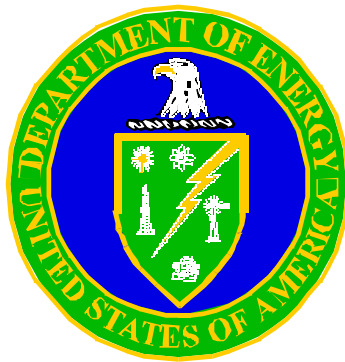


U. S. Department of Energy
Miamisburg Closure Project
RISK MANAGEMENT PLAN

Volume I
OVERVIEW



April 30, 2005

Revision 0

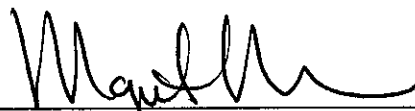
Signature Approvals

For

RISK MANAGEMENT PLAN, Volume I

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5/2/05

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I. INTRODUCTION

The Miamisburg Closure Project (MCP) has entered the final stages of closure. A Cost-Plus Incentive Fee (CPIF) contract was awarded to CH2M Hill Mound, Inc. (CHM) in December 2002, which has a contract target date of March 31, 2006 and a contract target cost and target fee of \$314.28 M. (The target cost is \$291 M and target fee is \$23.28M.) The contract defines the end state and exit strategy for the DOE to complete the cleanup and transition activities by March 31, 2006. The site will then be fully transferred to the new owner, the Miamisburg Mound Community Improvement Corporation (MMCIC), for industrial reuse. Any post-closure responsibility will be transferred from Environmental Management (EM) to Legacy Management (LM). This document summarizes risks associated with both contract closure and LM transition.

II. ROLES AND RESPONSIBILITIES

This section describes the organizational roles and responsibilities involved with risk management.

A. The Contractor

The contractor identifies, assesses, and effectively manages uncertainties associated with work scope and opportunity to accelerate the project using the following approach:

- Active planning for risk management
- Reviewing key project elements
- Using Probability of Occurrence and Impact matrixes to quantify risk
- Developing a risk handling strategy (reduction/mitigation, acceptance, avoidance, or transfer)

The contractor develops an implementation plan for risk handling strategy. All risk handling activities are included in a work plan with responsible point-of-contacts (POC) identified. High-risk mitigation activities are formally incorporated into the MCP baseline, with key mitigation planning milestones included in the baseline schedule.

The contractor tracks the progress of the work plan and reports to the MCP quarterly.

B. DOE/MCP

The DOE/MCP identifies, assesses, and effectively manages uncertainties specified as DOE Risks in Table 1-1 and LM Transition Risks. Those risks were either generated from comments and recommendations made by DOE-MCP, EM-6, and an external independent reviewer of the project baseline or newly identified as impact to DOE's ability to cleanup the site and transition it to the MMCIC as well as transfer post-closure liability to the LM. The methodology of assessing those risks is described in Section III of this volume. The MCP prepares the Risk Management Plan (Volumes 1 through III), which is a roadmap to effectively illustrate what and how the risk will be managed.

1. Project Director

The DOE/MCP Project Director has the following responsibilities in the Risk Management Plan:

- Overall responsibility for MCP Risk Management Plan
- Interface with the contractor to ensure that all risks associated with the project identified, assessed, mitigation strategies provided, and properly tracked and reported.

2. Project Managers

The DOE/MCP project managers are responsible for:

- Interfacing with the contractor's POCs to ensure that risk handling strategy has been properly implemented and measures have been taken to mitigate risks; and
- Tracking and reporting risks.

C. DOE/LM

DOE/MCP and LM jointly identify potential programmatic risks that might affect the scope and/or the schedule of the transition and could potentially delay the transition. Each risk is prioritized as high, medium or low. MCP and LM are then jointly identifying more detailed mitigation strategies for each transition risk based upon the baseline date when each risk, if not resolved, will result in negative impact on the successful completion of the closure contract. The mitigation strategies being developed will include dates by which DOE must achieve resolution of each risk before the aforementioned baseline dates actually occur.

III. RISK TYPES

Risks critical to the closure of Mound Site and transition it to the MMCIC and LM are categorized as **Contract Closure Risk** and **LM Transition Risk** in this plan.

A. Contract Closure Risk

As the project progressed, contract closure risk categorized in the DOE Risk Reduction Plan, February 2005, Revision 5: 1) contract risks, 2) contractor identified accelerated risks, and 3) DOE risks, are consolidated into one single list of risks. CHM revised its risk reduction plan in March 2005 to update the outstanding risk. Those risks are included in the list as part of the DOE project risks with responsibility and accountability from both contractor and DOE. Table I-1 is revised to reflect this consolidation.

Table I-1 Contract Closure Risk

Item #	Risk Description	Mitigated (Y/N)	Comments
DOE Project Risks			
A	Delays and cost impacts associated with Building 57 Demolition	N	The transfer of the Sewer System to the City remains problematic. Lease of the sewer system to the MMCIC has been approved by U.S. EPA. But, the MMCIC is still uncommitted to the lease term. Consequently, the project is not able to demolish Building 57 (housing the site sewage treatment system) and other ancillary buildings as planned, and to excavate PRS-41 (underneath Building 57). Demolition of Building 57 and PRS-41 removal become the critical path activities for the site closure. Any further delay of sewer system turnover will cause significant schedule and cost impact. The uncertainty becomes highly probable, with high potential cost and schedule impact.
B	TRU past expiration of OHOX railcar (>11/03) and exceeding 300 M ³ in volume	N	The expiration date of 11/03 has been extended to 9/30/05 by DOT railcar exemption (revision 13). A second DOT exemption (revision 14) added volume up to 14 shipments from the original 10 shipments.
C	OU-1 ROD and PRS-11	N	The original concern regarding

Item #	Risk Description	Mitigated (Y/N)	Comments
			<p>landscaping or removal of PRS 8 landfill has been evolved to additional concerns of OU-1 ROD and PRS-11. The MMCIC and City have questioned ROD remedy. The worst-case scenario is full removal of landfill. The uncertainty has a high probability of occurrence, with high potential cost impact and high potential schedule impact.</p>
D	<p>Government Furnished Services/Items (GFS/I)</p> <ul style="list-style-type: none"> ▪ Resources ▪ Regulator Support 	N	<p>The peak of GFS/Is starts to decline in FY05, which should help to alleviate both resource needs and regulatory support. The uncertainty has a low-to-medium probability of occurrence, with low potential cost impact and low-to-medium potential schedule impact.</p>
E	<p>Final Site-wide Record of Decision (ROD) definition and canal ROD</p>	N	<p>The ROD for the Canal area has been completed in September 2004. This area was remediated by DOE in the mid-1990's to remove plutonium contamination due to a production-era spill that caused an offsite contamination on the City property. There is no further risk associated with the Canal ROD. However, the groundwater contamination pathway not addressed here will be addressed in the final Site-wide ROD.</p> <p>The uncertainty associated with final Site-wide ROD has a low probability of occurrence, with low-to-medium potential cost impact and low-to-medium potential schedule impact. Much dialogue has occurred relative to the Contracting Officer=s and regulator=s intent of this document as contrasted with the contractor=s understanding. A difference in interpretation and intent exists that needs to be clarified and resolved. This will involve discussions between DOE and the regulator on the intent of the</p>

Item #	Risk Description	Mitigated (Y/N)	Comments
			<p>final site wide ROD to include its nature and extent of coverage. The greatest point of uncertainty deals with the expectations with regards to Aoff-site areas@.</p>
F	Groundwater Contamination and Migration	N	<p>The uncertainty has a low-to-medium probability of occurrence, with low potential cost impact and low-to-medium potential schedule impact. Two most significant concerns of on-site groundwater contamination are: 1) volatile organic contamination near OU1 and 2) tritium seeps from SW and R Buildings. A pump and treat system has been operating since 1997 to remove the VOCs near OU1. In early 2003, DOE initiated a rebound test to determine the effectiveness of the removal system. Should the rebound test be successful, the removal system can be removed and the contractor can follow through with the closure in place.</p> <p>For the tritium seeps, the contractor and DOE believe that following removal of SW and R buildings and removal of the soil below the buildings, that the source will be removed and monitored natural attenuation of the remaining tritium will be performed by DOE post closure until levels go below any regulatory concern level. Due to the geological terrain in the area, it is possible that the contamination is entering fissures in the bedrock which would make removal very difficult and not necessary due to the low dose concerns related to tritium.</p> <p>Several wells off-site have also been identified that have contamination levels in excess of MCLs for VOCs, tritium, chromium, radium and nickel.</p>

Item #	Risk Description	Mitigated (Y/N)	Comments
G	Legacy Medical and Pension Costs	N	The probability of increases in retiree pension, medical benefit and life insurance cost is high, with high potential cost and schedule impact. Under the annual funding constraint, the risk could result in planned work being delayed. The risk is a continuous risk throughout the period of contract performance, with risk increasing as the project progresses.
H	Estimated Low Level Waste (LLW) Soil Volumes	N	There is high probability that the estimated quantity of below-grade LLW will exceed 4.3 million ft ³ with significant cost and schedule impact. Current projections will exceed contract ceiling of 4.3M ft ³ ; New sources of LLW not previously identified in baseline will further increase LLW disposition liability, such as VOC contaminated soil under B Building slab.
I	MMCIC acceptance of T building as is	N	The uncertainty has a medium probability of occurrence, with medium-to-high potential cost and schedule impact. The MMCIC could reject acceptance of T Building. Unless a tenant can be found to occupy the building, it may be unattractive for the MMCIC to accept the building.
J	Added Scope Items 1. Building 22 Contaminated Soil	N	There are outside of the contract scope as defined in the Contract (DE-AC24-03OH20152) and have medium-to-high probability of occurrence, with high potential cost and schedule impact. The contractor submitted a request for equitable adjustment (REA) to DOE to resolve issues associated with added scope items. 1. During the installation of new sewer lines north of Building 22, an area was discovered to contain soil contamination above the site cleanup objective. This soil is being

Item #	Risk Description	Mitigated (Y/N)	Comments
	<p>2. Building 30 Contaminated Soil</p> <p>3. Potential VOC contamination Under B Building Slab</p> <p>4. Closure of PRS 286</p> <p>5. Off-site removal of sewer lines</p> <p>6. Closure of PRS 272</p>		<p>remediated as PRS 66 west.</p> <p>2. During utility stanchion removal west of Building 30, an area was discovered to contain soil contaminated with thorium 232 above the site cleanup objective. This work is completed and will be reported with BLDG 38 soils.</p> <p>3. A removal action performed in the early 90s indicated that VOC contamination may exist under B Building slab that may be contributing to the contamination found in the Main Hill seeps. The slab has been removed. Early indications are that no VOCs are above limits are under the slab. Final verification is planned.</p> <p>4. All field work is completed. No additional soil excavation is expected. Administrative closeout of this PRS will be handled under the group 5 OSC report which is in process.</p> <p>5. The sanitary sewer outfall piping from the Mound sewage treatment plant runs along a flood control levee on property owned by the Miami Conservancy District (MCD). The MCD requires in a permit that all installations will be removed and properties restored when the line is abandoned. The new sanitary sewage treatment system will still use the line for discharge to the river.</p> <p>6. All field work is completed. No additional soil excavation is expected. Administrative closeout of this PRS will be handled under the group 5 OSC report which is in process.</p>

Item #	Risk Description	Mitigated (Y/N)	Comments
	<p>7. Group 5 PRS D&D Areas</p> <p>8. Closure of Rail Staging Area</p> <p>9. Off-site Evaluation</p> <p>10. Excavation of ponds associated with the site-wide drainage system</p>		<p>7. The areas were cleaned up to former D&D standards in the early 1990's under the authority of the Atomic Energy Act, which is less stringent than standards under the CERCLA for the site cleanup. Additional cleanup work required to meet the CERCLA standards was not included in the contract scope as defined in the Contract (DE-AC24-03OH20152). Under the direction of DOE, the contractor proceeded to assess and remediate this PRS. All field work was completed in the 4th quarter of 2004</p> <p>8. The area is currently identified as PRS 441. Due to the financial constraint incurred in Legacy Medical and Pension Costs (item j), it became necessary to expand the footprint of the rail staging area to allow for additional staging capacity. Furthermore, during the construction of the staging area expansion, contamination was found in one area that has not been previously identified as a PRS.</p> <p>9. Areas outside the MCP property boundaries were not included in the current contract. However, these areas have potentially been impacted by the DOE operations and the regulators have indicated that a risk evaluation should be performed and resulted included in the final CERCLA closure documents for the site.</p> <p>10. PRS 68 is an asphalt-lined pond that is up gradient of other three PRSs. The investigation of PRS 68 is complete. However, the area beneath the pond (now designated as PRS 442) has been identified by the regulators as</p>

Item #	Risk Description	Mitigated (Y/N)	Comments
			<p>an area of concern. The potential exists for additional waste volume to be associated with PRS 442. PRS 69 is an overflow pond located adjacent to the sanitary landfill in OU-1. The Core Team has agreed to containment consistent with the 1995 ROD for the area below the pond. As a result, no additional volume of waste is expected.</p>
K	Acceptance of groundwater exit strategies	N	<p>The uncertainty has a low-to-medium probability of occurrence, with medium-to-high potential cost and schedule impact. A Groundwater “Exit Strategy” for the Miamisburg Closure Project (MCP) has yet to be established. An approved Groundwater Exit Strategy by regulators and stakeholders is required for final closure of the site and is expected to be a long and contentious processes since several areas of groundwater contamination (i.e., exceeding Maximum Contaminant Levels [MCL]) will likely remain upon site closure and transition of long term response action to LM.</p>
L	Adequate funding to carry out the scheduled activities	N	<p>The uncertainty has medium-to-high probability of occurrence with high potential cost and schedule impact. The project requires adequate funding to execute baseline activities for FY05 and 06. Any curtailment of funding will potentially result in delaying the project activities and push the project completion date beyond the target completion date. Consequently, it will require additional cost (“hotel” load) above the target cost to cover the period of extension.</p>
M	Additional Storm Sewer System Work	N	<p>The assessment and remediation of the closed piping of the storm sewer system are not included in the current contract. Without proper characterization and/or remediation of</p>

Item #	Risk Description	Mitigated (Y/N)	Comments
			the storm sewer system could delay its turnover to the MMCIC, which may cause significant schedule and cost impact. The risk has a high probability of occurrence, with medium potential cost impact and medium potential schedule impact.

Risks identified in this table will be further addressed in Risk Management Plan, Volume 2.

In general, the DOE risks result from unexpected contamination, regulatory hurdles, adequate funding, and community and stakeholders’ concerns. Specifically, risks identified to date may directly affect contract cost and schedule. An important example is the continuing growth of below grade LLW volumes that have been significantly underestimated in the Contract (4.3M ft³) and CHM baseline (3.7M ft³) both. All below grade waste in excess of 4.3M ft³ is DOE risk and therefore increases DOE budget requirements. Some of the risks, such as increased volumes of radiological soils, are “real” and need to be addressed right away. Other risks may have lower probability of materializing, but could potentially result in a costly and timely process to be resolved if materialized.

Other kinds of risks, which could impact the successful contract completion, are considered plausible but speculative. Although not included, they are noted below to recognize their potential. These are areas to be monitored but require no specific action:

1. Off-site contamination (mitigated by off-site ROD)
2. Closure of waste disposal sites
3. SRS no longer accepts MCP TRU waste
4. Safety event suspends operations
5. Stakeholder demands prevent parcel transfer
6. LLW shipping mishap suspends operations
7. LLW shipping/disposal violation suspends operations
8. New discovery of soil and or ground water contamination.

B. LM Transition Risk

Risks related to LM transition are still in the process of being identified and significantly depend on EM’s success in addressing the above DOE risks. Some of LM transition risks were mentioned in the draft Mound Site Transition Plan

(STP) submitted to HQ on March 29, 2005 that is currently under reviewed by both EM and LM. The primary goal of the STP is to efficiently close out EM site activities and to transfer all long-term DOE responsibilities from EM to LM in a timely manner with no disruption of services and no negative effects on the successful completion of the cleanup and closure mission leading to transfer of site responsibility by FY2006 year-end.

EM and LM have identified potential programmatic risks that might affect the scope and/or the schedule of the transition and could potentially delay the transition. Some of the potential programmatic risks that are of highest risk priority are listed in Table 1-2. EM and LM are implementing mitigation actions to address these and other potential risks to site transition.

Table I-2 LM Transition Risk

Item #	Description	Mitigation (Y/N)	Comments
1. Program Management			
1.1	Closeout of EM activities may be delayed if functions that were assumed able to be transferred to the EM CBC are unable to be transferred or are unable to be transferred in a timely manner.	N	LM, EM, and the CBC must work together to ensure that a business closeout process is developed.
2. Environmental			
2.1	There is a risk that unresolved cleanup issues could remain at the time of transfer of the site to LM (e.g., the Operable Unit 1 (OU-1) sanitary landfill continues to be an issue with the stakeholders and regulators).	N	LM and EM must work together to ensure that all cleanup issues are resolved prior to transfer. Pursuit of regulatory path forward on OU-1 landfill, canal ROD, and off-site impacted areas
3. Records Management			
3.1	Finding aids may be insufficient to support the identification and retrieval of records in the future that may be required to support post-closure activities.	N	Initiate a cooperative effort between LM and EM to document existing finding aids. Determination of mitigation actions required will be borne out by quarterly readiness reviews by the Site Transition Team.
4. Information Management			
4.1	There may be delays in the transfer (or insufficient transfer) of relational databases (e.g., MEIMS) deemed critical for post-closure because of lack of knowledgeable	N	Aggressively pursue accelerated transition of relational databases before site institutional knowledge is lost because of dwindling contractor personnel and resources.

Item #	Description	Mitigation (Y/N)	Comments
	personnel, resources, etc.		
6. Property			
6.1	MMCIC may delay acceptance of one or more of the site parcels from DOE (e.g., indemnification issue).	N	Aggressively pursue cooperative relationship with MMCIC to minimize likelihood of unexpected responses when DOE offers a parcel for conveyance.
6.2	Significant resources may be required to support the upcoming real estate transactions, as well as to identify and inventory real estate records. However, there are limited personnel who are qualified to conduct real estate transactions for DOE EM and LM.	N	Solicit the support of qualified personnel from other sites (e.g., the Hanford Site) and identify lessons learned from other sites to develop more efficient processes. Identify outstanding actions in the first readiness review for real property.

Please note that the numbering in Table 1-2 is adopted from the Mound STP. The missing numbers (5. Stakeholder and Regulator Interface, 7. Worker Pension and Medical, 8. Procurement and 9. Project Closeout) are not identified as high priority. If any of the potential risks are determined to be a high-risk priority, they will be included in the final STP as well as Volume III of the Risk Management Plan.

More detailed information of the potential programmatic risks associated with the transition and the plans to address the potential risk items will be presented in Volume III of this Risk Management Plan.

Some obvious risks to LM transition are contract related risks, which may cause delay of the site's ability and readiness for transfer, e.g. additional remedial requirements related to OU-1. Delays with property transfer may also complicate transition, which would require both EM and LM concurrent functions. To better clarify roles and responsibilities between LM and EM a transition MOU will be prepared.

IV. METHODOLOGY FOR ASSESSING DOE RISK

Each risk element typically poses a cost and/or schedule impact. When a risk becomes a reality the cost impact will 1) be absorbed by efficiencies and /or 2) require additional funds. Schedule risk, on the other hand, will not extend the project life unless the risk impacts the critical path (CP). In other words, if additional unplanned work is required it may be accomplished concurrently with other work without extension of the CP. Consequently through efficiencies or work realignment, risk work could proceed and not extent the project life. Furthermore, if additional work is outside of the target cost or baseline, it is likely that the contractor will submit a request for an equitable adjustment (REA), hence, change to the baseline. This could also be interpreted as a cost impact as well. Nonetheless, external constraints if not resolved timely could have significant impact on the critical path as well. For example, the MMCIC is not able to accept the DOE’s lease term for the sewer system on time. It causes demolition of Building 57 and subsequent removal of PRS-41 to become critical path activities. As it would impede contractor’s ability to earn fee, it is likely that the contractor will submit a request for an equitable adjustment (REA). For those reasons cost alone is considered the major factor related to MCP risks. However, some risks are so significant, such as OU-1 (see Volume II for detailed discussion) that related time requirements could become the CP and therefore extend the project life. The following two tables (Tables 3 and 4) depict how MCP uses quantitative criteria to categorize qualitative risk in terms of severity.

TABLE I-3 RISK SEVERITY LEVELS FOR COST AND SCHEDULE*

Cost	< \$100K	\$100-250K	\$250-1000K	\$1M-5M	>\$5M
CP Schedule	<7days	7-30days	1-3months	3-6 months	>6 months
	Negligible	Marginal	Significant	Critical	Crisis

* The table values and categories are based on MCP qualitative judgment.

Upon categorizing the severity of a risk, the probability of such a risk materializing is considered. This, also, is a qualitative determination (Very Likely, Likely, Unlikely and Very Unlikely) based on the project managers’ knowledge of site conditions impacting the eventuality of a risk occurring. For instance, the probability of LLW soil volume exceeding the 4.3 M ft³ contract threshold is nearly a 100%. Therefore, this risk is considered to be Very Likely. Using the above severity table and the risk matrix below, an individual risk is identified as 1) Low, 2) Moderate or 3) High.

These rules of thumb are used to quantify the DOE risk potential associated with variations of currently known contract scopes of work. The results of the quantification of the Cost and Schedule impact are included in Volumes II and III. DOE will use the risk assessment results to define the tactics and timing associated with risk reduction. The overall DOE objective is to reduce/eliminate

the risk such that the contract target case, at a minimum, can be accomplished as well as ensure accountability for achieving critical and interim completion dates, and any deliverables needed to be generated.

Table I-4 Risk Matrix Table						
Probability of Risk Materializing	Risk Level					
	Very Likely	Low	Moderate	High	High	High
	Likely	Low	Moderate	High	High	High
	Unlikely	Low	Low	Moderate	Moderate	High
	Very Unlikely	Low	Low	Low	Low	High
		Negligible	Marginal	Significant	Critical	Crisis
Severity of Consequence						

V. RISK REPORTING AND TRACKING

In order to manage identified risk items quarterly meetings will be held to address risk status. Volume II will identify and describe each DOE project risk as well assess the magnitude of risk using the above methodology. Also, Volume II will contain a task list designed to address and/or mitigate each risk. A project manager will be assigned to each of those risks for which he/she is responsible and report monthly progress against each task.

As specific risk elements are identified for LM transition, documentation similar to Volume II will be developed for LM risks in Volume III. Identification of LM related risks will, in part, be derived from the Site Transition Plan.

LIST OF ACRYNOMS

Calendar Year	CY
Comprehensive Environmental Response, Compensation, and Liability Act	CERCLA
CH2M Hill Mound, Inc.	CHM
City of Miamisburg	City
Contracting Officer	CO
Cost Plus Incentive Fee Contract	CPIF
Critical Path	CP
Decontamination & Decommissioning	D&D
Environmental Management	EM
Further Assessment	FA
Fiscal Year	FY
Government Furnished Services/Items	GFS/I
Independent Verification Contractor	IVC
Legacy Management	LM
Low Level Waste	LLW
Maximum Contaminant Level	MCL
Miamisburg Conservancy District	MCD
Multi-Agency Radiation Survey and Site Investigation Manual	MARSSIM
Miamisburg Closure Project	MCP
Miamisburg Mound Community Improvement Corporation	MMCIC
National Emissions Standard of Hazardous Air Pollutants	NESHAP
No Further Action	NFA
Oak Ridge Institute for Science and Education	ORISE
Office of Environmental Management	EM
Ohio Environmental Protection Agency	OEPA
Ohio Field Office	OH
Operable Unit	OU
Pico curies	pCi
Point of contact	POC
Potential Release Site	PRS
Record of Decision	ROD
Request of Equitable Adjustment	REA
Site Transition Plan	STP
Source Evaluation Board	SEB
Transuranic Waste	TRU
U.S. Department of Energy	DOE
Volatile Organic Compounds	VOC