule requirements that will be incorporated into the subcontract. Performance based statements of work that are outcome-oriented are encouraged.

Procurement Engineering and Technical Services can provide support in developing a tailored SOW to the requirement. An initial estimate which takes into consideration the specific type of subcontracts and desired quality controls should also be prepared.

The PM should understand the applications and advantages of different subcontract types and provide a preference to Procurement, from a technical and quality standpoint, which represents a best value approach for the acquisition. General data collection, guidance, and assistance to make informed decisions during the initial process of the SOW can be provided by the Procurement Engineering and Technical Services staff.

Assistance in developing acquisition strategies, e.g., approved/unapproved suppliers, performance criteria, and appropriate Quality Assurance (QA) and technical controls, is provided by Procurement Engineering and Engineering and Safety Technical Services (E&STS) as needed.

The QA Section within the SOW shall define the acceptance criteria with the appropriate procurement level for the commodities or safety related equipment provided, applicable plant programs, and the necessary and sufficient standards to achieve the desired quality level. The organization(s) responsible for assuring that the required actions are completed and performance standards met shall also be identified. The Site Design Authority (SDA) shall approve all Engineering Products.

3. OVERVIEW (continued)

The Subcontractor shall maintain and implement this QA program throughout the duration of the subcontract and allow access to their facility and records pertaining to the subcontract for the purpose of QA audits and surveillance. The Subcontractor is required to furnish the Site with a copy of their QA manual or plan at the time of proposal submittal. The specific controls implemented should be cost effective and document with adequate records for audit purposes.

In the QA Section, within the scope of work, safety class and augmented quality systems which are affected shall be identified. Commodities and equipment defined as safety class quality per 1-V51-COEM-DES-210, Design Process Requirements, must be controlled and supplied in a manner which provides reasonable assurance that they will perform their intended function.

96-DMR-000129

Reasonable assurance is established through appropriate QA controls over quality-affecting processes, which are either service related or item related. For services, pertinent controls may include sufficient experience and expertise in the scope of work, trained and certified personnel, independent engineering review processes, etc. These requirements are driven by the Performance Based contract at Rocky Flats (RF) and apply to all items and services at the Site. The OC is ultimately responsible for their implementation, even though some or all of the controls are performed by a Subcontractor.

4. DEFINITIONS

See COEM Glossary for applicable definitions.

5. RESPONSIBILITIES

5.1 Central Engineering Manager

Determines if engineering services can be provided in-house, considering cost and schedule constraints as defined by the Project Management Organization and the availability of in-house expertise and experience available.

5.2 Engineer(s)

Coordinates with the Project Engineer to provide specific technical and quality requirement information which determines the need or desirability for subcontracting, and the desired scope of the subcontract.

Coordinates with Procurement Engineering and E&STS to determine the quality controls which are necessary and sufficient to assure the desired quality of the end product. Assistance is provided in developing preliminary Design Criteria (DC) and the development of procurement specifications.

Writes the SOW, capturing the technical and quality requirements and the scope of work for which each organization is responsible.

Performs technical evaluations on Subcontractor's proposals with appropriate engineering input.

5.3 Engineering & Safety Technical Services (E&STS)

Assists in the development of the SOW when deliverables from the Subcontractor include electronically produced engineering drawings or technical services.

Assists in the initiation of SRs under the Engineering Services Master Task Subcontract (MTS), and SOWs for Service Subcontracts in accordance with current Acquisition Guidelines.

Provides line item status, charge number status and accrual status for cradle-to-grave subcontract status.

5.4 Procurement Engineer

Assists PM and Project Team in determining the desired technical and quality controls necessary for developing the SOW assuring that the end product meets technical and safety requirements.

5.4 Procurement Engineer (continued)

Writes Procurement Specifications for subcontracts in accordance with COEM-DES-273, Engineering Standards for Procurement, and COEM-PMG-327, Government Furnished Equipment (GFE), when requested.

5.5 Project Manager (PM)

Initiates the SOW and the Purchase Requisitions (in accordance with Standing Order 30) for acquisitions in support of designated projects.

Approves Purchase Requisitions and authorizes commitment of project funding.

Monitors overall project schedule and completion in accordance with all technical and quality requirements.

Acts as the team leader and is ultimately responsible and accountable for the success of the project.

5.6 Lead Engineer (LE)

Writes the SOW and initiates the Purchase Requisition (in accordance with Standing Order 30) for acquisitions not within the authority of the PM.

Initiates the technical and quality controls for work to be performed and for commodities supplied under subcontract.

6. INSTRUCTIONS

PM/LE

[1] Identify the acquisition approach based upon the project requirements and authorized funding. For Engineering services/staff augmentees, an assessment of internal capabilities should be conducted prior to the decision and initiation of the Requisition or SR. For tasks and deliverable oriented acquisitions such as studies, assessments, Title I and II services, etc., a more traditional Requisition will be initiated in accordance with the Standing Order 30.

Central Engineering Manager

[2] Investigate reassigning or transferring OC/Integrator personnel to meet the need without staff augmentation based upon analysis of available resources and input from the PM or LE considering technical, cost, and schedule constraints.

Procurement Engineer/E&STS

[3] Provide input to determine:

- Procurement levels.
- Subcontractor's QA requirements based on the scope of work, e.g., source inspection, receipt inspection, and pre/post-installation testing, qualifications of personnel.
- If a Procurement Specification is necessary and cost effective.

[4] Provide input for developing SOWs, procurement plans, and Engineering cost estimates.

[5] Provide the PE with Engineering Computer-Aided Design/Computer-Aided Engineering (CAD/CAE) standards required of the Subcontractor.

Project Team

[6] Determine the technical and administrative controls necessary for assuring the desired quality of the end product, and supply the PM information pertinent to the Subcontractor decision process.

6. INSTRUCTIONS (continued)

PM/LE

[7] Assign project charge number and cost element, and authorize commitment of funds for Subcontractor services.

[8] Monitor overall project schedule and provide direction to the Project Team as necessary.

E&STS and Procurement Engineering/PE/LE (Project Team)

[9] Write Procurement Specifications (in accordance with COEM-DES-273 and COEM-PMG-327) for subcontracts as directed by the PM/LE.

[10] Write the SOW in accordance with Standing Order 30, define system and component classifications in accordance with COEM-DES-223, and incorporate the technical and quality requirements and the SOW for which each organization is responsible as directed by the PM/LE.

[11] For non-project designated acquisitions, the LE is responsible for compliance with Standing Order 30. This includes assuring that the subcontractor's QA program is approved by the Site integrating contractor and incorporates the quality elements defined in the SOW. Items such as GFE shall be supplied in accordance with COEM-DES-273.

[12] Provide the Supplier Quality Assurance group with the relevant quality assurance elements which must be audited for determining acceptability of the supplier for the defined scope of work.

E&STS

[13] Initiate SRs and Requisitions for Engineering and Project Management staff augmentation as directed by Engineering Management.

6. INSTRUCTIONS (continued)

[14] Initiate badging and coordination for staff augmentees in accordance with the SOW.

[15] Provide oversight for ES and directed acquisitions and associated cost and schedule impacts to management.

[16] Provide the PE with Engineering CAD/CAE standards for incorporation in the SOW.

E&STS/Procurement Engineering

[17] Initiate Purchase Requisitions for subcontracting services, including specifying the procurement level and router code, and submit to the PM for approval.

Project Team

[18] Perform technical evaluations on proposals, as required by the PM and the SOW.

E&STS and Procurement Engineering

[19] Provide technical support to Supplier Quality Assurance on audits, when requested by the PM or LE, in order to assure that Project objectives are met.

E&STS

[20] Track Subcontractor's expenditures for staff augmentees. (Appendix 2 is the Subcontractor Line Item Activity sheet which is processed for each subcontract.)

[21] Assist the PM and LE in subcontract administration and close out.

7. RECORDS

No records are generated by this procedure. Records mentioned are directly controlled by other procedures.

96-DMR-000129

8. REFERENCES

Plant Policy 9-8, Plant Engineering Program

Standing Order 30, Acquisition Guideline for Commodities and Services

1-V51-COEM-DES-210, Design Process Requirements

2-C93-COEM-DES-273, Engineering Standards for Procurement

2-M54-COEM-PMG-327, Government Furnished Equipment (GFE)

APPENDIX 1
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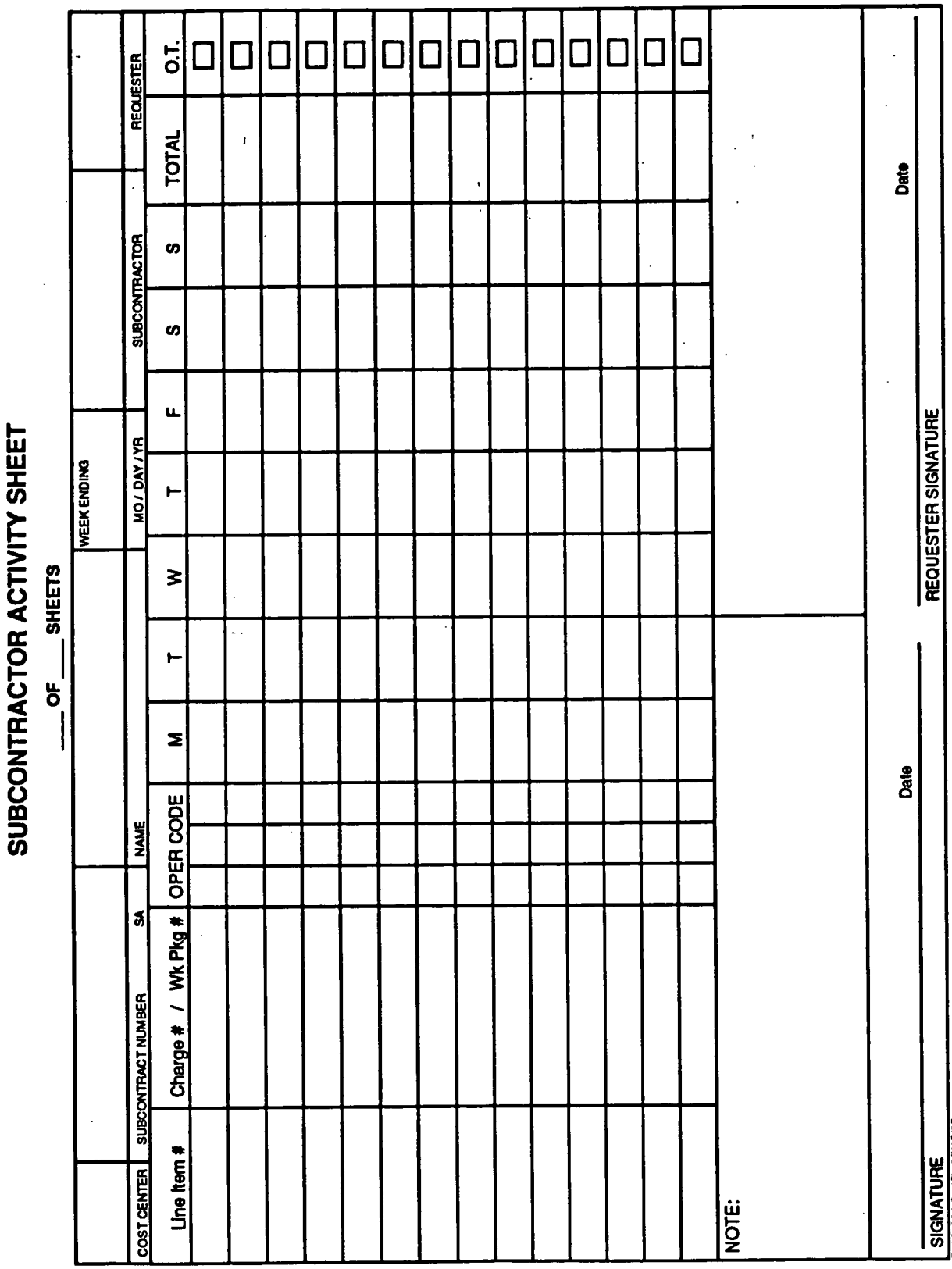
ENGINEERING SERVICES STAFF AUGMENTATION
MASTER TASK SUBCONTRACT

Engineering Discipline			Approving Manager				
Sec.	Para	Description	Central Engr'g	Project Mgmt	Supt Serv	Crit Engr'g	Nuclear Safety
I		**Electrical Engineering**					
	A	Power	X				
	B	Instrumentation & Control Systems	X				
	C	Alarms (Installation & Modification)	X				
	D	Fiber Optic Engineering Support	X				
	E	Security Systems	X				
II		**Mechanical Engineering**					
	A	Glove box	X				
	B	Process Design	X				
	C	HVAC	X				
	D	Environmental	X				
III		**Civil/Structural Engineering**					
	A	Architectural	X				
	B	Structural/Stress Mechanics	X				
	C	Civil	X				
	D	Fire Protection	X				
IV		**Nuclear Safety Engineering**					
	A	Criticality Engineer				X	
	B	Safety Engineer					X
	C	Safety Analysis & Risk Assessment					X
V		**Systems Engineering**					
	A	Systems Engineer	X				
VI		**Project Engineering**					
	A	Project Engineer		X			
VII		**Systematic Evaluation Program**					
		See I - V above					
VIII		**Engineering Support Services**					
	A	Industrial Engineer			X		
	B	Procurement Engineer			X		
	C	Procedure Writer			X		
	D	Document Control Specialist			X		
	E	Project Management Specialist			X		
	F	General Administration			X		
	G	Support	X				
IX		**Research Engineering**					
	A	Engineering Disciplines	X				
	B	Typical Project Magnitude	X				

APPENDIX 2
Page 1 of 3



APPENDIX 2
Page 2 of 3

INSTRUCTIONS FOR COMPLETING SUBCONTRACTOR ACTIVITY SHEET

Cost Center
This is the Operating Contractor's (OC) work group designation of usually 4 digits and is supplied by the Technical Monitor (TM). The TM is either the Contractor Technical Representative (CTR) under a subcontract or the Requisitioner for Service Requests under the ESMTS.

Subcontractor Number
The number of the contract written between the OC and the Subcontractor's firm. It is available from the TM or the Subcontractor's firm.

Name
Please list surname first, followed by first name and middle initial.

Week Ending
Write the Sunday date at the end of the week covered by month, day, and year.

Subcontractor
Write the name of the firm which has subcontracted your services.

Requester
If not directed otherwise, write the TM's name here.

Line Item Number
There is a listing of the line number with its corresponding charge number in a copy of the subcontract that should be available to the TM. Since the line number is used as a short hand way to communicate to accounts payable which projects are ultimately funding your efforts, it is important that the correct line number be used with the charge number. The line item number can cover a multitude of charge numbers if the contract is written in that way.

Charge #/Wk Pkg #
This identifies the OC's project on which work will be performed. These numbers are supplied by the TM.

Operation Code
The Operation Code is a set of three numbers consisting of two digits each. They are used to identify subsets of activities such as drawing review. If required, the TM will supply a list of these codes and instruct the Subcontractor in their use. Otherwise leave this section blank.

MTWTFSS
The days of the week. List the hours worked to the nearest 1/10 hour for each day across from each charge number. Please note a complete separate line listing is required for work done on overtime.

Total
The total number of hours worked during the week on an activity. Total the time separately for straight time and overtime activities.

O.T. (Overtime)
Check this box if the line was time worked beyond the agreed upon straight time.

Signature
Sign the form when it is completed for the week prior to giving it to the TM.

APPENDIX 2
Page 3 of 3

INSTRUCTIONS FOR PROCESSING THE SUBCONTRACTOR ACTIVITY SHEET

[1] Staff Augmentation Subcontractors (SAS) complete Activity Sheet reflecting activities performed for the week ending midnight Sunday, in accordance with the instructions on the back of the form.

[2] SAS submit the Activity Sheet to their respective (Contractor) technical monitors no later than noon Monday following the period covered.

[3] Technical monitors review and approve the Activity Sheet and forward a copy to E&STS no later than noon Tuesday following the period covered. Retain the original Activity Sheet to reconcile with Subcontractor invoices.

[4] E&STS enters the data from the Activity Sheet into Contractor Administration & Management Systems (CAMS) no later than close of business (COB) Thursday following the period covered.

RFPF - 1000.01 (5/95)
Formerly RF-47940

Page 1 of 1

Document Modification Request

Print or Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000130

Originator

1. Name/Phone/Pager/Location: Terry Weiser X5447/7335 Building 130 C218
2. Date: 01/29/96
3. Existing Document Number and Revision: 2-M54-COEM-PMG-327, Revision 0
4. Document Type: ■ Procedure ☐ Plan ☐ Other
5. Document Title: Government Furnished Equipment (GFE)

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	6	5.4	Change the third paragraph: From: "..COEM-DES-223, Classification of Systems, Components, and Parts..." To: "..1-V51-COEM-DES-210, Design Process Requirements..."
3	10	8	Change the reference: From: "2-C93-COEM-DES-223, Classification of Systems, Components, and Parts" To: "1-V51-COEM-DES-210, Design Process Requirements"

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by the PPG
2	SSC classification performed in 1-V51-COEM-DES-210.
3	See the change in (2) above.

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) [signature] 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) [signature] 1-31-96

13. New Document/ Rev. No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction ☒ Nonintent Change ☒ Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes ☒ No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location: L. Reed Bailey X4581/1764 Building 130 C230
20. Cost Center: 3077
21. Charge Number: 820111
22. Requested Completion Date: 02/05./96
23. Prescreen/Screen/USQD Number: N/A
24. Independent Safety Review Meeting and Date: N/A
26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L.R. Bailey [signature] 2-1-96
27. Effective Date: 2/5/96
28. Expiration Date (if applicable)

Reviewed for Classification/UCNI (U/U)
BY [signature]
DATE 2-1-96

PADC-97-00102

Rocky Flats
Environmental Technology Site
2-M54-COEM-PMG-327
REVISION 0
GOVERNMENT FURNISHED EQUIPMENT (GFE)

APPROVED BY: /s/ R. E. Kell / R. E. Kell / 06/01/95
Director, Engineering and Safety Services — Print Name — Date

Responsible Organization: Project Management Effective Date: 07/18/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Engineering and Safety Support
Central Engineering
Nuclear Safety
Project Management
All PCEs

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By _____

Date _____

Periodic review frequency: 4 years from the effective date

PADC-97-00102

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	07/18/95		
2	02/05/96		
3-5	07/18/95		
6	02/05/96		
7-9	07/18/95		
10	02/05/96		

The following DMRs for change are active for this procedure:

96-DMR-000130

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1. PURPOSE

This procedure provides direction and criteria to be used in evaluating the need for Government Furnished Equipment (GFE) on construction projects and defines interfaces and responsibilities for planning and ordering GFE.

2. SCOPE

This procedure applies to Operating Contractor employees and subcontractors who perform activities or services at Rocky Flats Environmental Technology Site (Site).

This procedure addresses the following topics:

- Evaluating the need for GFE on construction projects
- Organization interfaces
- Responsibilities
- Planning
- Ordering
- Storage

3. OVERVIEW

GFE can be a determining factor in cost and schedule on a project, and must be identified as early as possible to allow for timely solicitation, ordering, delivery, inspection, and installation of each item of GFE. The close coordination of all departments involved is necessary to obtain timely information and achieve proper handling of GFE to meet schedules. Equipment and materials will be considered for advanced procurement as GFE when one of the following conditions apply:

- Information required to complete some element of project design must be obtained through advanced procurement of equipment. This condition generally occurs for specialty equipment whose unique configuration or design installation parameters must be known prior to completion of design.

3. OVERVIEW (continued)

- The construction completion schedule for the project will be impacted if the ordering and delivery of equipment or material is delayed until the construction contract is placed. This condition is characterized by equipment procurement and delivery lead times being excessively long when compared to the critical path construction schedule.

4. DEFINITIONS

Government Furnished Equipment (GFE). Material and equipment purchased by the government and furnished to a Construction Subcontractor.

5. RESPONSIBILITIES

5.1 Project Manager/Project Engineer

Identifies GFE in early project planning providing for phased budget allocations such as Line Item Funding Authorization.

Establishes an overall plan for GFE and reviews with the Project Engineer, Procurement Engineer, and Procurement assuring development of appropriate procurement specifications, purchase requisitions, and purchase orders.

Monitors GFE procurement status and arranges for appropriate storage, including in-storage maintenance, as required.

Approves purchase requisitions and authorizes commitment of project funding.

5.2 Construction Coordinator

Coordinates with the installing Subcontractor to ensure a timely delivery for installation.

5.3 Construction Engineer

Assists the Project Manager and Project Engineer in establishing storage requirements.

5.4 Discipline Engineer

Works with the Project Manager identifying GFE and prepares a preliminary list of GFE for budget estimates.

Prepares specifications for procurement of GFE in accordance with COEM-DES-281, Specification for Procurement and Construction.

Classifies items to be purchased in accordance with 1-V51-COEM-DES-210, Design Process Requirements.

NOTE *Final item classification, and the resulting procurement level options, can have a significant effect on project schedule and cost. Consult with Procurement Engineering for guidance.*

Initiates purchase requisitions for procurement of GFE, specifying router code, procurement level, and storage requirements in accordance with Standing Order 30, Acquisition Guideline for Requisitioning Commodities and Services.

Performs technical evaluations as required by Procurement.

Assists Procurement Engineer, as necessary, in development of procurement specifications, including specifying receipt inspection requirements.

Specifies storage, handling, and in-storage maintenance requirements, as appropriate.

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5.5 Procurement Engineer

Assists the Project Manager and Discipline Engineer in classifying items for procurement.

Develops procurement specifications.

Assists Project Manager and Discipline Engineer, as requested, in expediting and problem resolution.

Assists Project Manager and Discipline Engineer with purchase requisition development and processing.

6. INSTRUCTIONS

Discipline Engineer

[1] Work with the Project Manager identifying GFE and prepare a preliminary listing of GFE for budget estimates.

NOTE *A detailed listing will be prepared, required on many authorization jobs, early as possible during the design effort, but no later than Title I, and will be included in the design review package.*

Project Manager/Project Engineer

[2] Establish an overall plan for GFE, a listing of GFE, delivery lead times, and budgets as required.

[3] Review the GFE plan with the Procurement Engineer to determine the need for procurement specifications per COEM-DES-273, Engineering Standards for Procurement.

Procurement Engineer

[4] Assist the Project Manager and Discipline Engineer, as necessary, in classification of items in accordance with COEM-DES-223.

Discipline Engineer

[5] Prepare equipment specifications, per COEM-DES-281, for procurement of GFE. Equipment specifications shall include requirements for shipping, handling, receipt inspection, storage, and in-storage maintenance.

[6] Review the GFE plan with the Procurement Engineer and provide P and I specifications (per COEM-DES-273), as needed, to aid in developing requisitions and establishing procurement costs and estimated delivery lead times.

Project Manager/Project Engineer

[7] Ensure the purchase requisition adequately defines the equipment, router code, procurement level, subcontractor quality assurance requirements, and other data necessary for clearly communicating requirements to suppliers or bidders.

6. INSTRUCTIONS (continued)

Discipline Engineer

[8] Provide a list of GFE equipment to the Project Manager, including shipping handling, receiving, storage and in-storage maintenance requirements.

[9] Work with Procurement Engineer in finalizing the procurement specifications.

Procurement Engineer

[10] Assist, as necessary, in expediting and problem resolution.

Discipline Engineer

[11] Initiate purchase requisitions for GFE, and note on the purchase requisition that equipment is GFE. The Discipline Engineer's name should be on the purchase requisition as the point of contact.

Procurement Engineer

[12] Assist the Project Manager and Discipline Engineer with purchase requisition development.

Project Manager

[13] Submit purchase requisitions to Procurement.

[14] Perform necessary technical evaluations of procurement proposals.

Construction Coordinator

[15] Verify the installation need dates with the installing Subcontractor for each item of equipment.

Construction Engineer

[16] Monitor GFE procurement status and arrange for appropriate short and long-term storage, including in-storage maintenance, as required.

6. INSTRUCTIONS (continued)

Construction Coordinator

[17] Request pickup/delivery of the equipment from Logistics - Material Control, as required by that department's procedures.

[18] **IF** material is scheduled for immediate installation,
THEN arrange for delivery of equipment to the Construction Contractor as soon as it has been inspected and released by Logistics - Receiving, Certification & Inspection (RC&I).

[19] Verify material being delivered in accordance with procedure COEM-CMG-406, Construction Management Control of Government Furnished Equipment (GFE).

7. RECORDS

None

8. REFERENCES

Integrated Work Control Program

Standing Order 30, Acquisition Guideline for Requisitioning Commodities and Services

1-V51-COEM-DES-210, Design Process Requirements

2-D03-COEM-DES-273, Engineering Standards for Procurement

2-I02-COEM-DES-281, Specification for Procurement and Construction

4-06C-COEM-CMG-406, Construction Management Control of Government Furnished Equipment (GFE)

96-DMR-000130

RFPF - 1000.01 (5/95)
Formerly RF-47940

Page 1 of 1

Document Modification Request

Printor Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000131

Originator

1. Name/Phone/Pager/Location: Jerry Weiser X5447/7335 Building 130 C218
2. Date: 01/29/96
3. Existing Document Number and Revision: 3-J68-COEM-PMG-331, Revision 0
4. Document Type: ■ Procedure ☐ Plan ☐ Other
5. Document Title: Project Closeout and Turnover

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the List of Effective Pages
2	8	6.1[1] [E]	Change the reference: From: "..2-D57-COEM-DES-211, Project Management Process" To: "...2-P38-COEM-PMG-349, Records and Document Management for Authorization Projects."
3	9	6.1[6]	Change the reference from 2-D57-COEM-DES-211" to "2-P38-COEM-PMG-349."
4	11	6.1[14]	Change the reference from "2-D57-COEM-DES-211" to "2-P38-COEM-PMG-349."
5	13	8	Change the reference: From: "..2-D57-COEM-DES-211, Project Management Process." To" "..2-P38-COEM-PMG-349, Records and Document Management for Authorization Projects."

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by the PPG
2	DES-211 was canceled on 11/9/95. The filing instructions are included in 2-P38-COEM-PMG-349.
3	See the change in (2) above.
4	See the change in (2) above.
5	See the change in (2) above.

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) 1-31-96

13. New Document/Rev No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction [X] Nonintent Change [X] Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes [X] No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location: L. Reed Bailey X4581/1764 Building 130 C230
20. Cost Center: 3077
21. Charge Number: 820111
22. Requested Completion Date: 02/05/96
23. Prescreen/Screen/USQD Number: N/A
24. Independent Safety Review Meeting and Date: N/A
26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L. R. Bailey 2-1-96
27. Effective Date: 2/5/96
28. Expiration Date (if applicable)

Reviewed for Classification/UCNI (U/NU)
BY [signature]
DATE 2-1-96

PADC-97-00103

Rocky Flats
Environmental Technology Site
3-J68-COEM-PMG-331
REVISION 0
PROJECT CLOSEOUT AND TURNOVER

APPROVED BY: /s/ Leon J. McGovern / L. J. McGovern / 09/29/94
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By /s/ D. E. Hepler

Date 09/30/94

This procedure supersedes PILOT procedure ENG-PILOT-PM-013, Revision 0.

Periodic review frequency: 4 years from the effective date

PADC-97-00103

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	10/01/94		
2	02/05/96		
3-7	10/01/94		
8-9	02/05/96		
10	10/01/94		
11	02/05/96		
12	10/01/94		
13	02/05/96		
14-23	10/01/94		

The following DMRs for change are active for this procedure:

96-DMR-000131

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1. PURPOSE

This procedure provides a guide to the requirements and responsibilities of individuals and organizations for completing activities needed for final closeout of authorization projects.

2. SCOPE

This procedure covers all authorization projects, including Capital Line Items, Major Items of Equipment, General Plant Projects, Basic Capital Equipment, and Expense-funded Construction projects.

3. OVERVIEW

Project completion consists of two primary elements: completion of all requirements for the project to become operational (KD-4) and the documentation required to complete the closure of a project.

Each project will have its own unique requirements for becoming operational. Projects may require the following:

- Project Acceptance and Transfer (PA&T) (4-17C-COEM-CMG-417, Construction Closeout) (Ref. Engineering Directive 92/003)
- Final Safety Analysis Report (FSAR)
- Systems Operational Testing (SOT)
- Operational Readiness Review (ORR) (Ref. 1-H24-ADM-10.01 and the Department of Energy (DOE) Order 5480.31)
- Final Operations Procedure

In addition, some or all of the following may be required:

- Permits and licenses
- Operator Training
- Support Services Contract

3. OVERVIEW (continued)

The closeout process begins with the issuance of a PA&T form by Construction Management (CM). Project closeout activities are conducted as an individual and distinct activity and independently of the requirements of the facility to become operational. A Flow Diagram for Closeout Activities (Appendix 1) depicts the general activities and the responsible parties involved in this procedure.

Authorization work will be considered closed only when all of the following has been completed:

- The Final Project Closeout (FPCO) form issued,
- The Accounting Closeout (ACO) form completed,
- Final Cost Reports (FCR) are issued, and
- All files are shipped to and accepted by Engineering Documentation (ED).

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

A matrix of the responsibilities of individuals and/or organizations, is presented as Appendix 2. These responsibilities are further defined as follows:

5.1 Closeout Manager

Provides assistance and direction to the PM on all closeout activities.

Maintains log of all projects that have been or are in the process of being closed.

Closes out completed projects which do not have a currently assigned PM.

Assumes the responsibilities of the Project Manager on projects which have Purchase Orders (POs) that require audits after the Project Manager delivers the completed FPCO and all project files.

5.1 Closeout Manager (continued)

Ensures that Financial Accounting records are closed.

Ensures that Procurement's records are complete and accurate.

Ensures that Procurement conducts subcontract closeout in a timely basis in support of Project Manager's objectives.

NOTE *Subcontract closeout shall be consistent with prescribed procedures and may involve the coordination of lengthy audit activities. A final closeout change notice shall be issued by Procurement constituting final subcontract closure and de-obligating funds, as applicable. Final project closure shall not occur until all POs and subcontracts have been formally closed, and all required audits completed.*

5.2 Construction Management

Completes all documentation required to demonstrate that construction has been completed and accepted.

NOTE *For authorization projects accomplished by Maintenance, all responsibilities of Construction Management shall be performed by assigned organizations.*

5.3 Project/Lead Engineer

Assures that all Engineering activities on the project have been completed and documented, and that the engineering files are complete and in order.

5.4 Project Manager

Requests support from Central Planning and Budgets (CP&B) in initiating, revising and obtaining approval on all Charge Number Authorization Request (CNAR) forms, and assists in the closure of the work packages.

Completes and coordinates all closeout activities.

Completes all project closeouts and records in accordance with the DOE Order, AL 4700.1, Project Management System.

Ensures that the Construction Manager initiates and distributes the completed PA&T form and provides red-line drawings to the Engineer.

Ensures the Engineer has completed As-Built drawings in a timely manner as required by 2-L08-COEM-AMN-105, Engineering Drawing Control, (90-days).

Ensures that all purchase orders are closed.

Consolidates project files.

Prepares FPCO, including lessons learned.

NOTE *To assist the PM, a Closeout Checklist (Appendix 5) may be used.*

6. INSTRUCTIONS

6.1 Closing of Authorization Projects

Construction Management

[1] **WHEN** construction/installation and Systems Operation testing of an authorization project is complete,
THEN:

[A] Ensure that all Non-Conformance Reports (NCRs) are closed.

[B] Deliver red-lined (as-constructed) drawings to the Project Engineer (PE).

[C] Obtain final sign-offs of the Integrated Work Control Program (IWCP) package.

[D] Initiate, obtain approval signatures, and distribute the PA&T form - indicating that the project has been inspected and the work completed is in compliance with approved project plans and specifications. (Completed and signed PA&T form indicates the project is now ready to start closeout procedure.)

[E] Consolidate files in accordance with the approved filing procedures described in 2-P38-COEM-PMG-349, Records and Document Management for Authorization Projects.

[F] Transmit the construction files to the Project Manager.

Project/Lead Engineer

[2] Determine the requirements for and the extent of As-Built documentation for the project.

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6.1 Closing of Authorization Projects (continued)

[3] Receive red-lined drawings from the CM, and ensure that all required As-Built drawings are completed in accordance with the COEM-AMN-105.

[4] Coordinate as-built drawing requirements with Engineering Technical Services.

[5] Prepare the required Architect-Engineer/Master Task Subcontracts (A-E/MTS) Performance Evaluation and A-E/MTS closeout letter, as applicable, and transmit to the Purchasing Subcontract and Administrative Manager in accordance with Procedure 2-E62-COEM-DES-291, Architect-Engineer Performance Evaluation.

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[6] Consolidate files in accordance with the approved filing procedure described in 2-P38-COEM-PMG-349 including:

[A] The Engineering Order (EO) documenting that the As-Built drawings have been completed and distributed.

[B] **IF** As-Built drawings are not required,
THEN provide a memo stating this.

[7] Transmit all engineering files to the Project Manager.

Project Manager (PM)

[8] **WHEN** the completed PA&T is received,
THEN:

[A] Initiate and obtain all required signatures on the FPCO form (Appendix 6).

NOTE *The symbol "N/A" may be used in lieu of signatures where "not applicable" applies. However, the Project Manager's supervisor must initial for concurrence.*

6.1 Closing of Authorization Projects (continued)

[B] Attach one copy of the most current, approved funding document (Authorization Part I (if applicable), Engineering Job Order, or CNAR - Appendix 7) to the FPCO.

NOTE *The DOE's Budget and Reporting (B&R) Code must be shown on the funding document, or may be separately attached to the FPCO.*

[C] **IF** FPCO is due to a job cancellation,
THEN, include a brief description of the reason for cancellation.

[D] **IF** Government and vendor furnished equipment has a cost in excess of $5,000 and a life expectancy of two years or more,
THEN include a list, stating the equipment description, manufacturer/ vendor, Rocky Flats Environmental Technology Site inventory tag and serial number, with the FPCO.

[E] Submit FPCO to the Closeout Manager in PC&S for review of open POs.

Closeout Manager

[9] Review project for open PO(s).

[10] **IF** an open PO is found,
THEN return FPCO to the Project Manager.

Project Manager

[11] Coordinate with the assigned purchasing agent(s) to have all POs closed.

6.1 Closing of Authorization Projects (continued)

NOTE *Some POs may require audit prior to final closure. Audit normally takes a number of years to complete. If this is the case, all POs except those to be audited shall be closed, and the fully signed FPCO - except for the Project Manager's signature, shall be delivered to the Closeout Manager. In this case, the Closeout Manager assumes the responsibility of finalizing and distributing the FPCO, receiving the ACO, inserting both into the project documents, and disposition of the final record documents.*

[12] **WHEN** all POs are closed,
THEN return FPCO to Closeout Manager for final signature and distribution.

Closeout Manager

[13] **WHEN** no open POs exist,
THEN accept, sign, and distribute the FPCO.

Project Manager

[14] Obtain project files from Engineering and Construction Management, and consolidates these along with the Project Manager's project files, in accordance with the approved filing procedure outlined in 2-P38-COEM-PMG-349.

[15] Initiate CNAR for closure of the project to further labor charges, with assistance from CP&B.

[16] Adjust the final authorized amount with the CNAR, if applicable

[17] Obtain assistance from CP&B in initiating the CNAR, as required.

[18] Request that Financial Accounting completes and issues the ACO.

96-DMR-000131

6.1 Closing of Authorization Projects (continued)

[19] Ensure that Financial Accounting prepares and distributes Final Cost Statements on all projects; and issues a final cost letter to the DOE/Rocky Flats Field Office on all Line Items and General Plant Projects.

NOTE *An ACO is required on all projects in order to complete the closeout activity. Each Line Item project will be reviewed individually to determine the requirements and schedule for completing the ACO. Financial Accounting may solicit information from the Project Manager concerning the distribution of project cost.*

[20] Ensure that Financial Accounting transmits the ACO to the Closeout Manager for distribution to the Project Manager.

Closeout Manager

[21] Receive the ACO from Financial Accounting, and transmit a copy to the Project Manager.

Project Manager

[22] Upon receipt of the ACO from PC&S, complete a Document Release Form in accordance with COEM-AMN-101, and transmit the consolidated project files to Engineering Documentation (ED).

NOTE 1 *Project files that do not comply with the procedures outlined in the COEM may be rejected by ED.*

NOTE 2 *Where audits of open POs are required, the Project Manager will not be required to hold these files until receipt of the ACO. The Project Manager contacts the Closeout Manager for direction on shipping of these project files.*

[23] Prepare Final Project Closeout Report (FPCR) outlining the accomplishments and major problems encountered during project execution including Lessons Learned.

6.1 Closing of Authorization Projects (continued)

[24] Distribute the FPCR, at a minimum, to the Project Manager's immediate supervisor and to PC&S.

7. RECORDS

Engineering Documentation

Records generated as a result of this procedure are maintained in the Project History File in accordance with the retention schedule identified in 1-77000-RM–001, Records Management Guidance for Records Sources.

8. REFERENCES

DOE Order 4700.1, Project Management System

DOE Order 5480.31

ENG DIR 92/003, Evaluation of Procedure Parameter Changes

1-H24-ADM-10.01, Operational Readiness Review

1–77000–RM–001, Records Management Guidance for Records Sources

2-L10-COEM-AMN-101, Engineering Document Control

2-L08-COEM-AMN-105, Engineering Drawing Control

2-E62-COEM-DES-291, Architect-Engineer (A-E) Subcontract Completion and Performance Evaluation

2-L91-COEM-DES-245, Preparing, Revising, and Controlling of System Category I, II, and III System Operational Testing Procedures

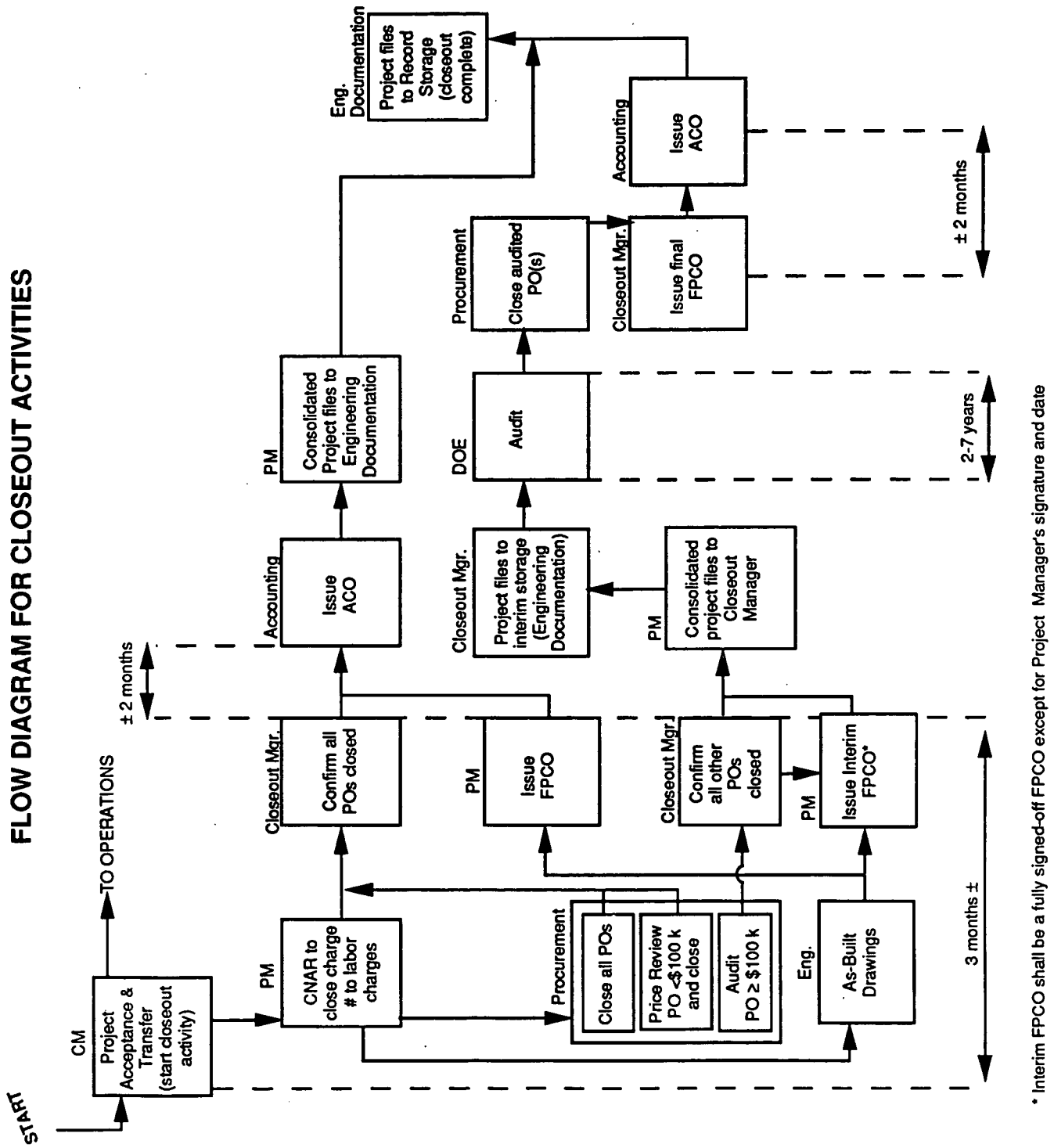
2-P38-COEM-PMG-349, Records and Document Management for Authorization Projects

4-17C-COEM-CMG-417, Construction Closeout

96-DMR-000131 96-DMR-000131

APPENDIX 1
Page 1 of 1

FLOW DIAGRAM FOR CLOSEOUT ACTIVITIES



* Interim FPCO shall be a fully signed-off FPCO except for Project Manager's signature and date

APPENDIX 2
Page 1 of 1

PC&S CLOSEOUT PROCEDURE
RESPONSIBILITIES ASSIGNMENT MATRIX (RAM)

	RESPONSIBILITY							
WORK ASSIGNMENT	**PM**	**CM**	**PE**	**CP&B**	**ACCT**	**PROC**	**DOE**	**PC&S**
SO TEST		X	X					
CLOSEOUT CHECKLIST	X							
REDLINE DRAWINGS		X						
AS-BUILT DRAWINGS	X		X					
PA&T		X						
CLOSE POs	X					X		
A-E PERFORMANCE EVALUATION			X					
CLOSEOUT LETTER	X							
MTS AUDIT						X	X	
CHARGE NUMBER AUTHORIZATION REQUEST	X			X				
ORGANIZE/CONSOLIDATE FILES	X	X	X					
FPCO	X							
ACO					X			
COMPLETE DOE FCR AND SUMMARY FOR PROJECT CHARGES	X				X			
COMPLETE DOCUMENT CONTROL FORM	X							X *
SHIP FILES TO ENGINEERING DOCUMENTATION	X							X *

* Audited projects only

GLOSSARY

PM - Project Manager
CM - Construction Management
PE - Project Engineer
CP&B - Central Planning & Budgets
ACCT - Financial Accounting
PROC - Procurement
DOE - Department of Energy
PC&S - Project Controls and Services

S.O. TEST - System Operation Test
PAT - Project Acceptance and Transfer
PO - Purchase Orde
A-E - Architect Engineer
FPCO - Final Project Closeout
ACO - Accounting Closeout
FCR - Final Cost Report
MTS - Master Task Subcontract

APPENDIX 3
Page 1 of 3

PROJECT CLOSEOUT AND RECORDS

NOTE *The following instructions are valid for Defense Programs (DP) Projects.*

1. INTRODUCTION

A. On completion of a project or a portion (subproject) of a project for which beneficial occupancy has been taken, the project office will take action to close the project and make the final disposition of property, financial resources, and project records.

B. The closeout of a project involves:

1. Cost Closing Statement.
2. Final Cost Reports.
3. Final Project Authorization.
4. Contracts Closeout and Contractor Evaluations.
5. Construction Completion Report.
6. Records Disposition.

2. COST CLOSING STATEMENT

A. The purpose of the Cost Closing Statement is to initiate the Final Project Closeout (FPCO). Financial claims and costs against the project should have been resolved and no further costs will be accepted. This document should be initiated within ninety (90) days after final acceptance.

B. The Cost Closing Statement should contain as a minimum:

1. Identification of the project (name, location, field organization, project and budget number).
2. Reference to the project authorization and all modifications thereto, with a request to PHD that they issue a final closing authorization.
3. The total cost incurred under the authorization with a breakdown into engineering, design and inspection, and construction costs, as shown in the authorization.
4. A comparison of final cost and schedule of the project with the original government estimate and initial authorization schedule with an explanation of major variances.
5. An instruction that no further charges may be made against the work covered by the authorization.

APPENDIX 3
Page 2 of 3

6. Identification of remaining funds and a request for de-obligation of unobligated balances.

7. On receipt of the cost closing statement from the project office, the Director, PMD will notify BRMD, FMD, and CPD; and place the project on the suspense list pending receipt of the Final Cost Report (FCR).

3. FINAL COST REPORT (FCR) (Appendix 9)

A. An FCR provides a basis for entering construction project costs in the property records and financial records. A report is required for each project or sub-project exceeding $100,000.

B. Chapter II, Internal Reporting, DOE Order 2200.8, "Reporting," contains the requirement for preparation of the FCR. This report should be prepared under the joint direction of Financial, Construction, and Property Management personnel. The Project Manager is responsible to ensure that the FCR is completed.

C. The entry of information into the (FIS) and (RPIS) should be coordinated. An annual reconciliation of FIS and RPIS data is a DOE requirement.

D. The FCR should be forwarded to the Director, (FHD) with a copy to the Director, PMD. This report should be completed as close to the date of beneficial occupancy as possible, but not to exceed six (6) months after the facility is in service.

E. FCR is prepared on Forms AL F 2210.1 and 2210.1A, which are stocked by PMD.

4. CONSTRUCTION COMPLETION REPORTS

A. Construction completion reports will include the following elements:

1. Entry of data required to comply with the RPIS requirements.

2. Completion of the final cost report to enter financial data into the FIS. The FIS and RPIS information must be compatible and will be reconciled annually as of September 30.

3. The data detailed in Chapter V, Part C5, and Attachment V-12 of DOE Order 4700.1. Since all or most of this data is in the Project file, a summary and index is sufficient in most cases.

4. For MSAs, MPs, and other projects of high complexity or projects that experienced unusual completion problems, a "Lessons Learned" summary will be included. Copies of "Lessons Learned" will be forwarded to PMD for appropriate distribution.

B. Area offices will retain completion reports with the project files.

APPENDIX 3
Page 3 of 3

5. CONTRACTOR PERFORMANCE EVALUATIONS

A. It is in AL's interests to have its contractors perform as well as possible in pursuit of construction projects. To assist in attaining top performance, it is beneficial to keep a record of A-E and construction contractor performance. This activity has a further benefit in that any contractor with a poor performance record can be eliminated from future competition, so long as that record is documented.

B. Within sixty (60) days of the conclusion of each contractor's effort, a Performance Evaluation (Standard Form 1421 for Architect/Engineers) and (Standard Form 1420 for Construction Contractors) will be completed by the Project Manager. The report will emphasize:

1. Cooperation of principals and employees.

2. Adequacy and active participation of top management.

3. Quality of work produced.

4. Suitability of end product for intended purposes.

5. Ability to meet established schedules.

6. Labor relations record.

7. Cost effectiveness of management procedures.

C. Contractor (A-E and Construction) performance evaluation will be retained by the AL site for future reference. Unsatisfactory reports will be forwarded to PMD for evaluation and possible forwarding to DOE-HQ for review.

D. Contracting Officers will review performance reports available prior to award of A-E or construction contracts.

6. PROJECT RECORDS

A. A Project record file will be maintained by the Project Manager or as delegated in the PMP. The content of this record will, as a minimum, meet the requirements of Chapter V, DOE Order 4700.1.

All data pertaining to the project should be retained in original or consolidated form, i.e. test and inspection records.

B. Disposition of records will be governed by DOE Order 1324.2, "Records Disposition," and AL Order 1324.2. Records will be maintained in the current records area for a minimum of one year after the cost closing statement is issued.

APPENDIX 4
Page 1 of 1

CLOSEOUT CHECKLIST

CLOSEOUT CHECKLIST

PROJECT NO. _____

		DATE COMPLETE
1.	LOCATE FILES	_____
2.	CHECK WITH OLD P. M.	_____
3.	PROJECT ACCEPTANCE AND TRANSFER	_____
4.	AS-BUILT DRAWINGS	_____
5.	CLOSEOUT ALL P. O. 'S	_____
6.	COMPLETE BOA AUDIT	_____
7.	COMPLETE CPFF CONSTRUCTION AUDIT	_____
8.	ISSUE FPCO	_____
9.	OBTAIN DESIGN & CONSTRUCTION FILES	_____
10.	INTEGRATE ALL FILES	_____
11.	ACCOUNTING ISSUE ACO	_____
12.	SEND FILE TO DOCUMENT CONTROL	_____

SAMPLE

CLOSEOUT COORDINATOR _____

APPENDIX 5
Page 1 of 1

FACILITIES PROJECT MANAGEMENT FINAL PROJECT CLOSE-OUT (FPCO)

FACILITIES PROJECT MANAGEMENT FINAL PROJECT CLOSE-OUT (FPCO)

TO: DISTRIBUTION

Auth. Number_____ Project Manager _____ Phone _____

Title _____ Bldg(s) _____

BOA Task Order No._____ Const. Subcontract P.O. No. _____

NO FURTHER LABOR OR MATERIAL ORDERS WILL BE INITIATED ON THIS PROJECT AND NO FURTHER CHARGES WILL BE ACCEPTED ON THIS AUTHORIZATION

Work requested has been completed in accordance with criteria, specifications, and construction orders and is hereby accepted by the Project User. Capital Equipment to be surplused as specified in the criteria. (Equipment Property Number(s)_____ has been transferred to PU&D, Bldg. 551).

_____
Project User, Organization, Bldg. No. Date

All material in storage for this project has been withdrawn from Warehouse Storage.

_____
Warehouse (PU&D) Date

Vendor submittals, maintenance information, etc. have been received and are adequate.

_____
Maintenance (Engineering) Date

An "As-Built" drawing revision has been issued and is on file for all project drawings. All contract deliverables have been received and accepted.

_____
Engineering Design Manager (1st Level) Date

Project complies with HS&E requirements.

_____
HS&E Engineer Date

There are no open purchase orders

_____
Closeout Manager, Project Mgmt. Support and Performance Date

SAMPLE

Check List (To be completed by Project Manager):	YES	NO	N/A
1. Sufficient funds for total project cost have been approved.	____	____	____
2. "Design Review Record" (RF-23250) has been completed.	____	____	____
3. "Construction Coordinator Check List Upon Job Acceptance" has been completed to certify that all construction parameters have been met.	____	____	____
4. Final "Purchase Order Contract Acceptance" has been issued.	____	____	____
5. Final "Project Acceptance and Transfer" had been issued.	____	____	____

REASONS FOR CLOSE-OUT

Scope and Estimate Only ☐ Job canceled ☐

Other _____

_____
Project Manager Date

Distribution:

Financial Accounting
Project User
Closeout Manager

APPENDIX 6
Page 1 of 1

CHARGE NUMBER AUTHORIZATION REQUEST

CHARGE NUMBER TITLE: _____ Charge No. ☐☐☐☐☐☐☐☐☐☐

WORK PACKAGE TITLE: _____ PSWBS: ☐☐☐☐☐☐☐☐☐☐

WORK PACKAGE MANAGER: _____ Request Type: ☐ Open ☐ Close All ☐ Close Labor ☐ Change ☐ Reopen

PROPOSED EFFECTIVE DATE: _____ PROPOSED DURATION: MONTHS:____ WEEKS:____ INDEFINITE:____

THIS BLOCK FOR OPENING AND CHANGING CAPITAL PROJECTS ONLY

B&R CODE: _____ PRN/EQU: _____

CUMULATIVE DOLLARS AUTHORIZED: _____ PIN PLAN#: _____

RESOURCE MANAGEMENT: _____ / _____ / _____ / _____ / _____
Name Signature Bldg. Ext. Date

SAMPLE

BRIEF DESCRIPTION OF WORK TO BE PERFORMED:

APPROVALS:

W/P MANAGER: _____ / _____ / _____ / _____ / _____
Name Signature Bldg. Ext. Date

CP&B REPRESENTATIVE: _____ / _____ / _____ / _____ / _____
Name Signature Bldg. Ext. Date

CHARGE NO. ADMINISTRATOR: _____ / _____ / _____ / _____ / _____
Name Signature Bldg. Ext. Date

ACCOUNTING ACTION: _____ / _____ / _____ / _____ / _____
Name Signature Bldg. Ext. Date

EFFECTIVE DATE: _____

DISTRIBUTION:

WORK PACKAGE MANAGER: [X] COST ACCOUNTING: [X]

CENTRAL PLANNING REPRESENTATIVE: [X] ORIGINAL - MCS DOC. CNTRL: [X]

APPENDIX Z
Page 1 of 1

SUMMARY OF PROJECT CHARGES

U. S. Department of Energy
ALBUQUERQUE OPERATIONS

AL F 2210.1
(2/90)

Sheet No. ___ of ___

FINAL COST REPORT FOR BUDGET PROJECT NO. _____

Project Title _____

Construction Contractor _____ Authorization No. _____

Contract Number _____

Architect-Engineer _____ Real Property Inventory Number _____

Contract Number _____ Date Prepared _____

SUMMARY OF PROJECT CHARGES

A-E Charges	
Contract Item No.	Dollar Value
Total	

Contractors Charges _____

Government Furnished Material _____

Architect-Engineer Charges _____

Other Charges _____

Total _____

Construction Charges	
Account No.	Amount
Total	

SAMPLE

PMG-331/7-1(1) 10/01/94

APPENDIX 8
Page 1 of 1

FINAL COST REPORT

AL F 2210.1 A
2/90

U. S. Department of Energy
ALBUQUERQUE OPERATIONS

FINAL COST REPORT

Sheet No. ____ of ____

Budget Project No. _____

Authorization No. _____

Project Title: _____

1	2	3	4	5		6		7	8
				Fixed Price Contracts		CPFF Contracts			
				(a)	(b)	(a)	(b)		
Asset Type	Description of Property Units	Quantity	Unit	Contract Costs	GFM	Direct	Indirect	A-E Costs	Total

SAMPLE

PMG-331/8-1(1) 10/01/94

Rocky Flats Environmental Technology Site

3-M02-COEM-PMG-333

REVISION 0

BASELINE MANAGEMENT

APPROVED BY: _____ /L. J. McGovern / 9-29-94
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____ UNC
Date 9/30/94

Periodic review frequency: 4 years from the effective date.

PADC-97-00104

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1-13	10/01/94	

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1. PURPOSE

This procedure establishes the general guidance for Program Project Managers, Project Managers, Project Engineers, and project support personnel in the development and management and control of project baselines, including technical scope, schedule, and budget.

2. SCOPE

This procedure applies to personnel within the Project Management organization who are involved in the development and management of project baselines at Rocky Flats Environmental Technology Site (RFETS).

3. OVERVIEW

This procedure provides an overview, throughout the life of the project, of the process of managing the project baselines. It sets forth instructions for the development of clear, definitive project baselines. It also addresses management of those baselines throughout the life of the project in order to complete the project in accordance with the approved technical scope, on time, and within budget.

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager

Develops the project Work Breakdown Structure (WBS) early on in the life of the project.

Ensures that the WBS is developed in accordance with the Operational Requirements Document (ORD).

Uses the WBS during project baseline development and management to verify and ensure completeness and to assist in baseline change control.

5.1 Project Manager (continued)

Develops integrated technical scope, schedule, and cost baselines coordinating with interested parties and meeting program and project requirements for Users, Programs, and regulatory agencies.

Ensures that project baseline information and data is entered in the Management Control System (MCS) and the Project Management Reporting System (PMRS).

Ensures that all baseline related information in the MCS and PMRS is current, accurate, and informative and that the Project Summary Report (PSR) reflects that information, accordingly.

Manages and controls project baselines throughout the life of the project ensuring program and project objectives are being met.

Issues Variance Analysis Reports (VARs) for the project, as required by the MCS.

Develops Work Arounds and alternate plans to avoid breaching project baselines, if possible.

Processes a Baseline Change Proposal (BCP) through the baseline change control process when required.

6. REQUIREMENTS

6.1 Department of Energy (DOE) Requirements

DOE Order 4700.1, Project Management System, and DOE Order 4700.5, Project Control System Guidelines, set forth requirements for the establishment of a clear project technical baseline as well as realistic and achievable schedule and budget baselines. Both documents encourage the use of a graded approach in baseline management, depending on project size, complexity, and relative level of risk.

6.2 EG&G Rocky Flats Requirements

EG&G Rocky Flats, Inc. has specific requirements related to the development and management of project baselines established, monitored, and controlled within the MCS as set forth in the following procedures:

- 1-40ADM-MCS-1002, Work Package Development
- 1-40ADM-MCS-1003, WBS/Baseline Change Control
- 1-40ADM-MCS-1004, Work Authorization & Suspension
- 1-40ADM-MCS-1006, MCS Commitments, Tracking

An additional requirement is that each active project assigned to Project Management be identified and tracked through the Project Management Reporting System (PMRS), a computerized data base. A primary output of the PMRS is the Project Summary Report (PSR), a summary report derived from the PMRS for a specific active project. The PSR contains information and data in a specified format, as well as management information on project scope, schedule, and cost baselines. PSR is updated and published weekly by the Project Manager.

7. INSTRUCTIONS - BASELINE DEVELOPMENT

7.1 Project Work Breakdown Structure (WBS)

Project Manager

[1] Develop the project WBS early in the project using input from cognizant DOE personnel, the user, program personnel, support personnel, project team members, and other interested parties.

[2] Use the project WBS throughout the life of the project in conjunction with baseline development and management to verify and ensure completeness of project baselines, to aid in control of baselines, and to assist in validating changes to baselines.

7.2 Project Technical Scope Development

Project Manager

[1] Develop project technical scope in terms of expected results that meet program and project objectives.

[2] Develop a clear, definitive project technical scope coordinating with cognizant parties, including the following organizations and personnel:

- Project Engineer and Design Disciplines
- User Organization and User Representative
- Program Organization and Program Manager
- Construction Management
- Site Safeguards and Security, and Safety Representatives

[3] Ensure that the technical scope includes features that satisfy program and project requirements and documents, including, but not limited to:

- Commitments, Regulatory Requirements, and other Project Drivers
- Feasibility and Alternative Studies and Cost Benefit Analysis
- Operational Requirements Document (ORD)
- Safety Analysis Reports (SARs)
- Constraints

7.2 Project Technical Scope Development (continued)

[4] Ensure that project technical scope is expressed clearly in narrative form and, whenever possible, in terms of quantified parameters (e.g. number of people to be housed, gallons per minute, etc.) such that salient performance requirements can be readily monitored and controlled throughout the life of the project.

[5] Assist and provide oversight of project engineering and cost estimating personnel in the development of the Scope and Estimate.

[6] Review and approve project baseline ORD, Scope & Estimate, Scope Statement (if used), and Statement of Work (SOW) prior to official release.

[7] Provide oversight of the development of the conceptual design report and design criteria for Line Item projects; including review through the DOE HQ Validation Process.

7.3 Project Schedule Baseline

Project Engineer

[1] Coordinate and work with the Central Planning & Budgets (CP&B) Project Scheduler in the development of project schedules.

[2] Obtain scheduling input from key personnel and organizations, including:

- Project Engineer
- Construction Management
- National Environmental Policy Act Personnel
- Safety Personnel
- Program User representative
- Procurement

7.3 Project Schedule Baseline (continued)

[3] Prepare a project summary schedule with milestones and critical path ensuring the schedule integrates with the following:

- Project Work Breakdown Structure (WBS)
- Project Technical Scope

[4] Prepare the summary schedule from lower level schedules developed by supporting organizations such as Engineering, Procurement, Construction Management, and other important support groups.

[5] Ensure that the project has as a minimum Level 2 schedule including the following activities and milestones:

Activities

- Pre-decisional
- Title I Design
- Title II Design
- Title III Construction/Procurement

Milestones (request for)

- Key Decision 1 (KD-1) - Approval to commence Title I Design
- KD-2 - Approval to commence Title II Design
- KD-3 - Approval to commence Title III Construction
- KD-4 - Approval to commence Production/Operations

[6] Provide more detail in the schedule as appropriate for the specific project.

[7] Ensure that baseline and current schedule dates for summary level activities match baseline and current information in the MCS and PMRS.

[8] Review and approve project baseline summary schedule and milestones prior to official release.

7.4 Project Cost Baseline

Project Manager

[1] Coordinate and work with the Project Cost Estimator in the development of project cost estimates.

[2] Coordinate and work with the Central Planning & Budgets (CP&B) representative to prepare a project summary budget ensuring it is integrated with respect to the following:

- Project Work Breakdown Structure (WBS)
- Project Technical Scope
- Project Baseline Schedule

[3] Prepare the summary budget from lower level budgets developed by supporting organizations such as Engineering, Procurement, Construction Management, and other important support groups.

[4] Ensure that budgets for labor, equipment, material, services, and subcontracts are established at the proper levels and time phased in accordance with the project schedule.

[5] Review and approve project baseline budget prior to official release.

8. INSTRUCTIONS - BASELINE MAINTENANCE

Project Manager

[1] Enter all pertinent project baseline information and data in the MCS and PMRS, and ensure that the information is current, accurate, and approved.

[2] Review and update the Project Summary Report (PSR) at least weekly, and update approved changes to baselines as required.

[3] Manage and control project baselines using reports and data from the MCS and PMRS as the basis for the analysis.

[4] Manage baselines using periodic and timely measures to monitor project scope, schedule, and costs throughout the life of the project to ensure work is progressing within the established baselines.

[5] Ensure that the interested parties including the User, Program Manager, and Project Team are active participants in the baseline monitoring and control plan.

[6] Perform iterative analysis throughout the life of the project to ensure that project scope continues to meet the approved Program/User needs and objectives as the project matures.

8. INSTRUCTIONS - BASELINE MAINTENANCE (continued)

[7] Analyze and review the following scoping or scope clarifying documents to ensure project technical objectives are being met throughout the life of the project:

- Project Request Documentation
- Operations Requirements Document (ORD)
- Project Summary Report (reporting, only)
- Scope & Estimate
- Project Data Sheet/Activity Data Sheet
- Predecisional Project Management Plan
- Conceptual Design Report (CDR)
- Design Criteria (DC)
- Project Management Plan (PMP)
- Title I and Title II Design Reports
- Title III, Construction/Procurement Contracts
- System Operation (SO) Tests & Operation Reports

[8] **IF** reportable variance occurs,
THEN prepare VARs as required by the MCS and distribute to appropriate personnel.

[9] **IF** it appears a baseline threshold will be exceeded,
THEN develop a Work Around, alternate plan, or another measure to remedy the situation, if possible.

[10] **IF** there is a change in the scope baseline,
OR
IF there are unrecoverable changes in the schedule or cost baselines,
THEN process a Baseline Change Proposal (BCP) in accordance with Baseline Change Control requirements.

9. RECORDS

Copies of project documents and records associated with the establishment and control of project baselines are to be maintained and stored in the Project Records File. Upon project close out, Project Records Files are to be retained in accordance with 1-77000-RM-001, Records Management Guidance for Records Sources.

Program Project Manager & Project Manager

[1] Ensure that all records and documents associated with baseline development and management are stored in the project records file.

10. REFERENCES

DOE Order 4700.1, Project Management System

DOE Order 4700.5, Project Control System Guidelines

1-40ADM-MCS-1002, Work Package Development

1-40ADM-MCS-1003, WBS/Baseline Change Control

1-40ADM-MCS-1004, Work Authorization & Suspension

1-40ADM-MCS-1006, MCS Commitments, Tracking

Glossary of Project Management Terms

Rocky Flats Environmental Technology Site

3-P35-COEM-PMG-335

REVISION 0

BASELINE CHANGE PROPOSAL GUIDE

APPROVED BY: L. H. McGovern 4-13-95
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management Effective Date: 4-14-95

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
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Date 4-17-95

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1. PURPOSE

The purpose of this guide is to provide additional information in following the customer-approved technical scope, schedule and budget baselines of plant projects. This guide provides direction for Project Managers to implement the Contractor Change Control System (CCCS) Department of Energy (DOE) change control process. This guide is intended to supplement the Level 1 procedure 1-40 ADM-MCS-1003, Work Breakdown Structure/Baseline Change Control.

2. SCOPE

This procedure applies to all Rocky Flats Environmental Technology Site (Site) projects. This procedure documents the process for documenting scope, schedule, and budget changes within a plant project.

3. OVERVIEW

3.1 Establishing a Baseline

A project's original baseline is established at its conception. For construction line item projects, the baseline is established with the submittal of the long form project data sheet to DOE, Headquarters (HQ). This project data sheet serves as the project's baseline. For smaller construction and equipment projects, the project baseline is established with submittal and approval of the first project management plan.

The project baseline (project management plan) can be modified during the Fiscal Year Baseline Development. However construction line item projects are limited in the level of modification that can be made before approval by DOE, HQ is required. These levels of modification or thresholds are documented in Baseline Documentation for Line Item Projects.

3.1 Establishing a Baseline (continued)

The plant contract baseline for any fiscal year is finalized in the Major Activity Documents (MADs) which are ratified by the M&O MAD Manager, the Rocky Flats Field Office (RFFO) MAD Manager, and the Site Change Control Board (SCCB). Every construction line item project has its own MAD. This construction line item MAD does not replace the Project Data Sheet as the baseline but only provides more detail on the scope, schedule, and cost that will be performed for the specific contract fiscal year. Smaller construction and equipment projects will be grouped with similar construction and equipment projects into a MAD.

3.2 Change Control

Change control is in effect when the baseline development is finalized and approved. For construction line item projects, this would be when the Congressional Project Data Sheet is established and the MAD is finalized. For smaller equipment and construction projects, this would be when the MAD is finalized. To create a MAD, add, delete, or change MAD baselines, a Baseline Change Proposal (BCP) must be completed and processed through the Change Control System.

Proposals to change a baseline may only be implemented after appropriate approval has been attained. Approval is hierarchial. Approval levels are governed by the amount or total impact of change to the existing baseline.

3.3 Change Identification and Change Proposal Philosophy

Any RFP personnel can identify the need for a change to a project, and notify the project manager.

A change to a project can be related to scope, budget, fiscal year cost, or schedule.

The baseline should rarely be modified. Every attempt should be made to accurately forecast scope, schedule, and cost, and maintain those forecasted targets throughout the fiscal year.

3.3 Change Identification and Change Proposal Philosophy (continued)

If it is necessary to submit a Baseline Change Proposal, it should be submitted prior to the change in scope being implemented, the cost overrun/underrun actual and/or missed milestone being incurred.

If a project is overrun or behind schedule, the project manager should attempt to exhaust all possible reasonable means to recover the schedule or cost prior to submitting a BCP to rebaseline.

An external justification or driver should be described for the reason for processing the BCP.

3.4 Types of Baseline Change Proposals

There are three types of Baseline Change Proposals.

1. Type I BCPs which require an External Board's approval. Changes to MAD or Project Data Sheet baselines exceeding the Site Change Control Board (SCCB) thresholds are considered External changes.

2. Type II BCPs require ratification by the Contractor Change Control Board (CCCB). These are BCPs affecting MAD baselines below the SCCB thresholds.

3. Type III BCPs are changes which do not affect MAD scope, milestones, or cost. Approval is by the MAD Manager. The MAD Manager is responsible to communicate all BCP changes to their Work Package Managers. Type III BCPs are not considered revisions to the MAD baseline. These changes affect detailed schedules or cost plans to work packages within a MAD and not MAD scope, schedule (MAD milestones) or MAD cost.

3.5 Change Control Approval Levels and Thresholds

There are potentially five levels of approval:

1. Energy System Acquisition Advisor Board: Acts on DOE, HQ Baseline Change Proposals for changes that exceed $50M, level zero scope changes and level zero milestones that slip more than six months.

2. Program Change Control Board (PCCB) Level I: Acts on DOE, HQ Baseline Change Proposals for changes that exceed $25M, project data sheet milestone slips greater than six months, and project data sheet scope changes.

3. Site Change Control Board (SCCB) Level II: Acts on RFFO Baseline Change Proposals which impact MAD scope, which request funding from the SCCB funding reserve, MAD budget changes that exceed 25% of the MAD fiscal year budget or greater than $1 million, changes to any MAD milestone that is greater than three months or deletion of a MAD milestone from a fiscal year. These changes are cumulative from the original baseline. The SCCB reviews and approves,disapproves, or endorses all Level I DOE,HQ baseline change proposals. On an exception bases, the SCCB chairman may endorse DOE, HQ baseline change proposals for the SCCB. The SCCB consists of both Management and Operating(M&O) Contractor Change Control Board Chairperson (non-voting) and the Rocky Flats Field Office (RFFO) managers.

4. Contractor Change Control Board (CCCB) Level III: Reviews all RFFO Baseline Change Proposals that require action from level II or level I. Ratifies all Type II BCPs. The CCCB consists of M&O senior managers approved by the RFETS M&O President. The CCCB chairperson is the M&O President or designate. The CCCB may endorse "Priority" or "Directed" BCPs for expedition to the SCCB chairperson. Priority BCPs are presented at the next scheduled CCCB and SCCB meetings for approval. Directed BCPs will be presented at the next scheduled CCCB and SCCB if the funding is not for a specific purpose.

3.5 Change Control Approval Levels and Thresholds (continued)

5. MAD Manager Level IV: Approves all Type III BCPs and reviews Type I and Type II BCPs. Acts on Site Baseline Change Proposals which move cost plans between project management plans within a MAD but which do not impact the overall MAD cost. Acts on Site Baseline Change Proposals which open new work packages without a cost impact to the overall MAD.

4. DEFINITIONS

Baseline. The basis for which all future scope, schedule, and cost performance will be compared. The baseline is defined at a specific point in time (usually during the development of the first project data sheet, or for smaller projects the first project management plan).

Baseline Change Proposal (BCP)-Rocky Flats Field Office (RFFO). The document used to create, delete or modify an existing work package, project management plan, Major Activity Document (MAD) baseline.

Baseline Change Proposal (BCP)-DOE Headquarters. The document used to create, delete or modify an existing project data sheet baseline. Must be processed in conjunction with a RFFO Baseline Change Proposal.

Capital Construction Project. A construction project whose total estimated cost, including design, procurement, and installation, is greater than $5K; has an expected service life of greater than two years; and results in a significant betterment to the plant site. (DOE allows the grouping of smaller projects for a large construction project whenever the activities are site-wide and constitute a theme, such as the construction of utilities.)

Construction Line Item (CLI). A capital construction project whose total estimated cost including engineering, procurement, and installation are greater than $2,000K. A project data sheet is required for all capital construction line item projects.

4. DEFINITIONS (continued)

Contractor Change Control Board (CCCB). A review board that is chaired by EG&G with members from the various EG&G program offices. CCCB members review, approve, or deny proposed changes to the project baseline that exceed the Project Manager's authority.

HQ Program Change Control Board (PCCB). A review board that reviews, approves, or deny proposed changes to a project baseline that exceed the SCCB authority.

Milestone. A zero duration activity representing a specific point in time and event.

External Milestone: A milestone representing a deliverable to an agency outside the M&O contractor (examples, DOE, RFFO, Colorado Department of Health, Stakeholders).

Internal Milestone: Those milestones managed by the M&O not listed in an approved MAD document or as an External Milestone.

MAD Milestone: A milestone represented on the current revision of the MAD document.

Project. A set of activities with a defined beginning and end date that results in the change of a physical entity. Normally projects are classified by their funding category: Capital Equipment, Operating Expense, or Capital Construction. Capital Equipment and Capital Construction projects can be further classified by their fund type. Capital Equipment fund types are Major Item of Equipment, Capital Equipment, and Miscellaneous Capital Equipment. Capital Construction fund types are Construction Line Item and General Plant Projects. Normally the distinguishing factor between fund types is the cost of the project.

Site Change Control Board (SCCB). A review board that is chaired by DOE with members from the various EG&G program offices. SCCB members review, approve, or deny proposed changes to the project baseline that exceed the CCCB authority.

5. RESPONSIBILITIES

5.1 Central Planning and Budgets - Funds Control (CP&B-FC)

Reviews all projects to ensure that appropriate funding is utilized to finance the project. Assigns a Change Control Coordinator. Reviews and approves BCPs prior to submission to the Contractor Change Control Board. Formally transmits all BCPs to DOE/RFFO. Notifies the Project Manager of scheduled board meetings.

5.2 Central Planning and Budgets - Project Management Support (CP&B-PMS)

Assists the Project Manager with the development of a BCP. Provides schedule and budget documentation required to support the BCP. Reviews and approves a BCP to indicate that the impacts are accurately stated and the BCP is properly completed prior to submission to CP&B-FC. Coordinates approved changes into the Project Control System.

5.3 Project Manager (PM)

Accomplishes the project scope within the established schedule and budget. Initiates and approves the BCP at the administrative level. Performs an impact analysis, generates the BCP and coordinates the BCP process. Monitors progress of the project and addresses schedule and budget variances noting the necessity for baseline change proposals. Works with CP&B-PMS to develop corrective actions and baseline change proposals. Coordinates changes with other PMs when proposed changes impact other projects.

5.4 Contractor Change Control Board (CCCB)

Members review, approve, or deny proposed changes to the project baseline that exceed the PMs authority.

5.5 Site Change Control Board (SCCB)

Members review, approve, or deny proposed changes to the project baseline that exceed the CCCB authority.

5.6 HQ Program Change Control Board

Reviews, approves, or denies proposed changes to a project baseline that exceed the SCCB authority.

6. INSTRUCTIONS

6.1 Baseline Change Proposal Preparation

The preparation of a Baseline Change Proposal form and the signatures required is defined in detail the MCS Change Control Procedures.

6.2 Approval Process

It is the project manager's responsibility to obtain all required signatures on the Site baseline change proposal form this includes the RFFO MAD Manager (Type I and Type II BCPs). The last signature to be obtained on the form prior to transmittal to the change control coordinator will be the responsible Central Planning and Budgets's Manager. The Manager will verify that the baseline change proposal has been categorized correctly (Type I, Type II, or Type III) and that the form has been filled out correctly.

Upon obtaining the Central Planning and Budget Manager's signature, the BCP is taken to the M&O contractor change control coordinator who will then if required schedule the proposal on the next open CCCB meeting. BCPs must be in the change control coordinator's office at least one week in advance of the desired CCCB meeting. The change control coordinator will notify the project manager when the BCP is scheduled for the CCCB.

Since Type III BCPs do not require a board meeting, the change control coordinator will review the BCP and send appropriate notification to the Central Planning Manager that the baseline may be changed in the Project Control System, the computer system.

At the CCCB meeting, the Type II BCPs will be reviewed for ratification. A project manager may be requested to present a formal presentation of a Type II BCP. If a formal presentation is required, the project manager will be notified prior to the briefing by the M&O contractor change control coordinator.

6.2 Approval Process (continued)

At the CCCB meeting all Type I BCPs will be reviewed and comments made on the formal presentation which will then be used for the SCCB. A formal presentation is required for all Type I BCPs and must follow the site standard presentation format.

If the Type II BCP is ratified, the change control coordinator will send appropriate notification to the Central Planning Manager that the baseline may be changed in the Project Control System, the computer system.

If the Type I BCP is approved, the change control coordinator will then transmit the proposal to the DOE SCCB Secretariat who will schedule it for the next open SCCB meeting. The original BCPs, presentation material and documentation must be transmitted one week in advance of the desired scheduled SCCB meeting. Due to the meeting locations, time constraints, or the volume of BCPs, BCPs may be held for a future meeting. The SCCB Chairperson will prioritize the agenda and does not guarantee every BCP submitted will be reviewed at the next scheduled meeting. The M&O change control coordinator will notify the project manager when the BCP is scheduled for the SCCB.

At the SCCB meeting, the project manager will be required to brief his baseline change proposal. The SCCB will review, endorse, reject, or approve the BCP. If the BCP is approved, the SCCB Secretariat will provide a letter of approval to the M&O change control coordinator who will forward it to the project manager and the appropriate Central Planning Manager. Upon receipt of the approval letter, the baseline may be changed in the Project Control System, the computer system. If the SCCB endorses the BCP for transmittal, the appropriate DOE MAD Manager office then forwards the BCP to DOE, HQ for their review and consideration. DOE HQ will then review the BCP and transmit a letter approving or disapproving the proposal to DOE MAD Manager office who then provides a copy to the project manager.

7. REFERENCES

1.40 ADM-MCS-1003, Work Breakdown Structure/Baseline Change Control

DOE NOTICE 4700.4, Baseline Change Control Process at the Executive Level

DOE ORDER 4700.1, Project Management System

Rocky Flats Environmental Technology Site

3-L89-COEM-PMG-337

REVISION 0

COST ESTIMATING

APPROVED BY: _____ / L. J. McGovern / 9-29-94
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management

Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____
Date 9/30/94

Periodic review frequency: 4 years from the effective date.

PADC-97-00106

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1. PURPOSE

This procedure provides guidelines for the development and utilization of project cost estimates throughout the life of a project at the Rocky Flats Environmental Technology Site (RFETS).

2. SCOPE

This procedure applies to all Construction Projects managed by Project Management.

3. OVERVIEW

This procedure contains general instructions regarding the development of an integrated project cost estimate that adequately identifies and accounts for all costs within the project and serves as the basis for the project budget and cost baseline.

Different types or levels of cost estimates are prepared throughout the life of a project, depending on the project stage being considered. At RFETS cost estimates generally fall into the categories of Planning, Conceptual, Title I, Title II, Government (or Bid), and Other.

The following represents documentation at typical stages of a project for which estimates may be required.

- **Planning**

  a. Scope & Estimate
  b. Short Form Project Data Sheet
  c. Pre-decisional Project Management Plan (PPMP)

- **Conceptual**

  a. Project Data Sheet (Schedule 44)
  b. Conceptual Design Report (CDR)
  c. Design Criteria (DC)
  d. Project Management Plan/Work Package (PMP/WP)

3. OVERVIEW (continued)

- **Title I - Preliminary Design**
- **Title II - Final Design**
- **Government (Bid)**
  a. Fixed Price (FP)
  b. Cost Plus Fixed Fee (CPFF)
  c. Small Business Administration (SBA) Set Asides
  d. Field Change Orders (FCOs)
- **Other**
  a. What if or Pro Forma Estimates
  b. Davis-Bacon covered work
  c. Current working estimate
  d. Validating or independent

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Project Manager (PM)

Reviews project scope to ensure it is clearly defined and sufficiently detailed to allow accurate, detailed cost estimating and meets the requirements of the Operational Requirements Document (ORD).

Monitors the project estimate, and related efforts, to ensure it integrates with project scope and schedule.

Ensures project Work Breakdown Structure (WBS) is used in the development of the cost estimate.

5.1 Project Manager (PM) (continued)

Initiates the development of the project schedule and resource loading and leveling.

Requests cost estimating support, as needed, throughout the life of the project.

Directs the Project Engineer (PE) and project Cost Estimator in their efforts.

Provides the Cost Estimator with information required to develop the project cost estimate.

Ensures that National Environmental Policy Act (NEPA) considerations, Safety Analysis Report (SAR) considerations, and other requirements are accounted for in the cost estimate.

Reviews project cost estimates for accuracy and proper form throughout the life of the project.

Approves project cost estimates prior to submitting them to others or incorporating them in project or scoping documents.

Prepares the PPMP, Short Form Project Data Sheet, Project Data Sheet, and PMP/WP using appropriate cost estimating information.

Assists in the project Validation Review process.

Ensures that all project cost estimating information and documentation is accurate, up-to-date, and available for justification and audit.

Ensures that all documentation associated with the project budget is filed and stored properly.

5.2 Project Engineer

Submits internal Support Requests to Engineering disciplines required to complete conceptual and design work for the project.

Prepares project Scope & Estimate, CDR, DC, Title I Design, and Title II Design, if required.

Supports PM in preparing all required documentation (e.g., NEPA Checklist, SAR Checklist).

Assists the project Cost Estimator by providing technical support and information for developing cost estimates throughout the life of the project.

6. INSTRUCTIONS - GENERAL COST ESTIMATE DEVELOPMENT

Project Manager

[1] Review project scope to ensure that the technical objectives are clearly defined and stated and meets the requirements of the ORD.

[2] Structure the project work scope into a WBS that reflects the work to be performed and the products to be delivered.

Project Engineer

[3] **IF** required by the PMP/WP,
THEN prepare the project technical Scope, Conceptual Design Report (CDR), Design Criteria (DC), Title I Design, and Title II Design.

[4] Provide technical support to the assigned project Cost Estimator in the development of all project cost estimates throughout the life of the project.

Project Manager

[5] Direct the development of the project schedule and resource loading using the project scope and WBS as the basis.

[6] Submit Request For Estimate (RFE) forms (see Appendix 1) to the Cost Estimating Manager in accordance with the Cost Estimating Handbook at appropriate times throughout the life of the project for cost estimating support.

[7] Provide information to the project Cost Estimator, as needed, to initiate the development of the project cost estimate.

[8] Ensure that the cost estimate is based upon and integrates with the project scope, WBS, and schedule.

[9] Account for any NEPA considerations making use of the initial NEPA Checklist.

6. INSTRUCTIONS - GENERAL COST ESTIMATE DEVELOPMENT (continued)

[10] Review and direct the development of the project cost estimate ensuring that a more definitive estimate is developed as scope becomes more clearly defined during the conceptual and development phases of the project.

[11] Review all cost estimates for accuracy and proper form prior to transmittal to others.

[12] Ensure that the Cost Estimator provides adequate support documentation that is accurate, up-to-date, and available for Validation Review, audits, and other justification activities.

7. INSTRUCTIONS - COST ESTIMATING, LIFE OF THE PROJECT

7.1 Planning Cost Estimate (Scope & Estimate)

Project Manager

[1] Establish the project scope of work (technical baseline) in sufficient detail to document project purpose, objectives, assumptions, performance criteria, and risk in accordance with the ORD.

Project Engineer

[2] Issue Support Request internally in Engineering to all disciplines required to complete the scope design package.

[3] Develop the scope design package.

[4] Deliver the scope design package and Engineering Work Plan, including the Project Design Hours Estimate (PDHE) to the Project Manager.

Project Manager

[5] Prepare the project WBS and element definitions to a level sufficient to formally organize and define the scope of work for cost estimating purposes.

[6] Direct the development of the project schedule including activities and durations, logic, milestones, critical path analysis, resource loading and leveling, and risk.

[7] Ensure that the project schedule integrates with project scope and the WBS.

[8] Submit RFE, scope design package, funding determination, Davis-Bacon determination, and project schedule to the Cost Estimating Manager.

[9] Provide information required by the assigned project Cost Estimator for development of the project estimate.

7.1 Planning Cost Estimate (Scope & Estimate) (continued)

Project Engineer

[10] Assist the project Cost Estimator with technical information and guidance in the development of the project cost estimate.

Project Manager

[11] Review the cost estimate with the User/Program Manager and Project Engineer to validate the estimated Total Project Cost (TPC) in accordance with the ORD.

[12] Ensure that all project cost estimating documentation is accurate, up-to-date, and available for project justification and audit.

[13] Prepare Short Form Project Data Sheet, if required, from the cost estimate.

7.2 Conceptual Cost Estimates

Project Manager

[1] Conduct iterative reviews and approvals of the project cost estimates that result as the project becomes better defined.

Project Engineer

[2] Prepare CDR and DC.

[3] Provide technical support to the assigned project Cost Estimator in the development of project cost estimates.

Project Manager

[4] Ensure that all deliverables prepared during the conceptual development stage integrate into and agree with the approved project scope.

[5] Submit RFEs, as required, to the Manager of Cost Estimating.

7.2 Conceptual Cost Estimates (continued)

[6] Direct the efforts of the Project Engineer and Cost Estimator in the development of more definitive project cost estimates in accordance with the project specific WBS.

[7] Ensure that all project cost estimating documentation is accurate, up-to-date, and available for project justification and audit.

[8] Review cost estimates to ensure that NEPA, SAR, and other requirements are accounted for.

[9] Review for accuracy and proper form all cost estimates prepared for or from the Project Data Sheet (PDS), Validation Review, CDR, DC, and PMP/WP.

[10] Approve cost estimates prepared for or from the PDS, Validation Review, CDR, DC, and PMP/WP.

[11] Resource load the project schedule using the estimated detail cost breakdown.

[12] Ensure the cost estimate is aligned with the project WBS.

[13] Include the estimate-based resource loads and costing profiles in the project PMP/WP.

7.3 Title I & Title II, Design Estimates

Project Manager

[1] Ensure that all deliverables prepared during the Title I/II Design stages of the project integrate into and agree with the approved project scope.

7.3 Title I & Title II, Design Estimates (continued)

Project Engineer

[2] Prepare Title I/II Design and reports.

[3] Provide technical support to the assigned project Cost Estimator in the development of project cost estimates.

[4] Ensure that Architect Engineer/Master Task Subcontract (AE/MTS) design effort cost estimates are in the approved format.

Project Manager

[5] Submit RFEs, as required, to the Manager of Cost Estimating.

[6] Direct the efforts of the Project Engineer and Cost Estimator in the development of a more definitive project cost estimate.

[7] Ensure that all project cost estimating documentation is accurate, up-to-date, and available for project justification and audit.

[8] Review the cost estimate to ensure that NEPA, SAR, and other requirements are accounted for.

[9] Review for accuracy and proper form all cost estimates prepared for Title I/II Design and the associated documentation.

[10] Approve the project cost estimate prepared for Title I/II Design.

7.4 Government (Bid) Estimate

Project Manager

[1] Submit RFE to the Manager of Cost Estimating.

[2] Direct the efforts of the Project Engineer and Cost Estimator in the development of Government Estimate.

7.4 Government (Bid) Estimate (continued)

Project Engineer

[3] Provide technical support to the project Cost Estimator, as needed, in the development of the Government Estimate.

[4] Direct the development of the Government Estimate from the final Title II estimate.

Project Manager

[5] Ensure that only appropriate costs are included in the Government Estimate.

[6] Ensure that all project cost estimating documentation is accurate, up-to-date, and available for project justification and audit.

[7] Review the Government Estimate for accuracy and proper form.

[8] Approve the Government Estimate.

7.5 Other Cost Estimates

Project Manager

[1] Submit RFE to the Manager of Cost Estimating for Other Cost Estimates.

[2] Direct the development of Other Cost Estimates as needed throughout the life of the project including:

- What if or Pro Forma Estimates
- Davis-Bacon Covered Work
- Current Working Estimate
- Validating or Independent Estimates

[3] Review Other Cost Estimates for accuracy and proper form.

[4] Approve Other Cost Estimates prior to transmittal to others.

8. RECORDS

All documentation related to the project cost estimate is to be stored in the Project Records File.

Project Records Files are to be processed in accordance with 1-48000-DM-001, Document Control Program.

Project Manager

[1] Store all documents related to the project cost estimate in the Project Records File.

[2] Process Project Records Files in accordance with 1-48000-DM-001, Document Control Program.

9. REFERENCES

Cost Estimating Handbook

Glossary of Project Management Terms

1-48000-DM-001, Document Control Program

APPENDIX 1
Page 1 of 1

REQUEST FOR ESTIMATE (RFE)

PROJECT TITLE: _____

PROJECT LOCATION: _____ AUTHORIZATION # _____

REQUEST DATE: ___/___/___ PREVIOUS ESTIMATE # _____

REQUESTER: _____ EXT X_____ PGR: _____

DOE COUNTERPART: _____ EXT X_____ PGR: _____

TYPE OF ESTIMATE

☐ WHAT/IF ☐ JUST. / VAL ☐ CDR ☐ T/I ☐ DES CR ☐ FP BID ☐ CPFF BID ☐ A/E CHECK
☐ SCOPE ☐ SCHD44/LR ☐ PMP ☐ T/I ☐ TECH EVAL ☐ CFC ☐ BUDGET ☐ EST. REP.

PREPARE A DAVIS - BACON SUB ESTIMATE ? ☐ YES ☐ NO IF YES PLEASE SUBMIT TWO COPIES OF DRAWINGS

FUNDING

☐ EXPENSE ☐ CAPITAL ☐ GPP ☐ LINE ITEM

REQUIRED INFORMATION

ADS NUMBER _____

B&R CODE _____

COST ACCOUNT / WORK PACKAGE # _____

(LINE ITEM PROJECT INFORMATION ONLY)

DOE PROJ. TITLE _____

DOE PROJECT # _____

CONSTRUCTION PERFORMED BY:

☐ M/TCE ☐ CPFF ☐ FP

DESIGN BY:

☐ EG&G ☐ A-E
☐ DESIGN - BUILD ☐ BOA

OTHER REQUIREMENTS

☐ GFE INVOLVED
☐ FULL FACE MASK
☐ SUPPLY AIR

PROPOSED SCHEDULE

☐ COPY ATTACHED ☐ SHOWN HERE

START DESIGN	A	MO. ___	YR ___
COMPLETE DESIGN	B	MO. ___	YR ___
ISSUE SPECS	C	MO. ___	YR ___
ISSUE PO (GFE)	D	MO. ___	YR ___
EQUIP. DELIVERY	E	MO. ___	YR ___
START CONST.	F	MO. ___	YR ___
COMPL. CONST.	G	MO. ___	YR ___

SPECIAL INSTRUCTIONS

1.) ESTIMATE NEEDED BY DATE: ___/___/___

2.) _____

P&CM. AND ED&I PROJECT HOURS

SUPPORT	MAN-HOURS	SUPPORT	MAN-HOURS
PM SUPPORT		TITLE I DES	
PROJECT TEAM		TITLE II DES	
RAD MONITORING		TITLE III DES	
DECON		STD. EQ. SPECS	
WASTE DISPOSAL		REMOVAL DES	
SECURITY ESCORTS		SOURCE/TRIP INSP	
OTHER		CONST. INSPEC.	

☐ USE TARGET PERCENT LIMITATIONS FOR SUPPORT ACTIVITIES

REQUESTERS AUTHORIZATION SIGNATURE TO PROCEED WITH WORK

CHARGE # TO BE USED

X _____ _____

COST ESTIMATING USE ONLY

DATE RFE RECEIVED ___/___/___

INFORMATION RECEIVED WITH RFE TO COMPLETE ESTIMATE:

☐ DRAWINGS ☐ SKETCHES ☐ PROJ. SCHEDULE
☐ SPECIFICATIONS ☐ IWCP ☐ WORK DESCRIPT.
☐ PDHE ☐ OTHER: _____

DATE ASSIGNED ___/___/___

ASSIGNED TO _____

ESTIMATED COMPLETION DATE ___/___/___

ESTIMATE # _____

TOTAL ESTIMATED COST OF PROJECT $ _____

ESTIMATE BACKGROUND INFORMATION

WAS A JOB WALK PERFORMED? ☐ YES ☐ NO

DID THE CONTRACTOR ACCOMPANY YOU ON THE JOB WALK? ☐ YES ☐ NO

WHO ELSE ACCOMPANIED YOU ON THE JOB WALK?

☐ CM ☐ PM ☐ ENGINEERING ☐ USER ☐ DOE
☐ OTHER: _____

WAS THE INFORMATION PROVIDED ADEQUATE? ☐ YES ☐ NO

DID THE INFORMATION PROVIDED REFLECT THE ACTUAL SCOPE OF THE PROJECT? ☐ YES ☐ NO

ESTIMATOR: _____ EXT. X_____

REQUESTERS SIGNATURE FOR RECEIPT OF ESTIMATE

X _____ DATE: ___/___/___

ESTIMATE START DATE ___/___/___

ESTIMATE FINISH DATE ___/___/___

ESTIMATING HOURS _____

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1. PURPOSE

This guidance reviews the various reports and reviews that are in part or wholly the responsibility of Project Management to manage and maintain construction projects. This guidance lists major reports and reviews required for the life of a project and establishes a generic process to be used for planning, preparation, and execution of these regular deliverables. The Project Management Plan/Work Package (PMP/WP) lists the specific reports required for each project.

2. SCOPE

This guidance applies to all active and planned construction projects managed by Project Management.

3. OVERVIEW

This guidance contains general information, instructions, and responsibilities for planning, preparing, and executing the regular reports and presentations required of Project Management. The number and types of reports and reviews required of a specific project is dependent on the project's funding type, value, complexity, and risk factors. Appendix A lists the various reports and reviews required of each type of project currently the responsibility of Project Management.

4. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

5. RESPONSIBILITIES

5.1 Deputy Director of Project Management

Ensures that all information provided to the Department of Energy (DOE) is accurate, timely, and of a highly professional quality.

5.2 Manager of Project Controls and Services

Ensures that all information provided to the DOE is accurate, timely, and of a highly professional quality.

5.3 Project Manager

Ensures that all information provided to the DOE is accurate, timely, and of a highly professional quality.

Provides accurate and up-to-date Project information for each project reported and reviewed.

Is knowledgeable and informed on the current status of assigned project, including activities, accomplishments, and problems from the last quarter and projected activities for the next quarter.

Maintains an accurate, up-to-date, and complete project file for each assigned project.

5.4 Program Project Manager

Ensures that all information provided to the DOE is accurate, timely, and of a professional quality.

Supports assigned Project Managers as required to insure adequate training and preparation for project reviews.

6. INSTRUCTIONS

Deputy Director of Project Management

[1] Oversee reporting and review process, provide leadership and direction where required.

Manager of Project Controls and Services

[2] Establish and maintain a twelve month schedule of required reports and reviews on the Project Management Calendar of Events published monthly.

[3] Coordinate the following for department-wide reports and reviews:

- Individual review meeting agendas.
- DOE Engineering and Project Management Division selection and approval process for agendas as appropriate.
- Arrange for meeting locations, times, and presenters.
- Ensure consistency and quality in all reports/reviews.
- Publish meeting minutes including discussions, agreements, attendance roster, and action item assignments as appropriate from reviews.

[4] Maintain a central library of reports and presentations.

[5] Maintain instruction sets and guidance on how to correctly complete individual reports and reviews.

Project Managers

[6] Provide accurate and timely information and/or submittals for required reports and reviews.

[7] Complete all assigned action items in the time agreed upon.

[8] Define specific reports and reviews required for assigned projects.

7. RECORDS

Copies of all standard project reports and reviews submitted to the DOE will be maintained in a central project documentation library.

Meeting minutes will be published for each review to provide a record of the meeting. Minutes will include a record of comments, agreements, attendance roster, and action item assignments.

8. REFERENCES

DOE Order 1332.1A, Uniform Reporting System

DOE Order 4700.1, Project Management System

DOE Order 4700.5, Project Control System Guidelines

APPENDIX 1
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PROJECT REPORTING & PROGRESS REVIEW MATRIX

PROJECT REPORTING & PROGRESS REVIEW MATRIX*

MEETINGS & REVIEWS	BASIS OF REQUIREMENT	INITIATOR	FREQ.	DISTRIBUTION				REQ'D FOR PROJECT TYPE
				DOE				
				HQ	AL	RFFO	EG&G	
Quarterly Construction Management Review		DOE	Q	X		X	X	CLI
Validation Review	4700.1	DOE	Y	X		X	X	CLI, EXP>$2M
Mid Year Review	MCS	EG&G	Y	X		X	X	ALL
Project Team Meeting	EG&G, OVR-110	PM	A			X	X	ALL
PTS Meeting	(1)	DOE	M			X	X	CLI, EXP>$2M
Project Action Center	(2)	EG&G	W			X	X	ALL
REPORTS & DOCUMENTS								
Project Summary Report (PSR)	EG&G	PM	M, A (3)	X		X	X	All
Monthly PATS/PTS Report	(1)	PM	M	X		X	X	CLI, EXP>$2M
4700.1 Quarterly Report	4700.1 (4)	PM	Q	X		X	X	CLI, EXP>$2M
Project Data Sheet	4700.1	PM	Y,A	X		X	X	CLI, EXP>$2M
Activity Data Sheet (ADS)	(5)	PM	Y,A	X		X	X	All
Baseline Change Proposal (BCP)	4700.1/MCS	PM	A	X		X	X	All
Project Management Plan/Work Package (PMP/WP)	4700.1/MCS	PM	Y,A	X		X	X	All
Cost/Benefit Analysis	(6)							

PROJECT FUNDING TYPES	FREQUENCY CODES
ALL = All Project Types	A = As Required
CLI = Construction Line Items	W = Weekly
EXP = Expense	B = Biweekly
	M = Monthly
	Q = Quarterly
	Y = Yearly

* This matrix represents the baseline level of reporting required for projects as agreed upon by EG&G and DOE. Written requests for additional meetings, reviews, reports, or documents will be reviewed on a case-by-case basis for each specific project to determine if additional funding is required.

NOTES:

(1) RFFO has verbally directed EG&G to conduct this monthly meeting, but no written direction has been sent.

(2) Certain projects with baseline variances beyond established limits may be reviewed at Project Action Center (PAC) meetings.

(3) This report is reviewed/updated weekly and published monthly.

(4) This report is not required for OLIs by 4700.1 - need letter from DOE establishing reqmt. for OLIs.

(5) This report is required by HQ EM.

(6) There is no written requirement for this report from DOE.

Rocky Flats Environmental Technology Site

3-M49-COEM-PMG-341

REVISION 0

CONSTRUCTION MANAGEMENT REVIEW GUIDE

APPROVED BY: _____ /L. J. McGovern 4-13-95
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management Effective Date: 4-17-95

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____
Date 4-17-95

This guide replaces Pilot ENG-PILOT-PM-008, Revision 0.

Periodic review frequency: 4 years from the effective date.

PADC-97-00108

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1. PURPOSE

This guidance establishes the process to be used for planning, preparation, and execution of the quarterly Construction Management Review (CMR) meeting.

2. SCOPE

This guidance applies to all active construction projects managed by Project Management.

3. OVERVIEW

This guidance contains general instructions and responsibilities for planning, preparing, and executing a quarterly Construction Management Review. Department Of Energy (DOE) requires a quarterly review be held on the status of all construction line item projects.

Primary participants are the DOE Rocky Flats Field Office (RFFO) Project Management and Engineering Division, and the Project Management Department. Both the DOE and the Operating Contractor may invite others to participate as they deem appropriate; this includes DOE Program Managers, Program Managers, Project Users, Engineers, Cost Estimators, and Planners.

For each CMR, projects will be selected for review from the Active Projects list. The current Project Summary Reports and Activity Level Project Schedule are used as the primary review documents. Additional information may be provided to clarify any points. In addition, a selection of project related issues appropriate for the current session will also be selected for discussion. Related topics may include such things as long range project planning, Project Manager training, or upcoming submittals.

4. DEFINITIONS

Refer to the Glossary of Project Management Terms for any specific definitions not recognized as plant standard.

5. RESPONSIBILITIES

5.1 Manager of Project Management

Provides introduction and overview of Project Management status for the start of each CMR .

5.2 Manager of Project Reporting Systems

Manages the CMR process including scheduling, establishment of agenda, coordination of reviews and special presentations, meeting minutes, and action items.

5.3 Project Manager

Presents the review of assigned projects.

Provides an accurate and up-to-date Project Summary Report, Activity Level Schedule, and current Open Issues Reports for each project reviewed.

Be knowledgeable and informed on the current status or each project, including activities, accomplishments, and problems from the last quarter and projected activities for the next quarter.

Provides copies and overheads of review material as appropriate.

Ensures appropriate Subject Matter Experts (SMEs) are available including Project Users and/or Project Engineers.

Executes any project related action items resulting from review in an accurate and timely fashion.

5.4 Program Project Manager

Ensures that all information provided to DOE is accurate, timely, and of a highly professional quality.

Ensures that all action items are completed on schedule.

Supports assigned Project Managers as required to insure adequate training and preparation for project reviews.

6. REQUIREMENTS

A CMR is to be held each quarter of the fiscal year. All information provided to the DOE will be accurate, timely, and of a highly professional quality. The selection of projects and special topics will be done with input and approval of the DOE/RFFO Project Management and Engineering division.

Project review documents will be comprised of current Project Summary Reports, Project Schedules, and Project Issues Report. Project reviews will include discussion on the current status of the project, activities, accomplishment and problems from the last quarter and projected activities, accomplishments, and problems for the next quarter.

Meeting minutes for each review will be taken to provide a record of discussion, agreements and action items.

7. INSTRUCTIONS

Manager of Project Reporting

[1] Establish and maintain a twelve month schedule of CMR Reviews on the Project Management Calendar of Events published monthly.

[2] Establish individual CMR meeting agendas in advance. Include the DOE Engineering and Project Management Division in the decision making, selection, and approval process for the agenda. Arrange for meeting locations, times, and presenters.

[3] Coordinate arrangements for site tours. Including site access for off-site personnel, assembly times and locations, and transportation when required.

[4] Chair CMR Meeting, maintain schedule, flow of reviews, attendance roster and meeting minutes and action items.

[5] Publish meeting minutes including discussions, agreements, attendance roster, and action item assignments, on a monthly basis.

[6] Track and report on status of open action items on a monthly basis.

Manager of Project Management

[7] Oversee CMR process, provide leadership and direction where required.

[8] Provide introduction for opening of each CMR.

[9] Provide overview of Project Management activities, accomplishment, and problems for the last quarter and projections for the next quarter.

Program Project Manager

[10] Provide oversight of Project Manager responsibilities.

Project Managers

[11] Provide accurate and timely Project Summary Reports and Project Issues Report for review, with sufficient copies provided to participants.

7. INSTRUCTIONS (continued)

[12] Provide a knowledgeable review of project status, past, current, and future projections.

[13] Provide knowledgeable and prepared SMEs where required.

[14] Complete all assigned action items in the time agreed to.

[15] Arrange for project specific site tours when requested, including building access, equipment and training as required.

8. RECORDS

Manager of Project Reporting

[1] Meeting minutes will be published for each CMR to provide a record of the meeting. Minutes will include a record of comments, agreements, attendance roster, and action item assignments.

ROCKY FLATS PLANT

ENG-PILOT-PM-009

REVISION 0

PROJECT SUMMARY REPORT (PILOT)

APPROVED BY: _____ /L. J. McGovern / 8-3-94
Director, Project Management — Print Name — Date

Responsible Organization: Project Management Effective Date: 8-5-94

USE CATEGORY

ORC Review not required.

Reviewed for Classification/UCNI
By _____ UNCL
Date 8/3/94

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1. PURPOSE

This guidance establishes the process to be used for preparation, updating, and general maintenance of Project Summary Reports (PSRs) within the Project Management (PM) organization.

2. SCOPE

This guidance applies to all active construction projects managed by PM.

3. OVERVIEW

This guidance contains general instructions for the preparation, maintenance of data and information, and use of the PSR in management and control of all active projects.

Each active project assigned to PM is identified and tracked through the Project Management Reporting System (PMRS), a computerized database. A primary output of PMRS is the Project Summary Report (PSR), a single page summary of each project assigned an authorization charge account number. See Appendix 2 for an example blank PSR form. The PSR includes information regarding project identification, current status, funding, approvals, team members, activities, scope, justification, schedule, and finances. PSRs serve as the Project Manager's main reporting tool and as such must be consistently accurate and timely.

Primary users of PMRS include the Department Of Energy/Project Management and Engineering, Project Management (PM), and Central Planning & Budgets (CP&B). The intent of this system is to have a single common database providing centralized and consistent project data in accordance with DOE Order 4700.5, Project Control System. Information for most construction project reports required of PM are generated using data available directly from this system, eliminating the need to repeatedly return to the individual Project Managers for information.

4. DEFINITIONS, ACRONYMS, AND STATUS CODES

See Appendix 1, Status Codes, and a separate document, Project Management Glossary of Terms for any specific definitions not recognized as plant standard..

5. RESPONSIBILITIES

5.1 Manager of Project Management

Approves changes to the PMRS for projects managed by PM, including the addition or deletion of projects to the database.

NOTE *The Manager of Project Reporting Systems is designated to act in this capacity.*

5.2 Manager of Project Reporting Systems

Maintains PMRS database, including adding and deleting projects when required.

Ensures integrity of PMRS data and procedures.

Provides data reports from the PMRS database as required.

5.3 Project Manager

Maintains an accurate, up-to-date PSR for each assigned project.

5.4 Major Project Manager

Reviews and concurs with project work load through changes and additions to Active, Inactive, or Historical project status.

Reviews all new project requests in the assigned area to determine whether resources are available to support the activity.

5.4 Major Project Manager (continued)

Reviews all active projects weekly and designate as "Inactive" any project not to be supported for the remainder of the fiscal year.

6. REQUIREMENTS

A PSR is to be maintained for each active construction project. Active projects are defined as those assigned an Authorization Charge Number and supported with an approved and funded Management Control System Work Package. If there is an approved Fiscal Year Work Package the project will be designated as ACTIVE for the entire fiscal year or until the work package is removed from the system through the Baseline Change Proposal process. If the project is completed or canceled in the course of the fiscal year it will remain ACTIVE, with the project status indicated as COMPLETE.

Each construction project assigned to PM under an Authorization Charge Number is designated Active, Inactive, or Historical. Active projects are fully supported by PM, by being worked or planned for work. Exceptions are Expense Projects for Scope and Estimate (S&E) only, which are funded out of S&E Work Packages. Inactive projects are not supported by PM. They are in queue awaiting additional plant resources, or are being completed or are canceled and waiting for final accounting closeout. Historical projects have been completed or canceled and are closed. These project files are archived for historical reference.

All new projects are initially designated Active when they are entered into the computerized PMRS by CP&B. New projects must have a valid work package, project priority, and a Charge Number Authorization Request (CNAR) to be entered into the system.

7. INSTRUCTIONS

7.1 Project Summary Report Maintenance

Manager of Project Reporting Systems

[1] Maintain the system database.

[2] Prepare reports and ensure system integrity.

[3] Add or remove projects as directed by the Project Managers.

[4] Designate all new projects initially as Active.

Manager of Project Management

[5] Approve and direct changes to the (PMRS), including the additions and deletions of construction projects to the database.

Major Project Manager

NOTE *Each project supported by a funded and approved work package is to have a corresponding PSR. Independent Scope and Estimate work funded as Expense Projects under a common Expense Support Work Package does not require entry into the PMRS.*

[6] Ensure that the PSRs for assigned projects are accurate and up-to-date.

[7] Ensure that resources are available to support each Active project.

Major Project Manager and Project Manager

[8] Review and approve (by signing) each PSR for assigned projects each week.

7.1 Project Summary Report Maintenance (continued)

Project Manager

[9] Review and redline the PSRs for each assigned project on a weekly basis with the responsible Project Manager.

[10] Ensure that the redlined PSRs are updated each week in the database by clerical staff.

NOTE *Completed projects do not require updated PSRs once a Project Close Out form is issued. The last current PSR noting Project Close Out is to be retained until the close out process is completed.*

8. RECORDS

NOTE *Projects that have been issued Accounting Close Outs are designated "Historical" and the project information is archived.*

9. REFERENCES

DOE Order 4700.1, Project Management System

DOE Order 4700.5, Project Control System Guidelines

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Page 1 of 4

PROJECT SUMMARY REPORT STATUS CODES

AE Architect - Engineering Firm Selection. Process to select and place an A-E firm under contract to work on a specific project.

CA Collection Account. An authorized charge number account used to sum charges from related sub projects in order to track overall costs. Often referred to as a "Mother Number" and used most frequently with large Capital Line Item projects with multiple sub projects. Collection Account authorization charge numbers are not intended to have project costs charged directly against them.

CD Conceptual Design. Specific pre decisional project documentation activity, creation of the project conceptual design package and Conceptual Design Review (CDR). Required for Construction line Item Projects.

CN Construction. Construction or equipment installation activities contracted to an outside firm, either a Cost Plus Fixed Fee (CPFF) contractor or Fixed Price (FP) Contractor. This is generally determined as Davis-Bacon covered work.

CO Close Out. Final process of project completion as final procurement charges are closed, files are audited and project charge number is closed in Accounting.

CX Canceled. Project permanently stopped in place, all work ceases and account closed to any further charges.

DC Design Criteria. Specific pre decisional project documentation activity, creation of the project design criteria. Required for Construction line Item Projects.

FC Functionally Complete. Project construction/installation, test and checkout have all been completed. The project has been accepted by the user through issuance and approval of a Project Acceptance & Transfer (PA&T). A Facilities Project Closeout Form is being processed to close off further labor charges being placed against the project in Accounting.

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Page 2 of 4

HO Hold. For any one of several reasons work on a project may be temporarily halted. This indicates a temporary halt in project activities at any phase of an approved project.

IN Installation. Construction/Equipment Installation activities assigned to the on-site Maintenance department for completion. This is generally determined as Davis-Bacon non-covered work.

OT Other - Define in Text. A catch-all status code for any circumstance or specific major project activity that cannot be defined by existing status codes. When the "Other" status code is used it must be defined in the Current Activities section of the project reporting system database.

PC Project complete, but Work Package (WP) not closed out. WP is still active in the MCS.

PD Pre-Decisional Documentation. For new and proposed projects awaiting capital approval and/or funding to proceed. Used for Schedule 44/45 preparation, cost estimates, Project Management Plans, etc.

PR Procurement. Project Procurement activities, either services contracting or the purchase of Government Furnished Equipment, (GFE).

SE Scope & Estimate. Project Scopes and Estimates may be performed at various stages of a project through the course of it's development.

ST Study. For Engineering Studies either as part of a larger project or as an independently funded effort.

T1 Title 1 Engineering Design. Initial engineering design package, review and approval.

T2 Title 2 Engineering Design. Final engineering design package, completed, corrected, reviewed and approved for Construction or Installation release.

Appendix 1
Page 3 of 4

T3 Title 3 Engineering Support. Engineering support during and after Construction/Installation release, including As-Built drawings.

TC Test & Checkout. Period where construction/equipment installation activities have been substantially completed and the resultant product is being tested and checked to be in compliance with design specifications and requirements. Testing includes operability, completeness, safety, etc.

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Page 4 of 4

Figure 1
Project Status Matrix

	Green - Satisfactory	Yellow - Minor Concern	Red - Major Concern
Technical	Essentially meeting performance/scope objectives.	Technical/Engineering problems result in inability to meet established performance/scope objectives.	Technical/Engineering problems will result in inability to meet established performance/scope objectives.
	No known external or internal constraints influencing achievement of technical scope.	Potential external or internal constraints influencing achievement of technical scope.	Probable external or internal constraints influencing achievement of technical scope.
Cost	Obligations and costs within 10% of Plan.	Obligation and/or cost variance from Plan greater than 10% but less than 25%.	Obligation and/or cost variance from Plan greater than 25%.
	Total estimated cost is within 10% of baseline.	Total estimated cost may or will increase by more than 10% but less than 25%.	Total estimated cost may or will increase by more than 25%.
	Available contingency as percentage of uncosted balance is adequate.	Available contingency as percentage of uncosted balance is relatively low.	Contingency is exhausted or is not commensurate with technical risk.
	No known external or internal constraints influence cost.	Potential external or internal constraints influence cost.	Probable external or internal constraints influence cost.
Schedule	Essentially on baseline schedule and within 3 months of established project completion date.	Baseline interim milestones or completion dates projected to slip at least 3 months but not more than 6 months.	Baseline interim milestones or completion dates projected to slip 6 months or more.
	No known external or internal constraints influencing schedule.	Potential external or internal constraints influencing schedule.	Probable external or internal constraints influencing schedule.

Appendix 2
Page 1 of 1

PROJECT SUMMARY REPORT

PROJECT SUMMARY REPORT

PROJECT IDENTIFICATION ADS:
Title
Charge No: B&R Code:
W.P. No: Ref # Cost Account:

Bldg. No:
Priority:
Fund Type:

DATES
Rev. Date:
Print Date:
Cost Date:

PROJECT TEAM

Proj Mgr:		Proj Eng:	
FPM Mgr:		Eng. Mgr:	
DOE Mgr:		Eng By:	
Cost Est:		Const Eng:	
CP&B Rep:		ACM:	
User:		Const By:	
AGM:		Purch Rep:	

STATUS
Status Code:
Cost Status:
Sched Status:
Tech Status:
Proj Status:
Act/Inact:
BCP Req:

DOCUMENTS
Baseline:
Baseline Date:
CAMP Score:
BCP's:
FCO's:
NCR's:
BCP Log No:

Project Scope:

Project Justification:

Activities & Comments:

SAMPLE

Variance/Impact: Cost: Schedule: Technical:

Problems/Issues/Recommendations:

SCHEDULE

	BASELINE START	BASELINE COMPLETE	FORECAST/ACTUAL START	FORECAST/ACTUAL COMPLETE	% COMP
Predec:					
Title I:					
Title II:					
Procure:					
Const:					
Startup:					
Other:					

COSTS $K
Total Project Cost:
Baseline Total Est Cost:
Current Est at Completion:
Current Budget Authority:
Total Committed:
Other Project Costs:
ACWP:
BCWS:
BCWP:
FY BCWS:
% Cost Variance:
% Schedule Variance:

Project Manager _____ Date: _____
Branch Manager _____ Date: _____

Rocky Flats Environmental Technology Site

3-P36-COEM-PMG-345

REVISION 0

PROJECT CONTROL/MANAGEMENT CONTROL SYSTEM INTERFACE

APPROVED BY: _____ /L. J. McGovern 9-29-94
Deputy Director, Project Management | Print Name | Date

Responsible Organization: Project Management

Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By _____ UNC

Date 9/30/94

Periodic review frequency: 4 years from the effective date.

PADC-97-00109

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1. PURPOSE

This procedure establishes guidance for Project Managers and project support personnel in management of the project reporting and control interface between the project and the Management Control System (MCS). It sets forth instructions for project interface with the MCS in effective project reporting and control.

2. SCOPE

This procedure applies to personnel within the Project Management organization who are involved in project management, reporting, and control.

3. DEFINITIONS

See Glossary of Project Management Terms for applicable definitions.

4. RESPONSIBILITIES

4.1 Project Manager

Develops the project Work Breakdown Structure (WBS) early-on in the life of the project .

Uses the WBS during project baseline development and management to verify and ensure completeness and to assist in validation of baseline change control.

Completes MCS Training for Work Package Managers.

Develops integrated technical scope, schedule, and cost baselines coordinating with cognizant parties and meeting program and project requirements for Users, Programs, and regulatory agencies.

4.1 Project Manager (continued)

Prepares the Project Management Plan/Work Package (PMP/WP) to meet the requirements of the Operational Requirements Document (ORD) and MCS format.

Ensures that project baseline information and data is entered in the MCS and the Project Management Reporting System (PMRS).

Ensures that all baseline related information in the MCS and PMRS is current, accurate, and informative and that the Project Summary Report (PSR) reflects that information, accordingly.

Initiates work authorization and controls charging against the project budget.

Analyzes MCS and PMRS reports and takes action to correct deficiencies.

Manages and controls project baselines throughout the life of the project ensuring program and project objectives are being met.

Issues Variance Analysis Reports (VARs) for the project, as required by the MCS.

Completes the authorized work under the project.

5. REQUIREMENTS

5.1 EG&G Rocky Flats Requirements

EG&G Rocky Flats, Inc. has specific requirements related to the development and control of work packages (projects) in the MCS as set forth in the following documents:

- 1-40ADM-MCS-1001, Management Control System
- 1-40ADM-MCS-1002, Work Package Development
- 1-40ADM-MCS-1003, WBS/Baseline Change Control
- 1-40ADM-MCS-1004, Work Authorization & Suspension
- 1-40ADM-MCS-1006, MCS Commitments, Tracking
- Policy 1-8, Management Control System

At Rocky Flats, the Project Management Plan/Work Package (PMP/WP) serves as both as the Project Management Plan (PMP) (meeting DOE Order 4700.1, Project Management System, requirements) and as the MCS Work Package (WP) for Project Management organization projects. This allows the use of one document to fulfill two requirements, and avoids the errors that can occur with duplication of information. On small projects as defined in 3-K78-COEM-PMG-323, Preparation of Project Management Plan/Work Package (PMP/WP), a PMP may not be required and the WP may suffice.

In addition, each active project assigned to Project Management is identified and tracked through the Project Management Reporting System (PMRS), a computerized data base. A primary output of the PMRS is the Project Summary Report (PSR), a summary report derived from the PMRS for each specific active project. The PSR contains information and data in a specified format, as well as management information on project scope, schedule, and cost baselines. PSR is updated and published weekly by the Project Manager.

6. INSTRUCTIONS - MCS INTERFACE

6.1 Project Work Breakdown Structure

Project Manager

[1] Develop the project WBS early in the project using input from cognizant DOE personnel, the User, Program personnel, support personnel, project team members, and other interested parties in accordance with the ORD.

[2] Work closely with the Central Planning & Budgets (CP&B) representative to ensure the project WBS rolls-up into and interfaces properly with the Site WBS.

[3] Use the project WBS throughout the life of the project in conjunction with baseline development and management to verify and ensure completeness of project baselines, to aid in control of baselines, and to assist in validating changes to baselines.

6.2 MCS Project Management Plan/Work Package

Project Manager

[1] Complete required MCS Training.

[2] Work closely with the User, Program people, DOE Counterpart, and Central Planning & Budgets (CP&B) representatives in establishing clear, definitive scope, schedule, and budget baselines for the project.

[3] Develop, approve, and revise the PMP/WP as set forth in COEM-PMG-323.

[4] Initiate work authorization, as required.

[5] Authorize and approve expenditures against the approved project budget baseline.

6.2 MCS Project Management Plan/Work Package (continued)

[6] Control charges against the project ensuring that only authorized personnel charge for activities, services, equipment, and material.

[7] Provide monthly schedule status updates to CP&B for all PMP/WP schedules.

[8] Prepare, update, and maintain Project Summary Reports (PSRs) on a weekly basis in accordance with 3-M47-COEM-PMG-343, Project Summary Report Guide.

[9] Manage and control the project by providing timely, accurate input to the MCS and Project Management Reporting System (PMRS) and through review and use of the following outputs from the MCS and PMRS:

- Project Summary Report (PSR)
- MCS Section 0.0, Cover Sheet for PMP/WP
- MCS 2-6, Resource Requirements Sheet
- MCS 2-7A (Year), Budget Spread Sheet
- MCS 2-7A(Month), Budget Spread Sheet
- MCS 035, Project Milestones Report
- MCS Level II, P2 Bar Chart
- MCS Primavera Detailed Schedule with Critical Path

[10] Prepares and issues Variance Analysis Reports (VARs) with the project Budget Analyst for the project, as required by the MCS.

[11] Manage and ensure completion of authorized project work scope on schedule and within budget.

7. RECORDS

Copies of project records associated with the MCS and PMRS and associated reports are to be maintained and stored in the Project Records File. Upon project close out, Project Records Files are to be retained in accordance with 1-77000-RM-001, Records Management Guidance for Records Sources.

Program Project Manager & Project Manager

[1] Ensure that all records associated with project reporting and control are stored in the project records file.

8. REFERENCES

DOE Order 4700.1, Project Management System

DOE Order 4700.5, Project Control System Guidelines

1-40ADM-MCS-1002, Work Package Development

1-40ADM-MCS-1003, WBS/Baseline Change Control

1-40ADM-MCS-1004, Work Authorization & Suspension

1-40ADM-MCS-1006, MCS Commitments, Tracking

3-K78-COEM-PMG-323, Preparation of Project Management Plan/Work Package

3-M47-COEM-PMG-343, Project Summary Report Guide

Glossary of Project Management Terms

Rocky Flats Environmental Technology Site

3-M55-COEM-PMG-346

REVISION 0

PROGRESS TRACKING SYSTEM/4700.1 REPORT GUIDE

APPROVED BY: _____ /L. J. McGovern / 4/13/95
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management — Effective Date: 4-14-95

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____
Date 4-17-95

This guide replaces Pilot ENG-PILOT-PM-010, Revision 0.

Periodic review frequency: 4 years from the effective date.

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-14	04/14/95	

TOTAL NUMBER OF PAGES: 14

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1. PURPOSE

This guidance establishes the process to be used for preparation, updating and general maintenance of the Progress Tracking System (PTS) and the 4700.1 Report within the Project Management (PM) organization.

2. SCOPE

The guidance applies to all active construction Line Item projects managed or supported within PM that are funded through Department of Energy (DOE) Environmental Management (EM).

3. OVERVIEW

The PTS is a computerized tracking system based on Activity Data Sheet (ADS) submittals. This guidance contains general instructions to guide in preparation and maintenance of data and information, and use of the PTS and the DOE Order 4700.1 quarterly Project Managers Progress Report.

PTS is the reporting system used for EM related projects. PTS and 4700.1 reports are maintained and submitted by Central Planning and Budgets (CP&B). Project Controls & Administration (PC&A) coordinates between the Project Manager and CP&B. These reports are used by DOE, Headquarters (HQ) to track progress on EM projects.

PTS is a report that is submitted to DOE, HQ monthly. The 4700.1 Report is submitted to DOE, HQ quarterly. Much of the information in the 4700.1 Report is rolled up from the PTS Report.

4. DEFINITIONS

See Appendix 1, Definitions and Acronyms.

5. RESPONSIBILITIES

5.1 Manager of Project Controls & Services (PC&S)

Provides backup and support to the Reporting Systems & Management (RSM) Coordinator. Contacts the Program Project Manager(s) when Project Managers are not performing their duties for processing the PTS.

5.2 Program Project Manager

Reviews and concur with the information provided in the PTS and 4700.1 Reports.

Provides backup and support to Project Managers.

5.3 Project Manager

Attends all training provided for updating the PTS and 4700.1 Reports.

Provides accurate information when updating PTS Status Sheets and 4700.1 Reports.

Coordinates with CP&B representatives in completing the updates.

Coordinates with DOE counterparts and obtains signatures of approval on the redlined information/mark-ups.

Signs the DOE approved redlined information and submits it to PC&S on or before the requested delivery date.

5.4 Reporting Systems & Management (RSM) Coordinator

Attends all meetings and training for the PTS and 4700.1 Reports.

Notifies Project Managers and Program Project Managers of any training that is being provided to update information on the PTS and 4700.1 Reports.

Distributes all information received from the meetings and training to the individual Project Managers and Program Project Managers.

Provides assistance or guidance in updating information on the PTS and the 4700.1 Reports.

Tracks and coordinates the information requested from the Project Managers.

Quality checks information provided by Project Managers to ensure accuracy, continuity, and completeness of submitted reports.

Notifies the Manager of PC&S of any late deliverables from the Project Managers.

Submits the required information to CP&B in the appropriate time schedule.

6. REQUIREMENTS

The PTS and 4700.1 Reports are the devices used to meet the requirement from EM to report progress on all EM funded projects.

7. INSTRUCTIONS

7.1 RSM Sheet/4700.1 Report Updates

RSM Coordinator

[1] Attend the PTS (monthly)/4700.1 (quarterly) kick-off meetings held by CP&B. Quarterly, the meetings will include information for both reports. Collect all reports, forms, and instructions received from CP&B at this meeting.

[2] Make copies of the reports, forms, and instructions for the Program Project Managers and for tracking purposes. Distribute originals to the Project Manager and copies to the responsible Program Project Manager with a cover letter. In the cover letter, inform them of all forms enclosed and delivery due date to PC&S.

[3] Follow-up and track Project Manager's progress in completion and DOE concurrence.

Project Manager

[4] Redline information received from the RSM Coordinator. Contact the project CP&B Representative or RSM Coordinator for assistance in updating the information.

[5] Contact the DOE Project Counterpart and set a meeting to review updates.

[6] Make final updates with DOE Project Counterpart and get approval signatures of the DOE Counterpart.

[7] Turn redlined reports into the RSM Coordinator immediately after final updates and sign-offs are completed.

RSM Coordinator

[8] Follow-up and track the Project Manager's progress. As the reports are received, they should be reviewed and then turned over to CP&B. **Do not wait until the final due date to turn all reports in at once.**

7.1 RSM Sheet/4700.1 Report Updates (continued)

[9] If the Project Manager has not turned the reports in to the RSM Coordinator by the delivery date requested in the cover letter, inform the Program Project Manager. If there is not an immediate response, turn the information over to the Manager of PC&S to resolve the issue.

8. RECORDS

[1] Records generated as a result of this guide are maintained in the Project History File in accordance with the retention schedule identified in 1–77000–RM–001, Records Management Guidance for Records Sources.

9. REFERENCES

DOE PTS 2.2 Training Manual, August-September 1993

Progress Tracking System 2.2, PTS Implementation Guide, August 1993

APPENDIX 1
Page 1 of 2

DEFINITIONS AND ACRONYMS

DEFINITIONS

NOTE *The following are definitions of terms as they relate to the Progress Tracking System (PTS) or to their respective sections or fields on the Status Sheet. Other acronyms are not repeated.*

Cognizant Program Managers. These are the Doe Program Managers. Verify information is accurate and completed.

Operating Contractor Point of Contact. Engineering and Project Management (E&PM) Project Manager assigned responsibility for execution of this project.

Funding Detail.

Curr Yr Bdgt Auth - This is expected money. This information is provided by HQ FIN Plan. Review this information and make any comments in the narrative section. It is a field that cannot be changed by the CP&B software. This is a field for the Project Manager to review and if there are discrepancies, contact their CP&B representative.

Curr Yr Bdgt Oblig -This is from the Headquarters (HQ) Financial Information System (FIS). Review this information and make any comments in the narrative section. It is a field that cannot be changed by the CP&B software. This is a field for the Project Manager to review and if there are discrepancies, contact their CP&B representative.

Carry Over - This information is provided by HQ FIN Plan. Review this information and make any comments in the narrative section. It is a field that cannot be changed by the CP&B software. This is a field for the Project Manager to review and if there are discrepancies, contact their CP&B representative.

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Page 2 of 2

Avail Funds - This information is automatic computation: sum of Curr Yr Bdgt Oblig + Carry Over. Review this information and make any comments in the narrative section. It is a field that cannot be changed by the CP&B software. This is a field for the Project Manager to review and if there are discrepancies, contact their CP&B representative.

Curr Yr Cost to Dt -This information is provided by FIS. Review this information and make any comments in the narrative section. It is a field that cannot be changed by the CP&B software. This is a field for the Project Manager to review and if there are discrepancies, contact their CP&B representative.

Remaining Funds - This information is provided by HQ. Review this information and make any comments in the narrative section. It is a field that cannot be changed by the CP&B software. This is a field for the Project Manager to review and if there are discrepancies, contact their CP&B representative.

Project ID. This is the Project Reporting Number (PRN), which is the last half of the B&R code. An example would be 88-D-122.

Total Project Plan.

BAC - This information is provided by the PM. This figure includes Capital and Operating Expense.

SAMPLE PROGRESS TRACKING SYSTEM (PTS) REPORT

APPENDIX 2
Page 1 of 4

DATE PRINTED: 04/03/1995

PTS - PROGRAM MANAGER'S REPORT
Reporting Period: 2/1995
ADS/TTP #: RF-6748- -
WBS #: 1.6.7.2.5.10

Title: UNDERGROUND STORAGE TANKS
Installation: ROCKY FLATS ENVIRONMENTAL TECH SITE Category: FT
Program Manager's- - FO: J. Springer (303) 966-4076
HQ: W. Kelly (301) 427-1580

Project Title: 92-D-125, UNDERGROUND STORAGE TANKS
Start Date: 10/01/1990
Completion Date: 12/22/1998

ANNUAL TOTALS ($000)

B&R Code	PY End FY 94 Unobl. Bal.	PY FY 94 Tot. Uncost. Obl.	CY FY 95 New Obl. Auth.	CY Total Avail.	CY FIS Obl. YTD 2/95	CY Prelim. Obl. YTD	CY FIS Cost YTD 2/95	CY Prelim. Cost YTD	CY Proj'd Cur. Yr-End EstCo	PC End FY 95 Unobl. Bal.	PC FY 95 Tot. Uncost. Obl.
OE EW7003000	0	15	-15	0	-15	0	0	0	0	0	0
LI 39EW70300	0	649	2,500	3,149	0	0	140	0	1,500	0	1,649
OE EW7030000	0	-28	506	478	469	0	226	0	478	0	0
Totals:	0	636	2,991	3,627	454	0	366	0	1,978	0	1,649

(Preliminary actuals not available; Actuals as of February/95.)

EXPENDITURE RATE ($000)

	MONTHLY						CUMULATIVE				
MONTH	BCWS	BCWP	Prelim	ACWP	SCHED VAR	COST VAR	BCWS	BCWP	ACWP	SCHED VAR	COST VAR
10	308	26	0	44	-282	-18	657	745	393	88	352
11	494	67	0	120	-427	-53	1,151	812	512	-339	299
12	-366	239	0	45	605	194	785	1,051	558	266	493
1	-166	-6	0	84	160	-90	619	1,045	642	426	403
2	433	378	0	73	-55	305	1,052	1,423	715	371	708
3	155	---	---	---	---	---		---	---	---	---
4	1,445	---	---	---	---	---		---	---	---	---
5	124	---	---	---	---	---		---	---	---	---
6	149	---	---	---	---	---		---	---	---	---
7	121	---	---	---	---	---		---	---	---	---
8	629	---	---	---	---	---		---	---	---	---
9	252	---	---	---	---	---		---	---	---	---
	3,578	704	0	366	1	338					

PRIOR YEARS COSTS			OUT YEAR COSTS				
ACWP	BCWP	BCWS	FY96	FY97	FY98	FY99	FY00
366	719	349	5,120	2,420	0	0	0

TOTAL PROJECT PLAN

BAC	12,500	Budgeted Mgmt Reserve	0
EAC	12,500	Remaining Mgmt Reserve	0
TEC	12,500	Planning Contingency	0
TPC	15,400	Remaining Contingency	0
		Planned R & U	0
		Remaining R & U	0

MILESTONE REPORT

LEV	TITLE	STATUS	PLANNED	FORECAST	ACTUAL	MILE CATEGORY	FLOAT
2	AWARD DESIGN/CONSTRUCTION CONTRACT	Forecast Delay	04/21/1995	06/01/1995	/ /		0
COMMENT:							
2	COMPLETE TITLE I DESIGN	On Schedule	08/14/1995	/ /	/ /		0
COMMENT:							
2	APPROVAL TO COMMENCE OPERATIONS	On Schedule	03/20/1997	/ /	/ /		0
COMMENT:							
2	COMPLETION AND STARTUP APPROVAL FOR UNDERGROUND STORAGE TANKS	Forecast Early	06/30/1998	09/30/1997	/ /		0
COMMENT:							

DATE PRINTED: 04/03/1995

PTS - PROGRAM MANAGER'S REPORT
Reporting Period: 2/1995
ADS/TTP #: RF-6748- -
WBS #: 1.6.7.2.5.10

NARRATIVE

Narrative

1. Significant Problems/Issues/Concerns
None.

2. Corrective Actions:
None.

3. *Summary Assessment:*
This project will replace twenty-two underground fuel storage tanks in order to bring them into compliance with applicable regulations.

The contract for the Pilot Project (three tanks) was renegotiated and awarded. The Statement of Work (SOW) for the Main Project (the remaining 19 tanks) was reviewed and comments are being incorporated. Preparation of a complete bid package is expected in March.

The schedule is being changed to reflect revisions in methodology to the Pilot and Main Projects. Completion of these revisions is expected in early March.

Design work on the Pilot Project is in progress. Fifty percent completion designs are expected in mid March.

4. Cost Variance:
Monthly Cost Variance (CV) is (81% and $305K) and a fiscal year-to-date CV (48% and $338K) was due to the cost of the Pilot construction not being accurately accrued, and thus Actual Cost of Work Performed is shown approximately $300K to low. This should be corrected in March.

5. Schedule Variance:
Monthly Schedule Variance (SV) is <12%> and $55K>. The project delay is due to a change in technical methodology in order to recover schedules, and cost estimates are being revised. A Baseline Change Proposal is being processed.

6. Technical Status:
None.

7. Major Accomplishments:
February:
- Renegotiated and awarded Pilot Project Design/Build Contract.
- Pilot Project 50% designs started.
- Draft SOW and Design Criteria for Main Project were completed and reviewed.

January:
- Completed Technical Evaluation of SOW for Pilot Project.
- Submitted a draft revised schedule for both the pilot and main projects.

December:
- Completed revised SOW for Pilot Project.

November:
- Major technical methodology revision for pilot project and main project is in process.

October:
- Initiated major technical methodology revision. This change incorporates the use of alternative, more cost effective, tank designs.

PROJECT MANAGER'S RATINGS

Cost Rating:	SATISFACTORY	Cost Trend:	BETTER
Schedule Rating:	SATISFACTORY	Schedule Trend:	BETTER
Technical Rating:	SATISFACTORY	Technical Trend:	BETTER
Overall Rating:	SATISFACTORY	Overall Trend:	BETTER

RFPF - 1000.01 (5/95)
Formerly RF-47940

Document Modification Request

Printor Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000132

Originator

1. Name/Phone/Pager/Location: Jerry Weiser X5447/7335 Building 130 C218
2. Date: 01/29/96
3. Existing Document Number and Revision: 2-P38-COEM-PMG-349, Revision 0
4. Document Type: ■ Procedure ☐ Plan ☐ Other
5. Document Title: Records and Document Management for Authorization Projects

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	7-8	8	Delete reference to COEM-DES-211, Add references to: 2-E17-COEM-DES-249, Title I Design Summary/Review 2-D75-COEM-DES-241, Preparation of Conceptual Design Reports 2-D62-COEM-DES-251, Engineering Reviews Correct "2L92-COEM-PMG-303" as "3-L88-COEM-PMG-303" (editorial correction)
3	12	2	Change: "Conceptual Design Report, Ref. COEM-DES-211..." to "Conceptual Design Report, Ref. 2-D75-COEM-DES-241..."
4	13	3	Change: "Title I Design Summary/Review, Ref. COEM-DES-211..." to "Title I Design Summary/Review, Ref. 2-E17-COEM-DES-249..."
5	13	3	Change: "Title II Design Review, Ref. COEM-DES-211..." to "Title II Design Review, Ref. 2-D62-COEM-DES-251...:
6	13	3	Change: "Title II Final Design, Ref. COEM-DES-211..." to "Title II Final Design, Ref. 2-D62-COEM-DES-251..."
7	13	3	Change: "Procurement Specifications, Ref. COEM-DES-211..." to "Procurement Specifications, Ref. 2-C93-COEM-DES-273..."

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by the PPG
2	References are update to reflect the changes in the body of the procedure, and make an editorial correction.
3	COEM-DES-211 was canceled 11/9/95. Conceptual Design Report is addressed in 2-D75-COEM-DES-241.
4	COEM-DES-211 was canceled 11/9/95. Title I Design Summary/Report is addressed in 2-E17-COEM-DES-249.
5	COEM-DES-211 was canceled 11/9/95. Title II Design Review is addressed in 2-D62-COEM-DES-251.
6	COEM-DES-211 was canceled 11/9/95. Title II Final Review is addressed in 2-D62-COEM-DES-251.
7	COEM-DES-211 was canceled 11/9/95. Procurement Specification is addressed in 2-C93-COEM-DES-273.

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) [signature] 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) [signature] 1-31-96

13. New Document/ Rev. No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction ☒ Nonintent Change ☒ Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes ☒ No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location: L. Reed Bailey X4581/1764 Building 130 C230
20. Cost Center: 3077
21. Charge Number: 820111
22. Requested Completion Date: 02/05/96
23. Prescreen/Screen/USQD Number: N/A
24. Independent Safety Review Meeting and Date: N/A

26. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L. R. Bailey [signature] 2-1-96
27. Effective Date: 2/5/96
28. Expiration Date (if applicable)

Reviewed for Classification/UCNI (UNI)
BY [signature]
DATE 2-1-96

PADC-97-00112

Rocky Flats
Environmental Technology Site
2-P38-COEM-PMG-349
REVISION 0

RECORDS AND DOCUMENT MANAGEMENT FOR AUTHORIZATION PROJECTS

APPROVED BY: /s/ R. E. Kell / R. E. Kell / 06/01/95
Director, Engineering and Safety Services — Print Name — Date

Responsible Organization: Project Management Effective Date: 07/18/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Engineering and Safety Support
Central Engineering
Project Management
All PCEs

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By _____

Date _____

Periodic review frequency: 4 years from the effective date

PADC-97-00112

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2	02/05/96		
3-6	07/18/95		
7-8	02/05/96		
9-11	07/18/95		
12-13	02/05/96		
14-17	07/18/95		

The following DMRs for change are active for this procedure:

96-DMR-000132

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1. PURPOSE

The purpose of this procedure is to ensure proper record identification and maintenance for each project within Project Management.

2. SCOPE

Projects covered by this procedure include all authorization work assigned to the Project Management Department.

3. OVERVIEW

In accordance with corporate records management requirements, procedures are established to ensure proper record identification, protection, transmittal, distribution, retention, retrieval, maintenance, and disposition for each project within the Project Management Department.

The purpose of these records is to retain documents that provide or define the following:

- administrative direction and control
- technical requirements and objectives
- outline of the methods to satisfy requirements
- evidence of the degree that requirements were satisfied and objectives accomplished
- controversial problems encountered and the solutions obtained
- review records, comments, and actions
- records of project completion and as-builts
- records that furnish documentary evidence of quality

4. DEFINITIONS

Project File Index/Records Checklist. A sheet that lists/identifies documents to be maintained in the project file. This sheet is placed at the beginning of the project file and is updated by the Project Manager (PM) as new information is placed in it.

5. RESPONSIBILITIES

5.1 Construction Engineer

Maintains construction records (originals and copies) in a project construction file.

Collects and consolidates all files from Construction Coordinators into a complete construction records package and transmits them to the PM, after project completion.

5.2 Project Engineer (PE)

Maintains design records (originals and copies) in a project design file.

Collects and consolidates all files from Engineering support groups into a complete design records package and transmits them to the PM, after project completion

5.3 Project Manager (PM)

Ensures the completeness and accuracy of all records associated with the project.

Maintains the official project file. Consolidates records at completion of the project.

5.4 Engineering Documentation (ED)

Maintains the original distributed design documents in a centralized filing system; sends a consolidated project file to storage; and retrieves files from archives as requested.

6. INSTRUCTIONS

NOTE *A yearly classification exemption letter is obtained by the Project Controls and Services group. Classification of individual documents is not required.*

PM

[1] Place the Project File Index/Records Checklist at the front of the project file for quick reference at inception of the project.

WHEN information is added to the file,
THEN check (X) the appropriate section of the Project File Index/Records Checklist to indicate inclusion in the file.

[2] Initiate Final Project Closeout (FPCO) form at completion of the project.

PE

[3] Maintain copies or original engineering and project design records in a design project file.

[4] **WHEN** the FPCO form is received,
THEN collect and consolidate all files from Engineering support groups in a complete design record package.

[5] Verify the accurate completion of final documents, such as specifications, drawings, etc.

[6] Sign Project File Index/Records Checklist form and transmit the design records package to the PM. Also, sign FPCO signifying that the Engineering function is complete.

PM

[7] Consolidate all project files as indicated on the Project File Index/Records Checklist.

6. INSTRUCTIONS (continued)

[8] Delete records which were of value only during design/construction. Remove duplicate copies retaining only one copy of the pertinent record information. Retain project file as a quality record document.

[9] Sign the Project File Index/Records Checklist.

[10] Transmit signed-off FPCO to Accounting for final closeout of project.

[11] Receive Accounting Closeout (ACO) form and place in project file.

[12] Transmit the consolidated file and the Project File Index/Records Checklist to Engineering Documentation (ED) within thirty (30) days after receipt of the ACO.

7. RECORDS

ED

[1] Records generated as a result of this procedure are maintained in the Project History File in accordance with the retention schedule identified in 1–77000–RM–001, Records Management Guidance for Records Sources.

7.1 Quality Records

Project files are to be considered quality records.

8. REFERENCES

1–77000–RM–001, Records Management Guidance for Records Sources

4-11C-COEM-CMG-411, Weekly Status Report

2-D16-COEM-DES-207, Design Process

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8. REFERENCES (continued)

2-D46-COEM-DES-255, Engineering Change Request (ECRs)

2-D62-COEM-DES-251, Engineering Reviews

2-D75-COEM-DES-241, Preparation of Conceptual Design

2-E17-COEM-DES-249, Title I Design Summary/Review

2-F32-COEM-PMG-301, Introduction to the Construction Project Management System

2-L91-COEM-DES-245, Preparing, Revising, and Controlling of System Category I, II, and III Operational Testing Procedures

2-L92-COEM-PMG-302, Introduction to Quality, Environmental, Davis-Bacon, Security, and Safety and Health Documentation

2-L93-COEM-DES-247, Preparing, Revising, and Controlling of System Category IV Operational Testing Procedures

2-P33-COEM-PMG-325, Engineering Subcontracting Guide

3-L88-COEM-PMG-303, Project Initiation Guide

96-DMR-000132
96-DMR-000132

Project File Index/Records Checklist

Consolidation of: ☐ CM Files ☐ ENG Files ☐ PM Files ☐ Other

Title: _____ Authorization Number: _____

	Records Checklist	YES (X)	
Section A	Project History	X=In File	Inventoried
	A-1 Project Team - Org. Chart, Phone Nos., Location, Dept.		
	A-2 Project Chronology - Listing of important events, approvals, reviews, special meetings, decisions, actions, etc.		
	A-3 Project Summary Report (current)		
	A-4 External Status Reports (current) - PTS, 4700.1 Report, etc.		
	A-5 Presentations - CMR, Special Briefings, etc. (current)		
	A-6 Closure Comments - Lessons Learned, other information		
Section B	Authorizations	X=In File	Inventoried
	B-1 ORD/Project Initiation/Request Documents/ User Functional Requirements		
	B-2 Funding Release Documents - Directives (older projects), CNAR, DOE Funding Release		
	B-3 NEPA Documentation - Checklist, CX, ADM, EA, FONSI, EIS, ROD		
	B-4 Security Plan - Checklist, Approvals		
	B-5 Key Decision (KD) Requests & Approvals - Includes LOA for older projects		
	B-6 PMP/WP - Original, revisions, supporting documents, EWP, CWP, Major Activity Document (MAD)		
	B-7 D-B Submittal & Determination		
	B-8 BCP Log/BCP		
	B-9 Final Project Closeout (FPCO)		
	B-10 Accounting Closeout (ACO)		
	B-11 Validation Justification Validation Summary Report & Checklists - ADS, Sched. 44, etc.		
	B12 Permits/compliance documentation		
Section C	Correspondence	X=In File	Inventoried
	C-1 DOE Incoming/Outgoing		
	C-2 Architect/Engineer		
	C-3 Procurement		
	C-4 Internal - User, H&S, Inter-dept.		
	C-5 External - EPA, CDPH&E, Stakeholders, other regulatory agencies		

	Records Checklist	YES (X)	
Section D	Engineering Documents	X=In File	Inventoried
	D-1 Engineering Summary Reports - M&O Designers & A/E Firms		
	D-2 Scope Definition - Scope from S&E		
	D-3 Conceptual Design Report - CDR		
	D-4 Design Criteria		
	D-5 Preliminary Design Basis Document - Title I Design		
	D-6 Title I Review - Comments Review Meeting Minutes, comment resolution details, EO		
	D-7 Title II Review - Comments, Review Meeting Minutes, comment resolution details, EO		
	D-8 Final Design Basis Document - Title II Design		
	D-9 Engineering Studies - VE, cost/benefit analysis, etc.		
	D-10 Drawings, Calculations, Specifications		
	D-11 Design Review Record		
	D-12 Acceptance Criteria, Quality Assurance Plan		
	D-13 Engineering Support Requests		
	D-14 List of Technical Basis Documents (TBD), as-builts, updated TBDs.		
	D-15 Engineering Change Requests		
	D-16 Nuclear Safety Documentation		
Section E	Cost Information and Estimates Note: Section E normally contains detailed estimate breakdowns & supporting data not found in the summary estimates presented in other sections and documents.	X=In File	Inventoried
	E-1 Project Data Sheet (PDS) Detailed Estimate - Required for Line Items		
	E-2 Scope Estimate		
	E-3 CDR Estimate		
	E-4 Design Criteria Estimate		
	E-5 Title I Estimate		
	E-6 Title II Estimate		
	E-7 Bid Estimates - Equipment, construction, A/E		
	E-8 Change Order Estimates		
	E-9 Value Engineering/Study Estimates		
	E-10 Request for Estimate		

Project File Index/Records Checklist

Title: _____

Authorization Number: _____

	Records Checklist	YES (X)	
Section F	Schedules	X=In File	Inventoried
	F-1 Project Baseline Schedule and Milestones - Level 2 & 3		
	F-2 Detailed Working Schedule - Current, level 4, 5 or greater detail		
	F-3 Archive Schedules - Previous Baseline schedules for reference		
	F-4 Subcontractor Schedules - Vendors, Construction Contractors, A/Es		
Section G	Procurement	X=In File	Inventoried
	G-1 Procurement Status Report - Requisition and POs		
	G-2 Purchase Requisitions		
	G-3 Statement of Work		
	G-4 Bid Evaluations		
	G-5 Contracts/POs/Change Orders		
	G-6 Submittals		
	G-7 Inspections/Other Reports		
	G-8 Invoices		
Section H	Construction and Installation	X=In File	Inventoried
	H-1 Construction Notification		
	H-2 Status Reports		
	H-3 Non Conformance Reports		
	H-4 Construction Field Changes		
	H-5 Inspection Reports/Acceptance Criteria		
	H-6 Project Beneficial Occupancy Notice		
	H-7 Construction Transmittal		
	H-8 Pay Requests		
	H-9 Procurement/Schedules/Deliveries		
	H-10 Construction Redlines		
	H-11 Communications		
	H-12 Subcontractor Information, Badging		
	H-13 GFE Information		
	H-14 Safety		
	H-15 Subcontractor's Performance Evaluation		
	H-16 Photos		
	H-17 Miscellaneous		
	H-18 Coordinator's Checklist		
	H-19 Project Acceptance & Transfer		
	H-20 Integrated Work Control Package		

	Records Checklist	YES (X)	
Section I	Reports & Misc. Documentation (Archive Data)	X=In File	Inventoried
	I-1 Monthly MCS Reports/VARS		
	I-2 CMR Briefings		
	I-3 Annual ADS & Backup Data		
	I-4 DOE PTS Report		
	I-5 DOE 4700.1 Quarterly Report		
	I-6 Performance Indicators		
	I-7 Previous PDS Submittals		
	I-8 Various Cost Reports		
	I-9 Other (Special Briefings, PATS, etc.)		
Section J	Miscellaneous	X=In File	Inventoried
	J-1 Project/Lessons Learned Summary Report		
	J-2		
	J-3		
	J-4		
	1. All preliminary CX, DX, & X drawing have been microfilmed and destroyed.		
	2. Project closeout has been completed and the above documents have been checked "X" for inclusion in the file and for completeness.		
	3. All Subcontractor Performance Evaluations have been completed in accordance with Project Management procedures, #_____.		

Sign: _____ Date: _____

Project Engineer

Sign: _____ Date: _____

Project Manager

APPENDIX 2
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RECORDS AND DOCUMENTATION

Project Management documentation is summarized below by Project Phase. These project phases are described in COEM-PMG-301. When the documentation is created, it is kept in the project, design, construction management or other project file. The Project Management File Index/Records Checklist code (Ref. Appendix 1) is provided in italics for the purpose of consistent organization.

1. Project Initiation & Definition

Project Team Organizational Chart, Phone Numbers, Location, Department *(A-1)*

Project Chronology - Listing of important events, approvals, reviews, special meetings, decisions, actions, etc.*(A-2)*

User Functional Requirements Document, Ref. COEM-PMG-301, (Project Documentation)*(B-1)*

Operational Requirements Document, Ref. COEM-PMG-301, (Project Documentation)*(B-1)*

Legal Review, Ref. COEM-PMG-301, (Project Documentation) *(B-1)*

DOE Funding Release*(B-2)*

Charge Number Authorization and Request Form, Ref. COEM-PMG-303 (Project Documentation)*(B-2)*

Priority and Funding Determination, Ref. COEM-PMG-301, (Project Documentation)*(B-2)*

Environmental Topics Screen, Ref. COEM-PMG-302 Appendix 2, (Environmental Documentation - optional) *(B-3)*

Site Characterization Studies, Ref. COEM-PMG-301, (Project Documentation)*(B-3)*

Alternative Analysis, Ref. COEM-PMG-301, (Project Documentation) *(B-3)*

Feasibility Studies, Ref. COEM-PMG-301, (Project Documentation) *(B-3)*

DOE KD-0 Approval, Ref. COEM-PMG-301, *(B-5)*

Written Preliminary Scope of Work, Ref. COEM-PMG-302, (Quality Documentation) *(D-2)*

Quality Assurance Plan, Ref. COEM-PMG-302, (Quality Documentation) *(D-12)*

Written Preliminary Estimate, Ref. COEM-PMG-301, (Project Documentation) *(E-2)*

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2. Conceptual Development and Approval

Environmental Checklist, Ref. COEM-PMG-302 Appendix 3 for Sample, original form and instructions available from the NEPA & NPDES/FFCA Management Group, T130B (Environmental Documentation), Ref. COEM-PMG-301, (Project Documentation) *(B-3)*

Categorical Exclusion *(B-3)*

Action Description Memoranda *(B-3)*

Finding of No Significant Impact*(B-3)*

Environmental Impact Statement *(B-3)*

Record of Decision*(B-3)*

DOE KD-1/KD-2 Approval, Ref. COEM-PMG-301, (Project Documentation) *(B-5)*

Project Management Plan/Work Package including Baseline Scope, Schedule, and Budget, Ref. COEM-PMG-301 (Project Documentation) *(B-6)*

Validation Review Documentation, Ref. COEM-PMG-301, (Project Documentation) *(B-11)*

Project technical scope, Ref. COEM-DES-207, (Quality Documentation) *(D-2)*

Conceptual Design Report, Ref. 2-D75-COEM-DES-241, (Project Documentation) *(D-3)*

Design Criteria, Ref. COEM-PMG-301, (Project Documentation) *(D-4)*

Preliminary Safety Analysis Report, Ref. COEM-PMG-302, (Safety and Health Documentation) *(D-16)*

Hazard Categorization, Ref. COEM-PMG-302, (Safety and Health Documentation) *(D-16)*

Unresolved Safety Question Determination, Ref. COEM-PMG-302, (Safety and Health Documentation) *(D-16)*

Project Data Sheet Detailed Estimate, Ref. COEM-PMG-301, (Project Documentation) *(E-1)*

Scope Estimate *(E-2)*

Conceptual Design Report Estimate*(E-3)*

Design Criteria Estimate *(E-4)*

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Project Baseline Schedule and Milestones, Level 2 &3, Ref. COEM-PMG-301, (Environmental and Project Documentation) *(F-1)*

Staff Requests, COEM-PMG-325, (Project Documentation) *(G-3)*

3. **Engineering Technical Analysis and Detailed Design**

Notice of Intent, Ref. COEM-PMG-302, (Environmental Documentation) *(B-3)*

DOE KD-3 Request & Approval, Ref. COEM-PMG-301, (Project Documentation) *(B-5)*

Estimate of Labor and Materials, Ref. COEM-PMG-302, (Davis-Bacon Documentation) *(B-7)*

Davis-Bacon Submittal & Determination, Ref. COEM-PMG-302, (Davis-Bacon Documentation) *(B-7)*

Baseline Change Proposals, Ref. COEM-PMG-301, (Project Documentation) *(B-8)*

Engineering Summary Report *(D-1)*

List of design inputs, assumptions, and requirements (Technical Design Basis or Scope Definition), Ref. COEM-DES-211 (Quality Documentation) *(D-2)*

Title I Design Summary/Review, Ref. 2-E17-COEM-DES-249 (Project Documentation) *(D-5)*

Title II Design Review, Ref. 2-D62-COEM-DES-251 (Project Documentation) *(D-7)*

Title II Final Design, Ref. 2-D62-COEM-DES-251 (Project Documentation) *(D-8)*

Procurement Specifications, Ref. 2-C93-COEM-DES-273 (Quality Documentation) *(D-10)*

Construction Specifications, Ref. Construction Management Construction Technical Specifications (Project Documentation) *(D-10)*

Design Review Record *(D-11)*

User's acceptance of the Title II Final Design, Ref. COEM-PMG-301, (Project Documentation) *(D-11)*

Engineering Support Requests or Work Authorization Documents for each Cost Center, Ref. COEM-PMG-301, (Project Documentation) *(D-13)*

Drawings *(D-10)*, Calculations *(D-10)*, and Acceptance Criteria *(D-12)*, Ref. COEM-DES-211 (Quality Documentation), List of drawings that require as-builts and other Configuration Management/Technical Baseline Documents or BDCF *(D-14)*

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Graded Design Package for Title I, II review, or II final (i.e Minor Modification, General Engineering Service, Engineering Support Program, Full Design Package), Ref. COEM-DES-207 (Quality Documentation) *(D-5, 6, 7, 8)*

Integrated Work Control Package instructions, Ref. IWCP Manual (Quality Documentation) *(H-20)*

Safety Analysis Report, Ref. COEM-PMG-301 (Project Documentation) *(D-16)*

Title I Estimate *(E-5)*

Title II Estimate *(E-6)*

Bid Estimates for Equipment, Construction, A-E *(E-7)*

Value Engineering/Study Estimates, (Project Documentation) *(E-9)*

Subcontractor cost estimate and schedule estimate, COEM-PMG-301, (Project Documentation) *(F-4)*

Construction Bid Documents, Ref. COEM-PMG-301, (Project Documentation) *(G-4)*

Procurement Statement of Work *(G-5)*

Procurement Schedule, Ref. COEM-PMG-301, (Project Documentation) *(H-9)*

Permit To Install, Ref. COEM-PMG-302 (Environmental Documentation - as needed) *(B-12)*

4. **Work Planning, Procurement, Construction or Disassembly**

Security Checklist, Ref. COEM-PMG-302, (Security Documentation - as required) *(B-4)*

Security Plan, Ref. COEM-PMG-302, (Security Documentation) *(B-4)*

System Operational Testing Procedures, Ref. COEM-DES-245 and COEM-DES-247 (Project Documentation) *(D-12)*

Criticality Safety Operating Limits, Ref. COEM-PMG-301, (Project Documentation) *(D-16)*

Nuclear Material Safety Limits, Ref. COEM-PMG-301, (Project Documentation) *(D-16)*

Safety Evaluation Screen, Ref. COEM-PMG-302, (Safety and Health Documentation) *(D-16)*

Change Order Estimates *(E-8)*

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Level 4, 5 or greater Project Schedule, Ref. COEM-PMG-301, (Project Documentation) *(F-2)*

Procurement Status Reports *(G-1)*

Purchase Requisitions *(G-2)*

Bid Evaluations *(G-4)*

Contracts/Purchase Orders/Change Orders *(G-5)*

Submittals *(G-6)*

Inspections and Other Reports *(G-7), (H-5)*

Invoices *(G-8)*

Construction Notification *(H-1)*

Construction Status Reports *(H-2)*

Weekly Project Summary Reports, Ref. COEM-CMG-411 (Project Documentation) *(H-2)*

Non Conformance Reports *(H-3)*

Engineering Change Requests, Ref. COEM-DES-255 (Project Documentation) *(D-15)*

Construction Field Change Notice, Ref. COEM-CMG-409 (Project Documentation) *(H-4)*

Construction/Quality Control Reports, Ref. COEM-PMG-301, (Project Documentation) *(H-5)*

IWCP Package Revisions, *(H-20)*

Ref. IWCP Project Beneficial Occupancy Notice, *(H-6)*

Construction Transmittal *(H-7)*

Pay Requests *(H-8)*

Project schedule interface with operation and maintenance schedules, Ref. COEM-PMG-301, (Project Documentation) *(H-9)*

Weekly report of project labor charges, Ref. COEM-PMG-302, (Project Documentation) *(H-9)*

Construction Redlines, Ref. COEM-PMG-302, (Quality Documentation) *(H-10)*

As-built Drawings, Ref. COEM-PMG-302, (Quality Documentation) *(D-14)*

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Construction Meeting minutes, Ref. COEM-PMG-301, (Project Documentation) *(H-11)*

Communications *(H-11)*

Sub-Contractor Information, Badging *(H-12)*

GFE Information (H-13)

Safety *(H-14)*

Photos *(H-16)*

Operating, surveillance, and maintenance procedures, Ref. COEM-PMG-301, (Project Documentation) *(H-17)*

Coordinator's Checklist *(H-18)*

Excavation permits, Ref. COEM-PMG-302, (within IWCP package), (Safety and Health Documentation) *(H-20)*

Asbestos demolition and/or removal notification, Ref. COEM-PMG-302, (Safety and Health Documentation) *(H-20)*

Rubble Characterization Documentation, Ref. COEM-PMG-302, (Safety and Health Documentation) *(H-20)*

Facility Outage Notifications, Ref. COEM-PMG-302, (Safety and Health Documentation) *(H-20)*

Radiation Work Permits, Ref. COEM-PMG-302. (Health and Safety Documentation) *(H-20)*

Lockout/tagout documentation, Ref. COEM-PMG-301, (Project Documentation) *(H-20)*

Plan of the Day Documentation, Ref. COEM-PMG-302, (Safety and Health Documentation) *(H-2)*

Operational Safety Review documentation, Ref. COEM-PMG-301, (Project Documentation) *(I-9)*

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5. Operational Testing and Project Close Out

DOE KD-4 Request and Approval *(B-5)*

Final Project and Closeout, COEM-PMG-331, (Project Documentation) *(B-9)*

Accounting Closeout Form, COEM-PMG-301, (Project Documentation) *(B-10)*

Safety Analysis Report, Ref. COEM-PMG-302, (Safety and Health Documentation), Ref. COEM-PMG-301, (Project Documentation) *(D-16)*

Construction Punch Lists, Ref. COEM-PMG-301, (Project Documentation) *(H-5)*

Sub-Contractor's Performance Evaluation, (Safety and Health Documentation) *(H-15)*

Operation and Maintenance Manuals, Ref. COEM-PMG-301, (Project Documentation) *(H-17)*

Project Acceptance and Transfer form for each sub-contract, Ref. COEM-PMG-301, (Project Documentation) *(H-19)*

6. Miscellaneous Reports and Documentation (not initiated within a specific project phase)

Engineering Project File Index, COEM-PMG-349 (Project Documentation) *(Index)*

Log of Project Files, COEM-PMG-301, (Project Documentation) *(Index)*

Project Summary Report *(A-3)*

Project Tracking System Report *(A-4), (I-4)*

4700.1 Report *(A-5), (I-5)*

Construction Management Report Presentation *(A-6),(I-2)*

Lessons Learned Report *(A-6)*

Baseline Change Proposal Log/BCP *(B-8)*

Correspondence *(C)*

Request(s) for Estimate *(E-10)*

Monthly Management Control System Reports/VARS *(I-1)*

Annual Activity Data Sheet & Backup Data *(I-3)*

Performance Indicators *(I-6)*

Cost Reports *(I-8)*

ROCKY FLATS PLANT

ENG-PILOT-PM-011

REVISION 0

TRANSFER OF PROJECT MANAGEMENT (PILOT)

APPROVED BY: _____ L. J. McGovern 8-3-94
Director, Project Management — Print Name — Date

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____
Date 8/3/94

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-12	00/00/94	

TOTAL NUMBER OF PAGES: 12

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1. PURPOSE & SCOPE

This Desk Note establishes the process to be used in transferring a construction project from one Project Manager to another. It applies to all construction projects transferred within Engineering & Project Management (E&PM), and contains general instructions to guide maintenance and management of project records and information to ensure orderly transfer to a new Project Manager. It also contains instructions concerning briefings and orientations that must be completed prior to transfer of a project from one Project Manager to another.

2. DEFINITIONS

Project Management Reporting System (PMRS). A computerized database designed to track Capital and Expense construction projects.

Project Records File. The storage place and file for the central records of a project arranged in format as set forth in Appendix 1, PROJECT RECORDS FILE FORMAT.

Project Summary Report (PSR). A single page summary of each project assigned an authorization charge number. The PSR is a primary output of the PMRS and includes information regarding project identification, current status, funding, approvals, team members, activities, scope, justification, schedule, and finances.

3. RESPONSIBILITIES

3.1 The original Project Manager has responsibility for the following:

- Work closely with the new Project Manager to ensure a smooth, orderly hand-off of the project.

- Ensure that all project records, information, and documentation are stored properly in the Project Records File (PRF).

3.1 The original Project Manager has responsibility for the following: (continued)

- Ensure that the records and information stored in the PRF are current and accurate.

- Coordinate with Engineering, Procurement, Budgeting, Scheduling, and other project support personnel to ensure that project performance and status reports are current and on file prior to transfer of the project.

- Coordinate with the project team including Engineering, Procurement, Budgeting, Scheduling, and other project support personnel to ensure that they are cognizant of the transfer, prepared for the transfer, and ready to produce support documents and information, as required.

- Prepare for and provide briefings, orientations, and training, as required, to ensure the new Project Manager is fully cognizant of the status of all aspects and elements of the project.

3.2 The new Project Manager has responsibility for the following:

- Work closely with the original Project Manager to ensure a smooth, orderly hand-off of the project.

- Become fully cognizant of all aspects of the project prior to completion of the transfer.

4. REQUIREMENTS

Proper construction project transfer must ensure the following:

- The Department of Energy (DOE) and the User are informed of the planned change.

- All project documentation is current, accurate, on file, and available.

4. REQUIREMENTS (continued)

- The project team and other support personnel are cognizant of the change and prepared for it.

- Sufficient time is set aside for orientation and transition of project management.

- The new Project Manager is made fully cognizant of the status of all elements of the project.

NOTE *It is recommended that a checklist such as the one in Appendix 2, PROJECT TRANSFER CHECKLIST EXAMPLE, be used to help ensure a smooth transfer of project management.*

5. INSTRUCTIONS - PROJECT TRANSFER

5.1 Pre-Transfer Activities

Original Project Manager

If appropriate, inform your supervisor as early as possible of the need, or possible need, to transfer the project.

Assist in (or lead in, if so directed) the preparation of the plan for transferring the project.

Inform the project team and support personnel as early as possible of impending transfer of the project.

Ensure that each project team member or support person has current and accurate documentation and is prepared for the new Project Manager.

Coordinate with the project team members to ensure that the project is ready for transfer giving particular attention to the following support members:

- Project Budget Analyst
- Project Engineer
- Project Scheduler
- Project Cost Estimator
- Project Buyer/Subcontract Administrator
- Project Construction Engineer
- Other important project support personnel

Update the project records file to ensure it contains the most current and accurate information.

5.2 Transfer Activities

Original Project Manager

Introduce the new Project Manager to the following key personnel, if required:

- DOE Counterpart
- Project User
- Project Budget Analyst
- Project Engineer
- Project Scheduler
- Project Cost Estimator
- Project Buyer/Subcontract Administrator
- Project Construction Engineer
- Other important project support personnel or interested parties

Provide the new Project Manager with an inclusive orientation to the project covering all elements, documents and records, and special management considerations.

Conduct briefings to ensure that the new Project Manager has adequate information on the status of all aspects of the project to manage and control the following key elements of the project:

- Scope Baseline
- Schedule Baseline
- Budget Baseline
- Milestones
- Commitments
- Project Data Sheet or Activity Data Sheet Information
- Regulatory Drivers
- Other Special Information or Factors Related to the Project

Turn over control and management of the project to the new Project Manager when sufficiently assured that the new person is ready for that responsibility.

5.2 Transfer Activities (Continued)

New Project Manager

Coordinate and work closely with the original Project Manager to ensure the project is handed-off properly and in an orderly manner.

Review and verify contents of the project records file.

Verify project scope, schedule, and cost baselines.

Review and verify project schedule with particular attention given to critical and near critical activities and project milestones.

Be cognizant of important problems, commitments, and other issues related to the project before completing the transfer.

Assume control and management of the project when fully cognizant of all aspects and elements of the project.

6. RECORDS

A record of the transfer of project management, including all letters, memoranda-to-file, and documents, shall be maintained in the project records file in accordance with DOE Order 1324.2A, Records Disposition.

7. REFERENCES

1-F32-PM-OVR-0110, Construction Project Management System

DOE Order 1324.2A, Records Disposition

DOE Order 4700.1, Project Management System

DOE Order 4700.5, Project Control System Guidelines

Project Management Procedures Manual

Project Managers Handbook

Appendix 1
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PROJECT RECORDS FILE FORMAT

Project Records Files shall be organized into sections as set forth below:

Section A - Project History

Section B - Authorizations/EJOs

Section C - Correspondence

Section D - Engineering Documents

Section E - Cost Information and Estimates

Section F - Schedules

Section G - Procurement

Section H - Construction and Installation

Section I - Miscellaneous

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PROJECT TRANSFER CHECKLIST EXAMPLE

Item	Description	Covered		
		Yes	No	N/A
	Plan has been developed for transfer of the project.			
	Project Records File is complete, up-to-date, and accurate.			
	User, DOE, Project Team, and interested parties have been notified of the change.			
	Sufficient time and resources have been allocated for the transfer.			
	Project team/support personnel are ready for the transfer.			
	PMRS data and information is current and accurate.			
	PSR data and information is current and accurate.			
	New Project Manager has been oriented to important documents and processes in PM: • DOE Order 4700.1 • DOE Order 4700.5 • 1-F32-PM-OVR-0110, Construction Project Management System • PM Procedures • PM Project Manager's Handbook			
	New Project Manager has been oriented to and trained for PM Project Management Systems, the MCS, and the PCS			

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Item	Description	Covered		
		Yes	No	N/A
	New Project Manager has been introduced to Key Personnel: • DOE Counterpart • User • Budget Analyst • Project Engineer • Project Scheduler • Project Cost Estimator • Buyer/Subcontract Administrator • Construction Engineer • Others			
	New Project Manager has been fully briefed and is cognizant of the status of all aspects and elements of the project including; • Baselines • Milestones • Commitments • Regulatory Drivers • PDS/ADS Information • Other information specific to the project			
	The new Project Manager is ready for transfer of the project.			
	Formal notice of a new Project Manager has been provided to all interested parties			
	A plan exists for post transfer assistance for the new Project Manager, should the need arise.			

Rocky Flats Environmental Technology Site

GLOSSARY OF PROJECT MANAGEMENT TERMS

REVISION 0

Reviewed for Classification/UCNI

By _____

Date 9/30/94

This Glossary supersedes PILOT Procedure ENG-PILOT-PM-012, Revision 0

PADC-97-00168

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2. SCOPE 3

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1. PURPOSE

This guidance provides a glossary of Project Management specific terms (see Appendix 1) used in the management, analysis, and reporting of construction projects. This glossary is intended to be referenced by all other Project Management Policies, Procedures, and Guides.

2. SCOPE

This guidance applies to all active, inactive, and planned construction projects managed by Project Management. And to all documents, reports, and reviews issued by Project Management.

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PROJECT MANAGEMENT GLOSSARY OF TERMS

Active/Inactive. Indicates status of project support. Only the following three codes are acceptable in this field:

A - Active, Project is currently being supported, is actively being worked, or is planned to be worked.

I - Inactive, Project is not currently being supported, it is in queue awaiting additional plant resources or a higher priority, or has been completed or canceled and is awaiting final accounting close-out.

H - History, Project has been completed or canceled and closed in Accounting to further charges against this authorization charge number, archived for historical reference.

All changes and additions to Active Status, (Active, Inactive, or Historical) must be approved by the Project Manager and concurred with by the Director of Project Development, Support, and Performance or the PDSP-Project Support Systems (PSS) Manager. Database changes to this field are made only by PDSP-PSS personnel.

Activities & Comments. Short paragraph summarizing major activities in progress, milestone highlights, "Other" activities defined, or other information selected by the Project Manager. Note in this field if a Level 4 project schedule has been completed and is available, or if one is not required, i.e.; "Level 4 Schedule: Complete 4/19/93."

Activity. A specific item of work to be performed within a project. Activities consume resources and time, and usually result in a product or deliverable.

Activity Data Sheet (ADS). Enter the number assigned by DOE Headquarters (HQ), Office of Environmental Restoration and Waste Management (ER&WM). Project reporting to HQ is made against the ADS number.

Activity duration. The amount of time needed to complete an activity. The original duration is the planned estimate, the remaining duration is the number of work periods left to finish the activity.

Activity ID. A unique alphanumeric identifier, 10 characters in length, assigned to an activity in a project.

Actual Cost of Work Performed (ACWP). Incurred costs to date for work performed against the project Authorization Charge Number. This is Total Project Life To Date and includes costed dollars from this and any prior fiscal years. This figure can also be called project Cost To Date (CTD) and represents the total accrued value. ACWP is reported in thousands of dollars ($K).

Actual Dates. The dates on which an activity actually started or completed.

Area Construction Manager (ACM). Construction Department Manager who's area of responsibility this project falls under. Use "TBD" if one has not been assigned, "N/A" if not applicable.

B&R Code. The Budget & Reporting Classification Code used by the Department of Energy to track projects by funding.

Baseline. Quantitative expression of projected technical, schedule, and cost base, or standard for measurement during the performance of an effort; the established plan against which the status of resources and the objectives of the project can be measured.

Baseline Change Proposal Log Number. The CP&B log tracking number for any currently in-process BCP. Leave this field blank if there is currently no BCPs being processed for this project.

Baseline Change Proposal Required (BCP). A change in project Scope, or unrecoverable changes in the current project Schedule or Cost Baselines are projected. Answer "Y" for yes, if a Baseline change proposal is either required or in progress. Answer "N" for no if a BCP is not required or pending approval. Do not leave field blank.

Baseline Document. Official document defining project Scope, Schedule, and Budget. Project baseline may be changed, but only through the EG&G Baseline Change Process. Baseline documents may be different depending on amount and type of funding. The following are the acceptable Baseline Documents:

Schedule 44 - "Sched 44" (approved by DOE)
Schedule 45 - "Sched 45" (approved by DOE)
Project Directive - "Directive" (approved by DOE)
Project Management Plan - "PMP"
Charge Number Authorization Request - CNAR (Operational Expense projects only)

Baseline Document Approval Date. Date baseline document approved, or last Baseline change was approved.

Baseline Total Estimated Cost (TEC). Current official estimated cost of project scope as defined under this specific authorization charge number and the most current approved project baseline document. Any change to this figure must first be approved through the Baseline Change Proposal (BCP) process. Requirements for reporting and modifying TEC differ depending on the type of funding and size of project. Value is reported in thousands of dollars ($K).

Note: Total Estimated Cost (TEC) = Capital Funds; Other Project Costs (OPC) = Expense Support Funds; Total Project Cost (TPC) = TEC + OPC

Budget Cost Estimate. An estimate of project cost based on the project Scope Design including but not limited to materials, labor, escalation factors, and building factors.

Budgeted Cost of Work Performed (BCWP). Baseline estimated cost for work completed to date or budgeted value of work actually accomplished life-to-date. The sum of the budgets for completed portions of in-progress work up to the relevant point in time, including this and all prior fiscal years. BCWP is commonly referred to as Earned Value. Value is reported in thousands of dollars ($K).

Budgeted Cost of Work Scheduled (BCWS). Life-to-date amount of project funds planned to have been costed against this Authorization Charge Number at this point in time. Includes this and all prior fiscal years. BCWS is the sum of the budgets for work scheduled to be accomplished (including in-process work), up to the relevant point in time. Value is reported in thousands of dollars ($K).

Building Number. Primary area where the defined project work will be done, either in the specific building noted by this number or in its immediate, controlled area. Use "Multi" is in several different building locations. Use "Site" if the work is to be done outside but not related to any specific building.

Calendar. The work periods and holidays defined for activities within a project. A project may utilize several calendars. (For example, some activities may be worked seven days per week, ignoring holidays; other activities may be worked only five days a week, etc.)

Capital Assets Management Program (CAMP) Score. Capital Assets Management Program project need score. A CAMP rating provides a weighted score of the project's relative importance to the plant mission. Scores are calculated and documented using a CAMP form, part of the project request package. CP&B is responsible for the CAMP system. See the CP&B team member for any questions or concerns.

Charge Number. Project Authorization Charge Number used by plant accounting system to charge, collect, and track costs against the project. The Authorization Charge Number is provided by Central Planning & Budgets. This charge number is used for all time cards, contracts and procurement orders. The charge number is a six digit code, the first digit indicating Capital (300000), Expense (400000), or Special Environmental Expense (900000) funding.

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Constraint. A restriction imposed on an activity that may affect the activity's calculated start and finish dates. There are six basic constraint types:

- Finish-no-earlier-than. The activity can finish no earlier than the date imposed.
  Finish-no-later-than. The activity can finish no later than the date imposed.
  Finish-on. The activity must finish on the date imposed.
  Start-no-earlier-than. The activity can start no earlier than the date imposed.
  Start-no-later-than. The activity can start no later than the date imposed.
  Start-on. The activity must start on the date imposed.

Construction By. Agency performing construction activities for the project. These services may be done by in-house "Mtce," the on-site "CPFF" Contractor, i.e. "J. A. Jones," or a Fixed Price, "FP," contractor. If multiple contractors or a selection of agencies are to be employed on this project you may chose to indicate the primary construction agency or "Multi." Use "TBD" if one has not been assigned, "N/A" if not applicable.

Construction Engineer. Construction Department Engineer assigned responsibility for coordinating project construction phase engineering activities. Construction Department representative to the project team. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Construction Project. EG&G Rocky Flats defines a project as a nonroutine, complex scope of activities with firmly scheduled beginning and end points, specific performance requirements, established costs, cognizant management, and planning and control elements. A project will result in discrete products and deliverables, and will involve multiple organizations.

Construction Projects at Rocky Flats include all new construction and modifications to existing facilities, and acquisition and installation of new equipment under the capital equipment program. Construction Projects are managed in accordance with DOE Order 4700.1, Project Management System, and include the following funded types of activities:

- Expense Projects
- Basic Capital Equipment Projects
- Major Items of Equipment Projects
- Energy Conservation Projects
- Line Item Projects

Other Projects (Less than $50M)
General Plant Projects (Less than $1.2M)
Line Item Projects ($1.2M to $50M)
Major Projects ($50M to $100M)
Major System Acquisitions (over $100M).

Construction Projects may also be included in dedicated programs approved by the General Manager at EG&G Rocky Flats such as the Environmental Restoration (ER) and Residue Elimination Project (REP) Major System Acquisitions.

Routine maintenance and service contracts and work included in smaller Work Control Form activities are not generally classified as Construction Projects.

Construction Schedule. Project construction and/or installation activities schedule, including any required contracting. For Key Decision governed projects, Construction activities, including contracting may begin only after KD-3 approval has been issued by the DOE. Leave this field blank if there are no construction or installation activities related to the project.

Cost Account Number. Code series that identifies what section of the Management Control System Work Breakdown Structure (MCS WBS) the project work package is located under.

Cost Baseline. A budget that has been developed from the cost estimate made at approval of the technical baseline - the majority of the budget has been time phased in accordance with the project schedule. The cost baseline is referred to as a baseline since it is integrated with the technical and schedule baselines and subject to formal change control. The cost baseline normally contains direct and indirect budget and contingency amount.

Cost Date. Date that all cost information shown on this specific report is based from. This field may be read as "Costing information accurate as of _____." Cost Data from Accounting or Central Planning and Budgets is generally dated from the Accounting Calendar (i.e., the last day of the preceding accounting month).

Cost Estimator. Cost Estimator assigned to support this project as a member of the project team. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Cost Status - Red, Yellow, Green. Indicator of current project finances in relation to the approved baseline. R = Major Concern, Variance Analysis Report (VAR) or BCP required, information in Variance section of PSR; Y = Minor Concern, Alert Notice or, possibly, VAR required, information in Concerns section of PSR; G = Satisfactory. See Appendix 2, Status Colors Used in Project Management Reporting.

Critical activity. An activity located on the project's critical path.

Critical path. The longest duration path throughout a project. It is the sequence of activities which control the project finish.

CP&B Representative. Central Planning and Budgets Department representative assigned to support this project as a member of the project team. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Current Estimate At Completion (EAC). The current estimate of final costs under this specific Authorization Charge Number when all work scope has been completed and the project charge number is closed. This figure is not always the same as TEC, but an unofficial value representing the project manager's most current forecast of final project costs. Value is reported in thousands of dollars ($K).

Data date. The date used as the starting point for schedule calculations. The data date is changed each time the project's progress is recorded.

DOE Key Decisions. DOE Order 4700.1, Project Management System, establishes five discreet, pre-defined decision points for the approval and control of projects. These Key Decision (KD) points require formal submittal and approval of each KD point prior to proceeding with the next KD phase of a project. The KD points are defined as follows:

KD-0 Approval to proceed with conceptual development (Conceptual Design Report, Design Criteria, A/E selection). Generally required only for larger capital-funded projects.

KD-1 Approval to proceed with Title I (Preliminary) Design.

KD-2 Approval to proceed with Title II (Final) Design.

KD-3 Approval to proceed with procurement, construction and installation.

KD-4 Approval to operate facility.

DOE Manager. DOE Project Manager assigned to project by the DOE, Rocky Flats Office. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Driving relationship. A relationship between two activities in which the completion of the predecessor activity determines the early dates for the successor activity.

Early dates. The earliest an activity can begin (early start date) and finish (early finish date) after its predecessors have been completed.

Engineering By. Agency performing the project engineering. This may be done in-house, "EG&G-RF," or by a subcontracted outside A-E firm. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Engineering Manager. Manager of the Engineering Department discipline who's area of responsibility primary project engineering activities fall under. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Fiscal Year Budgeted Cost of Work Scheduled (FY-BCWS). Total amount of funds planned to be costed in this fiscal year. This figure does not include funds costed in prior years, but represent the total cost plan for this fiscal year alone, as represented in the work package and reported monthly as FY-BCWS in the Management Control System Work Package report. Value is reported in thousands of dollars ($K).

Float. The amount of time the start or finish of an activity can be delayed without affecting the project finish date.

Fund Type. Type of funding that has been authorized to do the work defined under this specific Authorization Charge Number. Funding types may only be one of the following:

EXP - Operating Expense Funded Project
ESP - Expense Support Project - Supporting a Line Item Project
BCE - Basic Capital Equipment
MIE - Major Items of Equipment
GPP - General Plant Projects
WLI - Weapons Line Item
CLI - Capital Line Item -
MSA, Major System Acquisition, > $ 100M
MP, Major Project, $ 50M < MP < $ 100M
OLI, Other Line Item Project, $ 1.2M < OLI < $ 50M

There are a variety of funding programs that create and support construction/installation work at Rocky Flats, but they all use one of the above funding types. Type of funding determines project reporting requirements.

Funds Available. Total amount of funds released under this specific Authorization Charge Number through the Charge Number Authorization Request (CNAR), including all years to date. The figure represents total amount of funds that have been made available to the Project Manager to spend against this charge number. Value is reported in thousands of dollars ($K). This field has also been called the project Budget Authority (BA).

Key Personnel. Key personnel are members of the dedicated, core project team. These individuals direct others and request support within their areas of responsibility in support of project objectives. They attend and participate in the regularly scheduled project team meetings.

Hammock activity. An activity added to a network to span a group of interrelated activities for summarization purposes. The start date (early and late) of a hammock is equal to the start date for the earliest activity in the group; the finish date for the hammock is equal to the finish date for the latest activity within the group.

Key Personnel. Individuals, as defined in the Project Management Plan/Work Package OPMP/WP), who have significant responsibility in the execution of the project.

Key personnel are members of the dedicated, core project team. These individuals direct others and request support within their areas of responsibility in support of project objectives. They attend and participate in the regularly scheduled project team meetings.

Lag. An offset or delay from an activity to its successor. Lag can be positive or negative.

Late dates. The latest an activity can begin (late start date) and finish (late finish date) without delaying the completion of the project.

Management Control System (MCS). A system organized on the framework of the Site Work Breakdown Structure (WBS), Organization Breakdown Structure (OBS), Funding Breakdown Structure (FBS), and the Site Cost Element Structure (CES). The MCS contains all relevant scope, schedule, task, milestone, deliverable, and cost information and utilizes a Project Control System (PCS) to report and control on all work planned or performed.

Milestone. An event marking the start or completion of a project or activity within a project. A milestone consumes neither time or resources.

Master project. A comprehensive project that consists of the detailed activities from designated subprojects. In short, the master project provides the ability to summarize information from multiple projects.

Number of Baseline Change Proposals (#BCPs). Total number of BCPs issued and approved against this project authorization charge number to date. This is a running count for the life of the project.

Number of Engineering Change Orders (#ECRs). Total number of ECRs currently issued against the project engineering package. This is a running count for the life of the project.

Number of Field Change Orders (#FCOs). Total number of FCOs currently issued against the project construction contracts. This is a running count for the life of the project.

Number of Non Conformance Reports (#NCRs). Total number of NCRs that have been issued against the project construction efforts, open or resolved. This is a running count for the life of the project.

Other Activities Schedule. A Project Manager defined category that includes items or services not covered in the already defined phases of the project. If this field is to be used the "Other" activity must be defined in the "Current Activities & Comments" field. If there are no "Other" activities, leave this field blank.

Other Project Costs (OPC). The expense support value of a capitalized project:

$$TEC + OPC = TPC$$

Operational Requirements. The end results which a project should achieve, including needs for operations, maintenance, safety, security, safeguards, quality assurance, utility requirements, etc.

Operational Requirements Document (ORD). A detailed question-and-answer list of items completed by the User, which should be considered prior to the start of definitive design. The level of detail must be adequate for the User and Engineering to approve so that design can be initiated.

Percent complete. The proportion of an activity that has been completed.

Percent Cost Variance (%CV). Deviation of project cost performance to date from planned performance. A positive variance is indication of a project under cost, while a negative variance indicates an overcosted project. This value is an indicator only and does not necessarily report current project conditions. The Cost Variance is reported using Life of Project information and not fiscal year. %CV = BCWP-ACWP/BCWP.

Percent Schedule Variance (%SV). Deviation of project schedule performance to date from planned performance. A positive variance is indication of a project ahead of schedule, while a negative variance indicates a project behind schedule. This value is an indicator only and do not necessarily report current project conditions. The Schedule Variance is reported using Life of Project information and not fiscal year. %SV = BCWP-BCWS/BCWS.

Predecessor. An activity that must occur before another activity. A predecessor controls the start or finish of its successor(s). An activity can have multiple predecessors, each with a different relationship to it.

Predecisional Activities Schedule. Activities include Conceptual Design Reports, Schedule 44/45 preparation, Davis-Bacon Determination, Pre-Approval Scope & Estimates, and Safety, Security, & Environmental documentation. For Key Decision governed projects, these activities are begun only after written KD-0 approval is issued by the DOE. For projects where pre decisional activities are charged to a separate account, this information should be included with the primary project information and the pre decisional project charge number listed in the "Related Charge #" field. Leave field blank if not applicable.

Print Date. Date this Project Summary Report was printed. The system automatically generates this date.

Priority. Project priority number as established by Central Planning & Budgets through the Project Priority System. Every active project should have a priority to ensure it receives attention and resources commensurate to its importance. CP&B updates and maintains the Project Priority List, no project should be worked without an established priority. Field is accessible only by CP&B department personnel responsible for maintaining the priority system to ensure data integrity.

Problems/Issues/Recommendations. Field open to the Project Manager to note current or forecasted project problems issues and concerns. This field should address any recommended corrective actions planned or in progress to address current project variances.

Procurement Activities Schedule. This represents any supplies, services, or materials procured to support the project that are not covered under specific Engineering or Construction Services Contracts. This field includes any planned Government Furnished Equipment (GFE) procurement. For Key Decision governed projects, procurement may begin any time after written KD-3 approval is provided by the DOE. If this activity is not applicable leave the field blank.

Program. A program usually consists of several projects and non-project activities and is mission oriented. It is recommended that Program Managers apply project management methods to non-project activities. Facilities construction and equipment projects that are part of a program shall comply with the requirements of this document.

Project. A non routine, complex scope of activities with firmly established beginning and end points, specific performance requirements, established costs, cognizant management, and planning/control elements.

Project Control System (PCS). The computer-based performance measurement system used at Rocky Flats to allocate and control work package / project funding requirements.

Project Design Hours Estimate (PDHE). An estimate of the total number of engineering hours required to complete the project from the point of starting definitive engineering through construction, acceptance testing, and close out.

Project Engineer. Lead Engineer assigned to support this project and act as Engineering Department representative to the project team. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Project Justification. Short paragraph outlining project need as defined in baseline documentation. Note any formal commitments to outside agencies, DOE Orders, or other specific project drivers.

Project Management Plan/Work Package. The Project Management Plan/Work Package (PMP/WP) is the defining document which establishes cost, schedule and scope baselines for a specific project. The PMP/WP is developed in the planning phase of a project. It defines methods of execution, responsibility assignments, project work breakdown structure and associated budgets, schedules, major milestones, project organization structure, and reporting requirements. The PMP/WP is maintained as a living document during the planning and execution phases of a project.

Input to the PMP/WP is provided by support organizations via lower tier planning documents including the Engineering Plan, Construction Plan, and Procurement Plan. Each of these planning documents are prepared by the Key Personnel for these organizations and define the detailed schedules, budgets, methods of execution and scope of work within their areas of responsibilities. See Section 5. for responsibility descriptions of Key Personnel.

Project Manager. Project Management (PM) Project Manager assigned responsibility for execution of this project. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Project Scope. Short paragraph outlining project scope as defined in currently approved baseline documentation. Reference the specific requirements document currently being used to establish the formal scope of work being done under this Authorization Charge Number. I.E.; Design Criteria, Conceptual Design, Operational Requirements Document, or any other titled document forming a detailed basis for current project scope. Reference approved scoping document and date of issuance.

Project Status - Red, Yellow, Green. Indicator of overall project status. R = Major Concern, Variance Analysis Report (VAR) or BCP required, information in Variance section of PSR; Y = Minor Concern, Alert Notice or, possibly, VAR required, information in Concerns section of PSR; G = Satisfactory. See Figure 1, Project Status Matrix, at the end of Appendix 1.

Project Summary Report (PSR). A summary report derived from the Project Management Reporting System (PMRS) for a specific active project. The PSR contains information and data in a specified format, as well as management information on project scope, cost, and schedule baseline. The report is prepared and updated weekly by the Project Manager.

Project Title. The official project title as it appears in the most recent approved baseline document. A project title should be as descriptive as possible. Avoid abbreviations or Rocky Flats specific terminology when and where ever possible. Always use the official project title to avoid confusion. Building number may be used in the title but it is not necessary.

Purchasing Representative. Purchasing Department representative primarily responsible for the project and member of the project team. Use "TBD" if one has not been assigned, "N/A" if not applicable.

Reference Number. Identifies and cross-references any directly related projects to this specific Authorization Charge Number. Most typically each Capital Line Item project will have a related Expense support charge number. The Capital Project will reference the Expense support charge number in this field, the Expense Charge number will reference the Capital project charge number in this field. The reference number may also be used to identify a mother collection number for a large capital project. If there is no related charge number for the specific project, leave this field blank.

Relationship. The logical connection between two activities. The relationships define the sequence in which activities will be performed in a project. There are four basic relationship types:

Finish-to-start. A relationship in which the successor activity can begin only when its predecessor activity finishes.
Finish-to-finish. A relationship in which the successor activity can finish only when its predecessor activity finishes.
Start-to-start. A relationship in which the successor activity can begin only when its predecessor activity begins.
Start-to-finish. A relationship in which the successor activity can begin only when its predecessor activity finishes.

Resource duration. The amount of time that a resource is used by an activity.

Resource lag. The delayed application of resources to an activity.

Resources. The "tools" needed to complete an activity. The tools can be labor, equipment, buildings, etc., which in turn translate to the costs associated with completing the activity.

Revision Date. Last recorded date this Project Summary Report data was reviewed and updated in the PMRS system.

Schedule Baseline. The time phased plan with a logical sequence of interdependent activities, milestones, and events necessary to complete the project. The schedule baseline shall be changed only through an approved process during the life of the project.

Schedule Baseline Dates, Start/Finish. Official project milestone commitment dates as defined in the currently approved baseline document. If a listed activity is not part of the specific project leave that field blank.

Schedule, Forecast/Actual Dates, Start/Finish, Percent Complete. Project Manager's current assessment of projected start and finish dates for the listed activities, or actual start and completion dates when they have been achieved. Project Manager's assessment of the percent complete of each activity listed. If a listed activity is not part of the specific project leave that field blank.

Forecast Date - The date anticipated by the Project Manager that an event will occur. The current projected start or finish date of an activity or milestone. This date should be more accurate than the planned date. The forecast date must never be older than the current "Today's" date unless it is now an actual date that the activity has occurred.

Actual Date - The actual date an event has occurred and/or milestone achieved.

Percent Complete - Measure of progress by amount of completeness to a task or

Schedule Status - Red, Yellow, Green. Indicator of current project progress in relation to the approved baseline schedule. R = Major Concern, Variance Analysis Report (VAR) or BCP required, information in Variance section of PSR; Y = Minor Concern, Alert Notice or, possibly, VAR required, information in Concerns section of PSR; G = Satisfactory. See Figure 1, Project Status Matrix, at the end of Appendix 1.

Scope and Estimate (S&E) Package. A completed S&E package consists of the following: a transmittal letter (see Attachment A), the scope design, a cost estimate, and a detailed cost estimate breakdown.

Scope Design. An engineering task that utilizes the User's operational requirements to define all salient aspects of a project. This includes major components and facilities and any other elements that set limits to the project. Data shall be sufficient to assure that all elements of the project that will affect the TEC are identified, allowing preparation of an accurate cost estimate for budgeting purposes.

Startup Activities Schedule. Activities include initiation and testing of equipment, systems, and/or any modifications created by this project. This phase includes all closeout activities. For Key Decision governed projects culmination of this phase in KD-4 approval by the DOE to operate the project. If there are no Startup & Testing Activities scheduled for this project leave this field blank.

Status Code. Two-letter designator indicating current project phase and activities. See "Project Status Codes" near the end of Appendix 1 for a detailed listing of the standard PM codes. Use only these standard codes. Up to two codes may be combined indicating current project activities and stages with a slash, "/", placed between each. I.E.: HO/T2 indicates project on HOLD, and in Title II Engineering when the Hold was initiated.

Successor. An activity that must occur after another activity. An activity can have multiple successors, each with a different relationship to it.

Support Organizations. Organizations such as Engineering, Construction Management, Central Planning & Budgets, and Procurement generally have continuous and significant involvement in construction projects and are responsible for execution of key elements of each project. Other support organizations provide important input to projects on an intermittent/as-needed basis during design, procurement, or construction.

> Support organizations such as Safeguards and Security, Industrial Hygiene and Health, and Site Quality Assurance are typically not identified as Key Personnel unless a project requires a dedicated assignment due to the nature of the project. These support organizations provide services in accordance with plant procedures at appropriate points during project execution.

Technical Baseline (Scope). A configuration identification document or set of documents that has been formally designated and approved. The Conceptual Design Report (CDR) normally will become the initial project technical baseline. The initial technical baseline, plus approved changes to that baseline, constitutes the current technical baseline.

Technical Status - Red, Yellow, Green. Indicator of current project scope, in relation to the approved baseline scope. R = Major Concern, Variance Analysis Report (VAR) or BCP required, information in Variance section of PSR; Y = Minor Concern, Alert Notice or, possibly, VAR required, information in Concerns section of PSR; G = Satisfactory. See Figure 1, Project Status Matrix, at the end of Appendix 1.

Title I Engineering Schedule. Preliminary project design, activities include project specific design studies, alternatives analysis, energy conservation evaluations, review of health, safety, and environmental aspects, preliminary design drawings, outline specifications, cost estimates, project schedules, and a Title I Design Summary Report. For Key Decision governed projects, Title I Engineering is begun only after written KD-1 approval is issued by the DOE. Leave field blank if not applicable.

Title II Engineering Schedule. Definitive project design phase, activities include site investigations, final design studies, drafting, final calculations, procurement & construction specifications, final cost estimates, design reviews, schedules, acceptance procedures, inspection planning, Safety Analysis Report, and final design package. For Key Decision governed projects, Title II Engineering is begun only after written KD-2 approval is issued by the DOE. Leave field blank if not applicable.

Total Committed. The amount of project funds that have been signed over to specific activities through issuance of Purchase Requisitions and/or Engineering Support Requests. Consider this a summation of checks written against the project bank account. Include both funds committed and costed to date against the Authorization Charge Number. Value is reported in thousands of dollars ($K).

Total Project Cost (TPC). Combined value of the current official and approved baseline estimated cost for both capital and expense elements of a project. This figure includes TEC values of all capital and expense authorization charge numbers related to this specific project. Value is reported in thousands of dollars ($K).

$$TPC = TEC + OPC$$

User. Designated technical representative of the project requester. The User defines what the project is to fulfill, scope and justification and represents the ultimate facility or system owner/operator on the project team.

Variance Analysis Report (VAR). Report required when a threshold for the project scope, schedule, or cost baseline is breached. Thresholds are established by Central Planning & Budgets.

Variance/Impact. Short description of causes and potential impacts of any cost, schedule or technical variance from currently approved project baseline. Note in the Cost, Schedule, and/or Technical boxes provided with an "X" which is being reported against. The variance report should be a brief statement but detail specific causes to the variances noted. Specific impacts resulting from the variance should also be noted.

Work Around. An action required to correct a variance or anticipated variance or disruption to the project plan. It should be planned ahead of time for disruptive events that can be reasonably predicted. An impromptu Work Around may have to be developed for disruptions or variances from plan that occur unexpectedly. Work Arounds are intended to keep the project within scope, on schedule, and within budget.

Work Breakdown Structure (WBS). A product- and task-oriented hierarchical structure of activities that organizes, defines, and graphically displays the total work to be accomplished in order to achieve the final objectives of a Construction Project. The WBS is designed to logically break down work into manageable tasks. It is organized downward into levels of increasing detail beginning with Level 0, the highest summary level of the WBS. The RFFO WBS is as follows:

Level	Description	Manager Title
RF-0*	Rocky Flats Field Office	EG&G RFFO General Manager
RF-1	Program	Program Manager
RF-2	Subprogram	Subprogram Manager
RF-3	Cost Account	Cost Account Manager
RF-4/P-0	Work Package	Work Package Manager
RF-5/P-1	Charge Number	Work Package Manager

*RF=RFFO WBS Level; P = Construction Project WBS Level

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WBS levels RF-0 through RF-4 provide summaries, only, with no work assigned. Work is assigned at level RF-5, the task/activity and detailed planning level. The WBS has these characteristics:

- It is product oriented.
- Elements are relatively independent at a level.
- It reflects an integrated system effort.
- It is factored until performing organization methods are reached.
- It shows all work.

The Construction Project WBS starts at the Work Package Level (RF-4) which generally equates to the Project Management Plan/Work Package (PMP/WP). This procedure addresses development of the WBS at this project level (P-0) and below. The Construction Project WBS includes:

Level	Description
P-0/RF-4	The Construction Project
P-1/RF-5	Major Sections of the Project
P-2	Major Subsections
P-3	Divisions of the Subsections

More levels of detail, as required.

Work Breakdown Structure Element. An individual product specified in the WBS. Each element below the end product is an item of real estate, hardware, software, data, or service. Each element name is, thus, a noun. The total of all the elements within the WBS defines the entire system or end product being developed or produced by the project.

Work Breakdown Structure Dictionary. A brief statement of work scope for each WBS element, usually Levels 0 through 4.

Work Package Number. Code number identifying project within plant Management Control System (MCS) Work Breakdown Structure (WBS). Each project must have a Work Package number with funding to be worked.

STATUS COLORS USED IN THE PROJECT MANAGEMENT REPORTING

	Green - Satisfactory	Yellow - Minor Concern	Red - Major Concern
Technical	Essentially meeting performance/scope objectives.	Technical/Engineering problems result in inability to meet established performance/scope objectives.	Technical/Engineering problems will result in inability to meet established performance/scope objectives.
	No known external or internal constraints influencing achievement of technical scope.	Potential external or internal constraints influencing achievement of technical scope.	Probable external or internal constraints influencing achievement of technical scope.
Cost	Obligations and costs within 10% of Plan.	Obligation and/or cost variance from Plan greater than 10% but less than 25%.	Obligation and/or cost variance from Plan greater than 25%.
	Total estimated cost is within 10% of baseline.	Total estimated cost may or will increase by more than 10% but less than 25%.	Total estimated cost may or will increase by more than 25%.
	Available contingency as percentage of uncosted balance is adequate.	Available contingency as percentage of uncosted balance is relatively low.	Contingency is exhausted or is not commensurate with technical risk.
	No known external or internal constraints influence cost.	Potential external or internal constraints influence cost.	Probable external or internal constraints influence cost.
Schedule	Essentially on baseline schedule and within 3 months of established project completion date.	Baseline interim milestones or completion dates projected to slip at least 3 months but not more than 6 months.	Baseline interim milestones or completion dates projected to slip 6 months or more.
	No known external or internal constraints influencing schedule.	Potential external or internal constraints influencing schedule.	Probable external or internal constraints influencing schedule.

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
Print or Type All Information (Except Signatures).

1. Date	2a.
6/2/94	DMR No. 94-DMR- 011159

2. Existing Document Number/Revision	3. New Document Number or Document Number if it is to be changed with this Revision
See Attached	See Attached
4. Originator's Name/Phone/Pager/Location	5. Document Title
[redacted]l Bagwell / 6339 / 130	See Attached - COEM Manual

6. Document Type ☒ Procedure ☐ Other _____

7. Document Modification Type (Check only one)
☐ New ☐ Revision ☐ Intent Change ☐ Nonintent Change ☒ Editorial Correction ☐ Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
			Change Procedure Number to reflect reorganization of COEM Manual in Table of Contents and throughout individual procedures. Delete obsolete references

[redacted]ation (Reason for Modification, EJO #, TP #, etc.)

Renumbering to reflect reorganization of COEM Manual. (Reformatting is not being done at this time.) This DMR will be filed with the COEM Table of Contents. The following statement will be listed on each procedures' title page: "This procedure has been renumbered and is the same as XXXX, Rev. X, per 94-DMR-XXX)

AGM signature on this DMR constitutes signature for each procedure.

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurrence prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
AGM	M. M. McDonald /s/ C. E. Beutler for M.M. McDonald	6/3/94
SQE	M. J. Collins /s/ M. J. Collins	6/9/94

16. Originator's Supervisor (print/sign/date)
P. W. Speyer /s/ 6/3/94

17. Assigned SME/Phone/Pager/Location	18. Cost Center	19. Charge Number	20. Requested Completion Date	21. Effective Date
[redacted]W. Speyer / 5120 / 130	3077	820111		

22. [redacted]ated Review?	23. ORC Review
☐ No ☒	not required

24. Responsible Manager (print,sign,date)
L. R. Bailey /s/ 6/2/94

RF-47940 (5/93)

REVIEWED FOR CLASSIFICATION / UCNI
BY /s/ D. E. HEPLER (UNC)
DATE 6/6/94

COEM VOLUME 4		REV	DATE
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	96-DMR-000861		07/18/95
4-03C-COEM-CMG-403	Evaluation of Non-Conforming Conditions	0	03/10/95
4-04C-COEM-CMG-404	Excavations and Soil Disturbances	0	06/01/94
4-05C-COEM-CMG-405	Davis/Bacon Covered Task Orders	0	03/10/95
4-06C-COEM-CMG-406	Construction Management Control of Government Furnished Equipment (GFE)	0	05/31/95
4-07C-COEM-CMG-407	Construction Subcontracting	0	03/10/95
4-08C-COEM-CMG-408	Subcontractor Submittals	0	03/10/95
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	96-DMR-000106		02/05/96
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4-12C-COEM-CMG-412	Subcontractor's Application for Payment	0	03/10/95
4-13C-COEM-CMG-413	Support Services for Construction Projects	0	03/10/95
4-14C-COEM-CMG-414	Construction Management Line Control Safety	0	05/31/95
Test Phase			
4-15C-COEM-CMG-415	Construction Management Responsibilities for Component Checkout and Systems Operations Testing	0	05/31/95
Project Close-out Phase			
4-16C-COEM-CMG-416	Performance Measurements	0	03/10/95
4-17C-COEM-CMG-417	Construction Closeout	0	07/15/94

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
***Print or Type** All Information (Except Signatures).*

1. Date	25. DMR No.
6/1/95	95-DMR- 000861.

2. Existing Document Number/Revision	3. New Document Number or Document Number if it is to be changed with this Revision
4-02C-COEM-CMG-402 / Rev. 0	N/A
[redacted]. W. Vaughn / x5447 / d7787 / 130	Project Records Management

6. Document Type: ☒ Procedure ☐ Other _____

7. Document Modification Type (Check only one): ☐ New ☐ Revision ☐ Intent Change ☒ Nonintent Change ☐ Editorial Correction ☐ Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
1	2	LOEP	REPLACE the List of Effective Pages with the one attached.
2	24	App. 2	DELETE "QA Level _____."
3	24	App. 2	CHANGE name in Distribution list from "Project Administrator" to "Project Manager."

12. Justification (Reason for Modification, EJO #, TP #, etc.)

2. QA Level no longer applicable and classification not required on this form.
3. Editorial Correction.

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurrer prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
SME	D. L. Crabb D L Crabb 6-5-95	

16. Originator's Supervisor (print/sign/date): P. W. Speyer P W Speyer 6/5/95

17. Assigned SME/Phone/Pager/Location	18. Cost Center	19. Charge Number	20. Requested Completion Date	21. Effective Date
[redacted]rroll Crabb	3077	820111		7-18-95

22. Accelerated Review? Yes ☐ No ☒ — 23. ORC Review: not required

24. Responsible Manager (print,sign,date): G. Coles 6/6/95

RF-47940 (5/93)

REVIEWED FOR CLASSIFICATION/ UCNI (UNL)
BY _____
DATE 6/15/95

PADC-97-00068

Rocky Flats
Environmental Technology Site
4-02C-COEM-CMG-402
REVISION 0
PROJECT RECORDS MANAGEMENT

APPROVED BY: _____ / G. W. Coles / 12/21/94
Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Quality Review
Subject-matter Expert

USE CATEGORY 4

ORC review not required

Reviewed for Classification/UCNI
By _____
Date 12-21-94

The following have been incorporated in this revision:
94-DMR-002132

This procedure supersedes procedure ENG-PILOT-~~CMG-009~~, Revision 0. PD 12/20/94 CM-009

Periodic review frequency: 4 years from the effective date

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1	03/10/95	
2	07/18/95	94-DMR-000861
3-23	03/10/95	
24	07/18/95	94-DMR-000861
25-33	03/10/95	

TOTAL NUMBER OF PAGES: 33

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1. PURPOSE

This procedure implements those portions of Department of Energy (DOE) Order 4700.1, Project Management System, and Code of Federal Regulations (CFR) 29 CFR1910, and 1926, Construction Guidelines which apply to construction records. It is a means to ensure the development and retention of records for construction projects by Construction Management.

2. SCOPE

This procedure applies to Construction Management. Implementation of this procedure begins when Construction Management is contacted to provide construction services and terminates with the transfer of files to the Project Manager in the Facilities Project Management office, or the Environmental Restoration Program Division (ERPD) office, as appropriate.

This procedure specifies the contents of each of the construction files.

This revision is a total rewrite and revision bars are omitted. This revision supersedes ENG-PILOT-CMG-009, and is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

This procedure contains information and instructions to assist Construction Management personnel in the proper use and retention of required records. The records are used as certified documentation of work performed by a subcontractor. This procedure also provides a consistency that enhances the recordkeeping for verification and auditing. The records and files required by this procedure become the official records for audit by various governmental agencies. The records may be used to show legal compliance with statutory and regulatory requirements.

The Instructions sections are arranged in 19 subsections which correspond to the 19 construction H files. Each section may be completed as an independent section and performed in any order. Some sections may be completed several times while other sections may not be required at all.

4. RESPONSIBILITIES

4.1 Area Construction Manager

Provides technical training, direction, and support.

Acts as the Contractor's Technical Representative.

4.2 Construction Coordinator

Establishes and maintains the construction project files system for construction project documentation, commonly referred to as the H files.

Ensures that all necessary documentation has been included in the H files.

Transfers construction H files to the Project Management office.

4.3 Construction Engineer

Provides preconstruction, in-progress, and post-construction documentation which shows both statutory and regulatory compliance.

Transfers all project documentation to the Construction Coordinator, and assists in closing out project files.

Transmits Construction Management documentation through the Construction Coordinator to the Project Manager for final disposition.

4.4 Construction Management Administrative Lead

Provides technical support for Construction Management personnel.

4.5 Construction Management Clerk

Provides clerical support to Construction Management personnel.

5. PERFORMANCE DOCUMENTS

Construction Coordinator

[1] Obtain the following for use in the performance of this procedure:

- Construction Coordinator Checklist (RF-46065)
- Photography Request Form (RF-20)

Construction Engineer

[2] Obtain the following for use in the performance of this procedure:

- Contractor Performance Evaluation (RF-46573)
- Topics for Preconstruction

6. INSTRUCTIONS

NOTE *The Instructions sections are arranged in 19 subsections which correspond to the 19 construction H files. Each section may be completed as an independent section and the sections need not be completed in any specific sequence. Some sections may be completed several times while other sections may not be required at all.*

Construction Coordinator

[1] Establish a construction project file upon notification by the Project Manager that a new construction project is being planned.

[2] File documentation in the appropriate construction project H file as it is received.

[3] Transmit all construction files to the Project Manager in the Project Management office upon completion of the construction project.

6.1 Construction Notification (File H-1)

Construction Engineer

[1] Document all Construction Project meetings attended and recommendations made in the construction project File H-1.

Construction Coordinator

[2] Conduct a preconstruction meeting with the subcontractor.

[3] Document the preconstruction meeting by obtaining signatures on Appendix 1, Topics for Preconstruction Meeting.

[4] Complete Appendix 2, Construction Notification, specifying key personnel and the responsibilities for the construction project.

[5] Provide the Construction Management Clerk with a copy of Construction Notification.

6.1 Construction Notification (File H-1) (continued)

Construction Management Clerk

[6] Distribute Construction Notification as required by the distribution list on the form.

[7] File one copy of the Construction Notification in the Construction Notification Log Book.

Construction Coordinator

[8] File the Construction Notification in the construction project File H-1.

6.2 Construction Management Weekly Construction Summary (Status Reports) (File H-2)

Construction Engineer

[1] Process a Weekly Status Report in accordance with 4-11C-COEM-CMG-411, Weekly Status Report.

Construction Management Clerk

[2] Distribute the Weekly Construction Summary to:

- Construction Coordinator (one copy)
- DOE (two copies)
- Shift Superintendent (one copy)
- Hygiene and Safety (one copy)
- Project Manager (one copy)
- Facilities Engineering (one copy)
- Subcontractor (one copy)
- Area Construction Manager (one copy)
- Procurement (one copy)
- Construction Management Clerk (one copy)
- Construction Services Supervisor (one copy)
- Manager of Construction Management (one copy)
- Architect or Engineer (one copy)

6.2 Construction Management Weekly Construction Summary (Status Reports) (File H-2) (continued)

Construction Coordinator

[3] File the Weekly Construction Summary in the construction project File H-2.

6.3 Nonconformance Reports (File H-3)

Construction Coordinator

[1] Process a Nonconformance Report in accordance with 4-03C-COEM-CMG-403, Evaluation of Nonconforming Conditions.

[2] **IF** the Nonconformance Report is issued on a project being worked in accordance with the Integrated Work Control Program (IWCP), **THEN:**

[A] File the Nonconformance Report with the IWCP package.

[B] File a copy of the Nonconformance Report in construction project File H-3.

6.4 Construction Field Change (File H-4)

Construction Engineer

[1] Process field changes in accordance with 4-09C-COEM-CMG-409, Construction Field Changes.

[2] Provide the Construction Management Clerk with the original Construction Field Change form.

Construction Management Clerk

[3] Distribute copies of the Construction Field Change to all persons who signed the original form.

Construction Coordinator

[4] File a copy of the Construction Field Change in the construction project File H-4.

6.5 Inspection Reports and Quality Verification Plan (File H-5)

Construction Coordinator

[1] Monitor construction progress.

[A] **IF** a project is done by the onsite subcontractor,
THEN verify that the subcontractor's Quality Assurance personnel make all inspections as required by a quality verification plan.

[B] **IF** a project is done by a subcontractor other than the onsite subcontractor,
THEN ensure that a Facilities Inspector (FI) will perform the inspections.

[C] **IF** inspections are required by a quality verification plan in the IWCP package,
THEN notify the FI or the onsite subcontractor inspector when an inspection is required.

[2] Place a copy of the inspection report in the construction project File H-5.

6.6 Project Beneficial Occupancy Notice (File H-6)

Construction Coordinator

[1] Process a Project Beneficial Occupancy Notice & Facilities Transfer in accordance with 4-17C-COEM-CMG-417, Construction Closeout.

NOTE *Temporary Facilities Transfer may be used in some instances in place of the Project Beneficial Occupancy Notice.*

[2] Deliver the completed Project Beneficial Occupancy Notice to the Construction Management Clerk.

Construction Management Clerk

[3] Prepare copies of the Project Beneficial Occupancy Notice, and distribute.

[4] Retain a copy of the Project Beneficial Occupancy Notice, and place in the Project Beneficial Occupancy Notice master copy book.

6.6 Project Beneficial Occupancy Notice (File H-6) (continued)

Construction Coordinator

[5] File a copy of the Project Beneficial Occupancy Notice in the construction project File H-6.

6.7 Construction Transmittal and Submittal (File H-7)

Construction Coordinator

[1] Process submittals in accordance with 4-08C-COEM-CMG-408, Subcontractor Submittals.

Construction Management Clerk

[2] Distribute the completed Construction Transmittal forms.

Construction Coordinator

[3] File the original of each Construction Transmittal form in the construction project File H-7.

6.8 Pay Request (File H-8)

Construction Coordinator

[1] Process Pay Requests in accordance with 4-12C-COEM-CMG-412, Subcontractor's Application for Payment.

[2] File a copy of the completed Application and Certificate for Payment in the construction project File H-8.

6.9 Procurement, Schedules, and Deliveries (File H-9)

Construction Coordinator

[1] Compile the following, and file in the construction project File H-9:

- Purchase requisitions
- Schedules
- Delivery receipts (other than Government-furnished equipment records)

6.10 Engineering Orders and As-built (File H-10)

Construction Management Administrative Lead

[1] Deliver the Engineering Order to the Construction Management Clerk.

Construction Management Clerk

[2] Log the Engineering Order in the Engineering Order Log Book.

[3] Distribute the Engineering Order and associated specifications by area to the appropriate Area Construction Manager.

Area Construction Manager

[4] Distribute the Engineering Order and associated specifications to the assigned personnel.

Construction Engineer

[5] Review the Engineering Order.

[A] **IF** the Engineering Order is adequate,
THEN proceed with the project.

[B] **IF** the Engineering Order is **NOT** adequate,
THEN return the Order with comments to the Project Engineer.

[6] Ensure that redline changes are made to the construction drawings to show changes as they are incorporated during construction.

[7] Review and submit the appropriate changes to the IWCP package.

[8] Submit the Engineering Orders to the Construction Coordinator for incorporation into the construction project File H-10.

[9] **IF** changes were made during construction,
THEN submit the redline drawings to the Construction Coordinator.

6.10 Engineering Orders and As-built (File H-10) (continued)

Construction Coordinator

[10] File the Engineering Orders and redline drawings in the construction project File H-10.

[11] Submit the redline drawings to the Project Engineer upon completion of the project.

[12] **IF** the project is **NOT** complete,
THEN retain drawings in the file for possible update until the project is complete.

[13] Document the transmittal of redline drawings to the Project Engineer on Appendix 3, Construction Coordinator Checklist, before project close-out.

6.11 Communications (File H-11)

Construction Coordinator

[1] File all correspondence from other departments as received in the construction project File H-11.

6.12 Contractor Information (File H-12)

Construction Coordinator

[1] Review all correspondence.

[2] **IF** the correspondence contains information about a subcontractor such as ANY of the following:

- Injury Reports,
- Lost Time Reports,
- Management and Operating (M&O) Accountability,
- Monthly Mancount Reports,

THEN file the correspondence in the construction project File H-12.

6.13 Government-furnished Equipment Information (GFE) (File H-13)

Construction Coordinator

[1] Process information for GFE in accordance with 4-06C-COEM-CMF-406, Control of Government Furnished Equipment (GFE).

[2] Place a copy of the information showing Government-furnished equipment in the construction project File H-13.

6.14 Badging and Safety (File H-14)

Construction Coordinator

[1] Review the correspondence.

[2] **IF** the correspondence contains information concerning subcontractor:

- Badging,
- Plant access,
- Safety concerns,

THEN file the correspondence in the construction project File H-14.

Examples of items which belong in the construction project File H-14 include:

- Safety Plan
- Safety Checklist
- Safety Reports
- Corrective Action Information
- Weekly Safety Appraisal
- Occupational Safety and Health Administration (OSHA) Safety Items
- Occupational Safety Reports
- Construction Management Safety and Health Inspection Report (RF-47986)

[3] Document safety meetings, and file the documentation in the construction project File H-14.

6.14 Badging and Safety (File H-14) (continued)

[4] Monitor the activities of the subcontractor for safety deficiencies and violations of:

- OSHA 29 CFR 1910 and 1926
- 1-C18-HSP-24.01, Safety and Health Responsibilities for Subcontractor Work Activities

[5] IF a safety deficiency or violation is discovered,
THEN:

[A] Document the deficiency and corrective actions taken on the Construction Management Safety and Health Inspection Report (RF-47986).

[B] Forward the Construction Management Safety and Health Inspection Report in accordance with the distribution on the bottom of the form.

[C] Maintain a copy in the construction project File H-14.

6.15 Builders Performance Report (File H-15)

Construction Engineer

[1] Evaluate subcontractor performance in accordance with 4-16C-COEM-CMG-416, Performance Measurements.

[2] Record the performance of the subcontractor as prescribed in Appendix 6, Contractor's Performance Evaluation.

[3] Forward the original Contractor's Performance Evaluation to the Construction Coordinator to file in the construction File H-15.

Construction Coordinator

[4] Evaluate the performance of the subcontractor as prescribed in the Contractor's Performance Evaluation.

6.15 Builders Performance Report (File H-15) (continued)

[5] File the original Contractor's Performance Evaluation in the construction project File H-15.

[6] Forward copies of the Contractor's Performance Evaluation to the Procurement and Occupational Safety departments.

6.16 Photographs (File H-16)

Construction Coordinator

[1] **IF** photographs of a construction project are required, **THEN** initiate Appendix 4, Photography Request.

[2] Escort the photographer on the construction site, and instruct the photographer on what to photograph.

[3] Review the proofs and order 4 prints from Media Services.

[4] Provide caption information for prints selected on Appendix 5, Photos-Caption Form.

[5] Deliver photographs and caption information to the Construction Management Clerk.

Construction Management Clerk

[6] Prepare captions and adhere them to photographs for filing and display.

[7] Distribute photographs as follows:

- Construction Coordinator for the construction project file (H-16), 1 copy
- Project Manager, 1 copy
- Construction Management Administrative Lead, 2 copies

Construction Management Administrative Lead

[8] Prepare a cover letter for the photographs to be transmitted to DOE, Rocky Flats Field Office (RFFO).

6.16 Photographs (File H-16) (continued)

[9] Forward the cover letter and the photographs to DOE, RFFO.

6.17 Miscellaneous (File H-17)

Construction Coordinator

[1] **IF** a piece of correspondence or documentation has no specific place to be filed, **AND** the information is or may be of value,
THEN file the correspondence in the construction project File H-17.

6.18 Coordinators Checklist (File H-18)

Construction Coordinator

[1] Perform a walkdown of the construction site to ensure that all items are completed in accordance with Appendix 3, Construction Coordinator Checklist.

[2] Obtain all signatures as required on the Coordinators Checklist upon satisfactory completion of all Construction Coordinator Checklist items.

[3] **IF** any Construction Coordinator Checklist item has **NOT** been completed satisfactorily,
THEN:

[A] Require that the subcontractor comply with the contract.

[B] Verify subcontractor compliance.

[4] **IF** the Construction Coordinator Checklist has been signed as complete by all required reviewers,
THEN distribute the following as appropriate:

- Vendor prints
- Parts lists
- Operating manuals
- Redline drawings

6.18 Coordinators Checklist (File H-18) (continued)

[5] File the completed Coordinators Checklist in the construction project File H-18.

6.19 Project Acceptance and Transfer (File H-19)

Construction Coordinator

[1] Complete Project Acceptance and Transfer in accordance with 4-17C-COEM-CMG-417.

[2] Insert the original Project Acceptance and Transfer into the construction project File H-19.

Construction Management Clerk

[3] Prepare copies of the Project Acceptance and Transfer Form, and distribute.

[4] Retain a copy of the Project Acceptance and Transfer Form, and place in the Project Acceptance and Transfer Form, master copy book.

7. RECORDS

Construction Coordinator

[1] Deliver the entire Construction Project File (H-1 through H-19) to the Project Manager for record retention.

8. REFERENCES

DOE Order 4700.1, Project Management System

OSHA 29 CFR 1910 and 1926, Construction Guidelines

1-C18-HSP-24.01, Safety and Health Responsibilities for Subcontractor Work Activities

4-03C-COEM-CMG-403, Evaluation of Nonconforming Conditions

8. REFERENCES (continued)

4-06C-COEM-CMG-406, Control of Government Furnished Equipment (GFE)

4-08C-COEM-CMG-408, Subcontractor Submittals

4-09C-COEM-CMG-409, Construction Field Changes

4-11C-COEM-CMG-411, Weekly Status Report

4-12C-COEM-CMG-412, Subcontractor's Application for Payment

4-16C-COEM-CMG-416, Performance Measurements

4-17C-COEM-CMG-417, Construction Closeout

APPENDIX 1
Page 1 of 3

TOPICS FOR PRECONSTRUCTION MEETING

Job Title: _____

Authorization No.: _____

Contract No. _____

Subcontractor Administration: _____

Construction Engineer: _____

Project Manager: _____

Project Engineer: _____

Construction Project Coordinator: _____

Subcontractor: _____

FOR ALL EMERGENCIES DIAL 2911

1. The Subcontractor is responsible for safety on the construction site.

2. EG&G's Construction Coordinator shall be the Subcontractor's only field contact. All written correspondence and/or questions related to contractual matters shall be directed to the assigned Subcontract Administrator.

3. Subcontractor working hours shall be from 7:30 a.m. to 4:00 p.m. Off-hours work must be scheduled through the Construction Coordinator.

4. Security badge requirements shall be processed through Construction Management (CM). U. S. citizenship is MANDATORY for work at Rocky Flats.

5. Welder certifications shall be submitted on a transmittal, eight copies, to the Construction Engineer.

6. Submittals shall be transmitted to the Construction Engineer for processing and a copy of the accompanying transmittal letter shall be routed to the assigned Subcontract Administrator.

7. The Subcontractor shall conduct weekly safety meetings with documentation of attendance and topics of discussion.

8. No guns, alcohol, drugs, cameras, radios or explosives are allowed at Rocky Flats Environmental Technology Site (Rocky Flats Site).

9. No claim shall be allowed for work not authorized in writing by the Subcontract Administrator. Subcontractor accepts all risks for work which was not either required by the contract or formally ordered by a Construction Field Change or a contract modification.

10. The use of hard hats, safety glasses, and safety shoes, will be the responsibility of the Subcontractor.

11. An IWCP Package must be issued by the Construction Engineer before work can begin. There will be no work performed by the Subcontractor or his lower tier Subcontractors unless an approved and current IWCP Package is on the job site.

APPENDIX 1
Page 2 of 3

12. Any excavation work at Rocky Flats requires an EG&G Soils Disturbance Plan issued by the Excavation Administrator. Orange-colored, metallic locator tape will be used as GFE for all underground utility burials. All excavations shall conform to OSHA and Rocky Flats Site Standards.

13. Barricades: Lights and signs are required around all excavations, as determined by Construction Management and the Excavation Administrator.

14. Fire lanes in and around buildings shall be kept open at all times. A minimum of twenty feet of access is required in and around all fire hydrants, hose reels, and fire extinguishers.

15. No 3-legged ladders shall be allowed. Metal or aluminum ladders shall not be used for electrical work. All scaffolding shall conform to OSHA requirements.

16. Personal tools and equipment are the Subcontractor's responsibility. Contractor will not loan any tools or equipment for Subcontractor's or lower tier Subcontractor's use.

17. Dust and noise shall be minimized. This is to include noise from employee's vehicle radios parked at job site.

18. Subcontractor shall notify Construction Management 24 hours prior to any scheduled delivery. All Subcontractor material delivered to the job site shall be properly identified. Subcontractor's representative must be onsite to accept material delivery. Delivery personnel must be able to identify the Prime Subcontractor and work site.

19. No material shall be stored within twenty feet of a security fence.

20. All flammable liquids must be stored in accordance with OSHA 1926.152 and 1926.153. Non-pressurized flammables must be stored in cabinets also. Cabinets shall be provided by the Subcontractor.

21. 48-hour notification is MANDATORY when any utility tie-in is required with the exception of an electrical tie-in which requires at least 10 days or as stated in the contract.

22. Availability of water, toilet, and electrical facilities are as specified in the contract technical provisions.

23. Good housekeeping is MANDATORY. Remove all combustible material as it is generated. If outside storage is required, all material must be secured to prevent dislodgment by the wind.

24. Any Subcontractor personnel receiving radioisotope treatment for diagnostic purposes shall report to the Medical building before starting or returning to work. Permission must be granted before radioactive sources are allowed at Rocky Flats Site.

25. At project completion, it is the Subcontractor's responsibility to remove all office and material storage trailers and/or clean and dress the job site and trailer site (if applicable). Office and material trailers shall be removed from Rocky Flats Site within 10 calendar days following contract completion.

26. Subcontractor performance report will be completed by the Contractor following contract completion. An unsatisfactory report may affect future award of contracts at Rocky Flats.

APPENDIX 1
Page 3 of 3

27. All work on electrically energized equipment must have special approval to be obtained through the Construction Coordinator.

28. All Subcontractor personnel shall be required to attend the Pre-Evolution Briefing, describing the scope of work and plan of the day requirements. This pre-evolution briefing shall be done at the beginning of a project and subsequently for all scope and personnel changes.

29. A list of the names and Social Security numbers of all Subcontractor and lower-tier Subcontractor personnel must be given to the Construction Coordinator.

30. Daily lost time reports must be requested by the Subcontractor from the Construction Coordinator. Reports must be completed on the day of the occurrence and will NOT be accepted if submitted 12 hours or more after the occurrence. Report must be signed by the Subcontractor Representative and verified by the Construction Coordinator.

31. Invoices should be submitted to the assigned Subcontract Administrator for processing.

32. All access to the Buffer Zone will require clearance through Environmental Management. Subcontractor personnel will be required to log in and obtain Buffer Zone Passes in T891E. This shall be coordinated through the Construction Coordinator.

SUBCONTRACTOR _____

CONSTRUCTION MANAGEMENT _____

DATE _____

APPENDIX 2
Page 1 of 1

CONSTRUCTION NOTIFICATION

JOB DESCRIPTION (KEYWORD) _____ AUTHORIZATION # _____

PROJECT TITLE _____ SUBCONTRACT # _____

BUILDING(S)/AREA(S) _____ MWO# _____

TYPE OF FUNDING _____ TYPE OF CONSTRUCTION _____

ASSIGNMENT OF RESPONSIBILITIES:

CONSTRUCTION COORDINATOR _____ EXT._____ PAGER _____

CONSTRUCTION ENGINEER _____ EXT._____ PAGER _____

AREA CONSTRUCTION MANGER _____ EXT._____ PAGER _____

PROJECT MANAGER _____ EXT._____ PAGER _____

PROJECT ENGINEER _____ EXT._____ PAGER _____

SUBCONTRACT ADMINISTRATOR _____ EXT._____ PAGER _____

DOE CONSTRUCTION REP._____ EXT._____ PAGER _____

CHIEF INSPECTOR _____ PHONE(S) _____

ACHITECT-ENGINEER (FIRM) _____ (INDIVIDUAL) _____

SCHEDULED START DATE:_____

SCHEDULED COMPLETION DATE: _____

NOTE: ALL FIELD COMMUNICATION IS THROUGH THE CONSTRUCTION COORDINATOR.

CONTRACTOR INFORMATION:

CONTRACTOR NAME _____ ADDRESS _____

SITE PHONE _____ SITE SUPV _____ EMER PHONE _____

SUBCONTRACTORS _____

DISTRIBUTION:

DOE Construction Management Office
Safety & Hygiene
Project Manager
Wackenhut
Subconstruct Administration
Operations Manager
Fire Department
Maintenance
Project Engineer
Shift Superintendent

APPENDIX 3
Page 1 of 1

CONSTRUCTION COORDINATOR CHECKLIST

EG&G ROCKY FLATS

CONSTRUCTION COORDINATOR CHECKLIST
UPON JOB ACCEPTANCE ROCKY FLATS PLANT

PROJECT: _____ DATE: _____
CONTRACT NO.: _____ P.O.: _____ CONTRACTOR: _____
AUTH. NO.: _____

		Yes	No	N.A.
1.	Contractor telephones removed in accordance with existing procedures.	☐	☐	☐
2.	Contractor buildings, equipment and materials removed.	☐	☐	☐
3.	Contractor temporary services and service lines removed.	☐	☐	☐
4.	Construction site cleaned and dressed.	☐	☐	☐
5.	Government Surplus Material and Equipment dispensed of in accordance with existing procedure.	☐	☐	☐
6.	All extras and credits are covered by C.O.'s and are complete.	☐	☐	☐
7.	Project Acceptance and Transfer completed for final occupancy and transfer to EG&G/RF.	☐	☐	☐
8.	Field office files, delivered to Project Manager.	☐	☐	☐
9.	Vendor Prints, Operating Manuals, Parts Lists, etc. Delivered To _____	☐	☐	☐
10.	Marked up As-Built Drawings submitted in accordance with procedure. Delivered To _____	☐	☐	☐
11.	All test reports submitted with "H" Files.	☐	☐	☐
12.	Pressure Vessel Certificates delivered to Pressure Vessel Engineer.	☐	☐	☐
13.	Office records on this job have been handled in accordance with standard procedures.	☐	☐	☐
14.	Final Contract Modifications have been processed.	☐	☐	☐
15.	Final Progress Payment has been processed.	☐	☐	☐

Signed: _____ _____
Construction Coordinator Date

Signed: _____ _____
Area Construction Manager Date

REMARKS: _____

APPENDIX 4
Page 1 of 2

PHOTOGRAPHY REQUEST

Normal Delivery is 10 working days, influenced by:
1) workload, 2) complexity, and 3) size of job

INSTRUCTIONS: **Please type or print this request.**
Complete Blocks 1-4 for all orders.
Two (2) copies of this request are needed for unclassified request.

1

DATE SUBMITTED
DATE REQUIRED

See reverse side for classified document accountability instructions.

2

NAME DEPT. CHARGE # COST CNTR (PHONE) ORG CODE (MAILING ADDRESS)	☐ SECRET ☐ CONFIDENTIAL ☐ UNCLASSIFIED ☐ TO BE REVIEWED ☐ UCNI ☐ RD ☐ FRD ☐ NSI	CLASSIFIED ON _____ (DATE) DERIVATIVE CLASSIFIER _____ (NAME) _____ (PRINT NAME) _____ (TITLE AND ORGANIZATION)

3

☐ COLOR PRINTS ☐ 8 X 10 ☐ OTHER	_____ COPIES OF _____ NEGATIVES	LIST REORDER NEGATIVE NUMBERS
☐ B & W PRINTS ☐ 8 1/2 X 11 ☐ OTHER	_____ COPIES OF _____ NEGATIVES	
☐ CANNON COLOR LASER COPIES ☐ 8 1/2 X 11 ☐ 11 X 17 ☐ SPECIAL ☐ VIEWGRAPHS	_____ COPIES OF _____ ORIGINALS _____ COPIES EA. OF _____ ORIGINALS	
☐ 35 MM SLIDES	_____ COPIES EA. OF _____ ORIGINALS	

4 JOB TITLE AND DESCRIPTION OF SUBJECT TO BE PHOTOGRAPHED OR SPECIAL INSTRUCTIONS:

RUSH PRIORITY SIGNATURE	DIRECTOR _____	LESS THAN 5 WORKING DAYS
	DEPARTMENT MANAGER _____	5 TO 9 WORKING DAYS

PHOTO LAB USE ONLY:

FILE NUMBER	LAB HRS	COLOR	B & W	CLC-500	OHTS	SLIDES	DATE RELEASED	BY
Consultation								
Custom Printing								

RF-20 (11/93)

APPENDIX 4
Page 2 of 2

COMPLETE FOR SRD ONLY

Transmit three (3) copies of this request to Photography and keep one as a reference or record copy. When work is completed, the following will apply:

ACCOUNTABLE PHOTOGRAPHS, SLIDES AND VIEWGRAPHS

1. The Requester/Recipient must sign and date one (1) copy, in the shaded areas, of the Photographic Request and return it to the Photography Department. This will serve as the transmittal receipt.

2. The Requester/Recipient must prepare a Document Accountability Receipt immediately for any copy retained by the Requester.

3. When the intended user is other than the requester:

   a. Each copy may be transferred immediately on an individual Document Accountability Receipt marked "Original Transfer" when the user is located on plantsite.

   b. Multiple copies may be transferred immediately on a Document Transaction Receipt marked "Original Transfer" when the user is located off plantsite.

4. Prints from Radiography film will be transmitted to the Requester in the same manner as prints, slides and viewgraphs. The Requester is responsible for entering the documents into accountability in accordance with instructions issued by Classified Document Control.

CUSTODIAN _____ EMP.# _____

ORIGINATOR/AUTHOR _____ EMP.# _____

DATE DC. ORIGINATED

UNCLASSIFIED TITLE OF DOCUMENT _____

NOTE: Date receipt is typed and distributed. All receipts must be prepared within two (2) working days.

PHOTO LAB USE ONLY:

Received by:				Date:	
PRINTS		SLIDES		VIEWGRAPHS	
Unique Dc. No.	Reference # Cy/Ser	Unique Dc. No.	Reference # Cy/Ser	Unique Dc. No.	Reference # Cy/Ser
RECEIVED BY:			DATE:		

NOTE: Shaded areas to be completed by requester.

RF-20 (11/93)

APPENDIX 5
Page 1 of 1

PHOTOS-CAPTION FORM

PHOTOS-CAPTION FORM

CONSTRUCTION PROJECT COORDINATOR _____

FILM ROLL NUMBER _____

DATE OF FILM ROLL NUMBER _____

NAME OF PROJECT TITLE _____

AUTHORIZATION NUMBER _____

CONTRACT NUMBER PURCHASE ORDER _____

CONTRACTOR _____

CAPTIONS:
FILM NUMBER (FROM SIDE OF PROOF)

NO.

Rocky Flats Environmental Technology Site

3-P29-COEM-PMG-339

REVISION 0

REPORTING AND REVIEWS GUIDE

APPROVED BY: _____ L. J. McGovern 9-29-94
Deputy Director, Project Management — Print Name — Date

Responsible Organization: Project Management — Effective Date: 10/01/94

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI
By _____ UNCI
Date 9/30/94

This procedure supersedes procedure ENG-PILOT-PM-015, Revision 0.

Periodic review frequency: 4 years from the effective date.

PADC-97-00107

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-8	10/01/93	

TOTAL NUMBER OF PAGES: 8

APPENDIX 6
Page 1 of 5

CONTRACTOR'S PERFORMANCE EVALUATION

CONTRACTOR	CONTRACTOR'S ADDRESS (STREET, CITY, STATE) TELEPHONE NO.	
PROJECT TITLE		PROJECT NO.
PURCHASE ORDER NO.	CONTRACT NO.	SCHEDULED START DATE
ACTUAL START DATE	SCHEDULED COMPLETION DATE	ACTUAL COMPLETION DATE
ORIGINAL BID PRICE	FINAL COST	PROJECT SUPERINTENDENT
DESCRIPTION OF PROJECT		CONSTRUCTION ENGINEER
		CONSTRUCTION COORDINATOR

I. SCHEDULE COMPLIANCE		
A.	Was the schedule achievable and did contractor strive to complete the project on or before the required contract completion date? ☐ Yes ☐ No	Comments
B.	The construction work was completed: ☐ Ahead of Schedule ☐ On Schedule ☐ Behind Schedule	Comments
C.	Was the contractor well equipped to perform proper job? ☐ Yes ☐ No	Comments
D.	Was the contractor's construction equipment modern, effective equipment and was it maintained in good repair? ☐ Yes ☐ No	Comments
E.	Did the contractor provide a sufficient work force to expedite the job at all times? ☐ Yes ☐ No	Comments
F.	Did contractor submit pay request with adequate documentation to accurately verify work in place for payment? ☐ Yes ☐ No	Comments
G.	Was material and equipment ordered well in advance to "ensure" delivery ahead of the need date? ☐ Yes ☐ No	Comments

APPENDIX 6
Page 2 of 5

H.	Was CPM or a similar project control system used to pinpoint schedule problems? ☐ Yes ☐ No	Comments
I.	Were changes expedited to avoid delay in schedule? ☐ Yes ☐ No	Comments
J.	Did the contractor maintain good control of all phases of the job to eliminate delays? ☐ Yes ☐ No	Comments
K.	Evaluate the contractor in his overall schedule performance?	☐ Excellent ☐ Good ☐ Fair ☐ Unsatisfactory
II.	ADHERENCE TO SPECIFICATIONS AND DRAWINGS	
A.	During bid period did the contractor visit the site of construction and make himself aware of the conditions under which he would work? ☐ Yes ☐ No	Comments
B.	Were drawings and specifications complied with in detail? ☐ Yes ☐ No	Comments
C.	Did the contractor make frequent requests for substitutions of material and equipment? If so, were these substitutions approved as equals? ☐ Yes ☐ No	Comments
D.	Did contractor strive to find suitable substitutions for material or equipment considered to be long lead items in order to prevent construction delays? ☐ Yes ☐ No	Comments
E.	Were engineering discrepancies clearly identified by the builder before beginning work? ☐ Yes ☐ No	Comments
F.	Did the contractor make required submittals in a timely manner? ☐ Yes ☐ No	Comments
G.	Was the contractor cooperative in correcting and resubmitting on unapproved submittals? ☐ Yes ☐ No	Comments
H.	Rate the contractor in his overall adherence to drawings and specifications.	☐ Excellent ☐ Good ☐ Fair ☐ Unsatisfactory

APPENDIX 6
Page 3 of 5

III. QUALITY OF WORK AND MATERIAL	
A. Were proficient personnel used by the contractor and his sub-contractors to assure an overall good quality of construction work? ☐ Yes ☐ No	Comments
B. Did Facilities inspection reports indicate a high quality of workmanship and material to be prevalent in all areas of construction? ☐ All ☐ Majority Minority	Comments
C. Were satisfactory C.C. tests made of all mechanical and electrical equipment before being released to User? ☐ Yes ☐ No	Comments
D. Were all manuals, operating procedures and warranties turned over to EG&G? ☐ Yes ☐ No	Comments
E. Were discrepancies, omissions and poor workmanship corrected promptly and satisfactorily? ☐ Yes ☐ No	Comments
F. Rate the contractor's performance in this overall area of quality of work and material..	☐ Excellent ☐ Good ☐ Fair ☐ Unsatisfactory
IV. GENERAL	
A. Did the contractor maintain good housekeeping and adequate safety practices? ☐ Yes ☐ No	Comments
B. Did the contractor adhere to EG&G rules and regulations governing contractors and their personnel? ☐ Yes ☐ No	Comments

C. List the major subcontractors and rate them for their overall performance using good, average or poor. USE ADDITIONAL SHEETS IF REQUIRED.

	Quality	Schedule	Changes	Cooperation	Safety

+ = Good
0 = Average
- = Poor

APPENDIX 6
Page 4 of 5

D.	Was the contractor cooperative with the EG&G field representatives? ☐ Yes ☐ No	Comments
E.	Were the subcontractors and trades personnel coordinated by the contractor for their most effective use? ☐ Yes ☐ No	Comments
F.	Were proficient personnel used by the contractor and his subcontractors to assure an overall good quality of construction work? ☐ Yes ☐ No	Comments
G.	Was contractor's policy on pricing field changes fair and equitable for the work involved? ☐ Yes ☐ No	Comments
H.	Did the contractor satisfactorily represent EG&G's interest in matters concerning subcontractors and suppliers? ☐ Yes ☐ No	Comments
I.	Would you recommend this contractor for future work at EG&G? ☐ Yes ☐ No	Comments

V SUBCONTRACTOR SAFETY PERFORMANCE

The questions below pertain to the safety performance of the subcontractor indicated, during performance of the subcontract identified above. Please answer the questions as completely as possible. The information submitted will be one of several criteria used in evaluating safety and health performance of this subcontractor, during work at Rock Flats Plant. Please use the back of the page if additional space is needed.

A.	What was the performance period of this subcontract?	Comments
B.	Did this subcontractor comply with safety and health program requirements, and safety and health rules and regulations as stipulated in Section 1700 of the subcontract? ☐ Yes ☐ No (if no, please explain)	Comments
C.	Did the subcontractor comply with his own written safety and health program, hazard communications program, and/or safety and health plan, which was submitted to EG&G for review during the pre-bid process? ☐ Yes ☐ No (if no, please explain)	Comments
D.	Did the subcontractor utilize lower-tier subcontractors or vendors during construction activities? ☐ Yes ☐ No	Comments

APPENDIX 6
Page 5 of 5

E.	If the answer to the above question is yes, did the subcontractor require and/or enforce contractual safety requirements upon his lower-tier subcontractors and vendors? ☐ Yes ☐ No	Comments
F.	Have you, as construction coordinator issued a "construction notice", about non-compliance with safety and/or health requirements to this subcontractor, his lower-tier subcontractors or vendors? ☐ Yes ☐ No (if yes, provide dates)	Comments
G.	Did the subcontractor respond to the notice(s) of safety noncompliance adequately and in a timely fashion? Yes No (if no, please explain)	Comments
H.	Subcontractor safety attitude and practices are helpful in evaluating the subcontractors safety and health capabilities. What was the safety attitude of the subcontractor's project superintendent, and supervisory employees?	Comments
I.	Please provide any additional information about the subcontractor's lower-tier subcontractor's, or vendors safety performance, which you may consider pertinent:	Comments
VI	OVERALL PERFORMANCE RATING	
A.	Give the contractor a rating on his overall performance. (Make a list of any strong or weak points in addition to the above questions to provide a thorough evaluation.)	☐ Excellent ☐ Good ☐ Fair ☐ Unsatisfactory

CONSTRUCTION COORDINATOR	DATE	CONSTRUCTION ENGINEER	DATE
PROJECT ADMINISTRATOR	DATE	AREA CONSTRUCTION MANAGER	DATE

ADDITIONAL COMMENTS (IDENTIFY BY SECTION AND LETTER):

Rocky Flats
Environmental Technology Site
4-03C-COEM-CMG-403
REVISION 0

EVALUATION OF NONCONFORMING CONDITIONS

APPROVED BY: _____ / G. W. Coles 11-18-95
Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Subject-matter Expert
Quality Review

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002133

Reviewed for Classification/UCNI
By Mary K. Frost (UNCL)
Date 11/18/95

This procedure supersedes procedure ENG-PILOT-CM-002, Revision 0.

Periodic review frequency: 3 years from the effective date

PADC-97-00070

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-7	03/10/95	

TOTAL NUMBER OF PAGES: 7

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4.	RESPONSIBILITIES	4
4.1	Area Construction Manager	4
4.2	Construction Coordinator	5
4.3	Construction Engineer	5
5.	INSTRUCTIONS	6
6.	RECORDS	7
7.	REFERENCES	7

1. PURPOSE

This procedure describes the minimum requirements for responsibility and documentation of nonconforming conditions. It also addresses disposition and verification of required completed actions.

This procedure implements the requirements of 1-A65-ADM-15.01, Control of Nonconforming Items.

2. SCOPE

This procedure applies to all construction activities at the Rocky Flats Environmental Technology Site (Rocky Flats). In particular, it applies to the Construction Management department and its implementation of 1-A65-ADM-15.01, as required by Department of Energy (DOE) Order 5700.6C, Quality Assurance.

This revision is a total rewrite, and revision bars are omitted.

This revision supersedes ENG-PILOT-CM-002, and is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

Construction projects are supported by the Construction Management department. All Construction Management personnel are required to have an understanding and knowledge of the requirements to recognize, report, and close nonconforming conditions.

4. RESPONSIBILITIES

4.1 Area Construction Manager

Provides technical direction, support, and training for personnel.

4.2 Construction Coordinator

Interfaces between the Rocky Flats Operating Contractor and the personnel performing construction work at the Site.

Maintains and controls the Integrated Work Control Program (IWCP) package during construction activities.

Initiates a Nonconformance Report (NCR) when a nonconforming condition (as outlined in 1-A65-ADM-15.01) is recognized.

Tracks the NCR from initiation through resolution to ensure timely closure of a nonconforming condition.

4.3 Construction Engineer

Initiates an NCR when a nonconforming condition is recognized.

Interfaces with the Project Engineer to determine resolution for a nonconforming condition.

Assists the Construction Coordinator in the tracking of nonconforming conditions.

Interfaces with all departments of the operating contractor and the subcontractors who are affected by the nonconforming condition, to resolve that condition.

5. INSTRUCTIONS

Area Construction Manager

[1] Provide technical direction, support, and training for personnel.

Construction Coordinator

[2] Inspect the construction site for adherence to the criteria in Section 5 of 1-A65-ADM-15.01.

[3] **IF** a possible nonconforming condition exists,
THEN inform the subcontractor of the condition.

The subcontractor may correct the condition prior to a Quality Inspection, which may eliminate nonconforming condition if done in accordance with 1-A65-ADM-15.01, Section 6.

[4] **IF** a nonconforming condition exists,
THEN inform the Construction Engineer of the possible nonconforming condition.

Construction Engineer

[5] Review the possible nonconforming condition and the project plans to determine if a nonconforming condition exists.

[6] **IF** it can be determined that a nonconforming condition exists,
THEN initiate an NCR in accordance with 1-A65-ADM-15.01.

[7] **IF** it cannot be determined that a condition is nonconforming,
THEN request an inspection of the condition by a Quality Assurance Inspector.

Construction Coordinator

[8] **WHEN** an NCR is issued,
THEN:

[A] Track the progress of the NCR.

[B] Periodically inform the Construction Engineer of the NCR status.

5. INSTRUCTIONS (continued)

Construction Engineer

[9] Monitor the progress of the personnel responsible for resolution of the nonconforming condition.

Construction Coordinator

[10] **IF** the project is scheduled for project acceptance and transfer in accordance with 4-17C-COEM-CMG-417, Construction Closeout,
AND there are NCRs outstanding,
THEN inform the subcontractor that the project cannot be accepted until the NCRs are closed.

[11] File a copy of each NCR in the Construction File under H-3 Nonconformance Reports.

6. RECORDS

Construction Coordinator

[1] Retain copies of NCRs in the Construction "H" files in accordance with 4-02C-COEM-CMG-402, Project Record Management.

7. REFERENCES

DOE Order 5700.6C, Quality Assurance

1-A65-ADM-15.01, Control of Nonconforming Items

4-02C-COEM-CMG-402, Project Record Management

4-17C-COEM-CMG-417, Project Closeout

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
***Print or Type** All Information (Except Signatures).*

1. Date	2a. DMR No.
3/30/95	95-DMR- 000518

2. Existing Document Number/Revision	3. New Document Number or Document Number if it is to be changed with this Revision
4-04C-COEM-CMG-404 / Rev. 0	N/A

4. Originator's Name/Phone/Pager/Location	5. Document Title
L. Crabb / 2957 / D0714 / 130	Excavations and Soil Disturbances

6. Document Type: ☒ Procedure ☐ Other _____

7. Document Modification Type (Check only one): ☐ New ☐ Revision ☐ Intent Change ☒ Nonintent Change ☐ Editorial Correction ☐ Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
1	6	5.2	CHANGE to read: Assigned Excavation Specialist **or** Replacement
2	9	6.3	CHANGE person performing steps to: **Assigned** Excavation Specialist
3	11	NOTE	MOVE note to page 10.
4	11	6.3	ADD to step [11] the following: [A] IF absence is foreseen, THEN provide replacement with written documentation detailing the status of the soils disturbance permit. Replacement Excavation Specialist [B] IF status documentation is not available, THEN perform steps [1] through [10] of section 6.3, to ensure proper location of utilities.
5	~~12~~ 11 PD 3/30/95	6.3	ADD person performing steps of: Assigned Excavation Specialist

Justification (Reason for Modification, EJO #, TP #, etc.)

Steps are necessary to ensure that preliminary utility locations are completed prior to excavation activities. This will assist in preventing damage to utilities.

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurror prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
N/A	N/A (Level 4 - no additional concurrences are necessary)	
R.J. Borde - SME		

16. Originator's Supervisor (print/sign/date): G. W. Coles 3/30/95

17. Assigned SME/Phone/Pager/Location	18. Cost Center	19. Charge Number	20. Requested Completion Date	21. Effective Date
J. LaBorde / 2538 / d0719 / 130	441	90391700		4/4/95

Accelerated Review? Yes ☐ No ☒ | 23. ORC Review: not required

24. Responsible Manager (print/sign/date): G. W. Coles 3/30/95

RF-47940 (5/93)

REVIEWED FOR CLASSIFICATION / UCNI
BY _____
DATE 3/30/95

PADC-97-00089

DOCUMENT MODIFICATION REQUEST (DMR)

Refer to 1-A01-PPG-001 for Processing Instructions.
***Print or Type** All Information (Except Signatures).*

1. Date	25.
2/1/95	DMR No. 95-DMR-000187

2. Existing Document Number/Revision	3. New Document Number or Document Number if it is to be changed with this Revision
4-04C-COEM-CMG-404 / Rev. 0	N/A
4. Originator's Name/Phone/Pager/Location	5. Document Title
L. Crabb / x2957 / d0714 / 130	Excavations and Soil Disturbances

6. Document Type: ☒ Procedure ☐ Other _____

7. Document Modification Type (Check only one): ☐ New ☐ Revision ☐ Intent Change ☒ Nonintent Change ☐ Editorial Correction ☐ Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
1	2	LOEP	REPLACE page 2 with the new List of Effective Pages Attached.
2	3	TOC	CHANGE Appendix numbers of the 2nd, 3rd, and 4th to 2, 3, and 4
3	14	App. 1	CHANGE bottom statement on form to read: **Requester shall fill out this form and submit it, along with information required, to the Excavation Specialist.**
4	15	App. 2	CHANGE ER to **ERM** on #1 and #2 of form.
5	16	App. 3	CHANGE signature requirement from Environmental Management to **Environmental Restoration Management** in bottom section of form.

12. Justification (Reason for Modification, EJO #, TP #, etc.)

2. Editorial correction only
2-5 Changes necessary because forms will also be used in the following Environmental Restoration Management procedure: 1-F20-ER-ERM-EM-001, Environmental Approval Process for Construction Excavation Activities or Near Individual Hazardous Substance Sites (IHSS)

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurror prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
CM	Area Construction Manager, Site Area — NOT Required	
CM	Area Construction Manager, 700 Area — NOT Required	
CM	Area Construction Manager, 400/800 Area — NOT Required	
CM	Area Construction Manager, Protected Area — NOT required	
CM	Area Construction Manager, Special Projects — NOT required	

16. Originator's Supervisor (print/sign/date)
G. W. Coles /s/ 2/1/95

17. Assigned SME/Phone/Pager/Location	18. Cost Center	19. Charge Number	20. Requested Completion Date	21. Effective Date
J. LaBorde / 2538 / d0719 / T130F	3077	820111		03/10/95

22. Safety Related Review?	23. ORC Review
Yes ☐ No ☒	Not Required

24. Responsible Manager (print,sign,date)
P. W. Speyer /s/ 2/2/95

RF-47940 (5/93)

REVIEWED FOR CLASSIFICATION / UCNI (UNC)
BY _____
DATE 2-6-95

PADC-97-00069

ROCKY FLATS PLANT

4-04C-COEM-CMG-404

REVISION 0

EXCAVATIONS AND SOIL DISTURBANCES

APPROVED BY: /s/ Gary Coles / Gary Coles / 5/16/94
Director, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 6/1/94

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE

Area Construction Manager, Site Area
Area Construction Manager, 700 Area
Area Construction Manager, 400/800 Area
Area Construction Manager, Protected Area
Area Construction Manager, Special Projects

USE CATEGORY 4

ORC review not required.

The following have been incorporated in this revision:
94-DMR-000042

Reviewed for Classification/UCNI

By /s/ Mary K. Fiore

Date 5/9/94

Periodic review frequency: 4 years from the effective date.

PADC-97-00069

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7-8	06/01/94	
9-11	04/04/95	95-DMR-000518
12-13	06/01/94	
14-16	03/10/95	95-DMR-000187
17	06/01/94	

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95-DMR-000187

1. PURPOSE

This procedure provides the minimum requirements to ensure sitewide consistency and control of excavations and other soil disturbances. This procedure ensures that all excavations are directed through a central point of contact for review evaluation and approval in accordance with industry, Department of Energy (DOE), and EG&G Rocky Flats, Inc. (EG&G) guidelines. This procedure implements the requirements of:

- Code of Federal Regulations (CFR) 29 CFR 1926, Subpart P, Occupational Safety and Health Administration.
- DOE Order 4700.1, Project Management System.
- Health and Safety Practices Manual 1-B37-HSP-12.08, Excavations and Trenching.

2. SCOPE

This procedure applies to Construction Management personnel responsible for evaluation, approval, and surveillance of soil disturbances and excavations on the grounds of the Rocky Flats Plant (RFP).

This procedure addresses the following topics:

- Evaluation of proposed excavation and soil disturbance sites for potential hazards
- Monitoring of excavation and soil disturbance sites for hazards during work
- Stopping work when unforeseen hazards are encountered

3. OVERVIEW

This procedure provides complete, concise instructions for personnel planning excavations or soil disturbances at RFP. This procedure provides specific research requirements to be completed and documented before beginning any excavations or soil disturbances at RFP. Instructions for the documentation of the location of new buried conduit, piping, power lines, communications lines, or any other item are also in this procedure.

4. DEFINITIONS

Excavation. Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal, and includes, but is not limited to, the installation of fence posts, poles, and drilling of boreholes.

Excavation Specialist. A member of Construction Management who is qualified through experience and training to identify:

- Existing or predictable hazards in the surroundings.
- Working conditions which are unsanitary, hazardous, or dangerous to personnel.

Requestor. Anyone at RFP who has a need to perform an excavation or otherwise disturb the soil. The requester may be a subcontractor, Construction Management, or any foreman, superintendent, planner, or other responsible person who is involved.

Soil Disturbance. Any mechanical disturbance of the soil. Examples of a soil disturbance include the following:

- An excavation made using a backhoe
- A hole dug with a hand shovel
- A post or stake being driven into the ground
- A spoonful of dirt scooped up for sampling
- A borehole or a core drilling even if done through the floor of a building or through a roadway.

5. RESPONSIBILITIES

5.1 Construction Coordinator

Performs field liaison duties between the subcontractor and EG&G.

Oversees all field work that is performed by a subcontractor, and monitors safety considerations.

Ensures that all work is done safely, and all contract requirements are met.

Maintains a comprehensive working knowledge of the requirements for excavations and soil disturbances.

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5.1 Construction Coordinator (continued)

Maintains a list of persons to contact in case of an emergency, or the discovery of unforeseen problems during an excavation.

5.2 Assigned Excavation Specialist or Replacement

Reviews and evaluates all excavation and soil disturbance requests for compliance with 1-B37-HSP-12.08 and other governing documents.

Approves or rejects all excavation and soil disturbance requests based on 1-B37-HSP-12.08 and other governing documents.

Performs inspections of excavation sites to ensure compliance with 1-B37-HSP-12.08 and other governing documents.

Ensures excavation sites are inspected each day before entry by personnel.

Takes prompt corrective measures to protect personnel and the environment, as necessary.

6. INSTRUCTIONS

6.1 Excavation and Soil Disturbance Package

Excavation Specialist

[1] **WHEN** a Soil Disturbance Evaluation, Appendix 1 is received, **THEN** review the Soil Disturbance Evaluation for accuracy and content.

[2] Ensure that a hazardous waste determination form is attached and complete.

[3] **IF** the Soil Disturbance Evaluation is incomplete or incorrect, **THEN** return the Soil Disturbance Evaluation to the requester for resubmission.

[4] **IF** a Soil Disturbance Package is NOT required, **THEN** complete a Soil Disturbance Waiver in accordance with Section 6.2.

[5] **IF** the Soil Disturbance Evaluation is complete and correct, **THEN** establish a file for the excavation.

[6] Initiate the Site Survey Determination for Environmental and Worker Exposure, Appendix 2 and the Soil Disturbance Waiver, Appendix 3 by filling in the header information.

[7] Visit the site of the proposed excavation or soil disturbance to view and evaluate the site for visible hazards.

[8] Deliver the Site Survey Determination for Environmental and Worker Exposure to the following organizations for review and approval:

- Environmental Restoration Management
- Industrial Hygiene
- Radiological Engineering

6.1 Excavation and Soil Disturbance Package (continued)

[9] Review and ensure completeness of the information supplied on the Site Survey Determination for Environmental and Worker Exposure and the attached summaries by the following:

- Environmental Restoration Management
- Industrial Hygiene
- Radiological Engineering

[10] Complete a Soil Disturbance Approval Form. (Appendix 4)

[11] Attach the Soil Disturbance Approval Form to the Site Survey Determination for Environmental and Worker Exposure.

[12] Deliver the entire package to Facilities Engineering.

[13] Copy all pertinent information from the Excavation and Soil Disturbance package for the requester.

[14] Inform the requester that the Excavation and Soil Disturbance package is ready to be picked up.

[15] File the original Excavation and Soil Disturbance package in numerical sequence by authorization or work order number.

6.2 Excavation and Soil Disturbance Not Required

NOTE *Concurrence of all parties is required to support a decision that an Excavation and Soil Disturbance package is not required.*

Excavation Specialist

[1] **IF** soil disturbance package is **NOT** required,
THEN:

[A] Complete a Soil Disturbance Waiver.

6.2 Excavation and Soil Disturbance Not Required (continued)

[B] Deliver the Soil Disturbance Waiver to the following for concurrence:

- Environmental Restoration Management
- Industrial Hygiene
- Radiological Engineering
- Occupational Safety

[2] **WHEN** concurrence for a Soil Disturbance Waiver has been obtained, **THEN:**

[A] Sign and date the Soil Disturbance Waiver.

[B] Deliver the Soil Disturbance Waiver to the requester.

[3] **IF** any required concurror declines to concur,
THEN proceed with an Excavation and Soil Disturbance package.

6.3 Excavation and Soil Disturbance Surveys Inspections

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Assigned Excavation Specialist

[1] **WHEN** informed that an Excavation or Soil Disturbance is to be started, **THEN** survey the area of the proposed excavation or soil disturbance to determine if the proposed excavation or soil disturbance will cause any interference with utilities.

[2] Survey the area of the proposed excavation or soil disturbance to determine if any special instructions or cautions will apply to the proposed excavation or soil disturbance.

[3] Mark the locations of known utility installations in accordance with 1-B37-HSP-12.08 to prevent damage to the utilities, and to prevent injury of personnel.

[4] Record cautions and special instructions (Item 6), and disturbance limits (Item 7) on the Soil Disturbance Approval, Appendix 4.

6.3 Excavation and Soil Disturbance Surveys Inspections (continued)

NOTE *Special emphasis should be placed on the requirements of 1-B37-HSP-12.08 and 29 CFR 1926 during the field indoctrination.*

[5] Conduct a field indoctrination and review the Soil Disturbance Approval with the following personnel:

- All workers
- Operators
- Responsible supervisors

[6] Obtain signatures from the following personnel on Items 8 and 9 of the Soil Disturbance Approval:

- All workers
- Operators
- Supervisors

[7] Sign and date the Excavation Specialist line (Items 10 and 11) on the Soil Disturbance Approval.

The signature on this line authorizes work to begin on excavation or soil disturbance.

[8] **IF** personnel are or may be required to enter excavation,
THEN record the appropriate soil classification from 29 CFR 1926, Occupational Health and Safety Administration.

[9] Conduct an initial safety inspection of the site and the equipment to be used in the excavation.

[10] Sign and date Item 13 of the Soil Disturbance Approval.

NOTE *Daily inspections are performed to ensure that excavation is being performed safely in accordance with 1-B37-HSP-12.08 and other governing documents.*

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6.3 Excavation and Soil Disturbance Surveys Inspections (continued)

[11] Perform daily inspections of excavation site before authorized personnel enter an excavation site.

Daily inspection need not be performed on days when excavation site is not entered.

[A] **IF** absence is foreseen,
THEN provide replacement with written documentation detailing the status of the soils disturbance permit.

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Replacement Excavation Specialist

[B] **IF** status documentation is not available,
THEN perform steps [1] through [10] of section 6.3, to ensure proper location of utilities.

Assigned Excavation Specialist

[12] **IF** conditions at excavation or soil disturbance site change,
THEN reinspect excavation or soil disturbance site before reentry.

[13] Document the daily inspection on the Soil Disturbance Approval.

NOTE *Periodic inspections are performed to verify that the requirements of 1-B37-HSP-12.08 and other governing documents are being adhered to.*

Construction Coordinator

[14] Periodically inspect excavation site to ensure that work is being performed safely in accordance with:

- Occupational Safety and Health Administration (OSHA) standards
- RFP polices and procedures
- Other governing documents

[15] Ensure that all personnel involved in excavation are adhering to Personal Protective Equipment (PPE) requirements in the Work Package.

[16] Ensure that barricades required by and meeting OSHA standards are used.

[17] Meet with the subcontractor daily to resolve problems, deficiencies, or concerns, and to ensure that all requirements are understood and met.

6.3 Excavation and Soil Disturbance Surveys Inspections (continued)

[18] **IF** a change in excavation or soil disturbance status occurs which indicates that an adverse condition may exist in excavation,
THEN contact the following:

- The Excavation Specialist
- Industrial Hygiene
- Occupational Safety

[19] **IF** an adverse condition, such as a road closure or the blocking of a facility, becomes necessary,
THEN notify the following:

- Shift Superintendent (Ext. 2914)
- Central Alarm Station (Ext. 2444)
- Fire Department Dispatcher (Ext. 4337/4338)
- Affected Operations Managers
- Other organizations, as appropriate

[20] Ensure that the excavation or soil disturbance is left in a safe, clean configuration upon project completion.

7. RECORDS

The IWCP Package and Construction Project H Files are Quality Assurance Records generated by this procedure.

7.1 Integrated Work Control Program (IWCP) Package

Construction Coordinator

[1] Retain all information pertinent to the excavation portion of a project in the IWCP package.

[2] Transfer all information to the Operations Manager upon project completion.

7.2 Construction Project H Files

Construction Coordinator

[1] Retain information about excavation and soil disturbances as part of the Construction Project H Files in accordance with 4-01C-COCM-3.04, Project Records Management.

7.3 Excavation Specialist Files

NOTE *The Excavation Specialist retains the original Excavation and Soil Disturbance package until all excavation and soil disturbances are complete, allowing the Excavation Specialist to make necessary updates or extensions on the original Excavation and Soil Disturbance package.*

Excavation Specialist

[1] Retain the original Excavation and Soil Disturbance package until the excavation or soil disturbance is completed.

Construction Coordinator

[2] **WHEN** ALL of the following conditions exist:

- The excavation or soil disturbance is complete,
- No extensions are required,
- The project is ready for Project Acceptance and Transfer (PA&T),

THEN incorporate copies of the Excavation and Soil Disturbances package into the Construction Project H Files.

8. REFERENCES

DOE Order 4700.1, Project Management System

1-B37-HSP-12.08, Excavations and Trenching

4-01-COCM-3.04, Project Records Management

29 CFR 1926, Occupational Health and Safety Administration

APPENDIX 1
Page 1 of 1

SOIL DISTURBANCE EVALUATION

SOIL DISTURBANCE EVALUATION FORM

The purpose of this information is to assist the committee in identifying the potential hazard(s) associated with this soil disturbance.

1. REQUESTER: Name _____

   Group _____ Phone/Pager _____

2. PROJECT TITLE: _____ CHARGE NO: _____

3. Will the disturbance occur in or near an Individual Hazardous Substance Site (IHSS, formerly SWMU)?

   _____

4. Are overhead utilities present? Yes ☐ No ☐
   Are underground utilities present? Yes ☐ No ☐
   Will a utility outage be required? Yes ☐ No ☐

5. IS THE EXCAVATION FOR:

   Construction ☐ Trenching ☐ Sampling ☐ Driven rods or posts ☐
   Grounding ☐ Post holes ☐ Other types ☐

6. IF SAMPLING: Soil removal by hand? Yes ☐ No ☐
   Drilling? Yes ☐ No ☐
   Depth of drilling _____ Diameter _____

7. IF CONSTRUCTION:
   Hand digging only? Yes ☐ No ☐
   Will mechanical equipment be required? Yes ☐ No ☐
   What Type? _____

Depth of excavation _____ Length of excavation _____

Width of excavation _____ Will shoring be required? _____

Requester shall fill out this form and submit it, along with information required, to the EXCAVATION SPECIALIST.

SAMPLE

APPENDIX 2
Page 1 of 1

SITE SURVEY DETERMINATION FOR ENVIRONMENTAL AND WORKER EXPOSURE

SITE SURVEY DETERMINATION FOR ENVIRONMENTAL AND WORKER EXPOSURE

Authorization No.: _____ Project Manager _____

Project Title: _____

Date submitted for determination: _____
(Submit site plan and scope of site work to committee.)

SAMPLE

		YES	NO
1.	Review completed of historical data to determine location relative to IHSS/SWMUs or other areas of known contamination that may influence the site. Data may include IHSS or SWMU maps and descriptions of sites, previous documented soil, sediment, or water sampling, and documented radiological surveys. Summary attached? _____ Responsibility: ERM Signature Date	☐	☐
2.	Sampling plan required to satisfy Interagency Agreement (IAG) or other requirements for environmental sampling. Summary attached? _____ Responsibility: ERM Signature Date	☐	☐
3.	Sampling plan required to satisfy Health and Safety requirements for radiological protection. Summary attached? _____ Responsibility: RE/EC Signature Date	☐	☐
4.	Sampling plan required to satisfy Health and Safety requirements for nonradiological protection. Summary attached? _____ Responsibility: IH Signature Date	☐	☐

APPENDIX 3
Page 1 of 1

SOIL DISTURBANCE WAIVER

SOIL DISTURBANCE WAIVER

REQUESTER: _____ PHONE/PAGER _____

JOB NO.: _____

TITLE: _____

The request for soil disturbance for the above project has been reviewed, and the determination has been made that no further review is required.

Work may proceed as planned.

SAMPLE

EXCAVATION SPECIALIST _____ _____
Signature Date

CONCURRENCE:

ENVIRONMENTAL RESTORATION MANAGEMENT: _____ _____
Signature Date

INDUSTRIAL HYGIENE: _____ _____
Signature Date

RADIOLOGICAL ENGINEER: _____ _____
Signature Date

OCCUPATIONAL SAFETY: _____ _____
Signature Date

APPENDIX 4
Page 1 of 1

SOIL DISTURBANCE APPROVAL

ROCKY FLATS
SOIL DISTURBANCE APPROVAL FORM

(1) LOCATION, PROJECT TITLE, AND WORK DESCRIPTION: _____

_____

(2) CONTRACTOR: _____ (3) AUTHORIZATION CHARGE NO.: _____

(4) LOG NO.: _____ (5) DRAWING NO.: _____

(6) CAUTIONS AND SPECIAL INSTRUCTIONS: _____

_____

(7) DISTURBANCE LIMITS (SUCH AS, DURATION OR BOUNDARY): _____

(8) RESPONSIBLE JOB SUPERVISOR: _____

_____

(9) OPERATOR AND WORKER(S): _____

(10) EXCAVATION SPECIALIST: _____ (11) DATE: _____

SAMPLE

EXCAVATION ENTRY APPROVAL

(12) OSHA SOIL CLASS: A ☐ B ☐ C ☐

(13) INITIAL SAFETY INSPECTION BY: _____ _____
Signature Date

DAILY INSPECTIONS

INITIALS	DATE	INITIALS	DATE	INITIALS	DATE

Rocky Flats
Environmental Technology Site
4-05C-COEM-CMG-405
REVISION 0

DAVIS/BACON-COVERED TASK ORDERS

APPROVED BY: _____ / G. W. Coles / 11-18-95
Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Construction Management
Quality Review

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002134

Reviewed for Classification/UCNI
By Mary K. Ferre (U/NC)
Date 11/18/95

This procedure supersedes procedure ENG-PILOT-CM-008, Revision 0.

Periodic review frequency: 3 years from the effective date

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-14	03/10/95	

TOTAL NUMBER OF PAGES: 14

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1. PURPOSE

This procedure provides instructions for issuing and controlling work requests costing under one million dollars determined to be covered by the Davis/Bacon Act and funded through a facility operations budget. The procedure does not cover authorization projects.

2. SCOPE

This procedure applies to Construction Management personnel and their interface with groups performing construction activities associated with work requests determined to be covered by the Davis/Bacon Act.

This revision is a total rewrite and revision bars are omitted.

This revision supersedes ENG-PILOT-CM-008, and is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

The guidelines of this procedure are intended for the direction and use of Construction Management. Controls established by this procedure begin with the Davis/Bacon determination letter and continue through completion of construction. The process applies to Construction Management's relationship with all Rocky Flats Environmental Technology Site departments and subcontractors. This procedure ensures that all Davis/Bacon work is directed through a central point of contact for review and approval in accordance with industry, Department of Energy (DOE), and Rocky Flats Operating Contractor guidelines.

3. OVERVIEW (continued)

For the purposes of clarification, the Construction Management functions in this procedure are divided into two parts:

- Construction Management Administrative Preparation Personnel receive requests for support and provide an administrative function for work which has been determined to be covered by the Davis/Bacon Act.

- Construction Management Field Construction Personnel provide a central interface between a subcontractor and the Rocky Flats Operating Contractor to ensure that all requirements are met during construction of a project.

4. DEFINITIONS

Construction Management Plan. A form estimating the man hours required to support a Davis/Bacon task. (Appendix 1, Construction Management Plan)

Davis/Bacon Determination. A decision made by the DOE that a work order is or is not covered under the provisions of the Davis/Bacon Act.

Requester. Anyone at Rocky Flats who has a Davis/Bacon-covered task they wish to have constructed.

Technical Evaluation. A process to determine whether the subcontractor's proposed units of labor/material resources are within 10% of the Government Proposed Units of Labor/Material resources.

5. RESPONSIBILITIES

5.1 Construction Management Administrative Preparation Personnel

Confirm that a task is Davis/Bacon-covered.

Receive a Work Authorization form (Appendix 2) from a requester asking Construction Management to supervise the construction activities.

5.1 Construction Management Administrative Preparation Personnel (continued)

Request an independent cost estimate from the Cost Estimating Department for a task that exceeds $10,000 in accordance with 718, III.H, Procurement.

Prepare a purchase requisition.

Prepare a request for Technical Evaluation.

Participate in the negotiation of the subcontract as requested.

Prepare a cost estimate for tasks which have a cost less than $10,000.

Confirm that material is or is not Government Furnished Equipment (GFE) through Logistics.

5.2 Construction Management Clerk

Maintains a work package closure Logbook.

5.3 Construction Management Field Personnel

Review the Integrated Work Control Program (IWCP) package for constructability and provides comments.

Obtain a listing of available pre-kit materials from Logistics or the Project Engineer, who may have ordered the materials.

Participate in the negotiation of a subcontract as requested.

Perform as the field interface who directs construction activities.

Prepare the closure of a work package in accordance with 1-74000-IWCP-3, Integrated Work Control Program.

6. INSTRUCTIONS

Construction Management Administrative Preparation Personnel

[1] **WHEN** an IWCP package is received,
THEN:

[A] Confirm that a letter indicating that the task is covered by the Davis/Bacon Act is on file.

[B] Contact the Facility Operator and request a preconstruction work authorization.

[2] **IF** the onsite construction subcontractor has been tasked with the project, **THEN** deliver the IWCP package to the subcontractor for review.

[3] Attach to the IWCP package any comments provided by the onsite subcontractor.

[4] Deliver the IWCP package, with construction subcontractor comments, as applicable, to Construction Management Field Personnel for review.

Construction Management Field Personnel

[5] Review the IWCP package and comments to determine:

- Completeness.
- Adequacy.
- Constructability.

[6] Perform a physical walkdown of the proposed work described in the IWCP package and determine the constructability of the package.

[7] Provide comments and recommendations for necessary changes to the IWCP package.

[8] Prepare a Construction Management Plan, (Appendix 1).

[9] Return the IWCP package to Construction Management Administrative Preparation Personnel.

6. INSTRUCTIONS (continued)

Construction Management Administrative Preparation Personnel

[10] Return the IWCP package to Planning for corrections, changes, and signatures.

[11] **WHEN** Planning provides the completed signed IWCP package, **THEN** make copies of the appropriate sections of the IWCP package for distribution.

[12] Prepare a Request for Estimate and a Request for Technical Evaluation.

[13] Submit the completed Request for Estimate and Request for Technical Evaluation with one copy of the appropriate sections of the IWCP package to Cost Estimating.

[14] Prepare a Purchase Requisition in accordance with instructions from Purchasing.

[15] Submit the following to Purchasing:

- Completed Purchase Requisition
- Two copies of the appropriate sections of the IWCP package
- Copy of the Davis/Bacon Determination letter
- Copy of the Request for Estimate and Technical Evaluation

[16] Obtain two copies of the estimate after Cost Estimating has completed their estimate.

[17] Deliver one copy of the estimate to Procurement and file the other.

[18] Obtain two copies of the subcontractor's completed estimate.

[19] Deliver one copy of the subcontractor's estimate to Cost Estimating for a Technical Evaluation and file the other.

[20] **IF** a project cost is less than $10,000, **THEN** Construction Management Personnel may perform the Technical Evaluation.

6. INSTRUCTIONS (continued)

[21] Obtain two copies of the completed Technical Evaluation.

[22] Deliver one copy of the Technical Evaluation to Procurement and file the other.

[23] Provide support to Procurement, as required, during negotiations of costs.

[24] Deliver the IWCP package to the responsible Construction Management Field Personnel upon award of the subcontract.

[25] Deliver the Construction Management Plan and the subcontractor's negotiated cost to the Facility Operator.

[26] Request a Work Authorization (Appendix 2) authorizing Construction Management to support the construction activities.

[27] **IF** the Facility Operator does NOT issue a Work Authorization,
THEN:

[A] Request a Work Suspension (Appendix 3, Work Suspension).

[B] Cancel the task.

[28] **IF** the task is canceled,
THEN:

[A] Return the IWCP package to the planner.

[B] Send a memo to Procurement canceling any further actions on the project.

Construction Management Field Personnel

[29] Direct construction activities in accordance with Conduct of Engineering procedures.

6. INSTRUCTIONS (continued)

[30] Prepare close out of the project in accordance with 1-74000-IWCP-3.

[31] Forward a copy of the closure and cover sheet to:

- Construction Management Administrative Preparation Personnel.
- The Construction Management Clerk.

Construction Management Administrative Preparation Personnel

[32] Forward a copy of the closure sheet to Procurement for closure of the task order.

Construction Management Clerk

[33] File the copy of the closure and cover sheet in the Davis/Bacon Work Package Closure Log Book.

7. RECORDS

Construction Coordinator

[1] Maintains the IWCP package during the life of the Construction Project.

[2] Upon closure, turns the entire package over to the Responsible Operations Manager.

8. REFERENCES

1-74000-IWCP-3, Integrated Work Control Program

718, III.H, Procurement

APPENDIX 1
Page 1 of 2

CONSTRUCTION MANAGEMENT PLAN

CONSTRUCTION MANAGEMENT STAFF REQUIRED			
Project Title:		Authorization No:	
		Work Control No:	
Constr. Mgr. (CM):			
Constr. Engr. (CE):		User Contact:	
		Phone:	
X	**Project/Services**	**Time MHS**	**Budget**
	Scope Estimate Review		
	Title 1 Design Review (Constructability)		
	Title 1 Estimate Review		
	Title 2 Design Review (Constructability)		
	Title 2 Estimate Review		
	Construction Schedule Prep/Tracking		
	Construction Budget Prep/Tracking		
	Invitation to Bid		
	Construction - Coordinator		
	- Engineer		
	As-Built Drawings		
	Project Close Out		
	Other (Specify)		
	TOTAL		

Special Instructions:

Attached Documents:

APPENDIX 1
Page 2 of 2

CONSTRUCTION MANAGEMENT SUPPORT REQUESTED				
Project Title:		Authorization No:		
		Work Control No:		
Constr. Mgr. (CM):				
Constr. Engr. (CE):		User Contact:		
		Phone:		
X	**Required Support**	**Time MHS**	**Budget**	**Concurrence**
	Alarms Technicians			
	Clean Water			
	Escorts			
	Facilities Inspection			
	Facilities Quality Engineering			
	Fire Department			
	Health and Safety			
	Industrial Hygiene			
	Maintenance			
	Occupational Safety			
	Operations			
	Planning			
	Plant Power			
	Plant Services (Trucking, Garage, Laborers)			
	Quality Assurance			
	Radiation Monitoring			
	Security (Wackenhut)			
	Subcontract Administration			
	Systems Engineering			
	Telecommunications (LAN and Telephone)			
	Traffic			
	Waste Generator			
	Waste Guidance			
	TOTAL			
Special Instructions:				
Attached Documents:				

APPENDIX 2
Page 1 of 1

WORK AUTHORIZATION

1. TO: _____
CC: _____ _____
NUMBER NAME

2. ☐ NEW AUTHORIZATION ☐ RE-AUTHORIZATION

3. FROM: _____ _____ _____
NAME/SIGNATURE WORK PACKAGE MANAGER PHONE BLDG

WORK PACKAGE _____ _____
NUMBER TITLE

CENTRAL PLANNING & BUDGETS REPRESENTATIVE: _____

4. DESCRIPTION OF WORK:

5. START DATE: _____ END DATE: _____

6. RESOURCES

HOURS	NON-LABOR $$$	DESCRIPTION	REFERENCE OR ATTACHMENTS LIST

7. WORK TO BE CHARGED TO:
CHARGE NUMBER: ☐☐☐☐☐☐☐☐

8. SIGN AND RETURN THIS ORIGINAL FORM TO THE WORK PACKAGE MANAGER IDENTIFIED ABOVE

CONCURRENCE: _____ _____ _____
NAME/SIGNATURE PERFORMING ORGANIZATION DATE

COMMENTS:

APPENDIX 3
Page 1 of 1

WORK SUSPENSION

1. TO: _____
CC: _____ _____
NUMBER NAME

2. ☐ PERMANENT ☐ TEMPORARY

3. FROM: _____ _____ _____
NAME/SIGNATURE WORK PACKAGE MANAGER PHONE BLDG

WORK PACKAGE _____ _____
NUMBER TITLE

CENTRAL PLANNING & BUDGETS REPRESENTATIVE: _____

4. DESCRIPTION OF WORK:

5. EFFECTIVE DATE: _____

6. RESOURCES SUSPENDED:

HOURS	NON-LABOR $$$	DESCRIPTION	REFERENCE OR ATTACHMENTS LIST

7. WORK TO BE CHARGED TO:
CHARGE NUMBER: ☐☐☐☐☐☐☐☐

8. SIGN AND RETURN THIS ORIGINAL FORM TO THE WORK PACKAGE MANAGER IDENTIFIED ABOVE

CONCURRENCE: _____ _____ _____
NAME/SIGNATURE PERFORMING ORGANIZATION DATE

COMMENTS:

Rocky Flats
Environmental Technology Site

4-06C-COEM-CMG-406

REVISION 0

CONSTRUCTION MANAGEMENT CONTROL OF GOVERNMENT-FURNISHED EQUIPMENT (GFE)

APPROVED BY: _____ / G. W. Coles / 4/3/95

Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 5/31/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Quality Review
Subject-matter Expert

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002135

Reviewed for Classification/UCNI
By _____
Date 4/3/95

This procedure supersedes procedure ENG-PILOT-CM-003, Revision 0.

Periodic review frequency: 3 years from the effective date

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1. PURPOSE

This procedure provides the minimum requirements for Construction Management in the management of Government-Furnished Equipment (GFE), including schedules for delivery to Rocky Flats Environmental Technology Site (Rocky Flats), storage, delivery to a job site, and installation of GFE.

2. SCOPE

All GFE must be effectively controlled and monitored while in the possession of the Rocky Flats Site Operating Contractor prior to release to subcontractors. This procedure applies to Construction Management and their interface with other departments to control GFE at Rocky Flats.

This procedure is developed in accordance with 1-C33-COEM-AMN-115, Developing, Processing, and Maintaining E&T Procedures.

This procedure is a total rewrite and revision bars are omitted.

This revision supersedes ENG-PILOT-CM-003.

This revision is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

Construction Management Personnel provide an important interface for tracking, scheduling, receiving, and installation of GFE. Tracking and scheduling begins once Construction Management personnel are advised of the GFE to be supplied for a specific project. This is accomplished through the interface with the Project Team that consists of a Project Customer or user, a Project Manager, a Project Engineer, Subcontract Administrator and other department representatives, as required, by the area and type of project.

The Construction Management Department must ensure that delivery information for long-lead items is received and provided to the subcontractor in a timely manner to allow project scheduling and avoid delays.

3. OVERVIEW (continued)

When GFE arrives at Rocky Flats, Construction Management must ensure that the equipment received matches what was ordered. To achieve this requirement, Construction Management personnel must know the safety or storage level requirements of the project, requirements from the Consolidated Bill of Materials (CBOM) and specifications, tagging requirements, and how to resolve nonconformance conditions. Documentation must also be maintained between the time GFE is purchased and installed.

Construction Management must also ensure that GFE is accepted by the Subcontractor to meet the requirements of scheduling and installation.

4. RESPONSIBILITIES

4.1 Construction Coordinator

Verifies the installation need dates with the installing subcontractor for each item of equipment.

Receives a request from the installing subcontractor at least 48 hours prior to the need date for installation.

Requests pickup/delivery of the equipment from Logistics Support as required by the departmental procedures of Logistics Support, Warehouse Operations, and Receiving and Offsite Shipping.

Arranges for delivery of equipment to the Construction Subcontractor as soon as it is received at the Logistics Support Warehouse when preparations have been made for immediate installation.

Transfers the records to the Project Manager for incorporation into the entire project file upon completion of construction.

4.2 Construction Engineer

Provides Logistics Material Control or Subcontractor with handling and storage requirements for long-term storage.

Interfaces with the Project Engineer to ensure:

- Delivery of GFE required for completion of individual projects.
- Resolution of problems related to GFE.
- Delivery schedules of Long-lead GFE items are received from Project Management.

Ensures that Project Management personnel provide:

- Drawings and design packages documenting the technical requirements for all safety related items.
- A Consolidated Bill of Materials (CBOM) for all augmented quality and safety related items required for the project.
- A listing of all potential requirements for GFE.
- An overall plan for usage of GFE to include delivery lead times and budgets.

4.3 Subcontractor

Receives and signs for GFE when issued for construction.

5. INSTRUCTIONS

5.1 Receiving GFE from Logistics Support Warehouse

NOTE 1 *Any special equipment required to off-load GFE will be supplied as indicated in the construction subcontract.*

NOTE 2 *Construction Engineer or Construction Subcontractor is to be present at time of delivery of GFE to the job site.*

NOTE 3 *Logistics Support will arrange for technical receiving inspection at the Warehouse, Building 130.*

Construction Engineer

[1] Obtain schedule for the receipt of GFE from the Project Engineer.

[2] Provide the schedule for receipt of GFE to the Construction Subcontractor to enable scheduling of construction activities, using Subcontract Technical Provisions, Division 1, Section 01503, Government Furnished Property or GFE Property Form, Appendix 1.

Construction Coordinator

[3] Remove Material Certification Tags (green tags) from all Procurement Level 1 & 2 material.

[4] Record Receiving Inspection Report Sheet (RIRS) numbers on the CBOM.

[5] Make copies of the green tags, and place the copies in the Construction Project H-File (H-9).

[6] Place green tags in an envelope and seal.

[7] Place the sealed envelope in Appendix 10, Miscellaneous and Field Generated Paperwork, of the Integrated Work Control Program (IWCP) Package.

5.1 Receiving GFE from Logistics Support Warehouse (continued)

[8] Sign the Release of Government Furnished Equipment form, Appendix 2, (RF-46266) indicating the equipment received and the condition of the equipment.

Construction Engineer

[9] Issue a Construction Notice to convey GFE to the subcontractor and include the following information:

- Authorization number or a Work Control number
- Purchase Order (PO) number
- Item number
- Description
- Disposition
- Date received at the Procurement warehouse
- Storage location
- Date of shipment to the job site
- Job site location
- Signature of the subcontractor's representative
- Date received by the subcontractor

[10] Deliver the Construction Notice to the following for concurrence:

- Initiator
- Assigned Engineer
- Area Construction Manager

[11] Obtain the subcontractor's signature on the Construction Notice.

[12] Distribute the original Construction Notice to the subcontractor and copies to the following:

- The requester
- The Area Construction Manager
- The Project Engineer
- The Subcontract Administrator
- The Construction Coordinator

5.1 Receiving GFE from Logistics Support Warehouse (continued)

[13] **IF** the construction subcontract requires delivery of GFE by Rocky Flats, **THEN** contact the Logistics Receiving Warehouse, Building 130, and request delivery of the items of GFE by Rocky Flats Trucking.

Subcontractor

[14] Indicate the receipt of GFE by signing the Integrated Work Control Package, Section 8, Initial Conditions/Prerequisites, and the Construction Notice listing of GFE supplied by the Construction Engineer.

Construction Coordinator

[15] Place the signed Construction Notice in the Construction Project H-File (H-13) to document receipt of the GFE by the subcontractor.

5.2 Receiving GFE for Davis/Bacon Task Orders

NOTE *Any special equipment required to off-load GFE will be supplied in accordance with the construction subcontract.*

Construction Engineer

[1] Obtain schedule for the receipt of GFE from the Project Engineer.

[2] Provide the schedule for receipt of GFE to the Construction Subcontractor on Appendix 1, to enable scheduling of construction activities.

Construction Coordinator

[3] Contact the Operations Scheduler to verify that all required GFE has been consolidated into the Pre-Kit and is ready for release or shipment.

[4] Verify material with subcontractor representative against the CBOM, noting any deficiencies.

[5] **IF** deficiencies are observed,
THEN do **NOT** receive Pre-Kit materials without instruction from the Area Construction Manager or the Manager of Construction Management.

5.2 Receiving GFE for Davis/Bacon Task Orders (continued)

[6] Notify the Project Engineer of any deficiencies.

[7] **WHEN** deficiencies are corrected,
OR instructions are provided by the Area Construction Manager or Manager of Construction Management,
THEN remove Material Certification Tags (green tags) from all Procurement Level 1 & 2 material.

[8] Record Receiving Inspection Report Sheet (RIRS) numbers on the CBOM.

[9] Make copies of green tags, and place the copies in the Construction Project H File (H-9).

[10] Place green tags in an envelope, and seal.

[11] Place sealed envelope in Appendix 10 of the IWCP Package.

Construction Engineer

[12] Issue a Construction Notice to convey GFE to the subcontractor and include the following information:

- Authorization number or a Work Control number
- Purchase Order (PO) number
- Item number
- Description
- Disposition
- Date received at the Procurement warehouse
- Storage location
- Date of shipment to the job site
- Job site location
- Signature of the subcontractor's representative
- Date received by the subcontractor

5.2 Receiving GFE for Davis/Bacon Task Orders (continued)

[13] Deliver the Construction Notice to the following for concurrence:

- Initiator
- Assigned Engineer
- Area Construction Manager

[14] Obtain the subcontractor's signature on the Construction Notice.

[15] Distribute the original Construction Notice to the subcontractor and copies to the following:

- The requester
- The Area Construction Manager
- The Project Engineer.
- The Subcontract Administrator
- The Construction Coordinator

[16] Sign the Release of Government-Furnished Equipment Form (RF-46266) indicating the equipment received and condition of the equipment.

NOTE *Special handling and storage requirements are indicated in the construction subcontract.*

[17] **IF** the subcontractor is to pick up the GFE items,
THEN:

[A] Notify the subcontractor to pick-up the GFE on a specified date and time.

[B] Inform Building 551 Warehouse of scheduled pick up date and time.

[18] **IF** delivery is to be performed by Rocky Flats Trucking,
THEN:

[A] Inform Building 551 Warehouse of delivery location, and schedule delivery.

[B] Inform the subcontractor of the date and approximate time of delivery.

5.2 Receiving GFE for Davis/Bacon Task Orders (continued)

Subcontractor

[19] Pick up or receive items, as notified by Construction Management, in accordance with a Construction Notice.

[20] IF the subcontractor picks up Pre-Kit from Building 551 Warehouse, OR receives Pre-Kit from Rocky Flats Trucking, THEN sign an In-plant Unclassified Material Receipt (RF-46590), Appendix 3, for the GFE.

Construction Coordinator

[21] Ensure that a copy of the Unclassified Material receipt and Construction Notice are placed in the Construction Project H-File (H-13) as documentation of receipt of GFE.

6. RECORDS

Appendix 1 is a Non-Quality Assurance record generated by this procedure.

Construction Coordinator

[1] Maintain all records in accordance with 4-02C-COEM-CMG-402, Project Records Management, as part of the Construction Project H-files or IWCP package.

[2] Transfer the records to the Project Manager for incorporation into the entire project file upon completion of construction.

7. REFERENCES

1-C33-COEM-AMN-115, Developing, Processing, and Maintaining E&T Procedures

4-02C-COEM-CMG-402, Project Records Management

APPENDIX 1
Page 1 of 1

GFE PROPERTY FORM

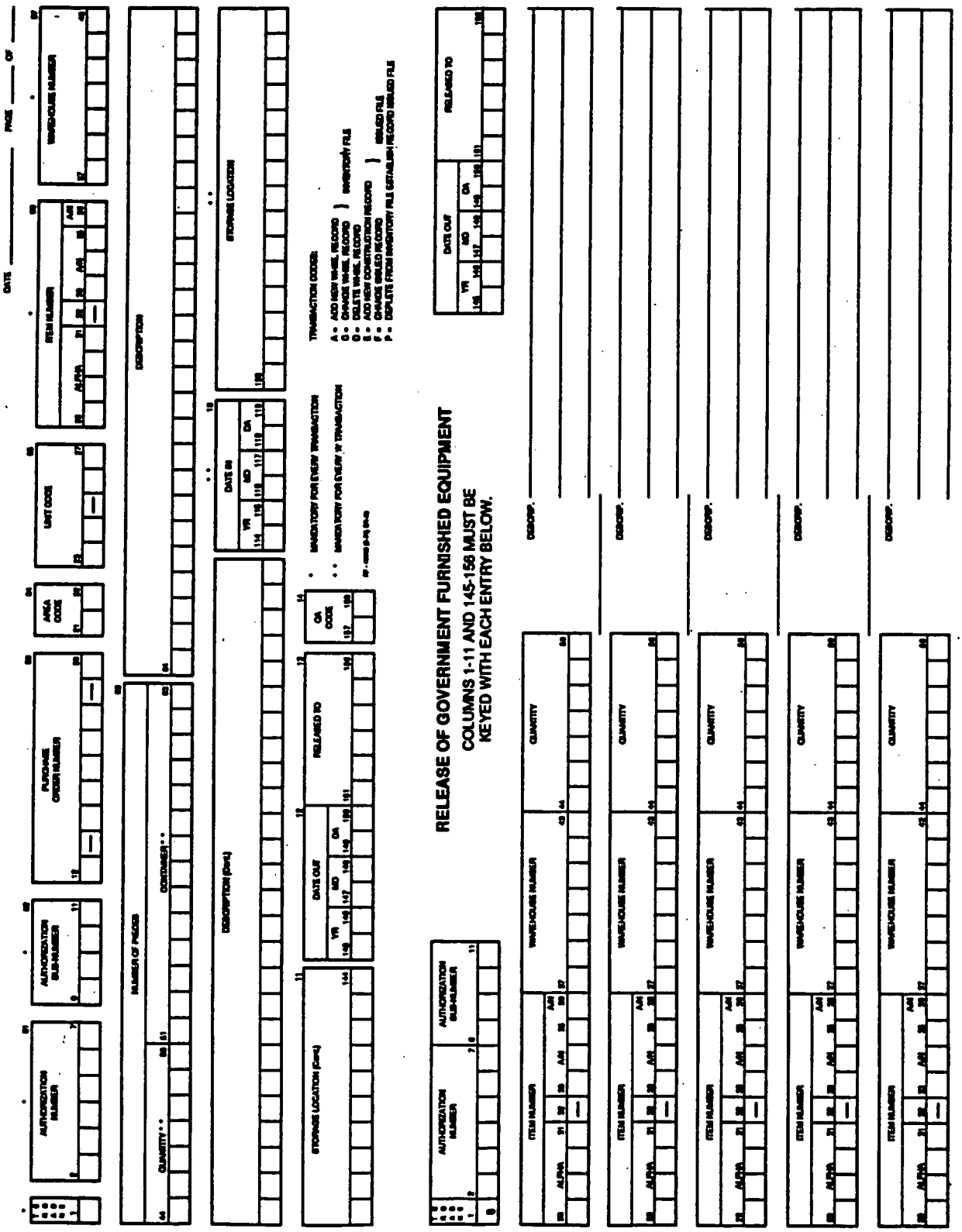
A. The Plant Operating Contractor will furnish to the Subcontractor, as free issue, the following property to be incorporated or installed in the work or used in its performance:

ITEM NUMBER	QUANTITY	DESCRIPTION	DELIVERY DATE AVAILABLE TO SUBCONTRACTOR

B. Such property will be furnished at:

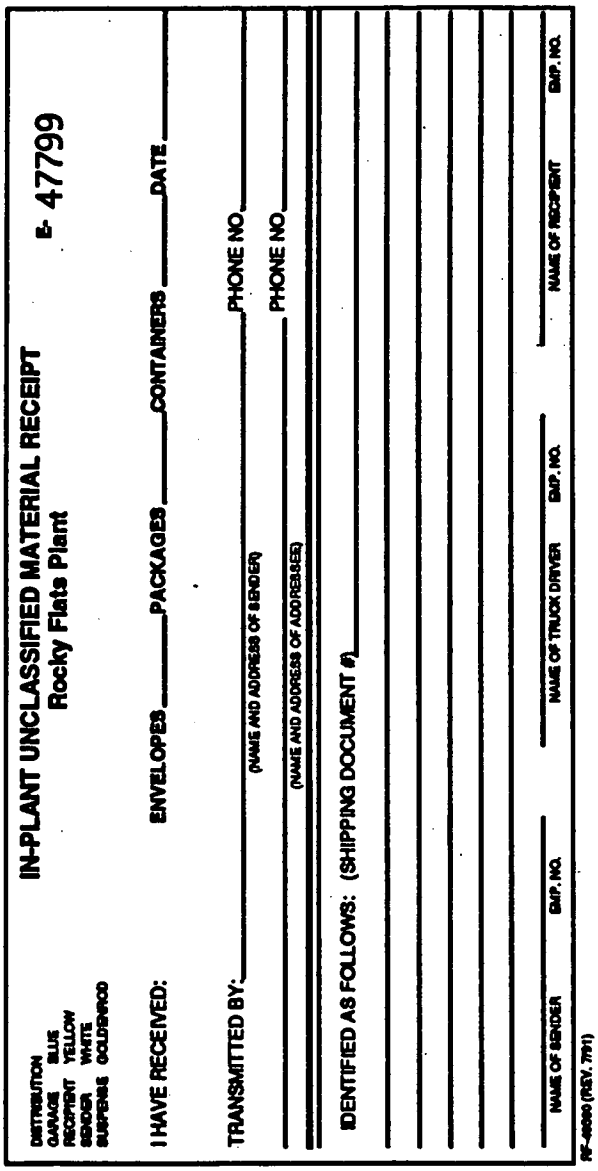
APPENDIX 2
Page 1 of 1

RELEASE OF GOVERNMENT FURNISHED EQUIPMENT



APPENDIX 3
Page 1 of 1

IN-PLANT UNCLASSIFIED MATERIAL RECEIPT



IN-PLANT UNCLASSIFIED MATERIAL RECEIPT
Rocky Flats Plant

E- 47799

DISTRIBUTION
GARAGE BLUE
RECIPIENT YELLOW
SENDER WHITE
SUSPENSE GOLDENROD

I HAVE RECEIVED: ENVELOPES _____ PACKAGES _____ CONTAINERS _____ DATE _____

TRANSMITTED BY: _____ PHONE NO _____
(NAME AND ADDRESS OF SENDER)

_____ PHONE NO _____
(NAME AND ADDRESS OF ADDRESSEE)

IDENTIFIED AS FOLLOWS: (SHIPPING DOCUMENT #) _____

NAME OF SENDER _____ EMP. NO. _____ NAME OF TRUCK DRIVER _____ EMP. NO. _____ NAME OF RECIPIENT _____ EMP. NO. _____

RF-46890 (REV. 7/91)

*U.S.GPO:1992-0-774-002

Rocky Flats
Environmental Technology Site
4-07C-COEM-CMG-407
REVISION 0
CONSTRUCTION SUBCONTRACTING

APPROVED BY: _____ / G. W. Coles / 2-15-95

Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Quality Review
Subject-matter Expert

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002136

Reviewed for Classification/UCNI

By _____

Date 2/16/95

This procedure supersedes procedure ENG-PILOT-CM-011, Revision 0.

Periodic review frequency: 3 years from the effective date

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1. PURPOSE

This procedure outlines the Construction Management responsibilities and instructions in the process of issuing Line Item, Capital, or expense construction projects at the Rocky Flats Environmental Technology Site (Rocky Flats). Expense projects from Facility baseline budgets are addressed in 4-05C-COEM-CMG-405, Davis/Bacon Covered Task Orders.

2. SCOPE

This procedure outlines the steps required to initiate procurement actions to issue Subcontracts for construction. Construction Management personnel have the primary responsibility for initiating such actions. The procedure addresses the following topics:

- Assist Procurement in assembling required Subcontract documents for the bid process.
- Negotiate milestone dates during the bid process.
- Conduct pre-bid walk downs of the work site.

This procedure is developed in accordance with 2-C33-COEM-AMN-115, Developing, Processing, and Maintaining Engineering and Safety Services (E&SS) Procedures.

This procedure is a total rewrite and revision bars are omitted.

This procedure supersedes ENG-PILOT-CM-011.

This revision is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

Rocky Flats is a United States Department of Energy (DOE) facility and, as such, the issuance of work by Subcontracting such work is a complicated process that must meet guidelines established in the Federal Acquisition Regulations (FARs) and DOE Acquisition Regulations (DEARs). This procedure is not intended to explain the regulations, but rather to instruct Construction Management personnel about how to initiate the Subcontract process.

3. OVERVIEW (continued)

In general, the Construction Engineer on the project will initiate such Subcontract activities. The Construction Engineer will obtain a copy of the final Title II engineering package. The Construction Engineer will review the package and prepare the Division 1 specifications.

The Division 1 section of the Subcontract document describes general Rocky Flats rules for work in the areas of protection of the site, personnel, and environment. The Division 1 also outlines the usual methods of interface between Rocky Flats operating contractor and Subcontractor personnel.

The Construction Engineer will prepare a Purchase Requisition, as required, and obtain approvals required by procurement procedures. The Construction Engineer and a Subcontract Administrator from the Procurement organization will evaluate the scope of work and determine the Subcontract performance period as well as the milestone dates contained in the Subcontracting process. The Construction Engineer, in collaboration with other Rocky Flats groups, will prepare a solicitation package. This document will be distributed to potential bidders in accordance with procurement procedures.

The project team will evaluate complete/submitted bids for Subcontractor qualifications in terms of price, safety compliance, and ability to perform the work. The Subcontract will be administered in accordance with Construction Management Procedures, and Procurement Procedures, and the Subcontract documents that formed the basis of the bid.

4. DEFINITIONS

Project Team. The Project Team consists of representatives from the following Rocky Flats organizations:

- Project Management (Project Manager)
- Occupational Safety (Safety Engineer)
- Project Engineering (Project Engineer)
- Cost Estimating (Cost Engineer)
- Construction Management (Construction Engineer/Coordinator)
- Procurement (Subcontract Administrator)

This Team reviews bid documents for completeness in accordance with the solicitation and prepares Technical Evaluations of bids and proposals.

5. RESPONSIBILITIES

5.1 Area Construction Manager

Provides technical training, direction, and support.

5.2 Construction Engineer

Establishes, with the Subcontract Administrator, the dates for advanced notice, bid period, and bid opening.

Prepares Division 1 specification for Subcontract documents.

Assists the Subcontract Administrator in assembling Subcontract documents for the solicitation package.

Prepares Purchase Requisitions, obtains approvals, and submits the Purchase Requisitions to the Subcontract Administrator.

Reviews and approves the technical evaluations.

Assists in the negotiation of Subcontract price and schedule where applicable.

Assists the project team, as required, to determine the successful bidder.

6. INSTRUCTIONS—CONSTRUCTION TYPE

NOTE *The identification of construction type is necessary to ensure that the design package is properly prepared for issuance as a construction document.*

Area Construction Manager

[1] **IF** the work is identified as a Fixed Price Subcontract
THEN go to Section 7.1, Fixed Price Subcontracts.

[2] **IF** the work is to be issued as a task for a Task Order Subcontractor,
THEN go to Section 7.2, Task Order Subcontracts (Issuing Task Orders).

7. INSTRUCTIONS—SUBCONTRACTING

7.1 Fixed Price Subcontracts

This section describes the steps required to prepare and issue solicitations for bids, and to provide reviews before awarding Fixed Price Subcontracts for construction.

Construction Engineer

[1] **WHEN** the Engineering Order containing the Title II Final Design and Statement of Work is received,
THEN complete the Division 1 specification.

[2] Prepare a Purchase Requisition (RF-1570) to request that a fixed price Subcontractor be contracted to perform work in accordance with the plans and specifications contained in the Engineering Order.

[3] Obtain all required signatures, including the Project Manager, to authorize the Purchase Requisition.

[4] Submit the following to the Procurement Department:

- Statement of Work
- Engineering Order
- Davis/Bacon Determination
- Cost Estimate
- Purchase Requisition

[5] Assist the Subcontract Administrator by:

- Ensuring adequate time is allowed for all phases of the project.

- Verifing this project has been properly assigned in accordance with the DOE Davis/Bacon determination letter from DOE.

7.1 Fixed Price Subcontracts (continued)

[6] Verify that the following listed items of the bid solicitation document are included:

- General Provisions and Invitation For Bid (IFB) - Procurement
- Contract Labor Agreement - Engineering Document Control
- Davis/Bacon Wage Rates - Engineering Document Control

NOTE *Procurement will determine how many copies of the solicitation are required to be reproduced for potential bidders.*

[7] Ensure that the solicitation is reproduced through Engineering Document Control by the committed date.

Construction Engineer

[8] Coordinate a pre-bid walk through on the date determined by Rocky Flats Subcontract Administrator with:

- All potential bidders.
- Construction Management.
- Cost Estimating.
- Project Engineer.
- Others, as required.

The pre-bid walk through gives all potential bidders the opportunity to see the work site and identify any areas of concern or items that require clarification before submitting bids and entering into a Subcontract. Issues raised during the pre-bid walk will be addressed by Rocky Flats representatives, as appropriate. Responses will be issued to all bidders by the Subcontract Administrator in the form of Addenda to the Solicitation. Such Addenda become part of the Subcontract Document.

[9] Conduct and attend a pre-construction meeting with the successful Subcontractor.

[10] **WHEN** the Subcontract has been awarded,
THEN request that the Subcontract Administrator issue a Notice to Proceed to the Subcontractor.

7.2 Task Order Subcontracts (Issuing Task Orders)

NOTE *Guidance for use in the preparation of Statements of Work can be obtained from the Procurement department. The deliverables section of the Statement of Work contains a listing of the required submittals specific to the task order.*

Construction Engineer

[1] Prepare a Purchase Requisition (RF-1570) to request that the onsite Subcontractor be contracted to perform work in accordance with the plans and specifications contained in the Engineering Order.

[2] Obtain all required signatures, including the Project Manager, to authorize the Purchase Requisition.

[3] Submit the following to the Procurement Department:

- Statement of Work
- Engineering Order
- Davis/Bacon Determination
- Cost Estimate
- Purchase Requisition

[4] Verify that a Cost Engineer has evaluated the Subcontractor's proposals by comparing the proposals to the independent estimate produced during the review process to ensure construction package completeness (Title II review).

[5] Assist the Subcontract Administrator in determining the task order price.

[6] **WHEN** the Subcontract has been awarded,
THEN request that the Subcontract Administrator issue a Notice to Proceed to the Subcontractor.

8. RECORDS

The following are Quality Assurance Records generated by this procedure:

- Subcontract documents
- Bid record
- Any generated review documents

Construction Engineer

[1] Transmit the documents to the Construction Coordinator for inclusion in the H-File in accordance with 4-02C-COEM-CMG-402, Project Records Management, and 1-77000-RM-001, Records Management Guidance for Records Sources.

Construction Coordinator

[2] Maintain documentation in the Construction Project H-File until project completion.

[3] Deliver the entire Construction Project H-File to the Project Manager for record retention in accordance with 4-02C-COEM-CMG-402, Project Records Management.

9. REFERENCES

1-77000-RM-001, Records Management Guidance for Records Sources

2-C33-COEM-115, Developing, Processing, and Maintaining Engineering and Safety Services (E&SS) Procedures

4-02C-COEM-CMG-402, Project Records Management

4-05C-COEM-CMG-405, Davis/Bacon Covered Task Orders

Rocky Flats
Environmental Technology Site
4-08C-COEM-CMG-408
REVISION 0
SUBCONTRACTOR SUBMITTALS

APPROVED BY: [signature] / G. W. Coles / 1-18-95
Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Subject-matter Expert
Quality Review

USE CATEGORY 3

ORC review not required

Reviewed for Classification/UCNI

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94-DMR-002137

By Mary K. Fiore (U/NU)

Date 1/18/95

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1. PURPOSE

This procedure provides instructions on receiving, routing, review, and distribution of subcontractor submittals.

2. SCOPE

This procedure applies to construction management and construction subcontractors at the Rocky Flats Environmental Technology Site.

This procedure addresses the routing, review, and distribution of subcontractor submittals.

This revision is a total rewrite and revision bars are omitted.

This revision supersedes ENG-PILOT-CM-006, Revision 0.

This revision is designated Revision 0 because the procedure number has been changed.

3. RESPONSIBILITIES

3.1 Construction Coordinator

Maintains a copy of each submittal in the construction project H-file in accordance with 4-02C-COEM-CMG-402, Project Records Management.

3.2 Construction Engineer

Receives submittals from subcontractors and oversees the processing of submittals through Construction Management, Project Engineering, and the Fire Department, as applicable.

3.3 Construction Management Clerk

Prepares Construction Transmittal forms (Appendix 1) and maintains a log of all Construction Transmittals. Maintains a transmittal log book for all subcontractor's submittals.

4. INSTRUCTIONS

NOTE *Submittals involving a Fire Protection system require 10 copies instead of the standard 8 copies.*

Construction Management Clerk

[1] Receive submittals from the Construction Engineer.

[2] **WHEN** the subcontractor submittal is received,
THEN prepare a Construction Transmittal form, Appendix 1, completing Sections A, B, D.1, and E.

[3] Place a copy of the Transmittal form and submittal in the transmittal log for each construction project.

[4] Deliver the original and six copies of the Transmittal form and submittals to the Construction Engineer.

Construction Engineer

[5] Deliver the Transmittal form with all attachments to the appropriate reviewers in Project Engineering.

[6] Ensure that the Project Engineer coordinates the review of the submittal by:

- Project Engineer
- Architect-Engineer
- Fire Department
- Any other reviewers deemed appropriate

[7] Ensure that the Project Engineer performs the following:

- Stamp and sign all copies, noting the final disposition
- Return the submittal to the Construction Engineer
- Provide comments with submittals that were not approved as submitted

4. INSTRUCTIONS (continued)

[8] **WHEN** the review is completed,
THEN pick up the original and four copies of the Transmittal form and submittals from Project Engineering.

[9] Deliver the following to the subcontractor for signature:
- The original
- Four copies of the Transmittal form
- Four copies of the submittal

[10] Receive the following from the subcontractor:
- The original
- Three copies of the Transmittal form
- Three copies of the submittal

[11] Transmit the following to the Construction Management Clerk:
- The original
- Two copies of the Transmittal form
- Two copies of the submittal

Construction Management Clerk

[12] Maintain the original Transmittal form in the transmittal log.

[13] Transmit one copy of reviewed submittal to the Construction Coordinator and one copy to Procurement.

5. RECORDS

The Construction Transmittal form becomes a part of the final file produced by the combination of the Construction Project H-file and the Project Manager file.

Construction Coordinator

[1] Maintain the Construction Transmittal form as part of the Construction Project H-file in accordance with 4-02C-COEM-CMG-402, Project Records Management.

6. REFERENCES

4-02C-COEM-CMG-402, Project Records Management

EG&G ROCKY FLATS

CONSTRUCTION TRANSMITTAL

A. Date _____ CC:PM _____

TO PE RECIPIENT _____ Bldg. _____
Or PE's Alternate

CONTRACT NO. _____

AUTH. NO. _____

PROJECT TITLE _____

SUBCONTRACTOR NAME _____

B. _____ Sets submitted for your REVIEW AND APPROVAL (listed and identified at right)

*Please RETURN ____ sets on or before _____ to Clerk, CM AREA Office, _____ telephone _____

* _____ Sets of FINAL MANUALS are submitted (list at right).

C. INSTRUCTIONS from CPFF Contractor only:

* _____ Sets of submittals to Eng. for/to PE for EG&G (Buyer's) records (listed and identified at right.)

* _____ Sets to be retained by Eng. (identified at right.)

D. TRACKING RECORD:

1) Date _____ transmitted by CM for review

CLERK _____
Construction Management

2) Reviewed by:

A-E _____
Name Date

PE _____
Name Date

*3) Date _____ receipt of submittals returned to CM

4) Date _____ transmitted to Subcontractor (see Note-1).

5) Date rec'd _____ _____
Signature of Subcontractor

**6) SUBCONTRACTOR to return one of signed copy of form to CM

7) Date _____ CM RECEIVED COPY FROM SUBCONTRACTOR.

E. LISTING OF TRANSMITTED ITEMS

Seller or Manufacturer	Item/ Description	Drawing No.

Note-1 The above items are returned herewith. The items/material have been A-E or EG&G reviewed with action taken as noted:

☐ APPROVED ☐ APPROVED AS CORRECTED

☐ NOT APPROVED ☐ REVISE AND SUBMIT

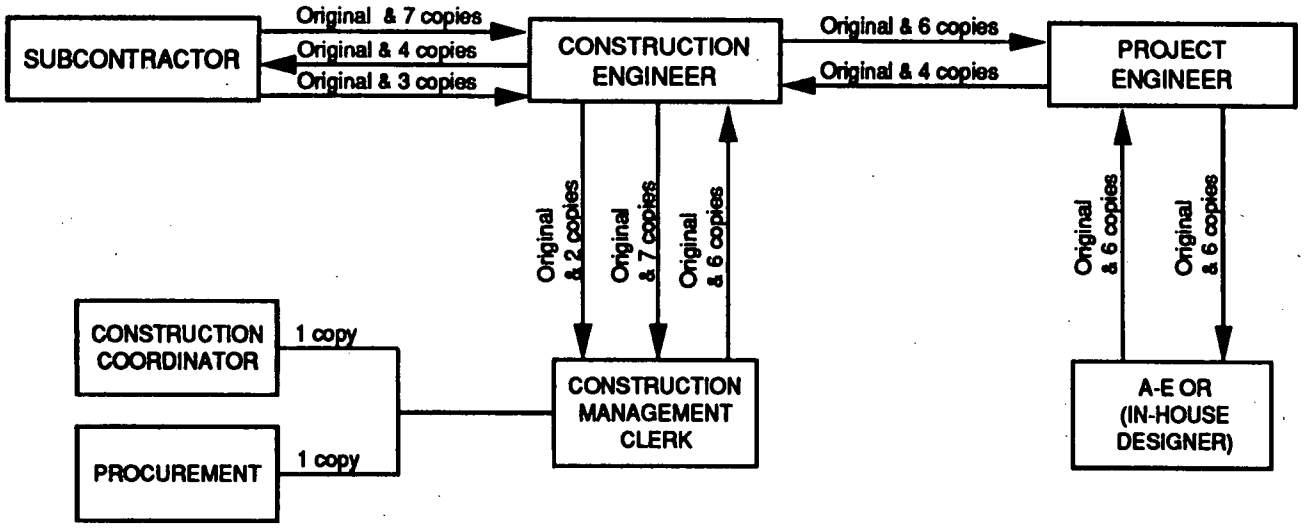
Approval if for conformance in adaptation to the design concept of the plans and specifications and for compliance with these contract documents.

CMG-408/1-1(1) 03/10/95

SUBCONTRACTOR SUBMITTALS (03/10/95) 4-08C-COEM-CMG-408 REVISION 0 PAGE 8

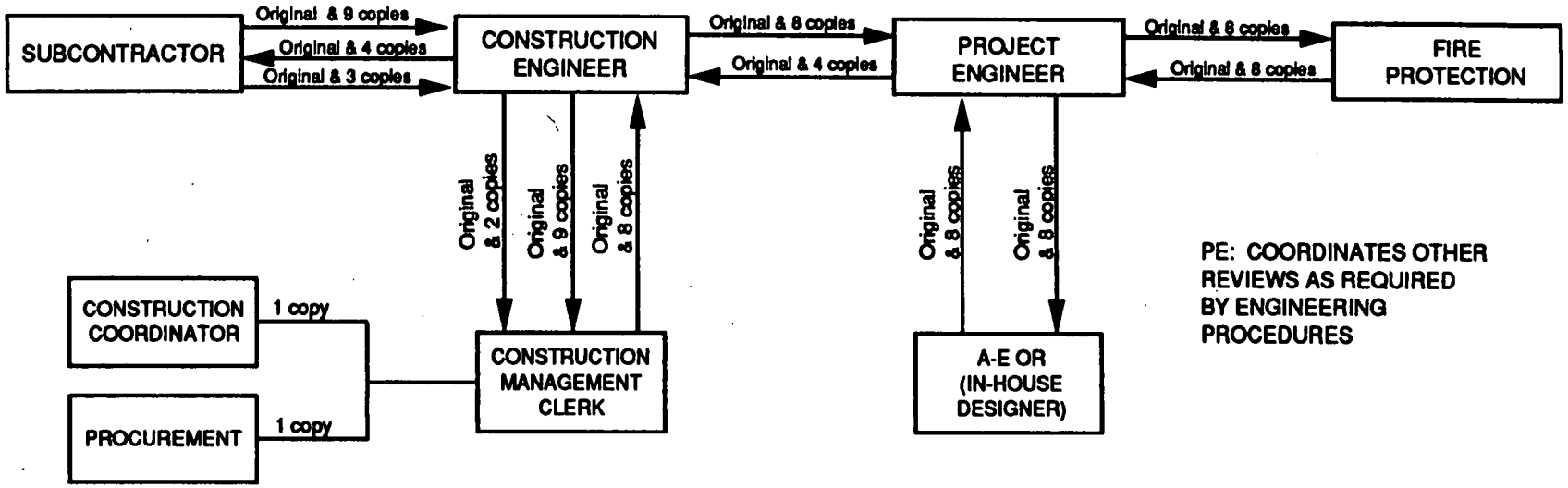
APPENDIX 1
Page 1 of 1

SUBCONTRACTOR SUBMITTALS (EXCEPT FIRE PROTECTION)



1. Subcontractor submits the original plus 7 copies for review to the Construction Engineer.
2. Construction Management Clerk logs submittal, prepares transmittal form, keeps one copy of the submittal in a pending file, and sends original plus 6 copies of the submittal to the PE.
3. The Project Engineer reviews comments from designers, resolves any conflicts, indicates the review action (approved, not approved, approved as corrected, or revise and resubmit), and signs each submittal.
4. The Project Engineer transmits original plus 4 copies to the Construction Engineer.
5. The Construction Engineer transmits original plus 4 copies to subcontractor, receives back original plus 3 copies, and transmits original plus 2 copies to the Construction Management Clerk.
6. The Construction Management Clerk transmits 1 copy to Procurement and 1 copy to the Construction Coordinator, and retains the original.

SUBCONTRACTOR SUBMITTALS (FIRE PROTECTION)



1. Construction subcontractor submits the original plus 9 copies for review to the Construction Engineer.

2. Construction Management Clerk logs submittal, prepares Transmittal form, keeps one copy of the submittal in a pending file, and sends original plus 8 copies of the submittal to the PE.

3. The Project Engineer coordinates review of Fire Department and A-E, reviews comments, resolves conflicting comments, indicates review action (approved, not approved, approved as corrected, revise and resubmit, rejected), signs each submittal, and returns the original and 4 copies to the Construction Engineer.

4. The Construction Engineer transmits original plus 4 copies to subcontractor, receives back original plus 3 copies, and transmits original plus 2 copies to the Construction Management Clerk.

5. The Construction Management Clerk transmits 1 copy to Procurement, and retains the original.

RFPF - 1000.01 (5/95)
Formerly RF-47940

Page 1 of 1

Document Modification Request

Originator

Printor Type all information (except signatures). Process procedures in accordance with 1-A01-PROC DEV-400, Procedure Process.

25. DMR No. 96-DMR-000106

1. Name/Phone/Pager/Location: ...rry Weiser X5447/7335Building 130 C218

2. Date: 01/29/96

3. Existing Document Number and Revision: 4-09C-COEM-CMG-409, Revision 1

4. Document Type: ■ Procedure ☐ Plan ☐ Other

5. Document Title: Construction Field Changes

6. Item	7. Page	8. Step	9. Proposed Modification
1	2		Update the LOEP
2	8	5.2[1]	Change: "COEM-DES-255, Engineering Change Requests (ECRs)" to "1-V51-COEM-DES-210, Design Process Requirements."
3	11	5.3[1]	Change twice in same step: "DES-255" to "1-V51-COEM-DES-210."
4	15	7	Change: "2-D46-COEM-DES-255, Engineering Change Request" to "1-V51-COEM-DES-210, Design Process Requirements."

10. Item	10a. Justification (reason for modification, EJO #, TP #, etc.)
1	Required by the PPG
2	ECRs are included in 1-V51-COEM-DES-210 and COEM-DES-255 will be deleted in the near future.
3	ECRs are included in 1-V51-COEM-DES-210 and COEM-DES-255 will be deleted in the near future.
4	ECRs are included in 1-V51-COEM-DES-210 and COEM-DES-255 will be deleted in the near future.

Originator's Supervisor

11. [X] Process ☐ Do not Process (state reason in Block 10a) — Thomas L. McLean (print/sign/date) [signature] 1/30/96

12. [X] Process (Complete Blocks 13-22) ☐ Do not Process (state reason in Block 10a) — L. Reed Bailey (print/sign/date) [signature] 1-31-96

13. New Document/ Rev No. (if new or changed)

Complete either Section 14a. or 14b., as applicable. For procedures, attach completed Procedure Modification Worksheet from 1-A01-PROC DEV-400.

14a. Type of Complete Modification: ☐ New ☐ Revision ☐ One-Time-Use ☐ Cancellation

14b. Changes: (check all that apply.) ☐ Intent Change ☐ Editorial Correction [X] Nonintent Change [X] Regular ☐ Interim Approval Requested - Needed for Immediate Use (14-day limit for obtaining final approval)

Additional Attributes: ☐ Temporary ☐ One-Time-Use ☐ Limited Distribution

15. ERM Change Control Board Required: ☐ Yes [X] No (Applicable only to new procedures, revisions, and intent changes.)

List the reviewing disciplines in Block 16. After concurrence has been obtained (in accordance with 1-A01-PROC DEV-400), enter the name of the reviewer followed by /s/ in block 17. If the reviewer indicates *No comments*, the review signature constitutes concurrence. Enter the date concurrence is obtained in Block 18.

16. Organization	17. Reviewer/Concurror	18. Date	16a. Organization	17a. Reviewer/Concurror	18a. Date
Fac. Conf. Mgmt.	Thomas L. McLean /S/	1/30/96			
SME	L. Reed Bailey /S/	1/31/96			

19. Assigned SME/Phone/Pager/Location: L. Reed Bailey X4581/1764 Building 130 C230

20. Cost Center: 3077

21. Charge Number: 820111

22. Requested Completion Date: 02/05/96

23. Prescreen/Screen/USQD Number: N/A

24. Independent Safety Review Meeting and Date: N/A

25. After obtaining ALL required signatures: Responsible Manager's Approval (print/sign/date) (Not required for New procedures or Revisions): L. R. Bailey [signature] 2-1-96

27. Effective Date: 2/5/96

28. Expiration Date (if applicable)

Reviewed for Classification/UCNI
BY [signature]
DATE 2-1-96

PADC-97-00075

Rocky Flats
Environmental Technology Site
4-09C-COEM-CMG-409
REVISION 1
CONSTRUCTION FIELD CHANGES

APPROVED BY: /s/ G. W. Coles / G. W. Coles / 03/15/95
Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 04/28/95

USE CATEGORY 4

ORC review not required.

Reviewed for Classification/UCNI

By /s/ D. E. Hepler

Date 03/16/95

This procedure supersedes procedure 4-09C-COEM-CMG-409 Revision 0.

Periodic review frequency: 4 years from the effective date

PADC-97-00075

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Pages	Effective Date
1	04/28/95		
2	02/05/96		
3-7	04/28/95		
8	02/05/96		
9-10	04/28/95		
11	02/05/96		
12-14	04/28/95		
15	02/05/96		

The following DMRs for change are active for this procedure:

96-DMR-000106

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1. PURPOSE

This procedure describes the steps required to incorporate changes to Construction subcontracts after such subcontracts have been awarded.

2. SCOPE

This procedure applies to Construction Management (CM) personnel and subcontractors involved in the administration, or change, of Construction subcontracts. Design changes made before bids are opened are issued as addenda to the solicitation for bid in accordance with Procurement procedures. This procedure applies only to subcontracts which have been awarded. Procurement processes changes to subcontracts which have not been awarded.

This procedure provides detailed steps for processing:

- Construction Notices
- Construction Field Changes
- Subcontract Modifications

3. DEFINITIONS

Construction Field Change. A document issued by CM to direct changes to a subcontract when any of three conditions are met. The conditions for the use of a Construction Field Change are:

- To avoid a work stoppage or significant cost increase
- To alleviate a health and safety problem
- To avoid damage to a facility or equipment

A Construction Field Change directs a subcontractor to proceed with the change at a not-to-exceed price, before the change is actually incorporated into the subcontract.

3. DEFINITIONS (continued)

Construction Notice. A document issued by CM to a subcontractor providing guidance, clarification, or instruction based on the existing subcontract requirements and plant policies and procedures. Construction Notices do not alter a subcontract in either price or scope. Construction Notices may also be used to track the turnover of Government-Furnished Equipment (GFE) to a subcontractor.

Subcontract Modification. A change to a subcontract requiring a formal request for proposal, a proposal, evaluation, negotiation, and incorporation into the subcontract before implementation of the change. Subcontract Modification is the preferred method of effecting changes to the subcontract.

4. RESPONSIBILITIES

4.1 Construction Engineer

Monitors construction projects to determine the appropriate method to document changes to the project or subcontract, as necessary.

Initiates changes to construction projects, ensuring that all changes are documented on the appropriate forms and that all records are properly filed.

5. INSTRUCTIONS

Construction Engineer

[1] **WHEN** notified that a design change is required,
THEN consult with the assigned engineer to determine how to proceed with problem resolution.

[2] **IF** the change is any of the following:

- Clarification to a subcontract,
- Conveyance of GFE,
- General instructions not requiring a schedule, cost, or scope change,

THEN issue the change as a Construction Notice.

5. INSTRUCTIONS (continued)

[3] **IF** the change is valued less than $25,000, and is required for any of the following:

- To alleviate a health and safety problem,
- To avoid damage to a facility,
- To avoid a significant cost impact,
- To avoid a schedule impact,

THEN issue the change as a Construction Field Change.

[4] **WHEN** a change does **NOT** fit into the categories above,
THEN issue the change as a Subcontract Modification.

[5] Prepare the following in accordance with the appropriate steps in this section:

- Construction Notice
- Construction Field Change
- Subcontract Modification

5.1 Construction Notice

Construction Engineer

[1] Prepare the Construction Notice, and log in the Construction Notice Log.

The notification portion of the Construction Notice is completed in sufficient detail to provide concise instructions to the subcontractor.

5.1 Construction Notice (continued)

[2] **IF** the Construction Notice is used to convey GFE to a subcontractor, **THEN** include the following information on the Construction Notice:

- Authorization number or Work Control number
- Purchase Order (PO) number
- Item number
- Description
- Disposition
- Date received at the Procurement warehouse
- Storage location
- Date of shipment to the job site
- Job site location
- Signature of the subcontractor's representative
- Date received by the subcontractor

[3] Deliver the Construction Notice to the following for concurrence:

- Initiator
- Assigned Engineer
- Area Construction Manager

[4] Obtain the subcontractor's signature on the Construction Notice.

[5] Distribute the original Construction Notice to the subcontractor and copies to the following:

- The requester
- The Area Construction Manager
- The Project Engineer (PE)
- The Subcontract Administrator
- The Construction Coordinator

96-DMR-0001106

5.2 Construction Field Changes for Fixed Price (FP) Subcontracts

Construction Engineer

[1] **IF** the change will result in a plant configuration change as defined in 1-V51-COEM-DES-210, Design Process Requirements,
THEN initiate an ECR in accordance with 1-V51-COEM-DES-210.

[2] **WHEN** the completed ECR is returned from Engineering,
OR no ECR is required,
THEN initiate a Construction Field Change:

[A] Prepare a Construction Field Change.

[B] Assign a number to the Construction Field Change.

[C] Log the Construction Field Change in the Construction Field Change Log.

[3] Attach the ECR to the Construction Field Change.

[4] Estimate the dollar value of the design change, and enter the estimate on the Not-to-Exceed Price line of the Construction Field Change.

[5] **IF** the estimated dollar value of the design change exceeds $25,000,
THEN:

[A] Cancel the Construction Field Change.

[B] Initiate a Subcontract Modification.

[6] Deliver the Construction Field Change to the following for review and signature:

- The Contract Technical Representative
- The Project Manager (PM)
- The Subcontract Administrator

5.2 Construction Field Changes for Fixed Price (FP) Subcontracts (continued)

The signatures obtained for the Construction Field Change indicate the following:

- The Contract Technical Representative's signature indicates that the technical content of the Construction Field Change is appropriate for issue as a Construction Field Change.
- The PMs signature indicates that funding is available.
- The Subcontract Administrator's signature indicates that the Notice to Proceed may be issued.

NOTE *Signing the Construction Field Change does not obligate the subcontractor to perform the work at or below the not-to-exceed price.*

[7] Deliver the Construction Field Change to the subcontractor, and obtain the subcontractor's signature on the original acknowledging receipt.

[8] Deliver a copy of the Construction Field Change to the planner.

[9] Ensure that the change has been incorporated into the Integrated Work Control (IWCP) Program work package before the subcontractor begins work on the project.

[10] Deliver the original Construction Field Change to the Subcontract Administrator.

[11] Distribute copies of the Construction Field Change to:

- The Contract Technical Representative
- The PM
- The Subcontractor
- The Construction Coordinator
- The Construction Clerk

5.2 Construction Field Changes for Fixed Price (FP) Subcontracts (continued)

The subcontractor starts work on and prepares a proposal for the Construction Field Change, and submits the proposal to the Subcontract Administrator. The Subcontract Administrator forwards the proposal to the Construction Engineer.

[12] **IF** the subcontractor's price is greater than the Not-to-Exceed Price line on the Construction Field Change,
THEN:

[A] Notify the Construction Coordinator to stop work on the Construction Field Change.

[B] Modify the Construction Field Change.

[C] Submit the Construction Field Change in accordance with Step [4].

[13] **IF** the proposed cost exceeds $10,000,
THEN submit the proposal to Cost Estimating for a technical evaluation.

[14] **IF** the proposed cost is less than $10,000,
THEN prepare the technical evaluation in accordance with Cost Estimating procedure CES-23, Technical Evaluation and Architect-Engineer (A/E) Check.

[15] **WHEN** the technical evaluation is completed,
AND the Subcontract Administrator initiates a meeting,
THEN negotiate the value and schedule impact of the change, with the:

- Subcontract Administrator
- Subcontractor
- Other project team members

96-DMR-000106

5.3 Construction Field Changes for Captive On-Site Subcontracts/Cost Plus Fixed Fee (CPFF)

Construction Engineer

[1] **IF** the change will result in a plant configuration change as defined in 1-V51-COEM-DES-210,
THEN initiate an ECR in accordance with 1-V51-COEM-DES-210.

[2] **WHEN** the completed ECR is returned from Engineering,
OR no ECR is required,
THEN initiate a Construction Field Change.

[A] Prepare a Construction Field Change.

[B] Assign a number to the Construction Field Change.

[C] Log the Construction Field Change in the Construction Field Change Log.

[3] Attach the ECR or statement of required work to the Construction Field Change.

NOTE A *The not-to-exceed price will be added to the total subcontract price as approved funding.*

NOTE B *The CPFF subcontractor is not required to submit a Cost Proposal, and a Technical Evaluation is not required prior to performing work described by a Construction Field Change.*

[4] Estimate the dollar value of the design change, and enter the estimate on the Not-to-Exceed Price line of the Construction Field Change.

5.3 Construction Field Changes for Captive On-Site Subcontracts/Cost Plus Fixed Fee (CPFF) (continued)

[5] **IF** the estimated dollar value of the design change exceeds $25,000, **THEN:**

[A] Cancel the Construction Field Change.

[B] Initiate a Subcontract Modification.

[6] Deliver the Construction Field Change to the following for review and signature:

- The Contract Technical Representative
- The PM
- The Subcontract Administrator

The signatures obtained for the Construction Field Change indicate the following:

- The Contract Technical Representative's signature indicates that the technical content of the Construction Field Change is appropriate for issue as a Construction Field Change.
- The PMs signature indicates that funding is available.
- The Subcontract Administrator's signature indicates that the Notice to Proceed may be issued.

[7] Deliver the Construction Field Change to the subcontractor, and obtain the subcontractor's signature on the original acknowledging receipt.

[8] Deliver a copy of the Construction Field Change to the planner.

[9] Ensure that the change has been incorporated into the IWCP Program work package before the subcontractor begins work on the project.

5.3 Construction Field Changes for Captive On-Site Subcontracts/Cost Plus Fixed Fee (CPFF) (continued)

[10] Deliver the original Construction Field Change to the Subcontract Administrator.

[11] Distribute copies of the Construction Field Change to:

- The Contract Technical Representative
- The PM
- The Subcontractor
- The Construction Coordinator
- The Construction Clerk

5.4 Subcontract Modification

Construction Engineer

[1] **WHEN** Engineering issues an ECR or an Engineering Order (EO), **THEN** prepare a Purchase Requisition (PR) in accordance with 1-4600-PROC-001, Requisitioning Items and Services, authorizing Procurement to fund the change.

[2] Attach a copy of the ECR or the EO to the PR, and forward the package to the Subcontract Administrator.

The Subcontract Administrator prepares and issues the Request for Proposal.

[3] Prepare a Request for Estimate in accordance with the Cost Estimating procedure CES-2, Request for Estimate and Estimate Package.

[4] Attach a copy of the ECR or EO to the Request for Estimate, and forward the package to Cost Estimating.

Cost Estimating prepares an independent estimate. The subcontractor submits a proposal to the Subcontract Administrator.

5.4 Subcontract Modification (continued)

[5] **WHEN** the Subcontract Administrator receives the proposal,
THEN obtain a copy of the proposal.

[6] **IF** the proposed cost exceeds $10,000,
THEN submit the proposal to Cost Estimating for a technical evaluation.

[7] **IF** the proposed cost is less than $10,000,
THEN:

[A] Obtain a copy of the Independent Estimate.

[B] Prepare the technical evaluation in accordance with Cost Estimating procedure CES-23.

[8] **WHEN** the technical evaluation is completed,
THEN initiate a meeting, to negotiate the value and schedule impact of the change with the:

- Subcontract Administrator
- Subcontractor
- Other project team members

[9] **WHEN** the Subcontract Administrator issues a formal change notice to the subcontractor and distributes copies of the change notice to the Construction Engineer and the PM,
THEN deliver a copy of the change notice to the planner.

[10] Ensure that the change has been incorporated into the IWCP Program work package before the subcontractor begins work on the project.

[11] Ensure that the subcontractor implements the design change.

6. RECORDS

Construction Coordinator

[1] Process records generated as a result of performance of the procedure in accordance with COEM-CMG-402, Project Records Management.

7. REFERENCES

CES-2, Request for Estimate and Estimate Package

CES-23, Technical Evaluation and A/E Check

1-V51-COEM-DES-210, Design Process Requirements

1-46000-PROC-001, Requisitioning Items and Services

4-02C-COEM-CMG-402, Project Records Management

96-DMR-000106

Rocky Flats Plant

4-10C-COEM-CMG-410

REVISION 0

CONSTRUCTION DAILY LOG BOOK

APPROVED BY: _____ / Gary Coles _____ 7/1/94
Construction Management — Print Name — Date

States that to the best of my knowledge, the necessary and sufficient Requirements, Codes, and Standards are met.

Responsible Organization: Construction Management Effective Date: 8-5-94

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Area Construction Manager, Site Area
Area Construction Manager, 700 Area
Area Construction Manager, 400/800 Area
Area Construction Manager, Protected Area
Area Construction Manager, Special Projects

USE CATEGORY 4

ORC review not required

The following have been incorporated in this revision:
94-DMR-000174

Reviewed for Classification/UCNI
By R.T. Kohla (UNU)
Date 7/1/94

Periodic review frequency: 4 years from the effective date

LIST OF EFFECTIVE PAGES

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1. PURPOSE

This procedure provides the minimum guidelines for providing the Construction Daily Log Book documentation required during construction projects at the Rocky Flats Plant, and ensures the consistency of the required reporting.

2. SCOPE

This procedure applies to the Construction Coordinators and Area Construction Managers who document subcontractor performance on a daily basis.

This procedure addresses the following topics:

- Construction Daily Log Book preparation
- Construction Daily Log Book entries
- Construction Daily Log Book corrections
- Construction Daily Log Book closeout

3. RESPONSIBILITIES

3.1 Area Construction Manager

Ensures that a qualified project representative is appointed to act during the absence of the primary Construction Coordinator.

Ensures that a Construction Daily Log Book is maintained for each construction project.

3.2 Construction Coordinator

Observes the daily work at a construction project, and records observations in the Construction Daily Log Book.

Ensures that entries made in the Construction Daily Log Book are complete and concise.

Maintains the Construction Daily Log Book as part of the construction project file.

4. INSTRUCTIONS

4.1 Construction Daily Log Book Preparation

Construction Coordinator

[1] Clearly print the project name and work control or work authorization number on the front outside cover of the Construction Daily Log Book.

[2] Clearly print the following information on the title page of the Construction Daily Log Book (see Figure 1, Log Book Title Page):

- Project name - the title of the project as provided by Engineering Technologies
- Contract number - the work control or work authorization number, followed by the task order number issued to the subcontractor by Procurement
- Subcontractor - the name of the subcontractor performing the work
- Volume number

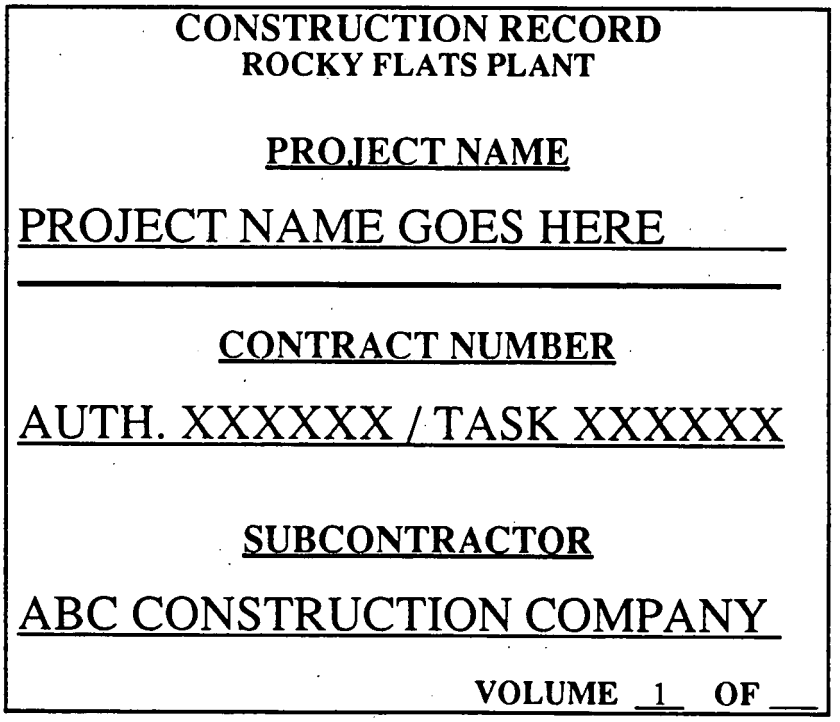

Figure 1, Log Book Title Page

4.1 Construction Daily Log Book Preparation (continued)

[3] **WHEN** the subcontractor starts work,
THEN begin daily record keeping in the Construction Daily Log Book.

4.2 Daily Entries

NOTE 1 *The Construction Coordinator or an alternate appointed by the Area Construction Manager makes all Log Book entries.*

NOTE 2 *All entries are made in black ink, and are legible, concise, and complete.*

Construction Coordinator

[1] Record the work control or work authorization number on the Authorization or Subcontract Number line.

[2] Record the date of the Construction Daily Log Book entry (for example, November 15, 1993) on the Date line.

[3] Record the day of the week (for example, Monday) on the Day line.

NOTE *The pages are numbered sequentially until the project is completed or the book is full.*

[4] Record the page number on the "Sheet _____" line.

[5] Leave the "of _____" line blank.

[6] **IF** multiple pages are required for a single day's entry,
THEN number the additional sheets by adding a letter to the sheet number.

4.2[6] EXAMPLE—Numbering Sheets.

The first page:	Sheet 1 of ___
The second page:	Sheet 1A of ___

[7] Print the name of the Inspector on the Inspector line.

4.2 Daily Entries (continued)

[8] Indicate the weather conditions in the Weather box by checking (√) the appropriate block for both a.m. and p.m.

[9] Record the number of workers by craft in the Work Force box.

This entry indicates only those craft persons who actually performed work on that day.

[10] Total the number of all craft persons working on the project on the day of the Construction Daily Log Book entry.

[11] Record the major equipment used on the project under the Equipment heading.

[12] Document the following under the Progress heading:

- Work being performed by the subcontractor personnel
- Functions provided by plantsite departments such as:
  - — Facilities Inspection
  - — Industrial Hygiene
  - — Maintenance
  - — Fire Department
- Services provided by Wackenhut Services Incorporated
- Any other items enhancing the Log

[13] Document any event which has an impact on project completion under the Delays heading.

Such delays include but are not limited to:

- Weather.
- Downtime.
- Job stoppage.
- Safety.
- Funding.

[14] Document any events or equipment that are causing a problem under the Problems/Resolutions heading.

4.2 Daily Entries (continued)

[15] **IF** the problem is resolved,
THEN document the resolution under the Problems/Resolutions heading.

[16] **IF** the problem is **NOT** resolved,
THEN document the following under the Problems/Resolutions heading:

- The impact of the problem on the project
- Who will resolve the problem
- When the problem is expected to be resolved

[17] Record the following under the Remarks section:

- Safety inspections
- Completion of the weekly safety report
- Other information which may be of significance in the future

[18] Document all meetings which are held regarding the project under the Meetings/Subject section.

Examples of meetings to be recorded, in this section, include:

- Safety meetings.
- Plan of the Day meetings.
- Engineering meetings.
- Roundtable discussions.

Area Construction Manager

[19] Periodically review the Construction Daily Log Book to ensure that all entries are made correctly and completely.

4.3 Construction Daily Log Book Corrections

NOTE *Only the person who made an entry is authorized to correct the entry.*

Construction Coordinator

[1] **WHEN** errors are found in an entry in the Construction Daily Log Book, **THEN:**

[A] Draw a single line through the entry.

[B] Initial and date the lined-out entry.

The original entry is to be readable through the lined-out entry.

4.4 Construction Daily Log Book Closeout

Construction Coordinator

[1] Make an entry in the Construction Daily Log Book indicating that the project has been completed and transfer has been documented in accordance with 4-17C-COEM-CMG-417, Construction Closeout.

[2] Enter the total number of pages in the "Sheet _X_ of ___" line on every page of the Construction Daily Log Book.

[3] Enter the total number of volumes in the "Volume _X_ of ___" line on the cover page of the Construction Daily Log Book.

4.4[2] and [3] EXAMPLE—Entering Number of Pages and Volumes

Sheet 98 of 100
Sheet 99 of 100

Volume 1 of 2
Volume 2 of 2

5. REFERENCES

4-17C-COEM-CMG-417, Construction Closeout

Rocky Flats
Environmental Technology Site
4-11C-COEM-CMG-411
REVISION 0
WEEKLY STATUS REPORT

APPROVED BY: _____ / G. W. Coles / 10-15-95

Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Quality Review
Subject-matter Expert

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002138

Reviewed for Classification/UCNI
By _____ UNC
Date 2/16/95

This procedure supersedes procedure ENG-PILOT-CM-004, Revision 0.

Periodic review frequency: 3 years from the effective date

PADC-97-00077

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1. PURPOSE

This procedure provides instructions for the reporting of activities on construction projects. It also provides information for entries, updates, and changes which are necessary to correctly report current activities on the Construction Management Weekly Construction Summary, Appendix 1, hereafter referred to as the Weekly Status Report.

2. SCOPE

The application of this procedure is specific to the Construction Management Department and defines only those responsibilities, requirements, and instructions for that department.

This procedure is a total rewrite and revision bars are omitted.

This procedure supersedes ENG-PILOT-CM-004.

This revision is designated Revision 0 because the procedure number has been changed.

3. DEFINITIONS

Weekly Status Report. The common name for the Construction Management Weekly Construction Summary form when completed and signed in accordance with the Instructions in this procedure.

4. RESPONSIBILITIES

4.1 Area Construction Manager

Provides technical training, direction, and support for the personnel under their respective direction.

Reviews information on the Weekly Status Report.

4.1 Area Construction Manager (continued)

Forwards completed Weekly Status Reports to the Construction Management Clerk for distribution.

Acts as Contractor's Technical Representative, as applicable.

4.2 Construction Coordinator

Monitors the physical work performed by a subcontractor during the construction phase of a project.

Provides input to the Construction Engineer for the Weekly Status Report or complete Weekly Status Report, as required.

Maintains all Weekly Status Reports in the Construction Project File (H-2).

Acts as Contractor's Technical Representative, as applicable.

4.3 Construction Engineer

Gathers information from the Construction Coordinator.

Compiles required information on the Weekly Status Report.

Acquires approval for the content of the Weekly Status Report from the Area Construction Manager.

Acts as Contractor's Technical Representative, as applicable.

4.4 Construction Management Secretary/Clerk

Distributes the Weekly Status Reports.

Prepares a Construction Status Summary Report, Appendix 2, from information received from the Weekly Status Report.

5. INSTRUCTIONS

5.1 Preparing the Weekly Status Report

NOTE *Construction projects being performed by the Onsite Subcontractor require the Job Task Number to be placed in the Purchase Order or Task Number blank.*

Construction Engineer

[1] Prepare a Weekly Status Report by entering information in the following areas on the Construction Management Weekly Construction Summary, Appendix 1:

- Purchase Order or Task Number.
- Type of funding
- Type of construction
- Scheduled construction start date
- Scheduled construction completion date
- Authorization number
- Job title
- Subcontractor
- Contract value
- Job description
- Building or areas

[2] Enter the names of the contacts for specific disciplines associated with the construction project next to their functional titles:

- Construction Coordinator.
- Operating Contractor Project Manager.
- Operating Contractor Subcontract Administrator.
- Operating Contractor Construction Engineer.
- Department of Energy Project Manager.
- Architect/Engineer Representative.

5.2 Reporting Project Status on the Weekly Status Report

NOTE *Once a construction project has begun, other specific information will be addressed on a weekly basis.*

Construction Coordinator

[1] Maintain contact with the subcontractor and all other required support organizations to monitor construction project progress and provide information to the Construction Engineer for the following blocks on the Construction Status Summary Report:

- Accomplishments
- Problems
- Planned Activities
- Percent of work complete to date

NOTE *All Weekly Status Reports are due to the Construction Management Secretary, for consolidation and distribution, by close of business on the Friday of the week the reports are due.*

Construction Engineer

[2] Enter the date that the Weekly Status Report is being prepared in the Date area, and the date of the last report prepared in the *Previous Report Date* area.

[3] **IF** this is the first report being prepared,
THEN enter First Report in the *Previous Report Date* area.

[4] Enter the dollar figure for the *Scheduled Cost To Date* to indicate the percent of the contract value that is scheduled to be spent as of the date of the Weekly Status Report.

[5] Enter the dollar figure for the *Actual Cost To Date* to indicate the percent of the contract value that has actually been spent as of the date of the Weekly Status Report.

5.2 Reporting Project Status on the Weekly Status Report (continued)

[6] Enter the percent of work that is scheduled to be completed in the *% Scheduled To Date* area to indicate the amount of work that is supposed to be completed as of the date of the Weekly Status Report.

NOTE 1 *Project Acceptance and Transfer (PA&T) is a part of the construction activities and the project cannot be 100% complete until the PA&T is completed.*

NOTE 2 *Percentages and dollar figures in the* Scheduled Cost To Date, Actual Cost To Date, % Scheduled To Date, and % Complete To Date *may change due to additional work assigned to a project which could affect both cost and schedule.*

[7] Enter the percent of work that has actually been completed in the *% Complete To Date* area to indicate the actual percentage of work completed as of the date of the Weekly Status Report.

[8] **IF** design changes occur,
THEN:

[A] Enter a number in the *Design Change Number* area beginning with number 1 and sequentially numbering changes as they occur.

[B] Enter the new completion date in the *Revised Schedule Completion Date* area to indicate the additional time it will take to complete the project due to a change, as applicable.

[C] Revise the *Scheduled Cost To Date* for a change that will impact the project cost.

[D] Revise the *Contract Value* for a change that will impact the overall subcontract value.

[E] Revise the *% Schedule To Date* for a change that will impact the overall project schedule.

5.2 Reporting Project Status on the Weekly Status Report (continued)

[9] **IF** nonconformances are noted at any time during the course of the project, **THEN** assign a number sequentially, beginning with the number 1, and record the number in the NCR area.

[10] Enter any items of work accomplished or any major equipment deliveries that impact a project under *Accomplishment.*

NOTE *Problems are things such as missed goals, missed equipment deliveries, failure of support organizations to perform scheduled activities, or anything that could be considered problems.*

[11] Enter any items of concern that could cause an adverse condition to a project under *Problems.*

[12] Enter any activities that are to be done in the future under *Planned Activity.*

Planned activities include the key decisional (KD) steps that apply to the project.

[13] Ensure that all names associated with the contact personnel are correct.

[14] **IF** the names that are associated with the contact personnel are **NOT** correct,
THEN change those names to indicate the correct personnel.

[15] Sign or initial the *Update By* area to indicate who updated the Weekly Status Report.

[16] Forward the Weekly Status Report to the responsible Area Construction Manager for review and signature approval.

Area Construction Manager

[17] Sign the Weekly Status Report in the *Construction Manager Approval* area and forward to the Construction Management Clerk responsible for distribution of the report.

5.2 Reporting Project Status on the Weekly Status Report (continued)

Construction Management Secretary/Clerk

[18] Distribute the Weekly Status Report in accordance with 4-02C-COEM-CMG-402, Project Records Management.

[19] Use the information supplied by the Weekly Status Report to compile information for the Construction Status Summary Report, Appendix 2.

6. RECORDS

The following Quality Assurance Records are generated by this procedure:

- Appendix 1
- Appendix 2

Construction Coordinator

[1] File the Weekly Status Report in the Construction Project File (H-2) in accordance with 4-02C-COEM-CMG-402.

7. REFERENCES

4-02C-COEM-CMG-402, Project Records Management

APPENDIX 1
Page 1 of 1

CONSTRUCTION MANAGEMENT WEEKLY CONSTRUCTION SUMMARY

CONSTRUCTION MANAGEMENT
WEEKLY CONSTRUCTION SUMMARY

DATE:
PREV. REPORT DATE:

PURCHASE ORDER/TASK NO:
TYPE OF FUNDING:
TYPE OF CONSTRUCTION:
SCHED. CONST. START DATE:
SCHED. CONST. COMP. DATE:
DESIGN CHANGE NO: (CFC)
REVISED SCHED. COMP. DATE:
NCR:

AUTHORIZATION NO:
JOB TITLE:

SUBCONTRACTOR:
SCHED. COST TO DATE:
ACTUAL COST TO DATE:
CONTRACT VALUE:
% SCHED. TO DATE:
% COMP. TO DATE:

JOB DESCRIPTION:

BLDG. OR AREAS:

ACCOMPLISHMENTS:

PROBLEMS:

PLANNED ACTIVITIES:

CONSTRUCTION COORDINATOR:
OPERATING CONTRACTOR PROJECT MANAGER:
OPERATING CONTRACTOR SUBCONTRACTOR ADMINISTRATOR:
OPERATING CONTRACTOR CONSTRUCTION ENGINEER:
DOE PROJECT MANAGER:
ARCHITECT/ENGINEER REP:
USER:
UPDATE BY:

CONSTRUCTION MANAGER APPROVAL:

_____ DATE: _____

APPENDIX 2
Page 1 of 1

CONSTRUCTION STATUS SUMMARY REPORT

Change	Task	Title	Bldg.	PM	ACM	Con Engr	Constr	Con Coor	NCR O	NCR C	Number Change	Status	Value

Rocky Flats
Environmental Technology Site

4-12C-COEM-CMG-412

REVISION 0

SUBCONTRACTOR'S APPLICATION FOR PAYMENT

APPROVED BY: _____ / G. W. Coles / 12-15-94

Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Quality Review
Subject-matter Expert

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002139

Reviewed for Classification/UCNI
By UNC
Date 2/16/95

This procedure supersedes procedure ENG-PILOT-CM-005, Revision 0.

Periodic review frequency: 3 years from the effective date

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1. PURPOSE

This procedure provides instructions to the Construction Management Department for receiving and processing applications and certificates for payment from Subcontractors performing construction work for the Rocky Flats Environmental Technology Site (Rocky Flats) Operating Contractor.

2. SCOPE

Construction Management is responsible for receiving, processing, and verifying requests for payment from Subcontractors to ensure that the requested dollar amount matches the work performed.

This procedure describes the processes and steps that Construction Management personnel perform from the time a Pay Application is received from the Procurement Department until it is approved for payment.

This procedure is a total rewrite and revision bars are omitted.

This procedure supersedes ENG-PILOT-CM-005.

This revision is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

There are two types of Pay Applications used when Subcontractors submit invoices for payment for projects supported by the Construction Management Group.

Applications for payment from Fixed Priced Subcontractors are made on the Application and Certification for Payment Form (Pay Application) (RF-47116), Appendix 1. Applications for payment from the Onsite Cost Plus Fixed Fee Subcontractor performing construction work at Rocky Flats Site are submitted on a computer-generated invoice.

The Construction Management Contractor Technical Representative reviews and certifies all Subcontractor Pay Applications for projects in the Technical Representative's area of responsibility.

4. RESPONSIBILITIES

4.1 Area Construction Manager

Reviews application for payment with the assigned Construction Coordinator and Construction Engineer to ensure accuracy of work performed against value of payment requested.

Serves as a Contractor's Technical Representative, as applicable.

Approves or disapproves Pay Application, as applicable.

4.2 Construction Coordinator

Receives Pay Application from the Construction Management Clerk.

Reviews Pay Application with the Area Construction Manager and the assigned Construction Engineer to ensure value of work performed against amount of payment requested.

Circulates the Pay Application to obtain the required signatures.

Returns the signed and dated form to the Construction Management Clerk for distribution.

Maintains a copy of the Application and Certification for Payment in the Construction Project H-File (H-8).

Serves as the Contractor's Technical Representative, as applicable.

4.3 Construction Engineer

Reviews the Pay Application with the Project Manager, Area Construction Manager, and assigned Construction Coordinator to ensure accuracy of work performed against value of payment requested.

Serves as the Contractor's Technical Representative, as applicable.

4.4 Construction Management Administrative Lead

Receives requests for payment from the Onsite Cost Plus Fixed Fee Construction Subcontractor.

Submits copies of Pay Applications to the assigned Contractor's Technical Representative for certification.

Logs copies of the approved Pay Applications and tracks the amount billed per month.

4.5 Construction Management Clerk

Receives Pay Applications for Fixed Price Subcontractors from Procurement or Contractor's Technical Representative.

Logs receipt of Pay Applications in the Payment Application Tracking Logbook.

Forwards Pay Applications to the Construction Coordinator to obtain approval signatures.

Receives approved Pay Applications from the Construction Coordinator and enters approval signatures and dates in the Payment Application Tracking Logbook.

Distributes Pay Applications in accordance with the distribution schedule on the form.

4.6 Contractor's Technical Representative

Reviews the Pay Application, as applicable, to ensure that the payment requested by a Subcontractor agrees with the amount of work performed.

5. INSTRUCTIONS

5.1 Processing Fixed Price Subcontractor Pay Applications

Area Construction Manager

[1] WHEN the Application and Certification For Payment Form (Pay Application) is received from Procurement, THEN forward Subcontractor Pay Applications to the Construction Management Clerk.

Construction Management Clerk

[2] Log the following items in the Pay Application Tracking Logbook:

- Date received
- Subcontractor
- Project name
- Subcontract number
- Pay Application number
- Dollar amount of application
- Date sent to construction coordinator

[3] Forward the Pay Application to the Construction Coordinator.

Construction Engineer

[4] Review the Pay Application with the Area Construction Manager and assigned Construction Coordinator to ensure the accuracy of work performed against value of payment requested.

Construction Coordinator

[5] Review the Pay Application with the Area Construction Manager and the Construction Engineer.

[6] Obtain signatures on the Payment Application from the following disciplines:

- Construction Project Coordinator
- Project Manager
- Labor Relations
- Area Construction Manager

APPENDIX 1
Page 1 of 2

CONSTRUCTION MANAGEMENT PLAN

CONSTRUCTION MANAGEMENT STAFF REQUIRED				
Date Submitted:		Date Due:		Date Returned:
Project Title: Charge No.:		Charge No.: Work Package No.:		Work Package Mgr.: Phone:
Constr. Mgr. (CM):		FPM Branch Manager:		
Constr. Engr. (CE): Org. Code/Name:		User Contact: Phone		
X	Project/Services	Charge No./ WBS Code	Authorized Budget	Baseline Completion Date
	Scope Estimate Review			
	Title 1 Design Review (Constructability)			
	Title 1 Estimate Review			
	Title 2 Design Review (Constructability)			
	Title 2 Estimate Review			
	Construction Schedule Prep/Tracking			
	Construction Budget Prep/Tracking			
	Invitation to Bid			
	IWCP Prep			
	Construction			
	As-Built Drawings			
	Project Close Out (PA&T)			
	Other (Specify):			
Special Instructions:				
Attached Documents:			Status Entered: (Initials/Date)	
Contract Accepted (CE):	Date:	Support Request Accepted:		Date:
Contract Accepted (CM):	Date:	Support Request Accepted:		Date:
Obtain Signatures Below After Contract is Completed				
Completed Support Request (CM):	Date:	Completed Support Request (CE):		Date:
Completed Support Request (PM):	Date:			

5.2 Processing Cost Plus Fixed Fee Captive Onsite Subcontractor Pay Applications (continued)

[4] **IF** the Pay Application is correct,
THEN forward the invoice copy to the Construction Coordinator for retention in the Construction Project H-File (H-8).

[5] **IF** the Pay Application is incorrect,
THEN provide written documentation of the discrepancies in letter form to the following:

- Procurement
- Construction Management Manager
- Construction Management Administrative Lead
- Onsite Subcontractor

[6] Arrange a meeting with the following to resolve discrepancies:

- Procurement
- Construction Management
- Onsite Subcontractor

Construction Management Administrative Lead

[7] File Discrepancies Notifications provided by the Contractor's Technical Representative in the Invoice Logbook along with associated pay applications.

[8] Enter the approved dollar amount on the Cost Plus Fixed Fee Task Worksheet.

6. RECORDS

The Application and Certification for Payment Form and the computer-generated invoices are Quality Assurance documents generated by this procedure.

Construction Coordinator

[1] Retain copies of Pay Applications in the Construction Project H-File (H-8) as a permanent record in accordance with 4-02C-COEM-CMG-402, Project Records Management.

7. REFERENCES

4-02C-COEM-CMG-402, Project Records Management

APPENDIX 1
Page 1 of 1

APPLICATION AND CERTIFICATION FOR PAYMENT

APPLICATION AND CERTIFICATION FOR PAYMENT **DATE:**

TO BUYER PROJECT TITLE: APPLICATION NO:

FROM (CONTRACTOR): PERIOD COVERED:
FROM TO

CONTRACT #: CONTRACT COMPLETION DATE

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for Payment, as shown below, in connection with the Contract.

CHANGE ORDER SUMMARY

	ADDITION	DEDUCTIONS
Change Orders approved in previous months by Owner		
TOTAL		
Approved this Month		
Number Date Approved		
TOTALS		
Net Change by Change Orders		

1. ORIGINAL CONTRACT SUM ..... $_____
2. Net change by Change Orders ..... $_____
3. CONTRACT SUM TO DATE (line 1±2) ..... $_____
4. TOTAL COMPLETED AND STORED TO DATE ..... $_____
5. RETAINAGE:
   a. _____% of Completed Work $ _____
   b. _____% of Stored Material $ _____
   Total Retainage (Line 5a + 5b) ..... $_____
6. TOTAL EARNED LESS RETAINAGE ..... $_____
   (Line 4 less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT
   (Line 6 from prior Certificate) ..... $_____
8. CURRENT PAYMENT DUE ..... $_____
9. BALANCE TO FINISH, PLUS RETAIN AGE ..... $_____
   (Line 3 Less Line 6)

Sample

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the contractor for Work for which previous Certificates for Payment were issued and the payments received from the Owner, and that current payment shown here is now due.

CONTRACTOR:

By:_____ Date:_____

State of:_____ County of:_____

Subscribed and sworn to before me this _____ day of _____, 19___

Notary Public: _____

My Commission expires: _____

APPROVED BY:

CONST. PROJ. COORD._____DATE_____

LABOR RELATIONS_____DATE_____

AREA CONST. MGR_____DATE_____

PROJ. ADMIN_____ DATE_____

DISTRIBUTION: White - Buyer
Yellow - C.P.C.
Green - C. M. Office
Blue - Contractor

RF 47116 (Rev 10/91)

APPLICATION AND CERTIFICATION FOR PAYMENT FORM

Rocky Flats
Environmental Technology Site
4-13C-COEM-CMG-413
REVISION 0

SUPPORT SERVICES FOR CONSTRUCTION PROJECTS

APPROVED BY: _____ / G. W. Coles 12-15-95
Manager, Construction Management, | Print Name | Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Subject-matter Expert
Quality Review

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002140

Reviewed for Classification/UCNI
By _____
Date 2/16/95

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Periodic review frequency: 3 years from the effective date

PADC-97-00079

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1. PURPOSE

This procedure provides instructions for obtaining the support of Rocky Flats Environmental Technology Site (Rocky Flats) organizations who might be required to participate in construction projects to assist in timely start and completion of those projects.

2. SCOPE

This procedure applies to Construction Management personnel and their interface responsibilities with other Service Departments at Rocky Flats. Support requirements from each support group represent a cost in the performance of a construction project and it is the responsibility of the Construction Management department to establish the requirements for such services.

This procedure is a total rewrite and revision bars are omitted.

This procedure supersedes ENG-PILOT-CM-007.

This revision is designated Revision 0 because the procedure number has been changed.

3. RESPONSIBILITIES

3.1 Construction Coordinator

Assists the Construction Engineer in determining the need for support services.

Schedules the support services required for a construction project.

Alerts the Construction Engineer to possible problems and recommends changes.

Interfaces between the support services departments and the Subcontractor or Maintenance, as appropriate.

Completes a daily log to track construction progress.

3.1 Construction Coordinator (continued)

Attends Plan of Day (POD) meetings to assist in the support service requirements.

3.2 Construction Engineer

Determines the need for support services.

Interfaces with the Project Manager to provide information support for a construction project.

Tracks the need for support services throughout the construction phase of a project.

Reports the status of projects on a weekly basis.

Reports concerns, problems, and accomplishments to the Area Construction Manager.

Attends meetings, as applicable, to assist in determining the requirements of support services.

4. INSTRUCTIONS

Construction Engineer

[1] Determine which support organizations will be required to support the proposed construction project upon receipt of the design package or statement of work from the Project Manager or User.

Construction Coordinator

[2] Provide input for determining the need for support organizations as requested by the Construction Engineer.

Construction Engineer

[3] Review the design documents with the Construction Coordinator, and estimate the number of hours required for each support organization.

[4] Complete a Construction Management Plan, Appendix 1, for all support organizations required to support the project.

[5] Complete a Work Authorization, Appendix 2, for Construction Management support of the proposed project.

[6] Distribute documents to the Project Manager or User and to the Construction Coordinator.

Construction Coordinator

[7] **WHEN** a project begins,
THEN attend Plan of the Day meetings, as required, to request support for a project.

[8] Schedule additional support as required on a daily basis.

[9] Maintain a daily log book in accordance with 4-10C-COEM-CMG-410, Construction Project Daily Log, to track and report support, or the lack of support, by the required organizations.

4. INSTRUCTIONS (continued)

[10] Inform the Construction Engineer of the status of organizational support on the project, for inclusion in the Construction Management Weekly Construction Summary Report in accordance with 4-11C-COEM-CMG-411, Weekly Status Report.

Construction Engineer

[11] **WHEN** the Project Manager or User approves a required change to the scope of the project,
THEN modify the support forms, as required.

5. RECORDS

The following Quality Assurance Records are generated by this procedure:

- Appendix 1
- Appendix 2

Construction Coordinator

[1] Maintain all records as part of the Construction Project H-Files in accordance with 4-02C-COEM-CMG-402, Project Records Management.

6. REFERENCES

4-02C-COEM-CMG-402, Project Records Management

4-10C-COEM-CMG-410, Construction Project Daily Log

4-11C-COEM-CMG-411, Weekly Status Report.

APPENDIX 1
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CONSTRUCTION MANAGEMENT PLAN

CONSTRUCTION MANAGEMENT STAFF REQUIRED

Date Submitted:		Date Due:		Date Returned:
Project Title: Charge No.:		Charge No.: Work Package No.:		Work Package Mgr.: Phone:
Constr. Mgr. (CM):		FPM Branch Manager:		
Constr. Engr. (CE): Org. Code/Name:		User Contact: Phone		
X	Project/Services	Charge No./ WBS Code	Authorized Budget	Baseline Completion Date
	Scope Estimate Review			
	Title 1 Design Review (Constructability)			
	Title 1 Estimate Review			
	Title 2 Design Review (Constructability)			
	Title 2 Estimate Review			
	Construction Schedule Prep/Tracking			
	Construction Budget Prep/Tracking			
	Invitation to Bid			
	IWCP Prep			
	Construction			
	As-Built Drawings			
	Project Close Out (PA&T)			
	Other (Specify):			

Special Instructions:

Attached Documents: Status Entered: (Initials/Date)

Contract Accepted (CE):	Date:	Support Request Accepted:	Date:
Contract Accepted (CM):	Date:	Support Request Accepted:	Date:
Obtain Signatures Below After Contract is Completed			
Completed Support Request (CM):	Date:	Completed Support Request (CE):	Date:
Completed Support Request (PM):	Date:		

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Page 2 of 2

CONSTRUCTION MANAGEMENT SUPPORT REQUESTED

Project Title:

Authorization No:

Work Control No:

Constr. Mgr. (CM):

Constr. Engr. (CE):

User Contact:

Phone:

X	REQUIRED SUPPORT	Time MHS	Budget	Concurrence
	Alarms Technicians			
	Clean Water			
	Escorts			
	Facilities Inspection			
	Facilities Quality Engineering			
	Fire Department			
	Health and Safety			
	Industrial Safety			
	Industrial Hygiene			
	Maintenance			
	Operations			
	Planning			
	Plant Power			
	Plant Services (Trucking, Garage, Laborers)			
	Quality Assurance			
	Radiation Monitoring			
	Security (Wackenhut)			
	Subcontract Administration			
	Systems Engineering			
	Telecommunications (LAN and Telephone)			
	Traffic			
	Waste Generator			
	Waste Guidance			
	TOTAL			

Special Instructions:

Attached Documents:

APPENDIX 2
Page 1 of 1

WORK AUTHORIZATION

1. TO: _____
CC: _____ _____
NUMBER NAME

2. ☐ NEW AUTHORIZATION ☐ RE-AUTHORIZATION

3. FROM: _____ _____ _____
NAME/SIGNATURE WORK PACKAGE MANAGER PHONE BLDG

WORK PACKAGE _____ _____
NUMBER TITLE

CENTRAL PLANNING & BUDGETS REPRESENTATIVE: _____

4. DESCRIPTION OF WORK:

5. START DATE: _____ END DATE: _____

6. RESOURCES

HOURS	NON-LABOR $$$	DESCRIPTION	REFERENCE OR ATTACHMENTS LIST

7. WORK TO BE CHARGED TO:
CHARGE NUMBER: ☐☐☐☐☐☐☐☐

8. SIGN AND RETURN THIS ORIGINAL FORM TO THE WORK PACKAGE MANAGER IDENTIFIED ABOVE

CONCURRENCE: _____ _____ _____
NAME/SIGNATURE PERFORMING ORGANIZATION DATE

COMMENTS:

CP&BFRM-004-8/92

Rocky Flats
Environmental Technology Site

4-14C-COEM-CMG-414

REVISION 0

CONSTRUCTION MANAGEMENT LINE CONTROL SAFETY

APPROVED BY: _____ / G. W. Coles 5-6-95

Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 5/31/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Quality Review
Subject-matter Expert

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
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Reviewed for Classification/UCNI
By _____
Date 3/2/95

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PADC-97-00080

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1. PURPOSE

This procedure provides instructions for Construction Management personnel to ensure proper instruction to assist in minimizing accidents and illness in the workplace. It also provides guidance which will enable personnel to identify, prevent, correct, and possibly eliminate potential hazards and unsafe behavior.

2. SCOPE

This procedure applies to Construction Management personnel and all phases and aspects related to their job responsibilities performed and documented at the Rocky Flats Environmental Technology Site (Rocky Flats).

This procedure addresses the following topics:

- Field activities
- Construction Management (CM) Safety Council Meeting

3. OVERVIEW

It is the responsibility of all employees to ensure their own safety. Additional responsibilities are given to personnel who are in a management or lead position, and provide guidance and direction to others. The main focus and priority of Construction Management is the safety and security of Rocky Flats personnel, the public, the environment, facilities, and equipment. The Line Control Safety Program is designed to actively involve all personnel to observe, educate, and participate in becoming health conscious and aware of safety.

4. RESPONSIBILITIES

4.1 Manager of Construction Management

Represents or appoints a designee to represent Construction Management in the Safety Management Council.

Interfaces with the designee if a designee has been previously appointed.

4.1 Manager of Construction Management (continued)

Appoints Safety Supervisors within the Construction Management group.

Ensures that procedures and guidance are available for Construction Management personnel.

4.2 Safety Compliance Coordinator

Serves as the alternate representative of Construction Management to the Safety Management Council.

Provides the necessary interface between Construction Management and other Rocky Flats Site Departments to ensure that safety requirements for the Construction Management Department are being met.

Maintains the safety tracking system for Construction Management.

Assists in determining and providing safety requirements for the Construction Management Department.

Initiates required Construction Management Safety Council Meetings.

4.3 Safety Monitors

Provide inspections, as required, of their areas of responsibility.

Document inspections on a Safety Monitor's Report or in the Construction Daily Logbook.

Attend necessary Line Control Safety Training.

Address and remediate safety concerns or problems within their capability.

Perform monthly walk-through reviews with the Safety Supervisor regarding assigned areas.

4.4 Safety Supervisor

Ensures that monthly safety meetings are conducted.

Implements, enforces, and documents the Line Control Safety Program.

Provides direction and assistance to safety monitors.

Develops and maintains the Line Control Safety Program.

Tracks Safety Infractions revealed through safety inspections.

Appoints Safety Monitors.

Attends necessary Line Control Safety training.

Performs monthly walk-through safety inspection (safety inspection) with Safety Monitors of assigned areas.

5. INSTRUCTIONS—FIELD ACTIVITIES

Manager of Construction Management

[1] Participate as an active member of the Safety Management Council.

[2] Develop performance indicators for health and safety concerns which address:

- Root causes.
- Corrective actions.

[3] Perform the following at the Manager and Safety Management Council Levels:

[A] Implement procedures and policies which provide criteria for safe work practices.

[B] Allocate resources to enable personnel to develop and execute the Line Control Safety Program and resolve safety related problems.

[C] Monitor the success of the Line Control Safety Program within Construction Management.

[D] Participate actively in the review and resolution of occupational incidents and accidents associated with Construction Management responsibilities.

[E] Interface with management of organizations outside of Construction Management concerning the removal of barriers to resolve safety concerns and problems.

[4] Appoint personnel within the Construction Management group to serve as:

- Safety Supervisors.
- The department internal Management Council.

Safety Supervisor

[5] Appoint Safety Monitors within their area of responsibility.

5. INSTRUCTIONS—FIELD ACTIVITIES (continued)

[6] Ensure that the Safety Monitors are trained in Line Control Safety.

Safety Monitor

[7] Attend Line Control Safety training to become aware of required responsibilities.

[8] Perform daily inspection for safety infractions of the area to which they are assigned.

[9] **IF** safety infractions are observed,
THEN remediate within the capability of the Safety Monitor and document observations.

[10] **IF** safety infractions cannot be remediated within the capacity of the Safety Monitor,
THEN:

[A] Initiate compensatory action.

[B] Document the compensatory action on Appendix 1, Construction Management Safety and Health Inspection Report (RF-47986).

[C] Elevate the infraction to the Safety Supervisor.

[11] **IF** no safety infractions were observed,
THEN document the following:

- A safety inspection was performed.
- No violations or infractions were observed.

Safety Supervisor

[12] Attend Line Control Safety training to become aware of the required responsibilities.

[13] Remediate safety infractions, within the Safety Supervisor's capability, which have been elevated from the Safety Monitor.

5. INSTRUCTIONS—FIELD ACTIVITIES (continued)

[14] Track safety infractions, within the responsible Safety Supervisor's area, through Construction Management and Plant Action Tracking Systems.

[15] **IF** safety infractions cannot be remediated by the Safety Supervisor, **THEN** convene a meeting with personnel to gather information to assist in remediation of safety infractions.

[16] **IF** safety infractions do NOT require immediate actions, **THEN** initiate compensatory action to address them in the required monthly meeting.

[17] **WHEN** a meeting is conducted with personnel within the Safety Supervisor's area of responsibility, **THEN** ensure the following:

- Attendees sign a roster indicating participation.
- Minutes from the meeting are recorded.
- Safety Monitors participate by addressing problems, concerns, infractions, new ideas, and other information important to Line Control Safety.
- Safety compliance with Department of Energy (DOE) Order 5480.9A, Construction Project Safety and Health Management; 1-C18-HSP-24.01, Safety and Health Responsibilities for Construction Activities; Occupational Safety and Health (OSHA) 29 Code of Federal Regulations (CFR) 1926, Construction Safety Standards; and 29 CFR 1910, General Industry Standards.
- Additional safety requirements, such as Colorado Department of Public Health and Environment (CDPH&E), and Environmental Protection Agency (EPA) are adhered to as required by Construction Project specifications.

5. INSTRUCTIONS—FIELD ACTIVITIES (continued)

- Documentation is provided to personnel having action items as a result of the safety meeting.

- Direction and input is provided to personnel within the Safety Supervisor's area of responsibility.

[18] **IF** safety concerns cannot be remediated at the area of responsibility meeting,
THEN elevate the concerns to the Construction Management Safety Council Meeting.

[19] **IF** safety infractions are remediated,
THEN issue a Construction Management Safety and Health Inspection Report as documentation of remediation and closure.

Safety Monitor

[20] Perform a required safety inspection of assigned construction area with the Safety Supervisor in attendance.

[21] Document results of the safety inspection in the Construction Daily Logbook in accordance with 4-10C-COEM-CMG-410, Construction Daily Logbook.

[22] **IF** the safety inspection is performed in association with an assigned construction project,
THEN:

[A] Document the safety inspection in the Construction Daily Logbook as indicated in 4-10C-COEM-CMG-410.

[B] File a copy of the information in the Construction Project H-File (H-14 Badging and Safety) as indicated in 4-02C-COEM-CMG-402, Project Records Management.

5. INSTRUCTIONS—FIELD ACTIVITIES (continued)

[23] **IF** the safety inspection is performed in office areas or facilities NOT associated with assigned construction projects,
THEN:

[A] Document the inspection on Appendix 2, Office Area Inspection Form.

[B] Maintain the documentation in a file other than the Construction Project H-Files.

Safety Supervisor

[24] Accompany Safety Monitors on required safety inspection of assigned area of responsibility.

[25] **IF** the Safety Supervisor is also the Area Construction Manager,
THEN ensure that Line Control Safety requirements are accomplished by reviewing Construction Daily Logbooks on a quarterly basis, in accordance with 4-10C-COEM-CMG-410.

6. INSTRUCTIONS—CONSTRUCTION MANAGEMENT (CM) SAFETY COUNCIL MEETINGS

Safety Compliance Coordinator

[1] Initiate the required monthly Construction Management Safety Council meeting.

[2] Ensure that rosters are signed by attendees.

Manager of Construction Management

[3] Conduct Construction Management Safety Council meetings.

[4] Follow a prepared agenda to discuss:

- The previous month's (30 days) lost/restricted work day injuries.
- Root causes.
- Corrective actions.
- Other safety concerns involving both construction projects and departmental concerns.

[5] Provide direction to assist in the remediation of safety infractions, problems, and concerns which cannot be solved at the Safety Monitor or Safety Supervisor levels.

Safety Compliance Coordinator

[6] Ensure that safety infractions, problems, and concerns that are addressed by Construction Management personnel are:

- Documented correctly.
- Entered in PATS.
- Successfully closed.

[7] Ensure that meeting minutes are recorded.

[8] Retain departmental records associated with Line Control Safety.

6. INSTRUCTIONS—CONSTRUCTION MANAGEMENT (CM) SAFETY COUNCIL MEETINGS (continued)

Manager of Construction Management

[9] **IF** safety infractions, problems, and concerns cannot be remediated at the Construction Management Safety Council level,
THEN elevate the infractions, problems, and concerns to the Site Safety Management Council.

[10] Participate as the Construction Management Representative in the Site Safety Management Council meetings.

[11] Forward actions assigned through the Site Safety Management Council to their respective areas of responsibility within Construction Management.

7. RECORDS

No Quality Assurance Records are generated by this procedure.

Safety Monitor

[1] **IF** field records were generated as a part of a construction project,
THEN file records in accordance with 4-02C-COEM-CMG-402.

[2] Provide a copy of the Office Area Inspection Form to the Facility (Building) Manager and the Construction Management Safety Compliance Coordinator.

8. REFERENCES

DOE Order 5480.9A, Construction Project Safety and Health Management

OSHA 29 CFR 1910, General Industry Standards

OSHA 29 CFR 1926, Construction Safety Standards

1-C18-HSP-24.01, Safety and Health Responsibilities for Construction Activities

8. REFERENCES (continued)

4-02C-COEM-CMG-402, Project Records Management

4-10C-COEM-CMG-410, Construction Daily Logbook

CONSTRUCTION MANAGEMENT SAFETY & HEALTH INSPECTION REPORT

Inspection Date: _____ Page ____ of ____

Construction Coordinator	Building/Area/Job	Other Location Information	Contractor/Subcontractor
Building/Area Manager	Operations Manager:	Director	

Work Stoppage Ordered? Y N

Corrected Immediately? Y N

Distribution Date _____

Item	Code	Requirement or Standard	(D) Deficiency/Hazard (Include specific location) (R) Recommended Action

RF-47986 (8/93) Distribution: White: Subcontractor Yellow: Health Effects Green: Compliance Construction Management Blue: Construction Coordinator

APPENDIX 1
Page 2 of 2

CONSTRUCTION MANAGEMENT SAFETY & HEALTH INSPECTION REPORT

Inspection Date: _____ Page ____ of ____

Item	Code	Requirement or Standard	(D) Deficiency/Hazard (Include specific location) (R) Recommended Action

RF-47986 (8/93) Distribution: White: Subcontractor Yellow: Health Effects Green: Compliance Construction Management Blue: Construction Coordinator

APPENDIX 2
Page 1 of 1

OFFICE AREA INSPECTION FORM

Office Area Safety Inspection For Line Control Safety

DATE: _____ AREA INSPECTED: _____

DEFICIENCIES IDENTIFIED:

Indicate if deficiencies were remediated immediately: _____

CORRECTIVE ACTION PLAN:

Unremediated deficiencies require a corrective action plan and must be registered and tracked in the Plant Action Tracking System (PATS).

INSPECTED BY: _____

Provide a copy of this inspection to the Facility (Building) Manager and Construction Management Safety Compliance Coordinator.

Rocky Flats
Environmental Technology Site

4-15C-COEM-CMG-415

REVISION 0

CONSTRUCTION MANAGEMENT RESPONSIBILITIES FOR COMPONENT CHECK-OUT AND SYSTEMS OPERATIONS TESTING

APPROVED BY: _____ / G. W. Coles 12-24-95

Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 5/31/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Subject-matter Expert
Quality Review

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002141

Reviewed for Classification/UCNI

By Mary K. Frost (U/NW)

Date 2/22/95

This procedure supersedes procedure ENG-PILOT-CM-012, Revision 0.

Periodic review frequency: 3 years from the effective date

LIST OF EFFECTIVE PAGES

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TOTAL NUMBER OF PAGES: 11

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1. PURPOSE

This procedure provides instructions for Construction Management personnel to ensure that Component Check-out and System Operations Testing are performed and documented in accordance with the Department of Energy (DOE) Order 4700.1, Project Management System, Chapter III, Part B.

2. SCOPE

This procedure applies to Construction Management for substantiating the use of Component Check-out and System Operation Testing that is performed and documented at the Rocky Flats Environmental Technology Site (Rocky Flats).

This procedure is developed in accordance with 2-33C-COEM-AMN-115, Developing, Processing, and Maintaining Engineering and Safety Services (E&T) Procedures.

This procedure is a total rewrite and revision bars are omitted.

This procedure supersedes ENG-PILOT-CM-012.

This revision is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

Component Check-out and Systems Operation Testing are functions which ensure that entire systems or portions of a system function properly as described in the scope of work and the plans and specifications of a project.

Although testing criteria and the procedures by which the testing is performed are provided by departments other than Construction Management, there are responsibilities that the Construction Management Department has for ensuring the safety of personnel and equipment associated with the testing. This procedure provides the information that guides Construction Management personnel through the steps of preparation and completion of their responsibilities and ensures accurate documentation for the Rocky Flats Site Operating Contractor by Construction Management.

4. RESPONSIBILITIES

4.1 Construction Coordinator

Ensures that the two-person rule is followed in accordance with HSP 15.00, Electrical Safety Practices, on all exposed energized electrical circuits or equipment energized at or above 480 volts.

Ensures that the requirements of HSP 2.09, Use of Production Equipment for Development Tasks, are followed.

Maintains written documentation of safety meeting minutes signed by attendees in accordance with 1-C18-HSP-24.01, Safety and Health Responsibilities for Construction Activities.

Retains documentation in the construction project H-files for the duration of the project, as required by 4-02C-COEM-CMG-402, Project Records Management.

Verifies and documents inspection of work at hold points by Facilities Inspection Department and Captive On-Site Subcontractor Quality Assurance Department, as required, by 1-E33-IWCP-3, Maintenance Work Package Planning Process, for compliance with:

- Plans
- Specifications
- Site standards
- Applicable codes

Ensures that safety measures are addressed as follows:

- Work to be accomplished is scheduled on the Plan of the Day and a pre-job survey is performed.
- Working area is clean and clear of unnecessary obstructions.
- Proper personnel protective equipment is used.
- Areas where work is performed is guarded against entry of unauthorized personnel.
- Radiological Engineering is notified, as applicable.
- Ensure that personnel are qualified to operate equipment, as applicable.

4.2 Construction Engineer

Ensures that Subcontractors prepare a Job Safety Analysis (JSA) in accordance with DOE Order 5480.9A, Construction Project Safety and Health Management and HSP 2.11, Job Safety Analysis.

Obtains approval signatures on the Integrated Work Control Program (IWCP) package in accordance with 1-E33-IWCP-3.

Monitors performance as required by the approved IWCP package, including:

- Hold points
- Safety inspections
- Testing
- Outages

5. INSTRUCTIONS

Construction Coordinator

[1] Prepare a Temporary Facility Transfer form in accordance with 4–17C–COEM–CMG–417, Construction Closeout, to transfer system or facility responsibility from the Subcontractor to the Site Operating Contractor.

[2] Obtain signatures on the Temporary Facility Transfer form from:

- Facility Manager
- Subcontractor
- Construction Coordinator
- Architect/Engineer

[3] Inform the user and Subcontractor that all signatures have been obtained and testing can now be performed.

[4] Ensure that the Component Check-out or System Operation Test has been scheduled on the Building Plan of the Day (POD).

[5] Notify the Shift Manager, in accordance with 1-E33-IWCP-3 before Component Check-out or System Operation Testing.

[6] Ensure that the pre-job survey is completed and the Radiation Work Permit (RWP) is issued and posted at job site, in accordance with HSP 6.07, Radiation Work Permit.

[7] **IF** the Site Operating Contractor performs the Component Check-out or System Operation Test,
THEN post copies of the following forms at the job site:

- Component Check-out
- System Operation Test
- Temporary Facility Transfer

5. INSTRUCTIONS (continued)

[8] Ensure that the IWCP Package is at the project work site.

[9] Ensure that all personnel participating in the Component Check-out and/or System Operation Test have attended the pre-evolution briefing in accordance with 1-E34-IWCP-5, Conduct of Maintenance Work, before work is performed.

[10] Ensure that all lock-out/tag-out procedures are followed in accordance with 1–15320–HSP–2.08, Lock-out/Tag-out.

[11] Ensure that all Subcontractor personnel have the required training to work on equipment and systems that have been locked-out/tagged-out in accordance with 1-15320-HSP-2.08.

[12] Review the test procedure and the engineering package associated with the IWCP package before Component Check-out or System Operation Test.

[13] Ensure that Subcontractor personnel adhere to the requirements set forth in Subcontractor Technical Provisions, Section 01700, Subcontractor Safety and Health Requirements, Division I General Requirements of the subcontract.

[14] Notify personnel required by the IWCP package to witness the Component Check-out or System Operation Testing of the scheduled test.

Construction Engineer

[15] Perform a visual inspection of components to be tested to ensure that there are no discrepancies.

[16] **IF** any discrepancies are noted before testing,
THEN:

[A] Document the discrepancies on the Subcontractor Deficiencies Form, Appendix 1.

[B] Ensure resolution of the discrepancies before testing.

5. INSTRUCTIONS (continued)

[17] For test failure (testing is performed and the required results are not achieved), inform Project Engineer.

[18] **IF** testing is performed,
AND the required results are achieved,
THEN ensure that the test results are transmitted to the Construction Coordinator to be included in the IWCP Package.

Construction Coordinator

[19] Obtain signatures on the Temporary Facility Transfer form from the following to transfer system or facility back to the Subcontractor to resume work as required:

- Facility Manager
- Subcontractor
- Construction Coordinator
- Architect/Engineer

[20] **IF** Component Check-out or System Operation Testing is the final step in the process of the project,
THEN begin preparation for acceptance of the construction portion of the project by issuing a Project Acceptance and Transfer in accordance with 4–17C–COEM–CMG–417.

6. RECORDS

Appendix 1 is a non-Quality Assurance record generated by this procedure.

Construction Coordinator

[1] Maintain all records in accordance with 4-02C-COEM-CMG-402, Project Records Management, as part of the Construction H-files or IWCP package, and transfer to the Project Manager for incorporation into the entire project file.

7. REFERENCES

DOE Order 4700.1, Project Management System

DOE Order 5480.9A, Construction Project Safety and Health Management

HSP 2.09, Use of Production Equipment for Development Tasks

HSP 2.11, Job Safety Analysis

HSP 6.07, Radiation Work Permit

HSP 15.00, Electrical Safety Practices

1-C18-HSP-24.01, Safety and Health Responsibilities for Construction Activities

1-E33-IWCP-3, Maintenance Work Package Planning Process

1-E34-IWCP-5, Conduct of Maintenance Work

1-15320-HSP-2.08, Lockout/Tagout

2-33C-COEM-AMN-115, Developing, Processing, and Maintaining E&T Procedures

4-02C-COEM-CMG-402, Project Records Management

4-17C-COEM-CMG-417, Construction Closeout

APPENDIX 1
Page 1 of 1

SUBCONTRACTOR DEFICIENCIES FORM

SUBCONTRACTOR DEFICIENCIES
(Repairs Required Prior to Start of Test)

ITEM	DISCREPANCY	RESOLVED YES	RESOLVED NO
1	_____	☐	☐
2	_____	☐	☐
3	_____	☐	☐
4	_____	☐	☐
5	_____	☐	☐
6	_____	☐	☐
7	_____	☐	☐
8	_____	☐	☐
9	_____	☐	☐
10	_____	☐	☐

Final Sign-off by Construction Engineer when discrepancy list is resolved.

_____ / _____
Signature Date

LCW/fjm: September 14, 1994

Rocky Flats
Environmental Technology Site
4-16C-COEM-CMG-416
REVISION 0
PERFORMANCE MEASUREMENTS

APPROVED BY: _____ / G. W. Coles 12-5-95
Manager, Construction Management — Print Name — Date

Responsible Organization: Construction Management Effective Date: 3/10/95

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Quality Review
Subject-matter Expert

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision:
94-DMR-002142

Reviewed for Classification/UCNI
By _____
Date 2/16/95

This procedure supersedes procedure ENG-PILOT-CM-010, Revision 0.

Periodic review frequency: 3 years from the effective date

PADC-97-00082

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1. PURPOSE

This procedure provides instructions for measuring the effectiveness of Construction Management personnel during the performance of their assigned duties in association with construction projects.

2. SCOPE

This procedure applies to all Construction Management personnel. Each job classification and responsibility may not be specifically covered herein, but may be found in 4-01C-COEM-CMG-401, Personnel Roles and Responsibilities.

This procedure is developed in accordance with COEM-AMN-115, Developing, Processing, and Maintaining Engineering and Safety Services (E&SS) Procedures.

This revision is a total rewrite and revision bars are omitted. This revision supersedes ENG-PILOT-CM-010, and is designated Revision 0 because the procedure number has been changed.

3. OVERVIEW

The measurement of performance for Construction Management personnel begins with participation in the construction project review process to provide input for constructability. As the cycle proceeds from the review into the subcontractor bid process, Construction Management personnel interface with prospective subcontractors to provide information such as site safety, security, training, and other information pertinent to the subcontract. This input is necessary and measurable in that it provides knowledge to the subcontractor which in turn expedites productivity. The productivity is measured in being able to remain on schedule and within budget.

3. OVERVIEW (continued)

Performance is measured throughout a construction project by how the construction project records, also known as Construction Project H-Files, are generated and maintained. Reviews of construction project records are performed periodically by the Area Construction Managers and personnel from the Construction Management Administrative staff. Construction Project H-Files are maintained in accordance with 4-02C-COEM-CMG-402, Project Records Management. The first document used as a performance indicator for Construction Management personnel at the beginning of a construction project is the Construction Notification. The performance is measured first by the issuance of the documents and then by how it is tracked and updated throughout the life of the construction project.

Changes made during the physical construction phase of a construction project are a negative measure of performance. It is important that changes which are necessary be recognized during the project review cycle in order to limit Construction Field Changes. The pre-bid walk down of a project is a critical time, in that all personnel involved in the planning and completion are available and may recognize changes that could possibly have an impact on cost and schedule. The positive aspect of this measurement is to provide the most construction with the least Construction Field Changes. This same measurement holds true for Nonconformance Reports.

During the physical construction phase of a project, safety of personnel is the main focus. Other areas of safety concern are facilities, equipment, and the environment. The Construction Management Group has the responsibility to be the first line safety observer for subcontractors performing work at the Rocky Flats Environmental Technology Site (Rocky Flats). Safety is measured by the number of Occupational Safety and Health Administration (OSHA) noncompliance issues, reportable injury cases, lost workday cases, workman's compensation cases and lost time days. Construction Management personnel are measured in their ability to recognize, report, and correct OSHA noncompliance conditions. Although Construction Management cannot control or even report the reportable injury, lost workday, workman's compensation, and lost time day cases, they are responsible for gathering this information from the subcontractors and providing it to Industrial Hygiene and Safety so that trending and tracking of safety records can be accomplished per Subcontract Technical Provisions, Division I, Section 1700, Subcontractor Safety and Health Requirements.

3. OVERVEW (continued)

Excavation packages provide another area of performance measurement for Construction Management. The measurement here is the correlation between the amount of excavations performed versus the amount of OSHA noncompliances issued in association with 29 Code of Federal Regulations (CFR) 1926, Subpart P, Excavations, Trenching, and Shoring, 1-B37-HSP-12.08, Excavations and Trenching, and 4-04C-COEM-CMG-404, Excavation/Soil Disturbance Requirements.

Additional data used are Subcontractor Submittals, Construction Daily Log Book, and Weekly Status Report.

An additional instrument for measuring performance of Construction Management personnel during this construction stage is construction project close-out. The specific measurement is the timeliness of issuing Project Acceptance and Transfers (PA&Ts) after completion of construction. By issuing a PA&T, Construction Management signifies that a subcontractor has fulfilled the obligation according to the information supplied in the drawings, specifications and accepted/documented subcontract modifications as referenced in 4-17C-COEM-CMG-417, Construction Close-out.

Subcontractors are evaluated upon completion of a construction project through the use of Contractor Performance Evaluation Form, RF-46573 (10/92). This form provides evaluation criteria in six categories, which are:

- Schedule compliance
- Adherence to specifications and drawings
- Quality of work and material
- General
- Subcontractor safety performance
- Overall performance rating

Construction Management personnel are evaluated on their ability to complete the contractor evaluation in a timely manner upon completion of construction.

4. RESPONSIBILITIES

4.1 Area Construction Manager

Provides technical training, direction and support

4.2 Construction Coordinator

Monitors construction projects and assesses the performance of the subcontractor.

Records evaluation of the subcontractor on a Contractor Performance Evaluation.

4.3 Construction Engineer

Provides preconstruction, in-progress, and post-construction documentation.

4.4 Excavation Specialist

Provides support for excavation needs.

5. INSTRUCTIONS—PRECONSTRUCTION AND IN-PROGRESS CONSTRUCTION ACTIVITIES

Area Construction Manager

[1] Assign a Construction Engineer and a Construction Coordinator to the construction project.

[2] Review Construction Project documentation generated by Construction Management Personnel to ensure correctness.

Construction Coordinator

[3] Complete and distribute a Construction Notification Form in accordance with the instructions in 4-02C-COEM-CMG-402, Project Records Management.

[4] Maintain a Construction Project H-File in accordance with 4-02C-COEM-CMG-402.

[5] Maintain a Construction Daily Log Book to record daily construction events in accordance with 4-10C-COEM-CMG-410, Construction Daily Log Book.

[6] Provide documentation, as required, for:

- Nonconformance Reports.
- Construction Field Changes.
- OSHA deficiencies.
- Safety concerns.
- Excavation requirements.

Excavation Specialist

[7] Provide necessary forms to personnel requiring excavation work associated with Rocky Flats in accordance with 4-04C-COEM-CMG-404, Excavation/Soil Disturbance Requirements.

5. INSTRUCTIONS—PRECONSTRUCTION AND IN-PROGRESS CONSTRUCTION ACTIVITIES (continued)

[8] Provide utility locations and excavation inspections to comply with requirements of OSHA 29 CFR 1926, Subpart P, Excavations, Trenching and Shoring, 1-B37-HSP-12.08, Excavations and Trenching, and 4-04C-COEM-CMG-404, Excavation/Soil Disturbance Requirements.

Construction Engineer

[9] Execute necessary construction field changes in accordance with 4-09C-COEM-CMG-409, Construction Field Changes.

Construction Coordinator

[10] Complete a PA&T Form in accordance with 4-17C-COEM-CMG-417, Construction Close-out, upon physical completion of the construction work.

[11] Provide information to the Construction Engineer for the preparation of a Contractor's Performance Evaluation in accordance with 4-02C-COEM-CMG-402, Project Records Management.

6. INSTRUCTIONS—POST-CONSTRUCTION ACTIVITIES

Construction Engineer

[1] Review documentation compiled throughout the life of the construction project to determine the Subcontractor's response to:

- Schedule.
- Construction Field Changes.
- Excavation requirements.
- Health and Safety requirements.
- Nonconformance issues.

[2] Complete a Contractor's Performance Evaluation.

[3] Forward the Contractor's Performance Evaluation to the responsible Area Construction Manager for review.

Area Construction Manager

[4] Review the Contractor's Performance Evaluation and provide comments, as appropriate.

[5] **IF** comments are made,
THEN return the Contractor Performance Evaluation Form to the Construction Engineer for revision.

Construction Engineer

[6] Prepare revisions to the Contractor's Performance Evaluation and forward to the Area Construction Manager for review.

Area Construction Manager

[7] **IF** no further comments are presented,
THEN forward the Contractor's Performance Evaluation to the Construction Coordinator.

Construction Coordinator

[8] Provide copies of the Contractor's Performance Evaluation to the Industrial Hygiene and Safety Department and the assigned Subcontract Administrator in the Procurement Department.

6. INSTRUCTIONS—POST-CONSTRUCTION ACTIVITIES (continued)

[9] File the original Contractor's Performance Evaluation in the Construction Project H-File (H-15), Builder's Performance Report.

7. RECORDS

No Quality Assurance records are generated by this procedure.

Construction Coordinator

[1] Maintain documents associated with this procedure in the Construction Project H-File.

[2] **WHEN** the entire project is completed,
THEN deliver the entire Construction Project H-File (H-1 through H-19) to the assigned Project Manager in accordance with 4-02C-COEM-CMG-402, Project Records Management.

8. REFERENCES

OSHA 29 CFR 1926 Subpart P, Excavations, Trenching, and Shoring

Subcontract Technical Provisions, Division I, Section 1700, Subcontractor Safety and Health Requirements.

1-B37-HSP-12.08, Excavations and Trenching

2-C33-COEM-AMN-115, Developing, Processing, and Maintaining Engineering and Safety Services (E&SS) Procedures

4-01C-COEM-CMG-401, Personnel Roles and Responsibilities

4-02C-COEM-CMG-402, Project Records Management

4-04C-COEM-CMG-404, Excavation/Soil Disturbance Requirements

8. REFERENCES

4-09C-COEM-CMG-409, Construction Field Changes

4-10C-COEM-CMG-410, Construction Daily Log Book

4-17C-COEM-CMG-417, Construction Close-out

Rocky Flats Plant

4-17C-COEM-CMG-417

REVISION 0

CONSTRUCTION CLOSEOUT

APPROVED BY: _____ / G. W. Coles / 6/15/94

~~Director~~, Construction Management — Print Name — Date

States that to the best of my knowledge, the necessary and sufficient Requirements, Codes, and Standards are met.

Responsible Organization: Construction Management Effective Date: 7/15/94

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Construction Management

USE CATEGORY 3

ORC review not required

The following has been incorporated in this revision:
94-DMR-000043

Reviewed for Classification/UCNI

By Mary K. Flore (UNM)

Date 6/15/94

Periodic review frequency: 3 years from the effective date

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-14	07/15/94	

TOTAL NUMBER OF PAGES: 14

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1. PURPOSE

This procedure provides the required steps and designates responsibilities for processing the documents required for Project Transfer.

Adherence to this procedure implements the requirements of 1-90953-CCCP-3.14, Acceptance and Transfer Process Instructions and 1-E34-IWCP-5, Conduct of Maintenance Work.

2. SCOPE

This procedure applies to the personnel in Construction Management Department.

This procedure addresses the following topics:

- Project beneficial occupancy
- Project temporary facility transfer
- Project acceptance and transfer
- Project cancellation

3. OVERVIEW

When a construction project is completed, it must be inspected and accepted by the plant operating contractor. Project inspection and acceptance is documented by the Construction Management Department. Upon project acceptance and transfer, operation of the facility is transferred to the plant operating contractor. At other times, it is necessary for the plant operating contractor to take possession of the construction project or some part of the construction project before completion. This is known as Beneficial Occupancy. Beneficial Occupancy is used when a portion of the project is required by the Facility Manager and will not be returned to the subcontractor.

When component checks or system operability checks are required during the course of construction, or temporary use of the facility is required, the plant operating contractor takes possession of the components or system long enough to make the required checks or operations, and then returns it to the subcontractor. This is known as Temporary Facilities Transfer.

3. OVERVIEW (continued)

A project descope letter is issued when a project is canceled or reduced in scope.

4. DEFINITIONS

Beneficial Occupancy. **Also known as Project Beneficial Occupancy.** The process by which the plant operating contractor takes possession of a project or a portion of a project before completion. Beneficial Occupancy is documented on a Project Beneficial Occupancy Notice, Appendix 1.

Descope Letter. A letter which reduces the scope of a project or cancels a project.

Project Acceptance and Transfer. The process by which the plant operating contractor takes possession and begins operating a facility on behalf of the Department of Energy (DOE). Also the form used to document this action.

Temporary Facility Transfer. The transfer of a construction project from the subcontractor to the plant operating contractor for testing or temporary operation, and the return of the construction project to the subcontractor for completion.

5. RESPONSIBILITIES

5.1 Construction Coordinator

Arranges for a walkthrough inspection prior to, or in conjunction with, the signing of a Project Beneficial Occupancy Notice, Temporary Facilities Transfer, or Project Acceptance and Transfer.

Ensures that the walkthrough inspection includes a representative of:

- The subcontractor.
- The Fire Prevention Bureau.
- Hygiene and Safety Area Management.
- Other agencies as necessary and appropriate.

5.1 Construction Coordinator (continued)

Ensures that the Project Beneficial Occupancy Notice, Project Acceptance and Transfer, or Temporary Facilities Transfer is completed, signed, and distributed in accordance with the instructions in this procedure and on the form.

5.2 Construction Engineer

Ensures testing of facilities and equipment as required by the Construction Plan and the subcontract.

Requests Descope letters for projects being reduced in scope or canceled.

Notifies all agencies affected by project cancellation.

6. INSTRUCTIONS

These instructions are divided into four stand-alone subsections which will normally be performed independently.

NOTE *A Project Beneficial Occupancy Notice does not give final ownership of a project to the DOE.*

6.1 Project Beneficial Occupancy

Construction Coordinator

[1] Ensure that all Nonconformance Reports are resolved and closed.

[2] Schedule a Beneficial Occupancy walkthrough inspection with all required departments.

[3] Initiate a Project Beneficial Occupancy Notice, Appendix 1.

[4] Perform a walkthrough inspection of the project which is to be occupied.

[5] Secure the signature of representatives of the following in the Required Approvals section of the Project Beneficial Occupancy Notice:

- Facilities Inspection
- Facilities Manager
- Project Manager
- Plant Project Engineering
- Area Construction Manager
- RFFO Project Engineer
- RFFO Director of Projects
- U. S. DOE, RFFO, Deputy Assistant Manager

[6] **IF** discrepancies are discovered during the walkthrough inspection which make the project incomplete,
THEN prepare a punchlist of items requiring correction or completion.

6.1 Project Beneficial Occupancy (continued)

[7] **IF** a punchlist was prepared,
THEN:

[A] Deliver the punchlist to the Subcontract Administrator for delivery to the subcontractor.

[B] Attach the punchlist to the Project Beneficial Occupancy Notice.

[8] Notify the Facilities Manager that the project is ready for partial occupancy.

[9] Forward a copy of the Project Beneficial Occupancy Notice to the Construction Management Clerk.

Construction Management Clerk

[10] Place a copy of the Project Beneficial Occupancy Notice in the Project Beneficial Occupancy Notice Log Book.

6.2 Temporary Facilities Transfer

NOTE *Any damage done to the project during component checkout or operability check is the responsibility of the plant operating contractor.*

Construction Coordinator

[1] Prepare a Temporary Facility Transfer, Appendix 2.

[2] Perform a walkthrough inspection of the facility.

NOTE *Any discrepancies in the facility discovered during testing are reported to the subcontractor for correction.*

Construction Engineer

[3] Ensure that temporary use is completed.

[4] Inform the Construction Coordinator that the facility may be returned to the subcontractor.

6.2 Temporary Facilities Transfer (continued)

Construction Coordinator

[5] Complete the Temporary Facility Transfer to return the facility to the subcontractor.

6.3 Project Acceptance and Transfer

NOTE *Project Acceptance and Transfer is used if, and only if, the project is completed.*

Construction Coordinator

[1] Ensure that all Nonconformance Reports are resolved and closed.

[2] Schedule a Project Acceptance and Transfer walkthrough inspection with all required departments.

[3] Initiate a Project Acceptance and Transfer, Appendix 3.

[4] Perform a walkthrough inspection of the project which is to be occupied.

[5] Secure the signature of representatives of the following in the Required Approvals section of the Project Acceptance and Transfer:

- Facilities Inspection
- Facilities Manager
- Project Manager
- Plant Project Engineering
- Area Construction Manager
- RFFO Project Engineer
- RFFO Director of Projects
- U. S. DOE, RFFO Deputy Assistant Manager

[6] **IF** discrepancies are discovered during the walkthrough inspection which make the project unfit for occupancy,
THEN prepare a Project Beneficial Occupancy Notice in accordance with Section 6.1, Project Beneficial Occupancy.

6.3 Project Acceptance and Transfer (continued)

[7] Notify the Facilities Manager that the project is ready for occupancy.

[8] Forward a copy of the Project Acceptance and Transfer to the Construction Management Clerk.

Construction Management Clerk

[9] Place a copy of the Project Beneficial Occupancy Notice in the Project Beneficial Occupancy Notice Log Book.

6.4 Project Cancellation

Construction Engineer

[1] Request a Descope letter from the Project Manager.

[2] **WHEN** the Descope letter is received,
THEN notify representatives of the following organizations of Descope and Project Cancellation:

- Facilities Inspection
- Facilities Manager
- Project Manager
- Plant Project Engineering
- Area Construction Manager
- RFFO Project Engineer
- RFFO Director of Projects
- U. S. DOE, RFFO, Deputy Assistant Manager

Construction Coordinator

[3] **IF** construction has begun or is partially completed,
THEN ensure that the construction area is placed in a safe configuration before the termination of the subcontract.

7. REFERENCES

1-E34-IWCP-5, Conduct of Maintenance Work

1-90953-CCCP-3.14, Acceptance and Transfer Process Instructions

ROCKY FLATS PLANT

PROJECT BENEFICIAL OCCUPANCY NOTICE

DATE: _____

PROJECT: _____

BUILDING: _____

AUTHORIZATION# _____

CONTRACT# _____

CONTRACTOR: _____

BENEFICIAL OCCUPANCY IS TAKEN OF THE FOLLOWING ROOMS/AREAS AND/OR EQUIPMENT OF THE REFERENCED PROJECT WITH EXCEPTIONS AS NOTED:

USE OR POSSESSION OF THE ABOVE LISTED ROOMS OR AREAS BY EG&G, ROCKY FLATS, INC., IS NOT AN ACCEPTANCE OF ANY WORK UNDER THE TERMS OF THE CONTRACT.

REQUIRED APPROVALS	REQUIRED DISTRIBUTION
FACILITIES INSPECTION	AREA UTILITIES MANAGER
FACILITY MANAGER	PLANT ALARMS
PROJECT MANAGER	TELECOMMUNICATIONS
PLANT PROJECT ENGINEERING	FIRE PREVENTION BUREAU
AREA CONSTRUCTION MANAGER	SAFEGUARDS AND SECURITY
RFFO PROJECT ENGINEER	HEALTH & SAFETY AREA MANAGEMENT
RFFO DIRECTOR OF PROJECTS	ENVIRONMENTAL RESTORATION
U.S. DOE, RFFO, DEPUTY ASSISTANT MANAGER	WASTE OPERATIONS
	CRITICALITY ENGINEERING
	EMERGENCY PREPAREDNESS
	SUBCONTRACTOR ADMINISTRATOR
	CONSTRUCTION COORDINATOR
	OPERATIONS MANAGER
	PLANT SERVICES

THE ABOVE PROJECT IS BEING COMPLETED THROUGH INTEGRATED WORK CONTROL PACKAGE (IWCP) NUMBER(S) _____

APPENDIX 2
Page 1 of 1

TEMPORARY FACILITY TRANSFER

TEMPORARY FACILITY TRANSFER

PROJECT_____ LOCATION/BUILDING_____

CHARGE NO._____ PURCHASE ORDER NO._____

CONTRACT NO._____

The following facility(s) is hereby transferred for System Operational Test or Checkout: Equipment and/or System:

_____

_____

_____

APPROVED_____ DATE_____
Facility Manager

APPROVED_____ DATE_____
Subcontractor

APPROVED_____ DATE_____
Construction Coordinator

APPROVED_____ DATE_____
Architect/Engineer

FACILITIES RETURNED TO_____ DATE_____
Subcontractor

APPROVED_____ DATE_____
Facility Manager

APPROVED_____ DATE_____
Subcontractor

APPROVED_____ DATE_____
Construction Coordinator

APPROVED_____ DATE_____
Architect/Engineer

NOTE: ***The completion of the top section signifies transfer from the Subcontractor to the Rocky Flats Plant Operating Contractor. The completion of the bottom section signifies from the Rocky Flats Plant Operating Contractor to the Subcontractor.***

ROCKY FLATS PLANT

PROJECT ACCEPTANCE AND TRANSFER

DATE: _____

PROJECT: _____

BUILDING: _____

AUTHORIZATION# _____

CONTRACT# _____

CONTRACTOR: _____

AN INSPECTION OF THIS PROJECT REVEALS THAT IT HAS BEEN COMPLETED IN COMPLIANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS.

THIS PROJECT IS ACCEPTED FOR FINAL OCCUPANCY BY DOE AND IS HEREBY TRANSFERRED TO EG&G ROCKY FLATS, INC., FOR OPERATION.

REQUIRED APPROVALS	REQUIRED DISTRIBUTION
FACILITIES INSPECTION	AREA UTILITIES MANAGER
FACILITY MANAGER	PLANT ALARMS
PROJECT MANAGER	TELECOMMUNICATIONS
PLANT PROJECT ENGINEERING	FIRE PREVENTION BUREAU
AREA CONSTRUCTION MANAGER	SAFEGUARDS AND SECURITY
RFFO PROJECT ENGINEER	HEALTH & SAFETY AREA MANAGEMENT
RFFO DIRECTOR OF PROJECTS	ENVIRONMENTAL RESTORATION
U.S. DOE, RFFO, DEPUTY ASSISTANT MANAGER	WASTE OPERATIONS
	CRITICALITY ENGINEERING
	EMERGENCY PREPAREDNESS
	SUBCONTRACTOR ADMINISTRATOR
	CONSTRUCTION COORDINATOR
	OPERATIONS MANAGER
	PLANT SERVICES

THE ABOVE PROJECT WAS COMPLETED THROUGH INTEGRATED WORK CONTROL PACKAGE (IWCP) NUMBER(S) _____