0104-1110190003

United States Government | Department of Energy

memorandum

Ohio Field Office

DATE: DEC 12 1995 OH-0211-96

REPLY TO ATTN OF: OS:BOADA-CLISTA

SUBJECT: OH ENVIRONMENTAL JUSTICE IMPLEMENTATION PLAN

TO: Georgia R. Johnson, Executive Director, DOE Environmental Justice, ED-2

The purpose of this memorandum is to transmit a copy of the Ohio Field Office Environmental Justice (EJ) Implementation Plan. This plan is in response to the White House Executive Order on Environmental Justice and the DOE Environmental Justice Strategy, dated April 1995. The plan includes an implementation plan outline for the Fernald Area Office, the Miamisburg Area Office and the West Valley Area Office.

If you have any questions, please contact me or Lydia M. Boada-Clista at (513) 865-4164.

J. Phil Hamric
Manager

Attachments

cc:
W. Best, AB
J. Craig, FN
G. Gartrell, MB
T. Rowland, WV

OHIO
FIELD
OFFICE

[redacted]

ENVIRONMENTAL JUSTICE IMPLEMENTATION PLAN

U.S. DEPARTMENT OF ENERGY

OHIO FIELD OFFICE

Ashtabula
Fernald
Miamisburg
West Valley

October 1995

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OH ENVIRONMENTAL JUSTICE IMPLEMENTATION PLAN

The Department of Energy (DOE) Environmental Justice (EJ) Strategy , dated April 1995 provides guidance for the Ohio Field Office (OH) and its' Miamisburg, Fernald, West Valley, and Ashtabula Area Offices for developing an Environmental Justice Implementation Plan. It provides all Departmental elements with a structured framework, that identifies a list of programs, policies, and planning processes for possible revisions, as well as a number of model projects that have been developed pre- and post- Executive Order 12898 that embrace the overall objectives of an environmental justice strategy.

The OH EJ Implementation Plan will provide current and ongoing modifications to Departments programs to integrate environmental justice principles into all our Departmental operations. It focuses on the following four Goals as identified in DOE EJ Strategy:

GOAL 1: IDENTIFY AND ADDRESS PROGRAMS, POLICIES, AND ACTIVITIES OF THE DEPARTMENT WHICH HAVE DISPROPORTIONATELY HIGH AND ADVERSE HUMAN HEALTH OR ENVIRONMENTAL EFFECTS ON MINORITY POPULATIONS AND LOW-INCOME POPULATIONS.

GOAL 2: ENHANCE THE CREDIBILITY AND PUBLIC TRUST OF THE DEPARTMENT BY MAKING PUBLIC PARTICIPATION A FUNDAMENTAL COMPONENT OF ALL PROGRAM OPERATIONS, PLANNING ACTIVITIES, AND DECISION MAKING.

GOAL 3: IMPROVE RESEARCH AND DATA COLLECTION METHODS RELATING TO HUMAN HEALTH AND THE ENVIRONMENT OF MINORITY AND LOW INCOME POPULATIONS BY INCORPORATING FULL CHARACTERIZATIONS OF RISKS, INCLUDING THE IDENTIFICATION OF DIFFERENTIAL PATTERNS OF CONSUMPTION OF NATURAL RESOURCES AMONG SUCH POPULATIONS.

GOAL 4: FURTHER DEPARTMENTAL LEADERSHIP BY INTEGRATING ENVIRONMENTAL JUSTICE CRITERIA, AS APPROPRIATE, WITH ACTIVITIES AND PROCESSES RELATED TO HUMAN HEALTH OR THE ENVIRONMENT.

The OH Environmental Justice Implementation Plan will use the Graded Approach to determine key decision points and the information

necessary to make these decisions. The DOE-OH and its' Area Office "Points-Of-Contacts" will assume ultimate responsibility for determining the appropriate level of knowledge necessary for justifying decisions and recommendations to upper management and other concerned parties.

The Department of Energy's Ohio Field Office Environmental Justice Implementation Plan will use a graded approach in identifying programs, policies, and activities that may have disproportionately high and adverse human health or environmental effects on minority and low income populations. The EJ implementation plan development plan is an initial step in an on-going effort to define and integrate specific environmental justice objectives into the Department of Energy's activities and is subject to changes as the various components of the strategy evolve in response to our stakeholders' concerns.

The following are the EJ Implementation Plan Outlines for Fernald, Miamisburg, and West Valley Area Offices, respectively.

Miamisburg Area Office

United States Department of Energy
Environmental Justice Strategy
Implementation Plan Outline

1. Name and Location of Department Facility/Site	MOUND PLANT MONTGOMERY COUNTY MIAMISBURG, OHIO
2. Name of Project/Program	CERCLA / D&D / ENVIRONMENTAL RESTORATION
3. Does the Facility/Site/Program/Project have adverse human health or environmental impacts?	[X] Yes [ ] No If no, Environmental Strategy does not apply -- Document and terminate analysis
4. What Environmental Justice goals or strategies relate to the program/project?	US, DOE, EJ STRATEGY GOALS 1, 2, AND 4
5. What is the nature of the problem/issue	On site stable soil contamination; groundwater contamination that could migrate to drinking water aquifer; one area of soil contamination immediately outside fenceline in a non-residential area.
a) Does the problem/issue have disproportionate human health or environmental effects on specific populations?	a) [ ] Yes [X] No
b) If yes, which population is affected:	b) [ ] Low-Income [ ] Minority
c) Is the conclusion based on perception, analysis, or other facts?	c) [ ] Perception [X] Analysis [X] Other Monitoring, Community Outreach, Information Feedback

6. Specify current or planned involvement with relevant stakeholders:	[X] Current [X] Planned
a) Method of their involvement (e.g. public meetings, citizens committees, surveys, etc.).	a) -Mound Advisory/Action Committees (MAC) -Meetings -Focus groups on specific problems -Newsletter & reponse postcards -Miamisburg Community Investment Corp. (MCIC) -Fact sheets and flyers -Mound Reuse Committee (MRC)
b) Specific perspectives or techniques which will be applied to involve the impacted population(s) (e.g. public testimony, focus groups).	b) SEE ABOVE
c) Are there Stakeholder concerns re: census date? (e.g. undercount, over-count).	c) [ ] Yes [X] No If yes, what are they? Discussions with Stakeholders has occurred in the context of health impacts. No concern over census data has been expressed.
d) Are local survey data available?	d) [X] Yes [ ] No Identify: Survey is re-done every 2 years per FFA.
e) Is translation of EJ materials needed?	e) [ ] Yes [X] No If yes, into what language(s)?
f) Will non-tradional schedules and announcements of meetings be needed?	f) [ ] Yes [X] No
g) Has a tentative schedule of meetings been established?	g) [X] Yes [ ] No If yes, please attach schedule. • General Public Meeting • MRC - The 3rd Friday each month • MCIC - Every other week

7. Have measures of strategy implementation and tentative near term milestones been established? Include the following:	[X] Yes* [] No If no, when do you anticipate beginning? _____
a) Is the program/project currently in process?	a) [X] Yes* [] No
b) Are there plans for conducting demographic analyses to determine impacts on the population?	b) [X] Yes [] No
c) Has an environmental risk management program been developed?	c) [X] Yes* [] No Type: <u>In cooperation with regulators and stakeholders as part of the transition program and environmental restoration.</u>
d) Have plans been made to monitor the progress of the program/project?	d) [X] Yes* [] No
e) Have plans been made to reassess issues which have been identified?	e) [X] Yes* [] No
f) Indicate Milestones/Task(s) Schedule.	f) [] <u>Task</u> <u>Completion Date</u> *Attach documentation where appropriate.

MONITORING OF THE MOUND ENVIRONMENTAL JUSTICE STRATEGY

Through public meetings (Mound Action Committee), comment cards provided by DOE, and the community relations call in number the public is capable of expressing its concerns in face to face forums as well as anonymously. All comments are responded to and those of general interest are covered in the Mound newsletter. Environmental impacts are covered in the Annual Environmental Monitoring Report. The demographics and an update of public interest, concerns, and the most desirable means of learning about Mound are covered subjects in the bi-annual survey conducted under the Community Relations Plan requirements of the CERCLA Federal Facility Agreement.

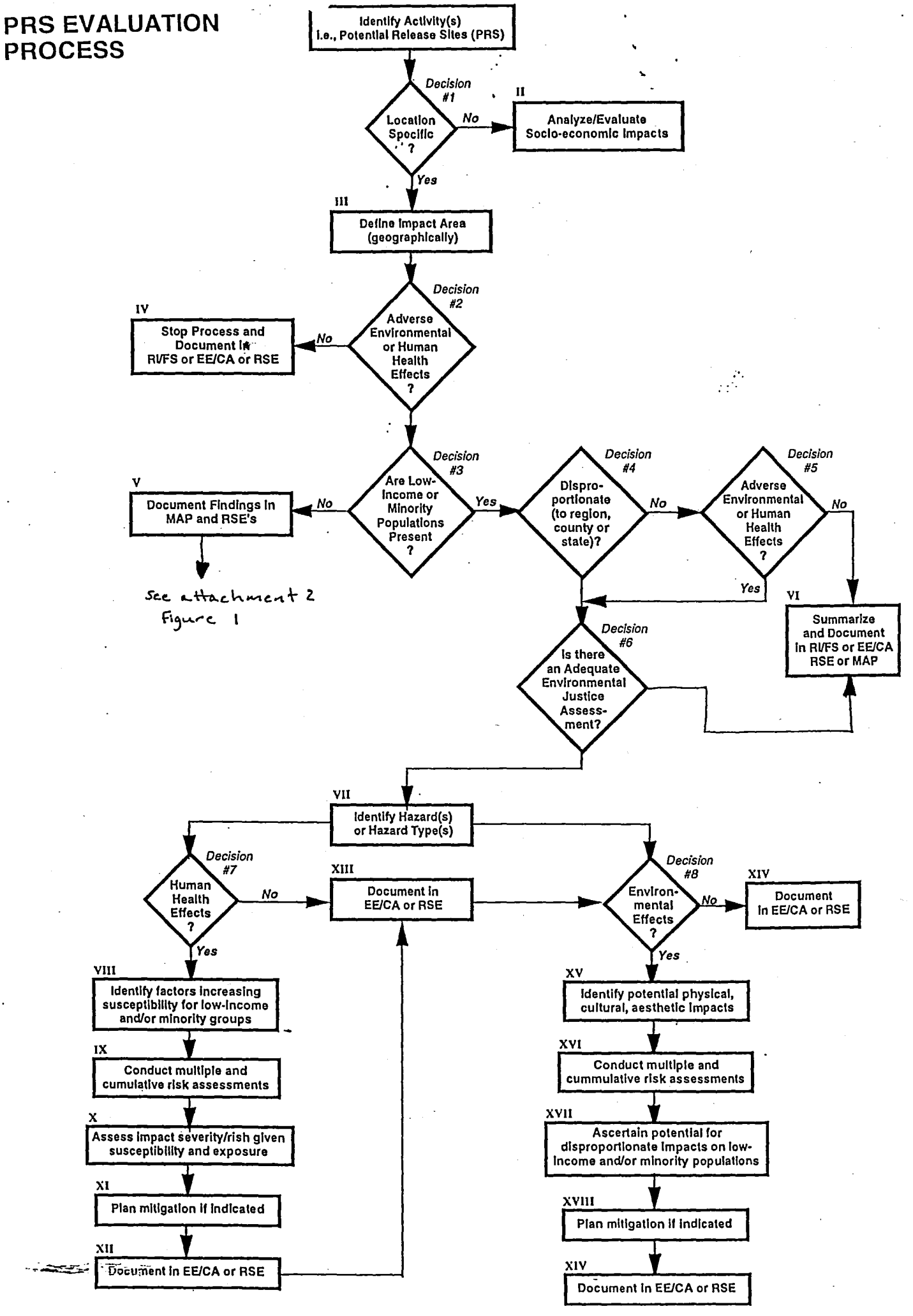
FUTURE MEETINGS/Conference Calls:

10/12/95 @ 9:00 a.m. - Canal Focus Group Meeting
10/19/95 @ 7:00 p.m. - MAC Meeting
11/16/95 @ 7:00 p.m. - MAC Meeting
12/14/95 @ 7:00 p.m. - CERCLA Quarterly Public Meeting
01/18/96 @ 7:00 p.m. - MAC Meeting
02/15/96 @ 7:00 p.m. - MAC Meeting
03/07/96 @ 7:00 p.m. - CERCLA Quarterly Public Meeting
03/21/96 @ 7:00 p.m. - MAC Meeting
04/18/96 @ 7:00 p.m. - MAC Meeting
05/16/96 @ 7:00 p.m. - MAC Meeting
06/06/96 @ 7:00 p.m. - CERCLA Quarterly Public Meeting
06/20/96 @ 7:00 p.m. - MAC Meeting
07/18/96 @ 7:00 p.m. - MAC Meeting
08/15/96 @ 7:00 p.m. - MAC Meeting
08/29/96 @ 7:00 p.m. - CERCLA Quarterly Public Meeting
09/19/96 @ 7:00 p.m. - MAC Meeting
10/17/96 @ 7:00 p.m. - MAC Meeting
11/07/96 @ 7:00 p.m. - FY97 CERCLA Quarterly Public Meeting
11/21/96 @ 7:00 p.m. - MAC Meeting
12/19/96 @ 7:00 p.m. - MAC Meeting

Room location through calendar year 1995 is the Community Room, with the exception of December 14, 1995 for the Quarterly Public Meeting, which is the Council Chamber.
Attached is a posting from Jolene on future Public Meeting/MAC dates

PROCESS

PRS EVALUATION PROCESS



ATTACHMENT

1

Location-Specific PPAs Decision #1

When a PPA is clearly tied to a specific, identifiable site it is said to be location-specific.

Location Non-Specific PPAs II

This category reflects the possibility that some PPAs may create a disproportionately high and adverse impact on minority and low-income populations regardless of the populations' locations. For these PPAs, a location-specific analysis is not appropriate; a more generalized analysis of the PPA's impact(s) is required. The kind of analyses that would be appropriate include those which have been conducted on national policy issues by the Socio-Economic Research and Analysis Program.

Step 1. Defining the Impact Area III

The first step in examining site-specific demographics is to identify or define the study area. The study area is the geographic area within which a potential exists for human health or environmental impacts, based on identified health, hazards, exposure mechanisms, and analytical models used to project exposures. The study area must incorporate the extent of the impact areas[3], which depend on the characteristics of the hazards (e.g., radiation, chemical, physical), and exposure assessment (e.g., transport mechanisms, pathway of exposures). As a result, impact areas for some types of hazards (e.g., soil contamination by chemical spillage) may have relatively small areas, whereas airborne substances such as SO_2 may have much larger impact areas.

In some situations a study area may be defined on the basis of a circle, centered at a site, with a radius of 80 kilometers (50 miles). This approach may be used as a screening tool, but lacks precision. It fails to reflect differences inherent in the nature of the hazard which alter the size and shape of the impact area and the direction of exposure pathways from the site. it is generally recommended that a fixed radius approach be employed only when better information is not available. Relatively precise identification of impact areas is important in an environmental justice assessment. Since minority and low-income populations tend to be spatially concentrated, determining whether an environmental justice issue exists may depend on the definition of the impact area.

Decision #2 and #5

Adverse Human Health Effects: Adverse human health effects are those which negatively affect the general condition and functioning of the individual. For example, the heightened risk of cancer associated with exposure to a particular contaminant constitutes an adverse health effect, as does a decline in life

expectancy, decline in quality of life related to health, and non-fatal disabilities or the reduction in ability to participate in the life of the community.

Decision #2 and #5

Environment: A broad term which refers to milieu within which a given organism lives, including air, water, minerals and all the factors that surround or affect an organism, in this case people, at a given time. For humans, the environment can also refer to cultural and aesthetic components of the surroundings. Included in the cultural are the behaviors and beliefs and attachments to particular sites characteristic of a particular social or ethnic group. One possible example may involve lands which are sacred to Native American groups. In terms of environmental justice, cultural impacts that impinge on minority or low-income populations, in particular, must be examined.

Is there a minority or low-income population in the study area?
Decision #3

The initial characterization of populations within the study area provides information to determine the presence or absence of minority or low-income populations. In the case where all such populations are absent or nearly absent (<1% of the study areas's population) the Environmental Justice Assessment may be terminated, since the likelihood of disproportionate exposure is also absent. The results to this point must be documented. If, however, such populations are present in the study area, the results to this point should be documented and the process continued to the next step.

Decision #4 X

Disproportionately High: If an effect is adverse the question of proportionality must then be addressed. When the distribution of such an effect among individuals is systematically related to attributes, such as race or ethnicity, the effect is disproportionate. The issue, however, is complicated by the possibility that adverse impact may vary in terms of rate of occurrence in the population or intensity of effect or both. The point at which an adverse effect is disproportionately high or "significant" occurs when either the probability of exposure to a hazard is higher for minority or low-income populations or the intensity/severity of effect from a given exposure is greater than expected in the majority population. Comparisons of population proportions, both between (a) the study area and a larger region (reference area) and (b) within divisions of the study area are needed to determine the potential for disproportionate impacts.

Decision #6

Environmental Justice: The fair and equitable distribution of human health or environmental hazards and benefits.

XII VII

Identify Hazard(s) or Hazard Type(s): Characterize site (PRS).

VII

Hazard: Hazards are those substances or physical forces that have an inherent risk of adversely affecting people who are exposed to them.

DATA SOURCES AND ANALYTICAL APPROACHES ARE: VII

- baseline (surrounding) ambient hazard levels
- hazards from non-DOE facilities and activities
- DOE site facilities and activities

BASELINE REGIONAL HAZARDS:

- Water Quality
- Air Quality
- Naturally occurring Radon

NON-DOE FACILITIES AND ACTIVITIES:

- Air Emissions
- Water Discharges
- Hazardous waste sites
- Transportation systems

DOE SITE FACILITIES AND ACTIVITIES:

- In evaluating health risks for the surrounding community, all off-site effects of the total DOE-site operations should be considered.
- ASSESS HUMAN HEALTH IMPACTS FROM EACH HAZARD CATEGORY. (Toxicity, exposure pathway analysis)

Decision #7

The procedure recommended for Health Effects Assessment addresses the potential for both disproportionately high individual risk levels and overall population subgroup exposures. This is accomplished in a series of steps that are based on the identification of DOE site hazards, impact areas, and population distributions described in the Site-Specific Demographic Assessment. The emphasis is on aspects of minority and low-income population susceptibility to health effects from hazard exposure and on assessing impacts of multiple and cumulative hazard exposures.

Health effect risk: The probability that an adverse health impact will occur, given individual or population exposure to a hazard or combination of hazards.

Health effect susceptibility depends on: VIII X

- o pre-existing health (disease) status,
- o behavioral characteristics, such as fish and wildlife consumption,
- o age structure of the population, and
- o occupational exposures.

There are indications that minority and low-income populations may have constellations of characteristics that place them in the "high-risk" category in terms of health effect susceptibility.

IX & XV1

Multiple and Cumulative Impacts: The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[6] Examples include:

- o Workers exposed due to on-site occupations and also by living in nearby off-site residential areas;
- o Off-site residents exposed to hazards from more than one facility on the same site or multiple facilities at different sites.

Decision #8 XV

Environmental Effects Assessment:

Physical Impacts (floods, explosions etc.)

Cultural Impacts (sacred land, valued community structures, archaeological sites)

Aesthetic Impacts (scenic degradation of environment, construction of perceived offensive structures, reduction in visibility)

XVII

To ascertain potential for disproportionate health risk to minority and/or low-income populations:

- Health Status
- Behavioral Characteristics
- Demographic Structure
- Occupational Exposure

Supporting Definitions

Minority: For purposes of environmental justice analyses, the term minority shall refer to those individuals or groups classified by the Bureau of the Census as Negro, Black, African-American, Hispanic, Asian and Pacific Islander, American Indian, Eskimo, Aleut; and other non-white persons based on self-reported racial/ethnic status.

Low-Income: The definition for low-income may vary depending on the source of data being used and the year being examined. For example, if data is from the 1990 census, then the definition will be consistent with that reported by Bureau of the Census for that year for individuals or households below the poverty level. On the other hand, if population estimates for a more recent year are available then the corresponding poverty level figures must be used. (For additional clarification see Appendix B).

Population: Population refers to the aggregate total of individuals (or sub-group totals, or combinations of these) within the particular geographic unit of interest, including counties, census tracts, census block groups, zip code areas, etc. The geographic unit of interest may vary depending on site-specific characteristics.

Minority Population: A minority population consists of the sum of self-reported individuals in a sub-group category of minority populations (see 7 & 9 above) that reside within the geographic unit. These may be considered separately (e.g. African American, Hispanic or Native American, etc) or combined (e.g. Total Minority or Underrepresented Minorities).

{IV, V, Vi, XIV}

RI/FS - Remedial Investigation and Feasibility Study.

EE/CA - Engineering Evaluation and Cost Analysis.

RSE - Removal Site Evaluation.

MAP - Mound Action Plan.

PPA - Policy Procedure Activity.

A Site-Specific Demographic Assessment process is developed for determining the potential for any disproportionate hazard exposure to occur at a given site location. This process has four main steps:

- identify hazards associated with the study site,
- define a study area that incorporates the hazard impact areas,
- determine whether minority or low-income populations are disproportionately represented in the study area relative to reference areas, and
- determine whether minority or low-income populations are disproportionately represented in the higher potential exposure areas of the study area (e.g., closer to the hazard source).

If the potential for disproportional exposure is very low, the analysis stops at this point, otherwise a detailed Health Effects Assessment is indicated. A similar process can be implemented to evaluate environmental impact distributions.

Adverse: Adverse health or environmental effects are those that are injurious to health or to the physical, cultural or aesthetic environment.

Effects: (a) Direct Effects are those effects which are caused by the action and occur at the same time and place; (b) Indirect effects are caused by the action but are later in time or farther removed in distance.

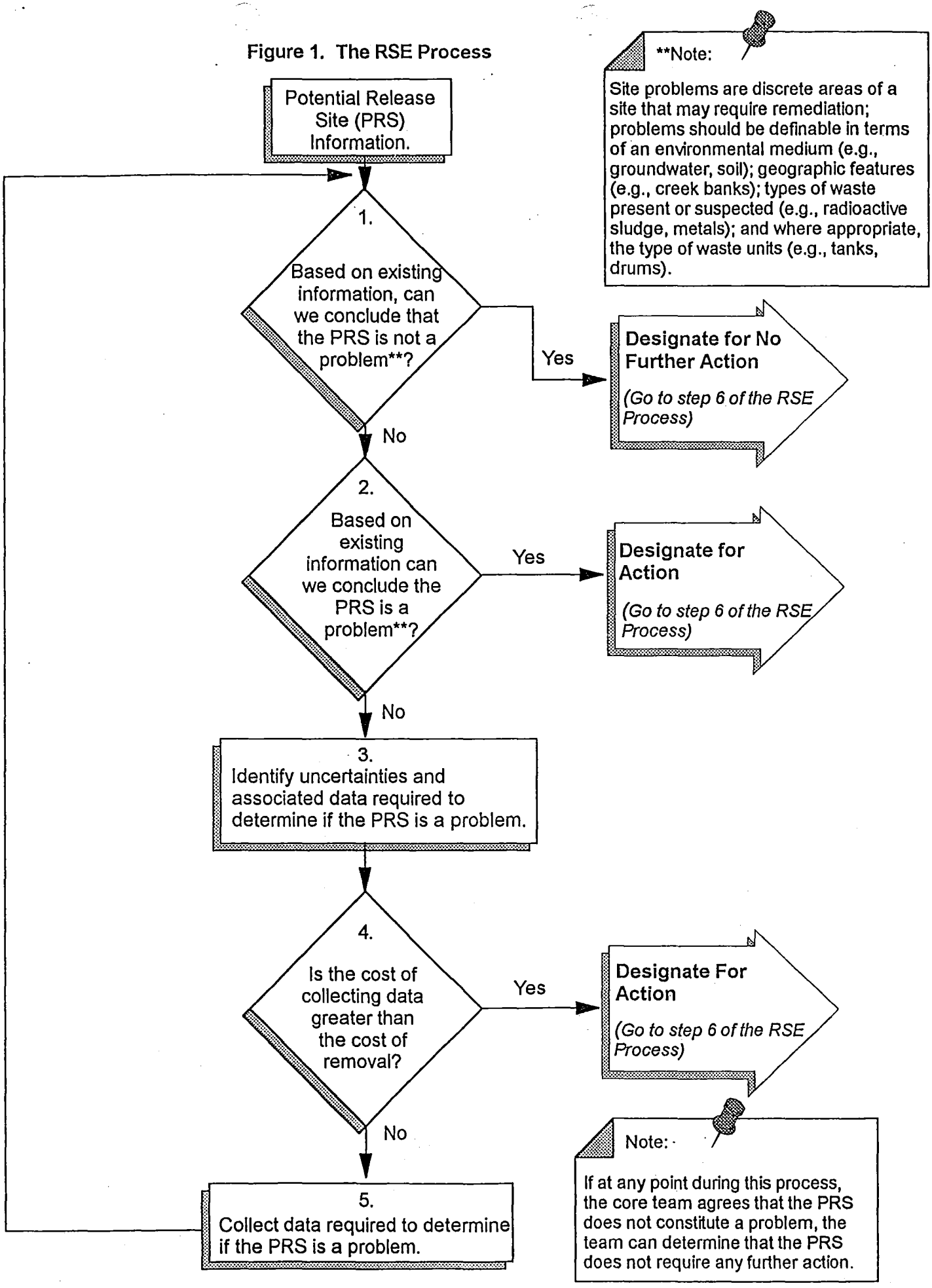
High: Where standards exist, rates of exposure or risk that exceed those standards may be considered high. Where no standards exist, what is high may be based on best scientific estimates or may reflect concerns of the public or affected stakeholders as measured by surveys or similar techniques.

Exposure: Intake of a hazardous substance through inhalation, ingestion or skin (dermal) contact, or, alternatively, contact with a physical force. Exposure may also be treated more broadly as a situation involving a high potential for contact with a hazard, regardless of whether or not contact occurs.

ATTACHMENT

2

Figure 1. The RSE Process



The RSE Process (Continued)

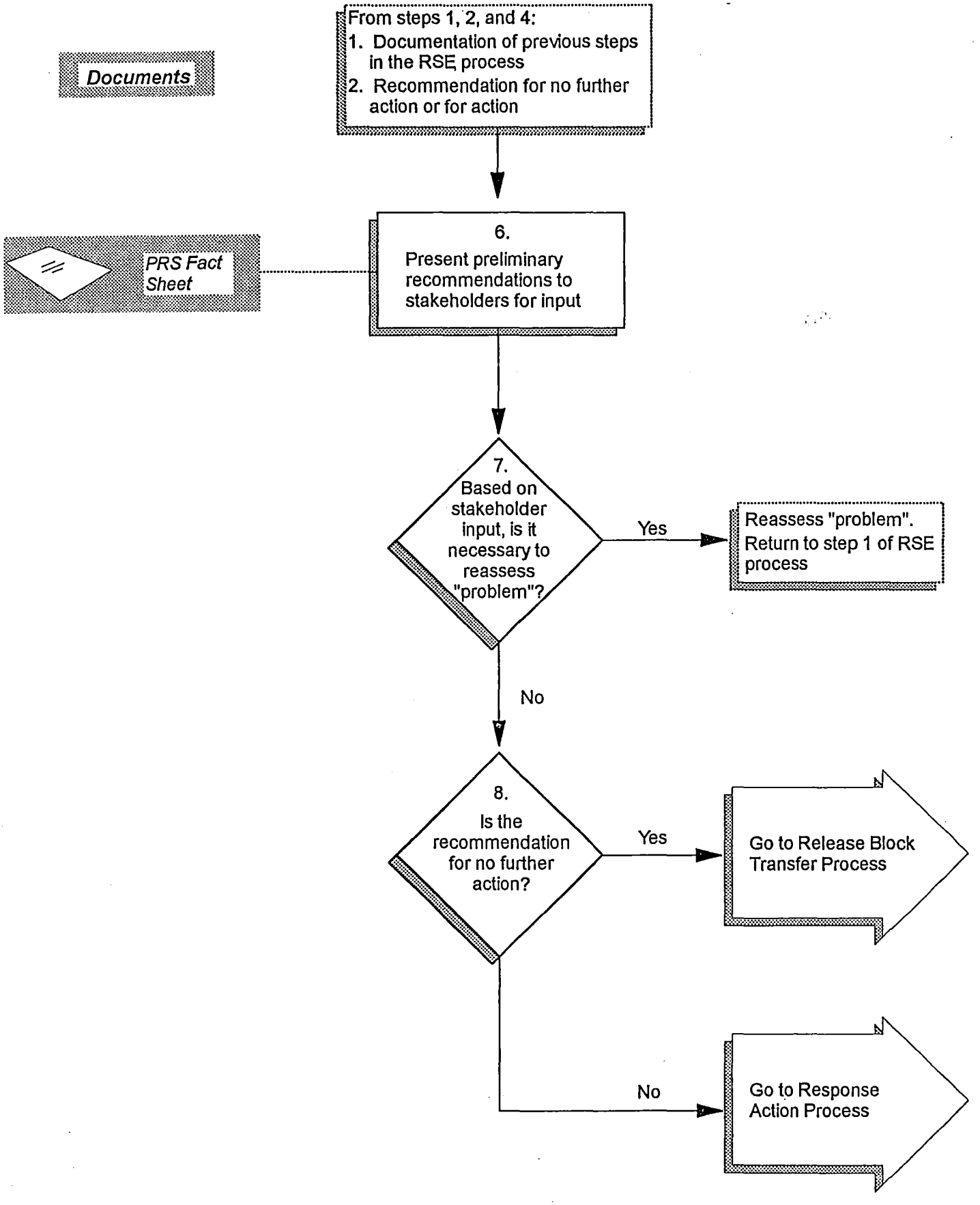


Figure 2. The Response Action Process

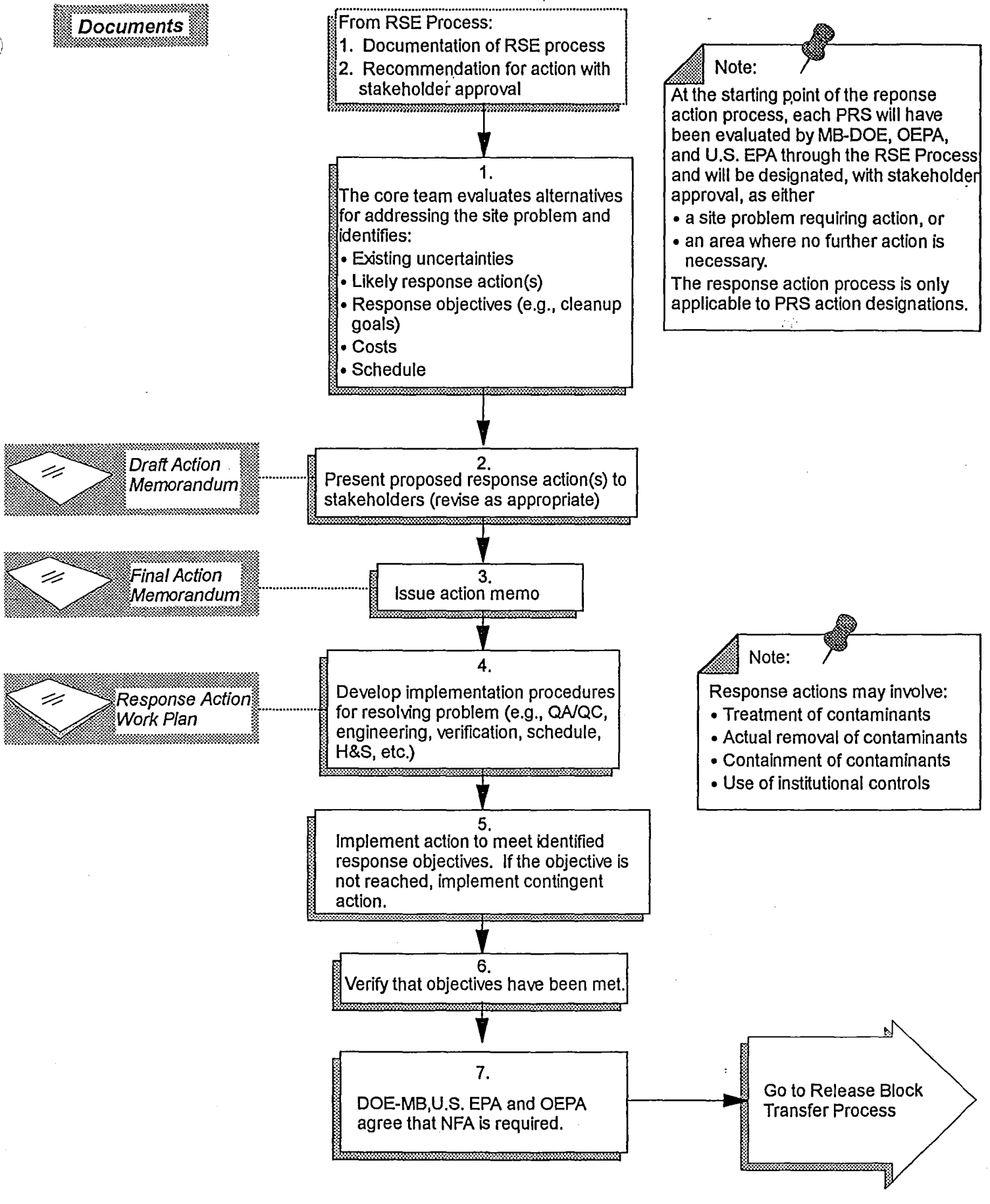
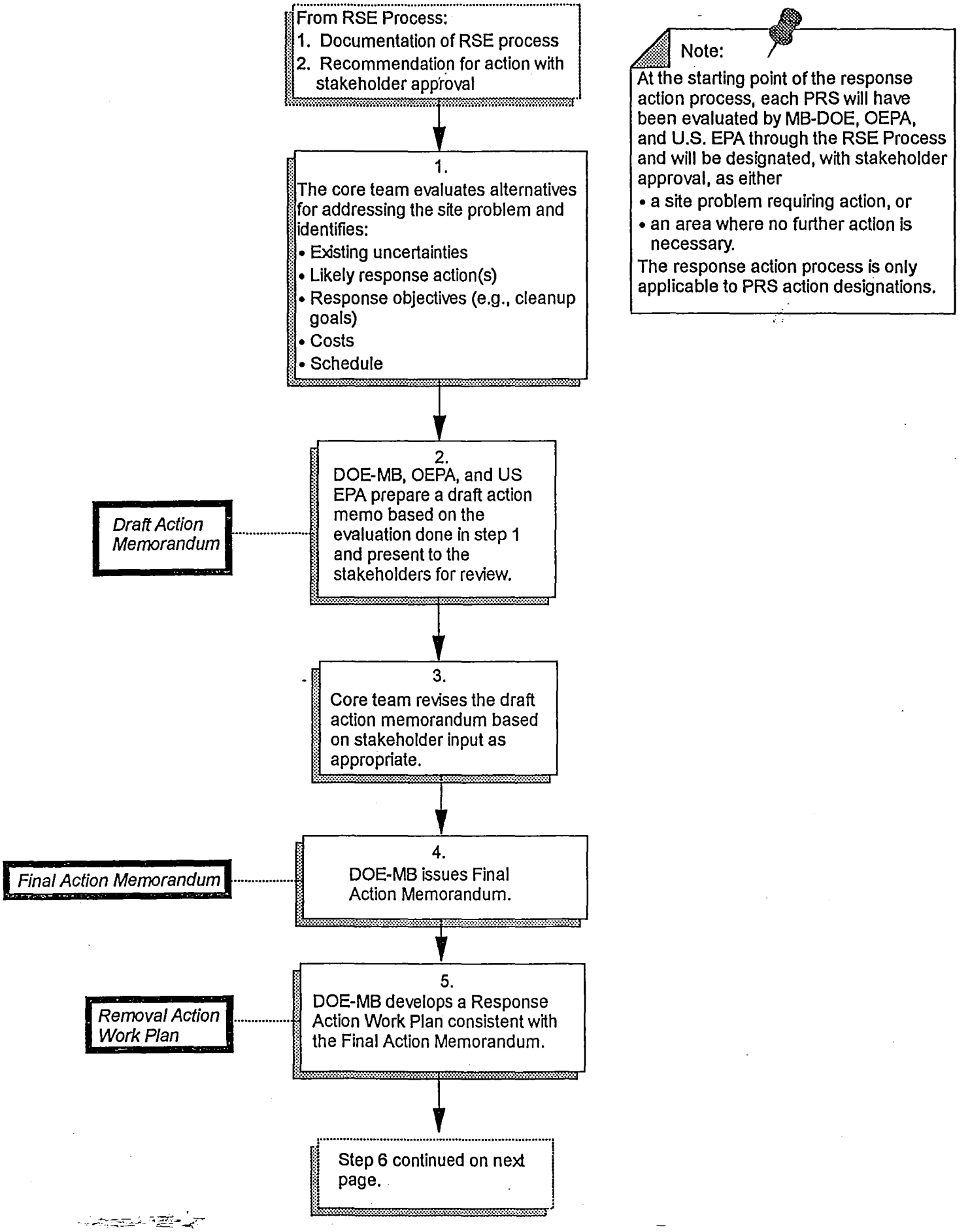
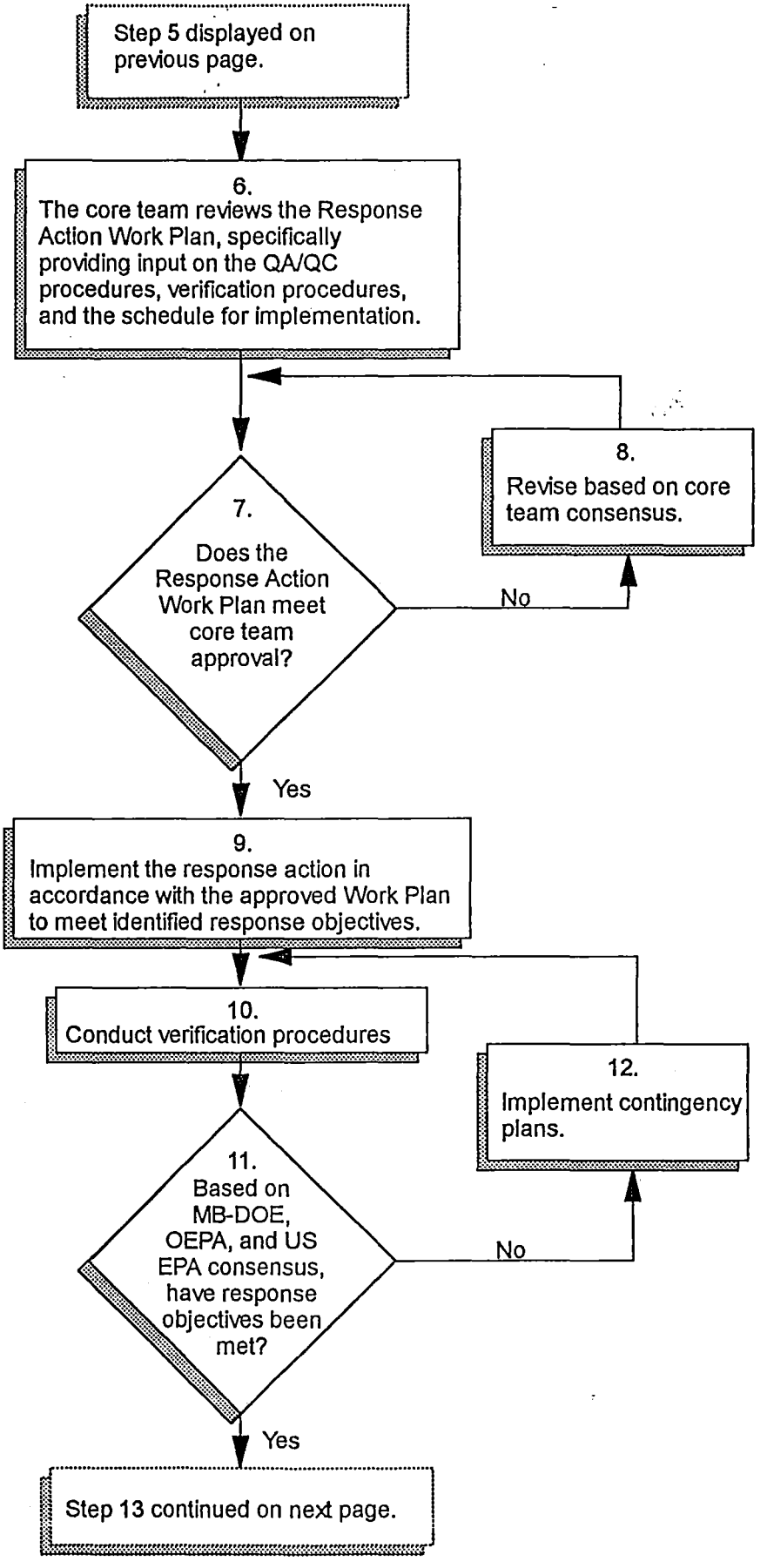


Figure 3. The Detailed Response Action Process



The Detailed Response Action Process (continued)



The Detailed Response Action Process (continued)

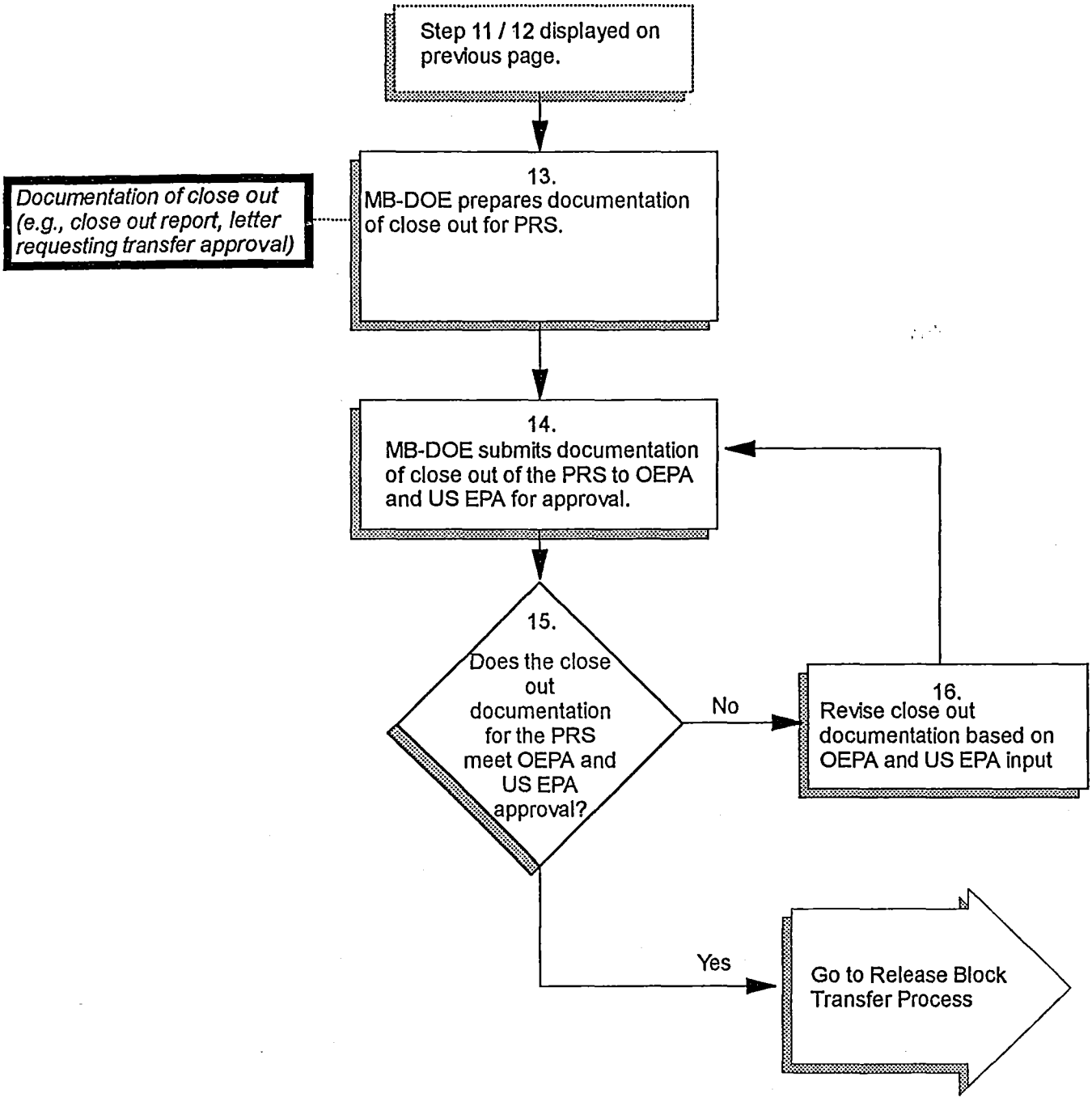
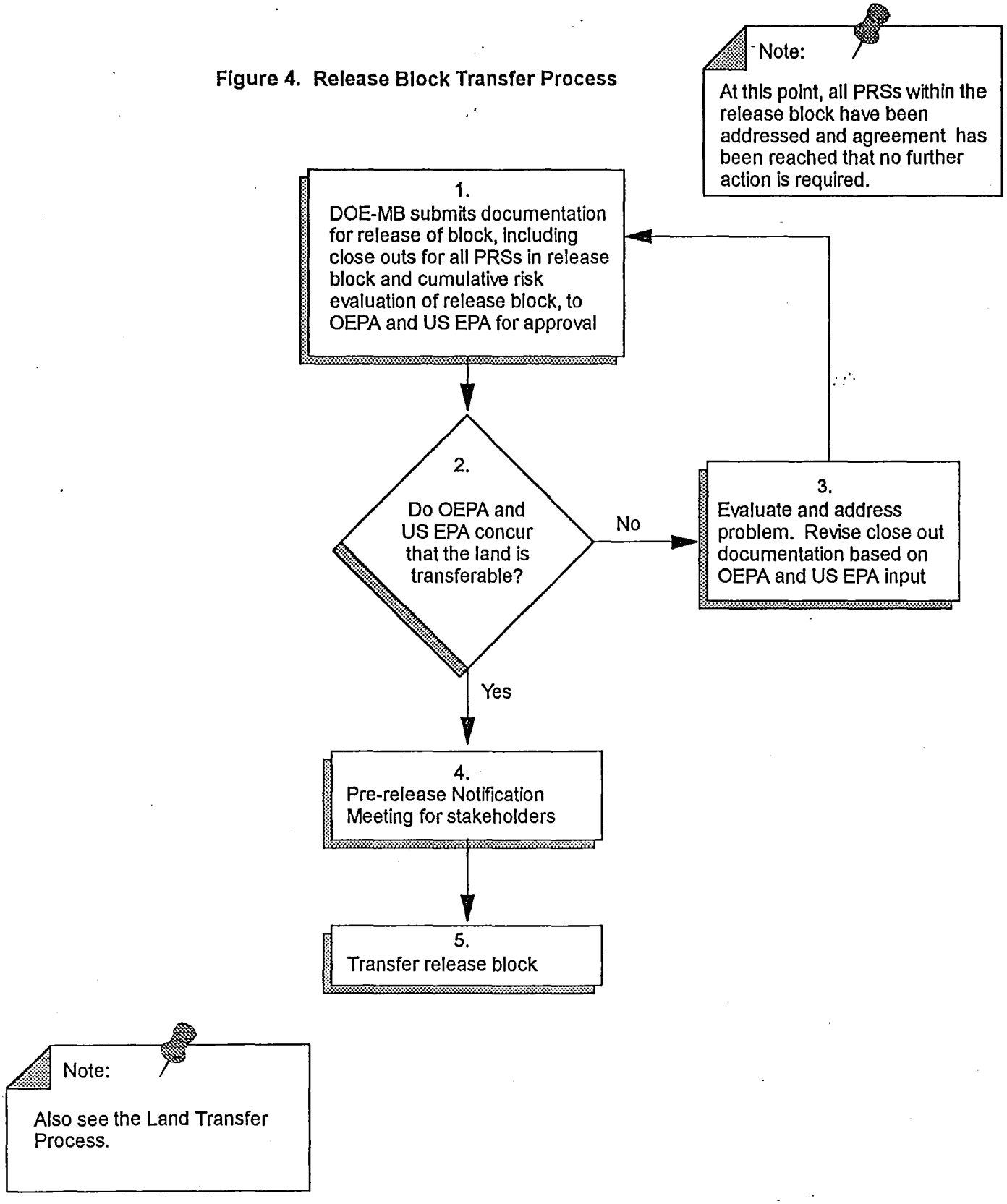


Figure 4. Release Block Transfer Process



MOUND ENVIRONMENTAL CHECKLIST

Project/Activity Title:
Tritium Collection Monitor Bubbler Inst.

NEPA ID Number: MDP-95-009 Date: 2/1/95

Program Office:
EM

Project/Activity Number:

Line Management Official:
W.C. Sherard, Jr., Director

Contact Name:
James Johnson, DOE/MB 513 847-5234
Mark Gilliat, EG&G Mound 513 865-4407

Signature: X

Sponsor:
C.E. Gallaher

Engineer:

A. BRIEF PROJECT/ACTIVITY DESCRIPTION: Install three back-up tritium bubbler collection monitors in T-99. The bubblers will provide on line back-up. The back-up bubblers will help provide highly accurate effluent monitoring at all times and establish a system which provides more than one data point in the event of an excursion.

Is this project/activity described in or covered by existing NEPA documentation? If yes, identify.(No)

B. ENVIRONMENTAL CONCERNS: Will the project/activity, either during construction or operation, result in changes and/or disturbances in the following entities? Provide brief explanations where appropriate. If the proposed project/activity represents a commitment to a course of action that would ultimately require a positive response to one or more of the questions below, identify question numbers and provide explanations.

	Yes	No		Yes	No
1. Air Emissions	___	x	14. Activity Outside Area Fence/ Wildlife	___	x
2. Liquid Effluents	___	x	15. Archaeological/cultural Resources	___	x
3. Solid Waste	___	x	16. Noise Levels	___	x
4. Radioactive Waste/Soil	___	x	17. Radiation/Toxic Chemical Exposures	___	x
5. Hazardous Waste	___	x	18. Pesticide/Herbicide Use	___	x
6. Mixed Waste (rad & haz)	___	x	19. Threatened/Endangered Species	___	x
7. Chemical Storage/Use	___	x	20. Floodplains/Wetlands	___	x
8. Petroleum Storage/Use	___	x	21. High Energy Source/Explosives	___	x
9. Asbestos Waste	___	x	22. Transportation	___	x
10. Water Use/Diversion	___	x	23. Environmental Restoration Site	___	x
11. Drinking Water System	___	x	24. Socio-Economic	___	___
12. Sewage System	___	x			
13. Clearing or Excavation	___	x			

Explanation and qualification of specific responses of "yes".

Number	Explanation

DEMOGRAPHIC DATA

ERCLIS ID	SITE NAME	ST	Population "0" Miles	Median Household Income	Age 0-4	Age 5-9	Age 10-19	Age 20-49	Age 50-64	Age 65-Up	WHITE "0" Miles	BLACK "0" Miles	INDIAN "0" Miles	ASIAN "0" Miles	OTHER "0" Miles	HISPANIC "0" Miles	MINOR.
OH6890008976	FEED MATERIALS PRODUCTIO	OH	21	38,367	1	1	3	9	4	2	20	0	0	0	0	0	
OH6890008984	US DOE MOUND PLANT	OH	991	30,193	75	73	142	453	122	125	982	2	1	5	0	5	.04%

ERCLIS ID	SITE NAME	ST	Population "1" Miles	Median Household Income	Age 0-4	Age 5-9	Age 10-19	Age 20-49	Age 50-64	Age 65-Up	WHITE "1" Miles	BLACK "1" Miles	INDIAN "1" Miles	ASIAN "1" Miles	OTHER "1" Miles	HISPANIC "1" Miles	
OH6890008976	FEED MATERIALS PRODUCTIO	OH	594	29,999	50	46	91	266	94	47	592	0	1	1	0	1	
OH6890008984	US DOE MOUND PLANT	OH	7,203	26,866	489	535	1,022	3,254	1,007	893	7,130	12	9	41	5	28	1.3%

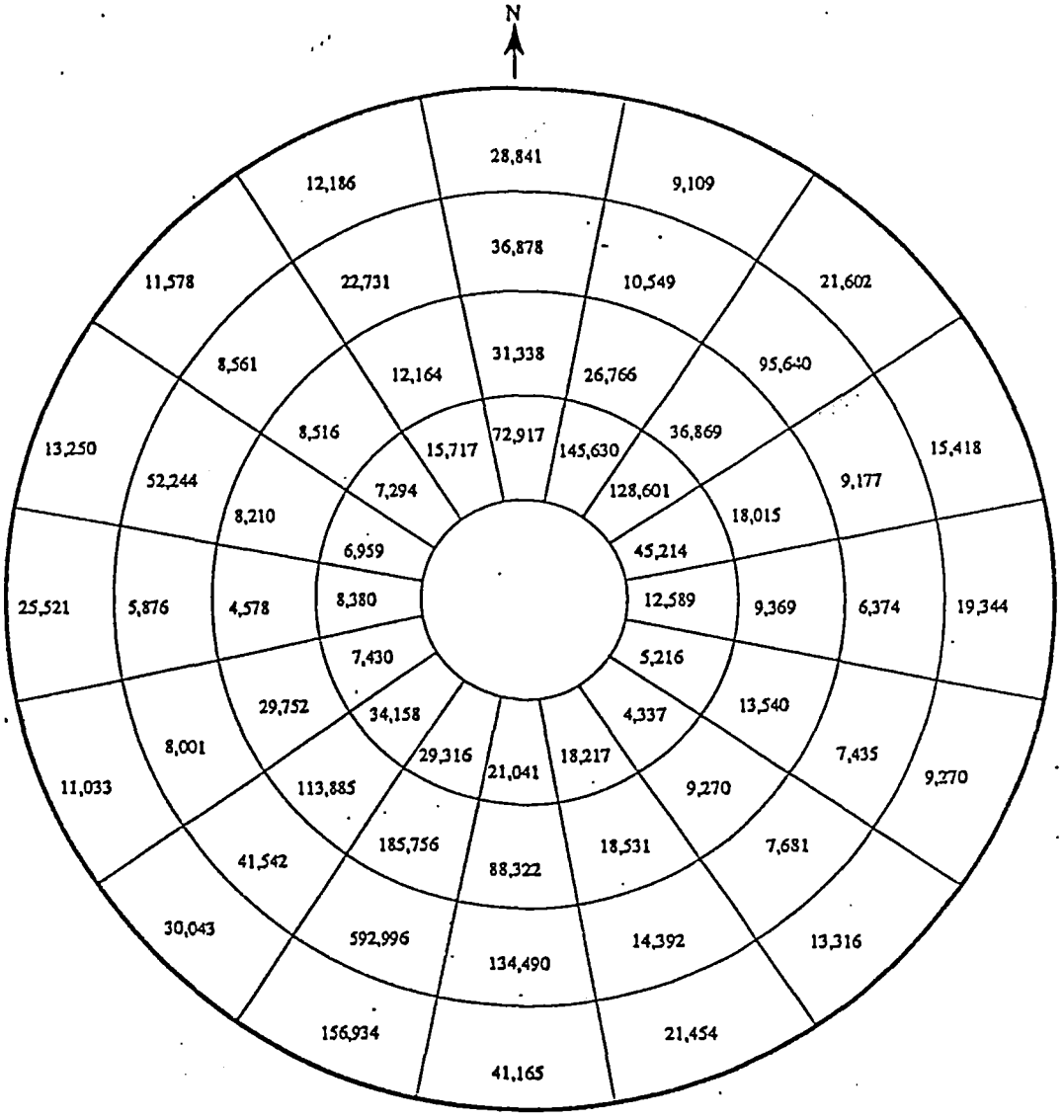
ERCLIS ID	SITE NAME	ST	Population "4" Miles	Median Household Income	Age 0-4	Age 5-9	Age 10-19	Age 20-49	Age 50-64	Age 65-Up	WHITE "4" Miles	BLACK "4" Miles	INDIAN "4" Miles	ASIAN "4" Miles	OTHER "4" Miles	HISPANIC "4" Miles	
																	1%
OH6890008976	FEED MATERIALS PRODUCTIO	OH	10,791	36,715	811	888	1,731	4,904	1,581	881	10,733	22	15	15	7	38	
OH6890008984	US DOE MOUND PLANT	OH	47,835	30,707	3,433	3,329	6,418	23,214	6,519	4,918	46,516	794	75	393	49	213	
																	3.2%

Landview II

STATE OF OHIO

9.7% families > low-income
12.5% people

12.2% minority



0 - 10 MILES			
N	22,172	S	12,967
NNE	42,420	SSW	32,098
NE	55,462	SW	26,549
ENE	44,585	WSW	5,489
E	23,647	W	3,433
ESE	10,710	WNW	6,524
SE	7,284	NW	4,125
SSE	7,781	NNW	4,757

CUMULATIVE POPULATION TOTALS 1989 Population 0 - 50 Miles	
0 - 10	310,003
0 - 20	873,019
0 - 30	1,487,900
0 - 40	2,542,467
0 - 50	2,982,531

Figure 1-3. Distribution of population surrounding Mound

EG&G Mound Applied Technologies
Employee Residence
(based on mailing zip codes)

City	%	Employees
Fairfield	.32	4
Hamilton	.48	6
Middletown	6.10	75
Monroe	.57	7
Okeana	.08	1
Oxford	.16	2
Somerville	.24	3
Trenton	.57	7
West Chester	1.06	13
West Middletown	.08	1
BUTLER COUNTY	**9.68**	**119**

City	%	Employees
Medway	.24	3
New Carlisle	.32	4
Springfield	.08	1
CLARK COUNTY	**.65**	**8**

City	%	Employees
Arcanum	.16	2
Greenville	.08	1
New Madison	.08	1
DARKE COUNTY	**.32**	**4**

City	%	Employees
Beavercreek	1.46	18
Bellbrook	.73	9
Jamestown	.16	2
Spring Valley	.90	11
Xenia	.65	8
Yellow Springs	.08	1
GREENE COUNTY	**3.99**	**49**

City	%	Employees
Cincinnati	.98	12
Forest Park	.08	1
Loveland	.08	1
Norwood	.16	2
Reading	.08	1
Sharonville	.08	1
HAMILTON COUNTY	**1.46**	**18**

City	%	Employees
Laura	.16	2
West Milton	.24	3
MIAMI COUNTY	**.40**	**5**

City	%	Employees
Brookville	.65	8
Centerville	7.32	90
Clayton	.16	2
Dayton	15.13	186
Englewood	.32	4
Farmersville	1.63	20
Germantown	3.99	49
Huber Heights	1.38	17
Kettering	5.45	67
Miamisburg	15.78	194
Moraine	.49	6
New Lebanon	1.06	13
Riverside	.40	5
Trotwood	2.77	34
Union	.08	1
Vandalia	.73	9
West Carrollton	5.86	72
MONTGOMERY COUNTY	**63.22**	**777**

City	%	Employees
Camden	.57	7
Eaton	.65	8
Gratis	.08	1
Lewisburg	.08	1
West Alexandria	.49	6
West Manchester	.08	1
PREBLE COUNTY	**1.95**	**24**

City	%	Employees
Carlisle	3.17	39
Franklin	6.91	85
Lebanon	1.79	22
Mason	.24	3
Morrow	.08	1
Oregonia	.16	2
Springboro	3.74	46
Waynesville	1.06	13
WARREN COUNTY	**17.16**	**211**

City	%	Employees
Bellefontaine	.08	1
LOGAN COUNTY	**.08**	**1**

City	%	Employees
Blanchester	.08	1
Clarksville	.08	1
Wilmington	.16	2
CLINTON COUNTY	**.32**	**4**

City	%	Employees
Ft. Thomas, KY	.08	1
Newport, KY	.08	1
KENTON COUNTY, KY	**.16**	**2**

City	%	Employees
Georgetown	.08	1
BROWN COUNTY	**08**	**1**

City	%	Employees
Groveport	.08	1
FRANKLIN COUNTY	**.08**	**1**

City	%	Employees
Indianapolis, IN	.08	1
MARION COUNTY, IN	**.08**	**1**

City	%	Employees
Manchester	.08	1
ADAMS COUNTY	**.08**	**1**

City	%	Employees
Milford	.08	1
CLERMONT COUNTY	**.08**	**1**

City	%	Employees
Richmond, IN	..08	1
Williamsburg, IN	.08	1
WAYNE COUNTY, IN	**.16**	**2**

81% live within 10 miles of MOUND

STATE OF OHIO (Demographics)

87.8% White/ 12.2% Minority people

Low Income 9.7% family/ 12.5%

County/ City	White	Minority	Low Income
Montgomery Co.	80.8%	19.2%	9.8%/ f and 12.6%/ p
Middletown	90.1%	9.9%	7.6%/ f and 10.6%/ p
Warren Co.	92.2%	7.8%	5.3%/ f and 6.4%/ p
AVERAGE	**87.7%**	**12.3%**	**7.5%/ Family And 9.8%/People**

all other counties less than 4% minority and other cities all less than 2% minority

Butler Co.
Clark Co.
Drake Co.
Greene Co.
Hamilton Co.
Miami Co.
Preble Co.
Wayne Co.
Adams Co.
Warren Co.
Logan Co.
Clinton Co.
Kenton Co.
Brown Co.
Franklin Co.
Marion Co.

CITY OF MIAMISBERG

TOTAL POPULATION 17,834
WHITE POPULATION 17,521

MINORITY	LOW INCOME
BLACK 0.8%/142	2.4% PER/PERSON
AMER.INDIAN 0.1%/19	1.4% PER/FAMILY
ASIAN 0.7%/131	
OTHER 0.1%/21	
TOTAL:1.7%/313	

REFERENCE:1990 CENSUS DATA

SUCCESS

DOE / MB
SUCCESS STORIES

On the canal clean-up a public focus group was formed, where together the various factions of public and DOE worked to establish a clean-up goal that was acceptable for all. This took place from June 1994 to March 1995.

In working with the public we established an additional mode of interactions called the Mound Action Committee. This group provides volunteers to work in detail with DOE on specific issues and results in work plans for clean-up that are acceptable to all. This involves safety issues and waste disposal issues.

MOUND
Environmental Restoration Program

SUPERFUND Update

EG&G

September 1995

AUGUST MEETING HIGHLIGHTS

The August Mound Action Committee Meeting was held on August 17th in the Miamisburg Community Room. Members of the public spent time discussing Mound's Environmental Monitoring Program with Dr. Linda Bauer, EG&G's Manager of Environmental Monitoring. Other topics discussed and updates presented included the Health Study Focus Group, the Canal Focus Group, and the possibility of a technical focus group.

The 1995 Third Quarter CERCLA Public Meeting was held on August 24th at the Miamisburg Civic Center Community Room. Members of the public had the opportunity to discuss field activities and updates with Mound's environmental restoration program managers, as well as representatives from waste management and safe shutdown. After the roundtable discussions, Mr. Robert Indian, Chief of the Chronic and Environmental Disease Surveillance section of the Ohio Department of Health made a presentation on cancer incidence among residents of Butler, Montgomery and Warren countes in Ohio.

Ken Morgan and Dr. Velma Shearer testing the new "Supersack".

1995 MOUND MEETING DATES

Sept. 21 - Canal Focus Group 6:00 p.m.	Msbg. Civic Center Community Room
Sept. 21 - MAC 7:00 p.m.	Msbg. Civic Center Community Room
Oct. 19 - MAC 7:00 p.m.	Msbg. Civic Center Community Room
Nov. 16 - MAC 7:00 p.m.	Msbg. Civic Center Community Room
Dec. 14 - CERCLA Qtrly. 7:00 p.m.	Msbg. Civic Center Council Chambers

In This Issue:

MOBILIZED AND MOV..NG

Removal Action in Area 7 Setting Records When Dig Face Came to Town!

It's 7:00 am on a simmering Wednesday morning in the dog days of August. Through the morning haze a pale red sun floats over a gray horizon like an egg yoke in the sky. The National Weather Service is forecasting record heat and humidity by midafternoon, and a heat warning is already being broadcast throughout the plant.

In a parking lot behind and below Building 29, dozens of white, dumpster-size metal boxes emerge through the gray with the first morning light. Set in neat rows, row upon row, the boxes are equally spaced.

From a trailer on the west side of this staging area, a figure in white Tyvec –radiation protection clothing– and face mask walks to a John Deere trackhoe excavator and starts the engine. He puts this behemoth through some early morning calisthenes, then positions it alongside an 8 foot jumble of earth, rock, rebar and debris lifted from a shallow excavation just a few feet away. In short order, he is joined at the edge of the site by three more figures in Tyvec and several others in Mound greens. Now, a frontloader roars to life and, with a nimbleness that belies its size, delivers one of the boxes to the excavator.

What unfolds now is a methodical, highly choreographed sequence of boxing this potentially radioactive rubble for transport to another staging area on the SM/PP hill. The trackhoe takes a mouthful of earth from the mound, swings around left to right, lowering the load to the tarmac and offering up the contents to a radiation technician for surveying. With a Fidler radiation counter, a garden trowel, and a plastic cup, the technician takes a reading, takes a scoopful of sample, seals it in the cup, and passes it to a teammate doing recordkeeping. The sampled load is then dumped in the box, and the procedure repeated, in exactly the same way, another three times, to fill the box. Then with amazing deftness, the great claw rakes the dumpload level, tamps it so gently, and lifts away, while the decontamination workers lid the box. The frontloader reappears to remove it and replace it with another empty box.

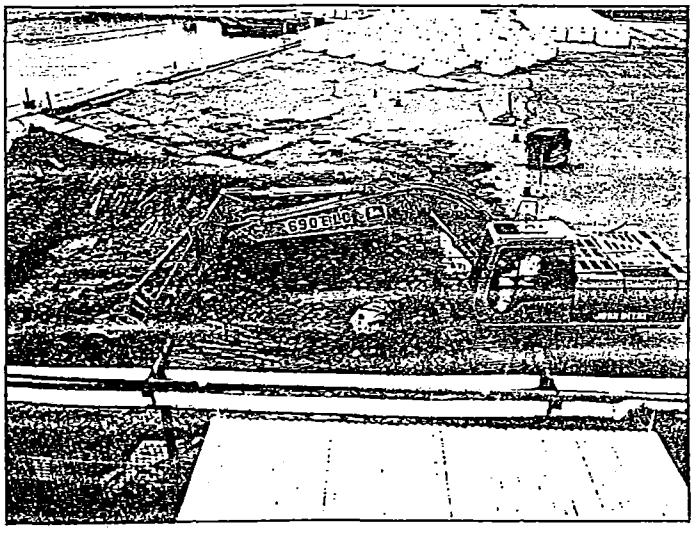
Boxing this rubble, dug from the parking lot to create a 58 x 48 x 6 foot excavation pad, is the first step for a planned demonstration of soil characterization technology, dubbed the "Dig Face Characterization" at Area 7. The demo will link highly sensitive scanning instruments to computers to show how areas of known or suspected radioactive contamination below ground can be located and mapped on computer printouts before actually sinking a shovel!

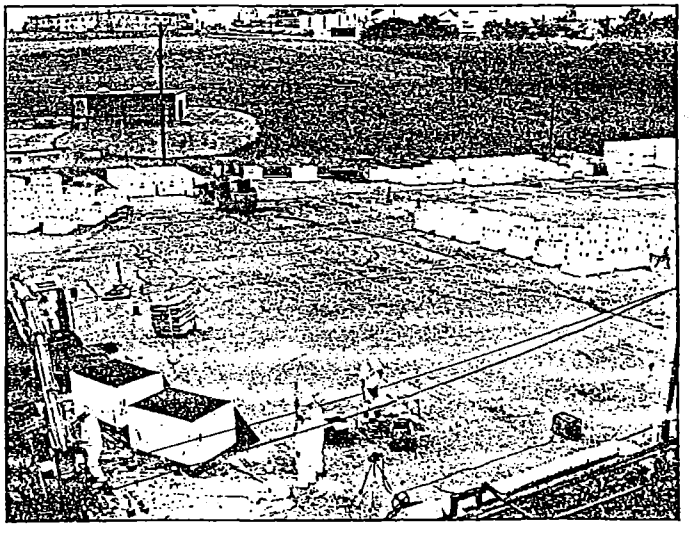
Originally, Area 7 was little more than a steep ravine that formed the upper reach of the plant drainage ditch. Historically, it was used as a dumping ground for contaminated waste and debris, with most of the refuse deposited at the lower reaches of the ravine. A septic tank, now long abandoned, is still buried, according to original plant construction drawings, near the head of the original ravine at the northern end of Area 7. Used from 1946 through the early 1950's for treatment of sanitary waste, the tank is assumed to be a 1500 to 3000 gallon concrete box buried within five feet of the original (1946) topography. Backfilling the ravine, however, has since raised the current surface elevation approximately 10-15 feet above the original contour.

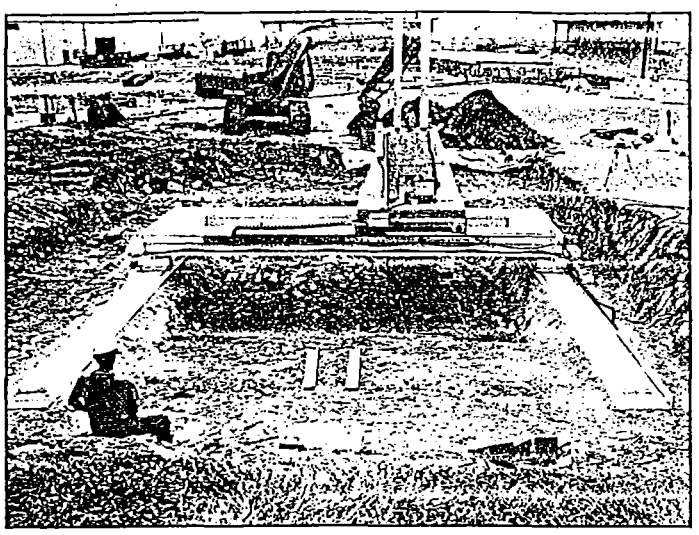
Verbal accounts from long-time Mound employees and limited written evidence indicate that soils contaminated with actinium-227 and radium-226 were moved to the ravine from another Mound location and placed in or near the abandoned septic tank in 1959. The precise role the tank played at the disposal location (i.e., as a locator or as a container) is unknown. The exact volume of contaminated soil deposited in the ravine is also unknown, although estimates are that less than five dump truck loads of soil and gravel were disposed of in or around the tank.

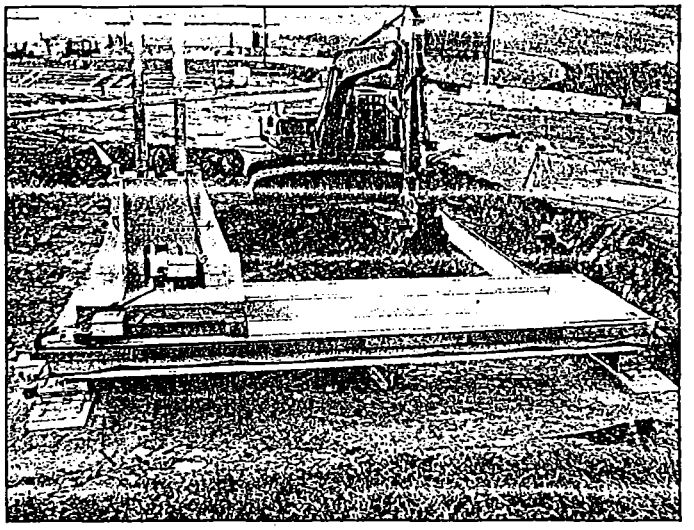
What is known is that in 1949, Mound Laboratory was requested by the Atomic Energy Commission to undertake the production of actinium-227. Because actinium is not found in natural source materials in quantities sufficient to allow for economical recoveries, it must be produced by the transmutation of radium-226 with neutrons in a nuclear reactor. Mound originally conducted two small-scale actinium production programs. In 1951, a special shielded facility on the east side of SW-Building was built to separate and purify actinium from irradiated radium. When the production program ended in 1955, soil beneath the SW-Building was found to be contaminated with actinium. A leak from a floor sump used to store liquid wastes from the actinium separation operations was found to be the source of the contamination. To remedy that problem, the contaminated soil was removed and hauled to the ravine–what we now refer to as Area 7. By 1984, the periodic filling of the ravine was completed, and the terrain was leveled for construction of the present-day parking lot.

Today, it is suspected the contaminated soil that filled the ravine may extend into what is known as a "perched groundwater strata"–a pocket or layer of groundwater sandwiched between layers of clay, some 18 feet below grade. Periodic monitoring of









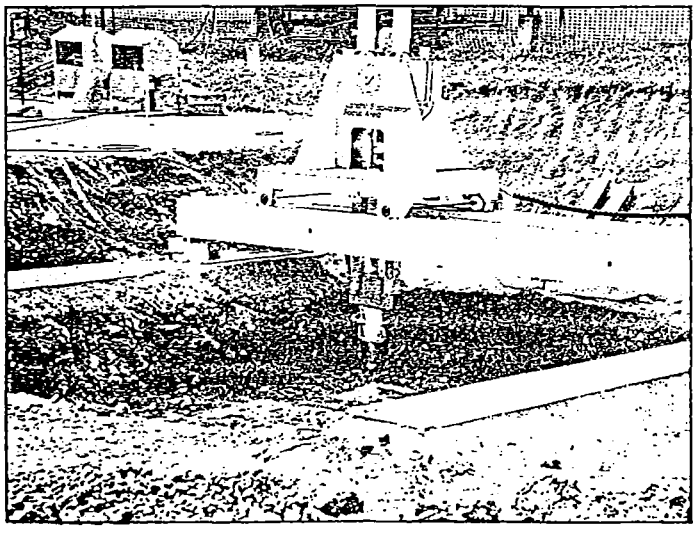
Mound Plant drinking water wells has revealed no actinium or radium contamination. Still, the contamination could potentially migrate via the site drainage ditch to the Buried Valley Aquifer. And that creates the potential for contaminating drinking water supplies or ecosystems. It is this concern that has led to the present Removal Action and "the Dig Face Demo"–a innovative new approach to Removal Actions.

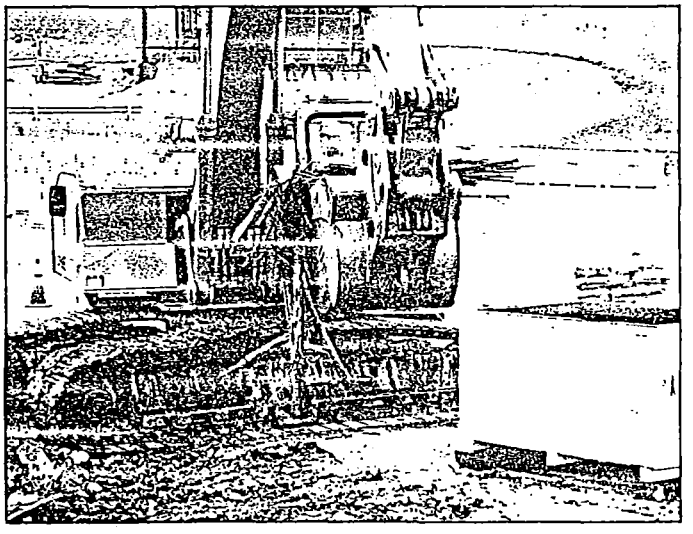
In preparation for the Removal Action, Mound had conducted a series of investigative probes intended to locate the septic tank and characterize the substrata surrounding it. Two boreholes were installed in 1994 during the Operable Unit 5 characterization study, to supplement two others drilled as part of a site survey in 1985. The boreholes have detected the presence of actinium between 7.5 and 18 feet below ground surface in concentrations ranging from 45 picoCuries per gram (pCi/ g) to 1400 pCi/g. To zero in on the location of the tank, a magnetic field survey used to detect the presence of buried objects, was done in May 1995, and a series of eleven Geoprobes were driven in this area to collect subsurface information and soil samples. Actinium-227 was detected in two Geoprobe locations at depths between 8 and 16 feet, with a maximum concentration of 184 pCi/g. Using the information from the soil borings, a conceptual model was developed to show the zone of contamination expected in the subsurface. The results suggest the contaminated soil was placed partially above the top of the tank. Consequently, actinium-227 is expected to be concentrated in a small, contiguous area from 6 to 18 feet below ground surface in the vicinity of the tank. Groundwater was also located at a depth of 17 feet.

Thursday morning looks and feels just like Wednesday. It's deja vu, all over again. By 8:00 a.m. anyone who has spent even a short time outdoors is sticky. The team of four technical experts here from the Idaho National Engineering Laboratory (INEL), to demonstrate Dig Face are soundng homesick for the cooler climate of Idaho Falls.

Still, despite the muggy morning, the INEL team is clearly enthusiastic about the opportunity to field test their state-of-the-art equipment in southwestern Ohio. The purpose of this INEL-Mound cooperative effort, explains INEL Principal Investigator, Nick Josten, is to provide "realtime" information on the distribution and magnitude of actinium and thorium contamination buried below ground within the test area. The demo is a first for the Dig-Face system on a real contaminated site under real field conditions. Josten, who has spent several years developing the system, is eager to start it up!

What is Dig Face? In simplest terms, it's like X-ray vision. It's a system for seeing what's below ground before digging. Put a little more technically, Dig Face instruments can "characterize" a plot of earth–every square inch of it–to a depth of about one foot, by scanning it for the elements or isotopes of interest and feeding data on what they find to computers. The computers compile and interpret the data, then generate charts, graphs, and full-color maps





Continued on Page 4

MOBILIZED AND MOVING (Continued)

showing topographical features and geological characteristics. Here in Area 7, Dig Face is going to tell us where contamination is located within the next foot of soil, what is it, and how concentrated it is before the trackhoe comes in to excavate it. Ultimately, this real-time data acquisition and interpretation system could save tremendous sums of time and money at Superfund dig sites, with the accurate and precise information it provides, allowing for the separation of contaminated soil from uncontaminated soil.

The primary instruments for the Mound dig are two ultra-sensitive scanners: a magnetometer (a metal detector) will sweep the excavation for ferrous or magnetic materials, and a gamma neutron scanner will probe it for radionuclides. The instruments ride aboard a remote-controlled trolley that spans a set of tracks about 30 feet in length and 15 ft apart. It's the area between the tracks that is scanned before the earth movers are sent in to dig.

To prepare the site for the tracks and trolley, a 40 x 40 ft section of the Area 7 parking lot was excavated to a depth of 6 feet. The site was leveled and the walls shored to produce the work pad. The tracks were laid down the middle of the pad, leaving room to move at one end for the trackhoe that will dig out the area between the tracks after each new scan. The beauty of the system, when deployed at a contaminated site, is, of course, that neither the instruments nor personnel come in contact with contamination while doing a scan. Thus, no one has to be in the hole facing a potential cave-in.

Now, with the Dig Face instruments mounted on the trolley, all systems are tested and ready to go! From the excavation site, Josten radios the command trailer to start this fully computer-controlled run. The first pass over the excavation pad sweeps the area for metals. The magnetometer, controlled by the computer, sweeps slowly across the width of the tracks, then reverses and sweeps back again, advancing one notch up the length of the tracks with each sweep. To scan the complete area takes ten to twelve minutes. As it goes, it feeds the data it takes to the command computer. Within another ten minutes, a full color characterization map will appear on the workstation's monitor. Now engineers and earthmovers will know where metal objects will be encountered in about the next foot of soil when the excavator sets to work again.

With the first pass complete, the trolley is returned to its start position, and reset to go again, this time with a gamma neutron detector for radionuclides. Both sweeps and the data interpretation require about an hour. And the results? The computer-enhanced geology clearly shows patches of thorium contamination in moderate concentration in the layer of soil just surveyed. That layer will next be excavated and boxed, and the Dig Face instruments are reset to sweep and read the next layer down. Despite the now intense solar energy of mid-morning, two more cycles are completed on Thursday, encountering higher concentrations of thorium, before a heat alert halts work for the day.

On Friday, the last day of the demo, the dig has dropped to a depth of about 10 feet, where the predig engineering analysis says we will find low levels of actinium, and perhaps the remains of the septic tank. Anticipation in the command trailer is running hot and bathed in sweat, as the air conditioning has conked out making the indoor atmosphere tropical! Bob Gehrke and Jorge Fiallega, doing data acquisition and interpretation, are starting to worry about the effects on their computers. Despite it all, the work goes forward. And at the end of the first sweep, a small but distinct indication of actinium is revealed on the computer plot. For INEL principal investigator, Nick Josten, this is a moment of supreme satisfaction. The Dig Face characterization technology has been field-tested and shown worthy, culminating two years of planning, design, and development. From here, the assumption is that actinium will be encountered in increasing concentrations throughout the next six to eight feet. And with the capability successfully demonstrated, the dig site will be returned to the Mound work team who started and will complete the Removal Action.

One week later, Mound team leader, Mark Daubenmire and his crew are still "chasing actinium." The dig has gone down 16 feet in one spot and 18 feet in another, where groundwater was encountered, just as expected. The team, which includes Daubenmire, the trackhoe and the frontend loader operators, four decon workers, and three health physics surveyors have set unofficial speed records on this project and are justifiably proud of their effort. From day one, when they started busting up asphalt for the Dig Face site pad, to today, the team has loaded a total of 240 LSA boxes of soil in only 12 digging days! The working conditions at this site, Daubenmire notes, have been ideal! (what about the weather?!?), and the dedication and efficiency of the crew have been outstanding.

With actinium counts now falling, the Removal Action will continue on a day-to-day basis and will be entirely completed in September. Workers will continue to box soil in the mornings and prepare empty boxes in the afternoon for the next day. When excavation and boxing are done, fresh fill will be trucked in to refill the pit. The area will then be resurfaced for parking.

This Removal Action has removed one more hot spot from the map of Mound, taking with it the potential problem of contaminated drinking water. With the completion also comes the bonus of the successful use of the Dig-Face characterization unit! This combined effort now offers the potential for saving thousands of dollars in surveying, digging, boxing, and disposal costs at other Superfund sites.

ENVIRONMENTAL JUSTICE AT MOUND

Environmental Justice continues to be a priority for the Administration and the Department of Energy.

A copy of the requirements for federal agencies with respect to Environmental Justice is available for review in the CERCLA Public Reading Room at the Miamisburg Senior Adult Center, 305 Central Avenue, Miamisburg, Ohio. Interested stakeholders are encouraged to review these requirements. Questions can be addressed to Oba Vincent, U.S. Department of Energy, Miamisburg Area Office, (513) 865-3278.

DOE ASSISTANT SECRETARY O'TOOLE TOURS MOUND

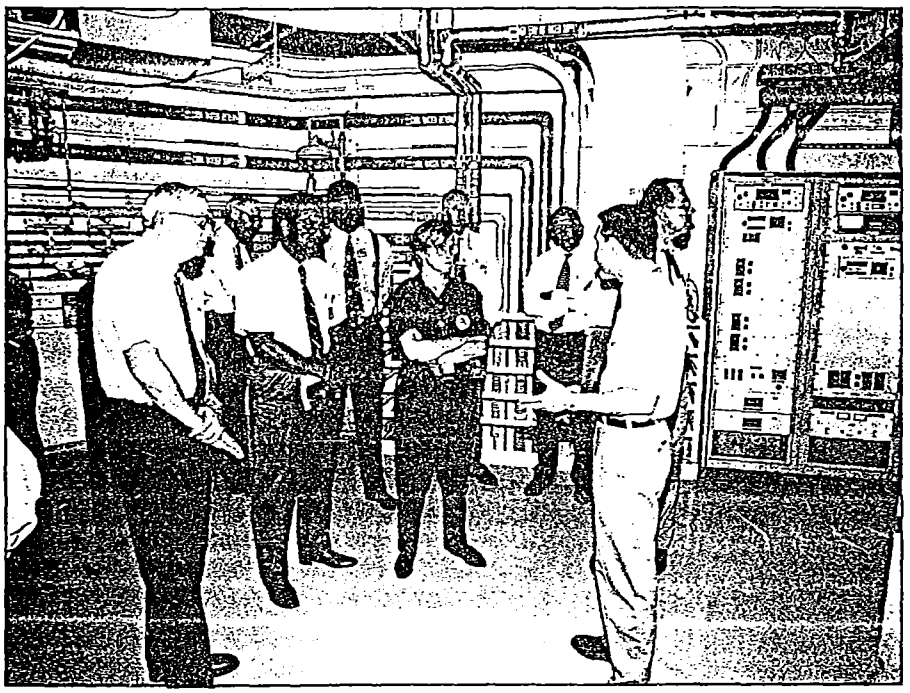
Remarking that "it is extremely helpful to come from Washington to see where the real work is done," Dr. Tara J. O'Toole, Assistant Secretary for the U. S. Department of Energy's Office of Environment, Safety, and Health, opened a two-day tour of the Mound and Fernald Facilities on July 11-12, 1995. The Mound tour was for the purpose of reviewing the progress being made on environment, safety, and health (ES&H) issues. Dr. O'Toole's emphasis was squarely on safety as she talked with and asked questions of Ohio Field Office personnel, EG&G employees, and Mound Stakeholders. Among the topics topmost on her agenda were safety engineering and Operational Safety Requirements, the safe shutdown of redundant facilities, the radiation protection program for radcon workers, and the community's perception of Mound's safety record.

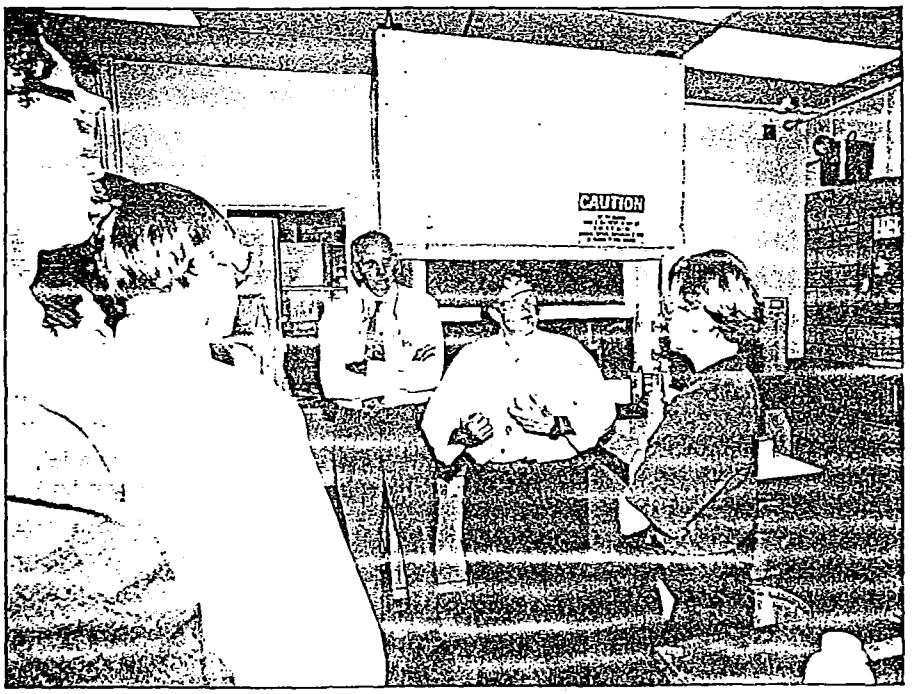
To see firsthand "where the real work is done," Dr. O'Toole donned a pair of safety glasses and spent the day seeing the site and talking with a cross-section of stakeholders. Following an early morning Safety Briefing, that included instructions for submitting a bioassay sample before leaving the site, Dr. O'Toole visited the SW-Building for a briefing on the tritium Effluent Removal System (ERS), the underground T-Building for a look at the Tritium Aqueous Waste Recovery System (TAWRS) and the Tritium Emissions Reduction Facility (TERF), and the H-Building for an inspection of the bioassay laboratories. Leaving the bioassay facility, she remarked she was exceedingly pleased with Mound's efforts to strengthen the bioassay program.

Following lunch with Mound stakeholders and community leaders, Dr. O'Toole observed "this was the liveliest bunch of stakeholders I've met. They had a lot to say and were quite candid!"

In the afternoon, a meeting with union officers and a look at the radioisotopic thermoelectric generator (RTG) assembly area was followed by a briefing on the dismantlement of the SM-Building (the first complete removal of a plutonium processing facility in the U.S.), a "windshield tour" of the Miami-Erie Canal, and a concluding presentation from Mound Safety IMPACT Team.

At the end of an high-activity day, Assistant Secretary O'Toole observed she was extremely pleased to have had this first-hand look at Mound-in-transition and was confident of Mound's ability to handle the environment, safety, and health issues that challenge the successful redeployment of this DOE site.





REMEDIAL RESPONSE:

This question was asked by a local citizen at the August 24th public meeting:

Won't the bugs used in the cleanup at the Fire Fighting Training Area breed with another bug and create a super pathogen that will render antibodies useless?

Sybron Chemicals Inc's. (Sybron) ABR® Hydrocarbon microbes are not "engineered" bacteria. The microbes were derived from petroleum contaminated sites around the United States and are almost identical to the native microbes found in uncontaminated top soil. The difference is that Sybron's microbes have been subected to high concentrations of specific contaminants until they naturally develop the ability to degrade that specific contaminant. The indigenous microbes in the top soil are capable of developing similar degradation characteristics. However, the indigenous microbes require a long adaptation period and are not as efficient at degrading the specific contaminants. Sybron's microbes are already "trained" to degrade the contaminants (in this case petroleum hydrocarbons) and do so, much more efficiently and with out suffering from the same toxicity effects as the indigenous microbes.

As the contaminants are removed from the soil the augmented microbial population begins to decrease. The population will decrease until it is at the same level as that of the indigenous microbial population. The augmented population decreases as a result of the reduction in the contaminant concentration (i.e., their food). Some of the remaining augmented microbes will be able to adapt to other carbon sources normally found in the soil and will then be virtually identical to the indigenous microbial population.

It is also important to remember that bioremediation is a "Natural" process. Through BioSystems Engineering, Sybron merely accelerated the remedial process.

What's Happening!

An update of Environmental Restoration Activities at Mound

CERCLA Removal Actions:

- OU4 Removal Action Workplan (draft) is out for review by the regulators.

An Innovative Treatment Remediation Demonstration (ITRD) meeting was held to evaluate technologies and remedial solutions for heavy metals contamination in a joint effort with Fernald. Work groups were formed to screen potential technologies for application at OU4.

A meeting of interested stakeholders on Tuesday, September 5, 1995, spotlighted Stakeholder involvement in the design and planning of the Canal Removal Action and reviewed upcoming plans for implementation.

- Excavation activities are nearing completion on the Area 7 Actinium Contaminated Soil Removal Action (see related story); 240 boxes have been filled with thorium and actinium contaminated soil. The formal public comment period for Area 7 Action Memorandum is open until September 19, 1995.

- Bioremediation of soil removed from the Fire Fighter Training Area continues in OU5. The first batch of innoculated (treated) soil has been sampled for Total Petroleum Hydrocarbons and results show a significant decrease. That batch will be removed from the treatment pad in coming weeks and disposed of at an onsite landfill. A second batch has been moved to the pad for treatment.

The procurement cycle for the remedial design is in progress.

OU2

Site Reconnaissance Scoping Report was submitted to regulators and comments have been received from Ohio and U.S. EPA.

OU5

The Drainage Control Response Action is continuing (see related article). The trench adjacent to Building 21 is nearly complete; total construction is now 70% complete.

OU9

Laboratory analysis of the Spring Surface Water and Sediment Investigation Sampling is 70% complete. The field report on Residential Water Sampling will be issued following receipt of ATSDR's comments.

D&D

- Continued digging in a 15 x 20 ft area of the SM Leachfield Catch Basin still indicates Pu-238 levels above cleanup project goals. Significant debris has been encountered in the excavation area 15 to 20 feet below grade. A total of 544 boxes of soil have been removed from the batch basin.

- All metal from the SM-Building demolition has been shipped to SEG and smelted or compacted. The final estimated amount of metal is 310,000 pounds. Discussions are underway for shipping the slag from SEG directly to Envirocare.

- 180 of 341 boxes of HH/WD Building waste have been shipped to Envirocare Shipments continue at 20 boxes a day and should be completed by September 30, 1995. Boxes will be returned empty to Mound for reuse.

- The SW Cave Draft Characterization Report was submitted or review.

Waste Management

- Sections A, B, C, E, J, K, and L of the Mound RCRA Part B Permit were revised and resubmitted to DOE/Miamisburg Area Office in draft form.

- Shipping continues on schedule to Envirocare for Lot 05 soils. As of August 28, 1995, 180 of 341 boxes have been shipped to Envirocare for Lot 05. Work continues on adding absorbent to SD sludge. This waste will be shipped following the Lot 05 shipments.

- A conveyor system for removing loaded Supersacks from the filling fixture is currently being designed. The new system will be tested on the Area 7 D&D project.