

**ACTION MEMORANDUM
ENGINEERING EVALUATION/COST ANALYSIS**

E BUILDING REMOVAL ACTION

**MOUND PLANT
MIAMISBURG, OHIO**

APRIL 2000

**Final
(Revision 0)**



Department of Energy



BWXT of Ohio, Inc.



BWXT Technologies, Inc.

a McDermott company

3003-0005090001

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ESC-047/00
April 18, 2000

00-TC/04-18

Mr. Richard B. Provencher, Director
Miamisburg-Environmental-Management-Project
U.S. Department of Energy
P.O. Box 66
Miamisburg, OH 45343-0066

ATTENTION: Dewain Eckman

SUBJECT: Contract No. DE-AC24-97OH20044
E BUILDING: RELEASE OF FINAL ACTION MEMORANDUM

REFERENCE: Statement of Work Requirement C 7.1d -- Regulator Data Requests

Dear Mr. Provencher:

The attached Final Action Memorandum for E Building has been authorized for release to USEPA, OEPA, and ODH by Art Kleinrath of MEMP.

Please advise if additional copies are required for distribution within DOE. If you require further information, please contact Dave Rakel at extension 4203.

Sincerely,

Jeffrey S. Stapleton
Manager, Environmental Safeguards & Compliance

JSS/nmg

Enclosures as stated

cc: Tim Fischer, USEPA, (1) w/attachments
Brian Nickel, OEPA, (1) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Art Kleinrath, MEMP, (2) w/attachments
Terrence Tracy, DOE/HQ, (1)w/attachments
Budd Thompson, BWXT of Ohio, (2) w/attachments
Public Reading Room, (5) w/attachments
Administrative Record, (2) w/attachments
DCC

**ACTION MEMORANDUM
ENGINEERING EVALUATION/COST ANALYSIS**

**REMOVAL ACTION
E BUILDING**

**MOUND PLANT
MIAMISBURG, OHIO**

April 2000

PREPARED BY:

**BWXT of Ohio, Inc.
P.O. Box 3030
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for the

U.S. DEPARTMENT OF ENERGY



The Mound Core Team
P.O. Box 66
Miamisburg, Ohio 45343-0066

Mr. Daniel Bird, AICP
Planning Manager
Miamisburg Mound Community Improvement Corporation
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Dear Mr. Bird:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Environmental Management Project (DOE-MEMP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the E Building Action Memo. Attached are our responses.

Should the responses to comments require additional detail, please contact Art Kleinrath at (937) 865-3597, and we will gladly arrange a meeting or telephone conference.

Sincerely,

DOE/MEMP: Art Kleinrath
Art Kleinrath, Remedial Project Manager

USEPA: Timothy J. Fischer
Timothy J. Fischer, Remedial Project Manager

OEPA: Brian K. Nickel
Brian K. Nickel, Project Manager

MMCIC Comments

For

E Building Removal Action Action Memorandum/Engineering Evaluation/Cost Analysis

Public Review Draft
December 1999

Substantive Comments

1. The Miamisburg Mound Comprehensive Reuse Plan and Addendum (CRP) indicates the area where Building E will be demolished is to be a parking facility. MMCIC believes a comment should be included in the Removal Action and/or Work Plan that indicates DOE and its subcontractor will work with MMCIC to ensure the site is left in a condition appropriate to accommodate the construction of a parking facility in accordance with the CRP.

Response:

Restoration activities for the E Building demolition are presented in the Work Plan. The Core Team understands that DOE and MMCIC will work to achieve a mutual agreement on parking accommodations.

No change will be made to the narrative of the document.

Errata

1. No comments.
-

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ACRONYMS

AEC	Atomic Energy Commission
AM	Action Memorandum
ARARs	Applicable or Relevant and Appropriate Requirements
BGS	Below Ground Surface
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental- Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
D&D	Decontamination and Decommissioning
DOE	Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
ER	Environmental Restoration
FFA	Federal Facilities Agreement
FSP	Field Sampling Plan
ID	Identification
LSA	Low Specific Activity
mrem	millirem
MSL	Mean Sea Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NTS	Nevada Test Site
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
pCi/g	picocuries per gram
PRS	Potential Release Site

ACRONYMS (cont.)

RCRA	Resource Conservation and Recovery Act
RESRAD	Residual Radioactive Material Program
RI/FS	Remedial Investigation/Feasibility Study
RSE	Removal Site Evaluation
SARA	Superfund Amendments and Reauthorization Act
SW	Semi-Works
TRU	Transuranic
USEPA	United States Environmental Protection Agency

1. PURPOSE

The U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (USEPA) have agreed on an approach for decommissioning surplus DOE facilities consistent with the **Policy on Decommissioning of Department of Energy Facilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** dated May 22, 1999. According to this approach, decommissioning activities will be conducted as CERCLA removal actions, unless the circumstances at the facility make it inappropriate (DOE 1995). The DOE is the designated lead agency and removal actions at the Mound Plant are implemented as non-Superfund, federal-lead actions. The DOE provides the On-Scene Coordinator (OSC). Non-Superfund, federal-lead removal actions are not subject to United States Environmental Protection Agency (USEPA) limitations on the OSC (\$50,000 authority) and are not subject to National Oil and Hazardous Substances Pollution Contingency Plan (NCP) limitations on removal actions (i.e., \$2,000,000 in cost and 12 months in duration).

This Action Memorandum (AM), has been completed to document the evaluation of site conditions, to propose the action described herein, and to allow public input.

2. SITE CONDITIONS AND BACKGROUND

2.1 SITE DESCRIPTION

This section describes the physical site location, site characteristics, potential release of contaminants into the environment and the site's National Priorities List (NPL) status.

2.1.1 Physical Location

The Mound Plant is a 306-acre site on the south border of the city of Miamisburg in Montgomery County, Ohio. The site is approximately 10 miles south-southwest of Dayton and 45 miles north of Cincinnati. The specific location of the proposed removal action is E Building. This location is identified in Figure 2.1.

2.1.2 Site Characteristics

E Building consists of the original E Building and the E Annex. E Building is a one story structure and E Annex is a two story building with five separate penthouses. The building encompasses 45,755 square feet. The building is constructed of reinforced concrete block walls, with brick face veneer and a metal roof covered with a built-up coal tar membrane.

The building is bordered by a sidewalk and roadway on the south side, a roadway on the north and gravel covered alley on the east side. It shares a corridor with R Annex on its west side. Adjacent buildings are H Building to the north, DS Building to the south, M Building (recently removed) to the east and R Building to the west.

E Building is one of the original buildings constructed in 1948. It was later expanded with additions to the north, east and south of the original building. It was built in six different stages. The original E Building consists of rooms E-101 through E-120 and Penthouse E-201P. The first addition was the E Building North-East Addition. This addition was built in 1962 and consisted of rooms E-123 through E-133 and Penthouse E-202P. The second addition, the Isolated Health Physics Facility, rooms E-141 through E-156 and the E-203P penthouse, was built in 1966. The third addition, the Analytical Facility, consists of rooms E-157 through E-187 and Penthouse E-204P, and was built in 1969. The fourth addition, which consists of The E Building Office Addition and The 50' Office Addition, and is referred to as E Annex, was built in 1982. The E Building Office Addition includes rooms E-200 through E-219 and E-300 through E-329. The 50' Office Addition consists of E-220 through E-229 and E-330 through E-349. The fifth and last addition was the Material Science

Addition, built in 1987. This addition consists of rooms E-188 through E-195 and the E-205P penthouse.

E Building is located on the Main Hill. The building is served by the central steam system for heat, chilled water for cooling, and electrical service of 480 V.

E Building contains analytical laboratories used for environmental analysis. Other uses for the building include economic development and offices for several different departments. Until September 30, 1999, portions of the building were being leased to the Mound Miamisburg Community Improvement Corporation (MMCIC) to further economic development. The rooms leased to MMCIC, were E-101, 101A, 101B, 102, 103, 103A, 104, 104B, 111, 112, 112A, 119, 120, 120A, 123, 124, 125, 128, 128A, 129, 130, 157 through 181, 184 through 187, 190 through 194 and 224A through 224H. Due to not being able to access these rooms until they were vacated by the MMCIC leasees the radiological surveys are currently being conducted. The asbestos surveys are complete and asbestos containing material was identified as pipe insulation, fumehood linings, some floor tile, and the roof flashing. Preparations are being made to perform a complete asbestos abatement.

Eighty percent of the building is laboratories. The building is not contaminated with energetic materials. There may be minor chemical and radiological contamination present. A complete asbestos abatement will be performed before demolition.

Associated Potential Release Sites

There are three PRS's associated with E Building. These are PRS 103, 104 and 105. PRS 103 represents E Building Soils and PRS 105 the Building E Solvent Storage Shed. PRS 103 and 105 have been determined by DOE, USEPA, and OEPA to require "No Further Assessment."

PRS 104 is the Tritium Liquid Scintillation Vial Storage room, E-133. This PRS will be removed as part of the Decontamination & Decommissioning (D&D) of E Building. Based on the latest radiological surveys no surface contamination exists in E-133. The vials have been moved and no contamination was found.

2.1.3 Current Conditions

Heating and cooling are provided to E Building via aboveground steam and refrigerated glycol piping originating from the powerhouse, P Building. Ventilation is provided to the building through a roof mounted HVAC system. Potable water and sanitary services are provided by means of the Mound Plant underground domestic water lines and an on-site sanitary and storm water sewer treatment plant, Building 57. The wastewater currently generated in the building is simple lab sink or sanitary water. Electrical power for E Building is supplied from the E Building Substation which only supplies E Building.

Radiological

Based on data from the Mound Site Radionuclides by Location, MD-22153, Issue 2, the *Environmental Appraisal of the Mound Plant, 1996* and the *HOK/K Phase I Environmental Site Assessment of DOE Mound, E Building, March 1995*, several areas of contamination have existed in E Building. They are as follows:

<u>Room</u>	<u>Type</u>	<u>Source</u>
E-101	Alpha	Rad contaminated saw
E105D		Alpha spec lab
E-107	Pu-238	Rad counting (fumehood)
E-113	Alpha	Contaminated test tube rack
E-133	Tritium	Scintillation vial storage
E-141, 142, 144, 155	Pu-238, 239	Environmental lab; tracers Tritium, lead-210 for environmental testing Th-229, 230 U-232, 234, 236, 238
E-174	Alpha	Unknown
E-175	Beta, gamma	Rad contaminated saw
E-177	U-235	Uranium rod, epoxy metallurgical sample and metal chips
E-185	U-235, Th-232	Metal samples
E-194	Possible U-235,	Unknown U-238, Pu-238

Mound Plant

E Building (Experimental) Laboratory & Office Building

Release Block P

On the map below:

- Building number and location shown in black
- PRS locations and numbers shown in blue
- Surrounding buildings shown in green

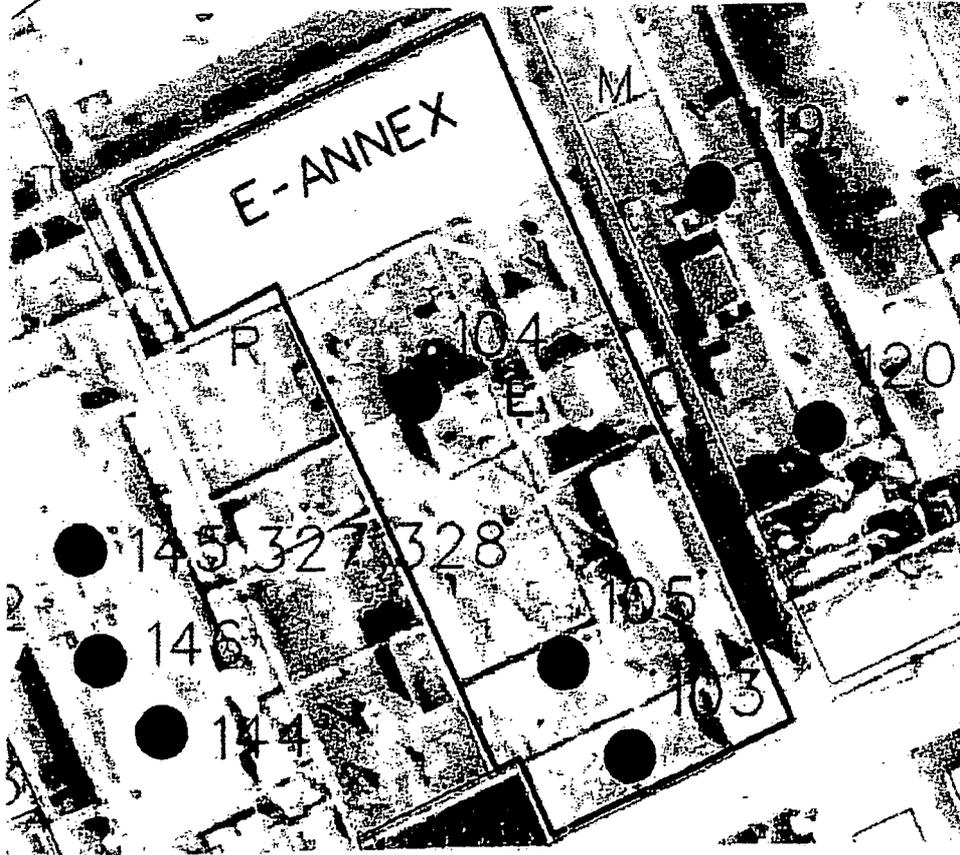
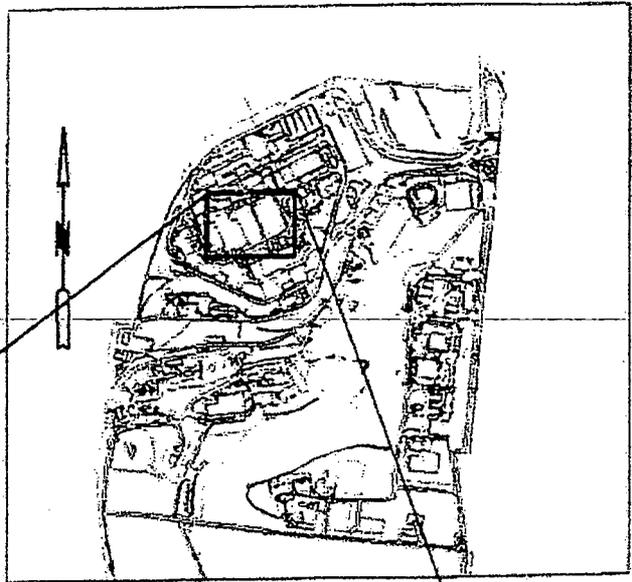


Figure 2.1 Location of E Building

Based on the latest rad survey data from 1998 and 1999, all known sources of contamination, except the E-107 fumehoods and the E-133 scintillation vials, have been removed. Confirmation surveys are ongoing as part of the project Safe Shutdown activity.

Asbestos

Asbestos sampling results indicate Asbestos Containing Material (ACM) in the pipe insulation, fumehood linings, floor tile and the roof flashing. The walls and plaster ceiling materials were sampled and the results confirmed that they are free of ACM. Industrial Hygiene will be working with the project until all asbestos is removed prior to demolition. Asbestos sampling results and information relative to the asbestos assessment summary of E Building are available in the project file.

PCBs

There are no PCB containing transformers in E Building. The only suspected source of PCBs is the florescent light ballast manufactured before 1979. If a ballast is not labeled "No PCBs," it will be removed and disposed of as a PCB containing ballast in an approved landfill.

Lead

Recent survey and sampling results indicate no lead in the paint, however, the cast iron drain piping contains lead seals. If the cast iron drain piping associated with these drains is found to be radiologically contaminated, it will be removed and disposed of as radioactive or mixed waste. Sampling results will be available in the E Building project file.

Monitoring Requirements

Asbestos will be monitored with the frequency to be determined by the Mound Industrial Safety and Health Department per MD-10391, *Asbestos Program Manual*.

All inaccessible areas will be monitored by the Radiological Control Department for radiological contamination during the Equipment Disposition activity.

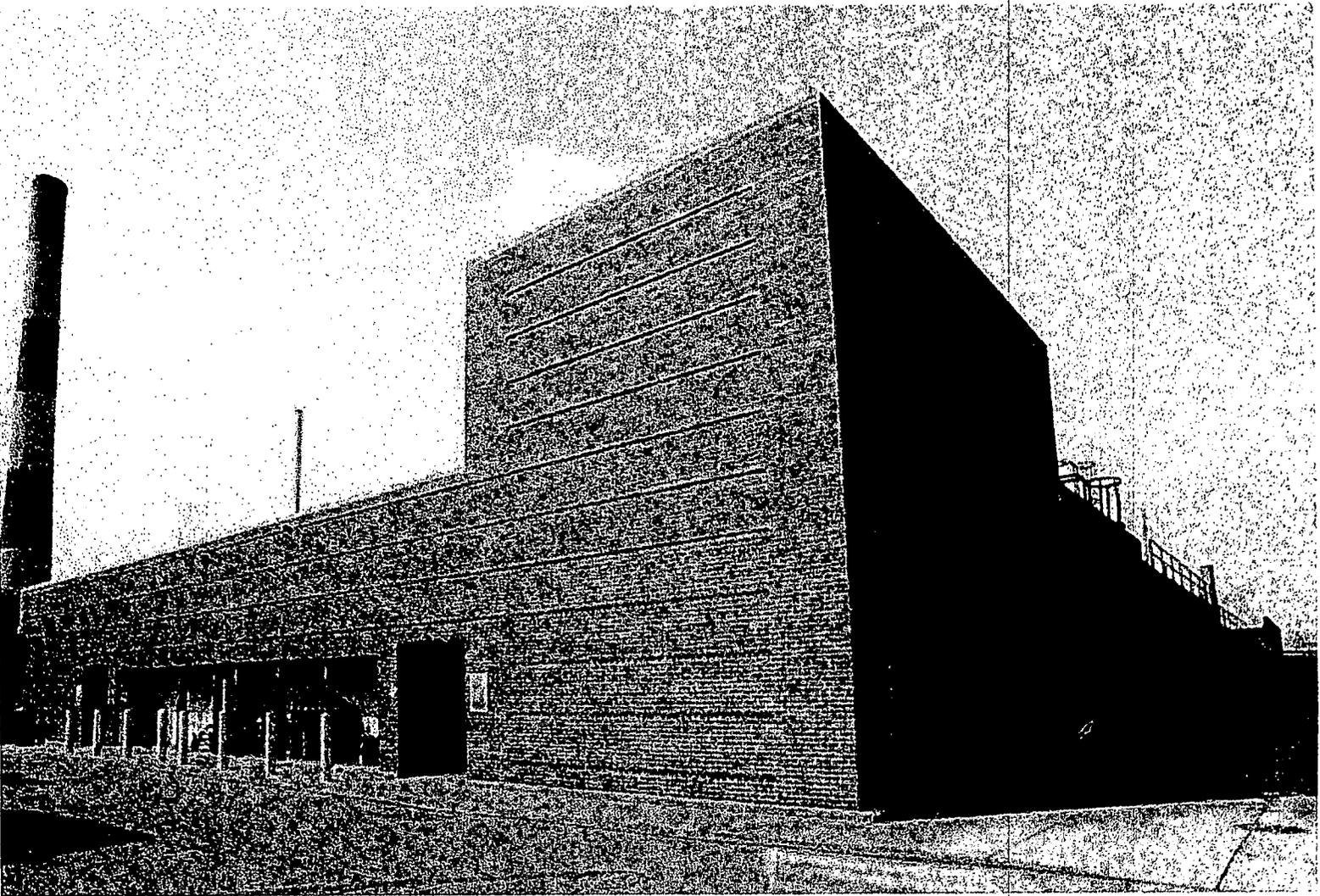


Figure 2.2 Mound Plant Building E/E Annex

2.1.4 Release or Threatened Release into the Environment

The hazardous materials found in E Building are Asbestos Containing Material (ACM), lead, and PCBs. There is ACM in the pipe insulation, and both ceiling and floor tile. All ACM will be removed, as required. There are lead seals inside the cast iron drain piping joints. Contaminated drain piping associated with the labs will be removed during the floor slab demolition and disposed of after being checked for contamination. Equipment remaining on or inside the building will be drained of refrigerants and hydraulic fluids prior to demolition. The fluorescent lighting ballast suspected of containing PCBs will be removed prior to demolition. There will be no hazardous process chemicals being used or stored in E Building at the time of demolition.

Radiation surveys of E Building indicate fixed contamination only on the E-107 fumehoods.

The potential release of radioactive or chemical contamination are not the primary reasons for this removal action. The primary purpose is to facilitate the removal of R Building which does carry a high potential for release of contamination to the public.

2.1.5 National Priorities List Status

The EPA placed the Mound Plant in Miamisburg, Ohio on the NPL by publication in the Federal Register on November 21, 1989.

2.2 OTHER ACTIONS TO DATE

The Mound Plant initiated a CERCLA program in 1989, now guided by the agreement between the DOE, Ohio Environmental Protection Agency (OEPA), and US EPA. A Federal Facilities Agreement (FFA) under CERCLA Section 120 was executed between DOE and US EPA Region V on October 12, 1990. It was revised on July 15, 1993 (EPA Administrative Docket No. OH 890-008984) to include OEPA as a signatory. The general purposes of this agreement are to:

- Ensure that the environmental impacts associated with past and present activities at the site are thoroughly investigated and appropriate remedial action taken as necessary to protect the public health, welfare, and the environment.
- Establish a procedural framework and schedule for developing, implementing, maintaining, and monitoring appropriate response actions at the site in accordance with CERCLA, Superfund

Amendments and Reauthorization Act (SARA), the NCP, Superfund guidance and policy, and Resource Conservation and Recovery Act (RCRA) guidance and policy.

- Facilitate cooperation, exchange of information, and participation of the parties in such actions.

2.2.1 Previous Removal Actions

The only previous removal action performed in E Building was the PRS 104, Solvent Storage Shed removal.

2.2.2 Current Actions

Asbestos piping insulation and florescent light ballasts containing PCBs will be removed as part of the building preparation activities, unless they present an immediate hazard. The removal and disposal of these materials will be performed according to the appropriate regulations.

All materials and equipment of value will be removed from E Building. Any low value furniture or equipment will be demolished with the building. All equipment or piping that is to remain will be drained of all fluids. Those containing fluids classified as hazardous will be thoroughly flushed. Among those items to remain are the following: several fumehoods, sinks, and cabinets, some furniture, windows, doors, plumbing fixtures, ceiling and floor tile, heating units, and their associated ductwork.

E Building has active potable water, compressed air, telephone, computer network connections (Molan), fire alarm, steam, storm sewer, and sanitary sewer systems. E Building also has electricity, a wet fire sprinkler system, and both bulk and bottled gas systems. All these services will be terminated and isolated outside the area to be demolished.

2.3 STATE AND LOCAL AUTHORITIES' ROLES

2.3.1 State and Local Action to Date

In 1990, as a result of Mound Plant's placement onto the NPL, DOE, and USEPA entered into a FFA which specified the manner in which the Mound CERCLA-based Environmental Restoration (ER) program was to be implemented. In 1993, the FFA was amended to include the OEPA. Under the ER program, DOE remains the lead agency.

2.3.2 Potential for Continued State and Local Response

Eventual release of this area for industrial use is planned. Periodic environmental monitoring of the area may be required until a final Record of Decision is implemented for the entire Mound site. This monitoring would need to be coordinated with local, state, and federal authorities. Current plant-wide environmental monitoring programs will continue until such time as remediation is complete in this and adjacent areas.

3. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

3.1 THREATS TO PUBLIC HEALTH OR WELFARE

The potential release of radioactive contamination may create a potential threat to the public health or welfare.

3.2 THREATS TO THE ENVIRONMENT

The potential release of radioactive contamination may create a threat to the environment.

3.2.1 Removal Site Evaluation

The Removal Site Evaluation (RSE) requirements, as outlined under EPA's NCP regulations in 40 CFR 300.415, are presented throughout this AM/EECA.

An evaluation by public health agencies has not been performed for this area, and, therefore, is not included in this AM/EECA. The determination of the need for a removal action is outlined in this section, in Table 3.1.

The NCP identifies eight factors that must be considered in determining the appropriateness of a removal action [40 CFR 300.415(b)(2)]. These criteria are evaluated in Table 3. 1.

Table 3.1 Evaluation of Removal Action Appropriateness Criteria [40 CFR 300.415(b)(2)]

Criteria	Evaluation
(i) "...potential exposure to nearby human populations, animals, or the food chain..."	None.
(ii) "Actual or potential contamination of drinking water supplies..."	There is the potential that contaminated drain lines have leaked into the ground at the floor drains in E Building. There is the potential for chemical contamination to be present in the soil near the drain lines and beneath the floor.
(iii) "Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;"	None.
(iv) "High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;"	None.
(v) "Weather conditions that may cause hazardous substances to migrate or be released;"	None.
(vi) "Threat of fire or explosion;"	None.
(vii) "The availability of other appropriate federal or state response mechanisms to respond to the release;" and	There are no state mechanisms, no other federal mechanisms (DOE is the designated lead agency at Mound under CERCLA), and no other DOE programs to provide an appropriate response.
(viii) "Other situations or factors that may pose threats to public health or welfare or the environment."	E Building surveys indicate one area of fixed radiological contamination, The E-107 fumehood. There are no indications of stains from hazardous chemical spills.

4. ENDANGERMENT DETERMINATION

As this location is currently configured and access controlled, actual or threatened releases of pollutants and contaminants from this site do not pose an endangerment to public health or welfare or to the environment. However, to eliminate the possibility of endangerment, as the site transfers from DOE ownership and control, DOE has determined that removal of the contaminants is appropriate.

5. PROPOSED ACTION AND ESTIMATED COSTS

5.1 PROPOSED ACTION

The proposed action is to perform the safe shutdown of E Building and then demolish the building in accordance with all DOE, OSHA, OEPA, USEPA, ODH, and other applicable procedures, regulations, and requirements.

5.1.1 Proposed Action Description

Site Preparation

This step includes establishing work area boundaries, radiological postings, radiological barriers with the necessary containment and exhausting, access and egress routes, material and supply storage, waste container staging and placement of all necessary permits.

Building Preparation

This includes the establishing of evacuation routes and assembly points, disconnecting utility feeds to all abandoned equipment and systems, removing excess equipment and material, removing designated abandoned systems, process and utility piping and conduit and repairing or removing Asbestos Containing Material (ACM), as necessary.

Building Decontamination

This will include the following activities:

1. Remove all ACM insulation throughout the building.
2. Isolate utilities, drain all systems of liquids.
3. Remove abandoned systems, excess equipment, and surplus materials.
4. Remove any contaminated fans and ductwork.
5. Demolish the roof and walls.
6. Remove the building floor slab.
7. Remove contaminated drains and associated piping.
8. Remove soil under the slab, if contaminated.
9. Remove the foundation and the Cesium well down to 3' below grade.

During decontamination activities, continuing inspections by the Project Supervisor will be made as work progresses to detect hazards resulting from weakened or deteriorated floors, walls, or loosened material.

Mobilization

This activity will include the set-up of the decontamination airlocks, portable HEPA exhausters, if necessary, establishing staging and waste loading areas, relocation of equipment to the demolition site, delivery of waste containers, monitoring equipment and water misters.

Decontaminate Walls

The walls will be decontaminated to below the regulatory release limits, via chemical wiping or mechanical means.

Decontaminate Floors

This activity covers the removal of any contamination above the regulatory release limits and its disposal as radioactive waste and the removal of any fixed contamination on the floors by chemical or mechanical means. Any excess dust material will be removed using a HEPA filtered vacuum.

Remove E-107 Fume Hoods

Size reduce and remove the fumehoods from E-107. Note these fumehoods contain traces of radiological contamination. The fume hoods and there associated piping will be size reduced and disposed of as radioactive waste.

Demolish Building

This activity covers the demolition of the E Building roof, ceilings, walls, and building floor slab.

Remove Drains

This activity consists of digging out the drains and associated underground piping no longer required to support the site buildings once E Building is demolished. This also covers the removal of any contaminated subsoil, backfilling, and grading the area to meet the necessary drain requirements.

Site Restoration

This activity includes reducing the work zone area and the placement of the area in a safe condition. Equipment, materials, waste containers, and boundaries will be removed. Any excavated area outside the building walls will be backfilled and compacted to the contours and elevations specified in the E Building Grading Plan.

Verification

A Verification Plan will be developed to obtain and analyze soil samples to confirm that all contamination has been removed to below the established limits. The Verification Plan will also identify the steps to determine the concentration of residual contaminants for comparison to the appropriate risk based guideline criteria and ARARs. The On-Scene Coordinator Report will document the completion of the removal action.

Project Closure

All project documentation should be forwarded to the Project Engineer and maintained in the project file. Upon completion of the project, the project notebook or a copy of the project records should be forwarded to the document management system. This is to be accomplished in a radiologically and otherwise safe manner to avoid future maintenance cost and eliminate potential negative impacts to personnel and the environment. Land within the project boundaries is designated for future industrial land use after decommissioning and demolition activities are complete. The boundary of this project includes the entire footprint of E Building in addition to a 15 foot perimeter surrounding the building.

5.1.1.1 Rationale, Technical Feasibility, and Effectiveness

The removal action chosen is necessary for the removal of known contamination and to ensure that migration of the contamination does not occur.

5.1.1.2 Monitoring

Health and safety monitoring will be performed throughout the removal action according to standard Mound procedures. Sampling and analysis of excavated soil will be described in more detail in the E Building Work Plan.

5.1.1.3 Uncertainties

The major uncertainties are the levels and extent of contamination in and beneath the E Building floor from broken drains or migration from adjacent Nuclear facilities. The minor uncertainties include location of utilities in the area of the project.

5.1.1.4 Institutional Controls

DOE will remain in control of the subject area over the near term. However, portions of the Mound Plant may be released to non-DOE uses in the foreseeable future. If necessary, enforceable deed restrictions will be in place at the time of transfer in order to ensure future protection of human health and the environment.

5.1.1.5 Post-Removal Site Control

Post removal site control will be provided by DOE/Mound. See Institutional Controls above.

5.1.1.6 Cross-Media Relationships and Potential Adverse Impacts

The potential cross-media impact associated with the removal action is the potential for unintended release of contaminated materials into the atmosphere. Careful monitoring and control by misting will be implemented during the removal action.

No potential adverse impacts of the removal action have been identified.

5.1.2 Contribution to Future Remedial Actions

To facilitate further assessments in or near the site of the removal action, the exact dimensions of the excavation and the levels of contamination identified and removed will be documented. The excavation will be documented by utilizing photographs, record drawings, the OSC report, and other information collected during the removal action.

Because the Mound Plant is anticipated to be cleaned up by removal actions, this demolition is planned to be performed as one total removal of E Building and the property transitioned over to MMCIC (Miamisburg Mound Community Improvement Corporation) by DOE. The information obtained, as a result of this removal, will be used in determining the availability for final disposition of the Mound site and will be subject to review in the subsequent risk evaluation.

5.1.3 Description of Alternative Technologies

Alternative technologies frequently evaluated for CERCLA remediation include institutional controls, containment, collection, treatment, and disposal. Based on the prevailing conditions, the following alternatives (in addition to the proposed alternative of excavation) were developed.

1. No Action
2. Institutional Controls

The performance capabilities of each alternative with respect to the specific criteria discussed below.

5.1.3.1 No Action

The "No Action" approach was eliminated. Building E must be removed to facilitate the removal of R Building.

5.1.3.2 Institutional Controls

Institution controls were eliminated. Building E will be demolished.

5.1.4 Engineering Evaluation/Cost Analysis (EE/CA)

This document serves as the action memo and the EE/CA.

5.1.5 Applicable, or Relevant and Appropriate Requirements (ARARs)

Mound ARARs for the ER Program have been identified (OEPA 1998). CERCLA regulations require that removal actions comply with ARARs.

The following areas have been identified, as applicable, or relevant and appropriate to this removal action:

- 49 C.F.R. 172, 173: DOT hazardous material transportation and employee training requirements.

5.1.5.1 Air Quality

- 40 C.F.R. Part 61 Subpart H: National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities.

- Ohio Administrative Code (O.A.C.) 3745-15-07(A): Air Pollution Nuisances Prohibited
 - O.A.C. 3745-17-02 (A,B,C): Particulate Ambient Air Quality Standards
 - O.A.C. 3745-17-05: Particulate Non-Degradation Policy
 - O.A.C. 3745-17-08: (A)(1), (A)(2), (B),(D): Emission Restrictions for Fugitive Dust
-

5.1.5.2 To Be Considered

- EPA/230/02-89/042: Methods for Evaluating the Attainment of Cleanup Standards.

5.1.5.3 Worker Safety

- 29 C.F.R. Part 1910: Occupational Safety and Health Act (OSHA) - General Industry Standards
- 29 C.F.R. Part 1926: OSHA - Safety and Health Standards
- 29 C.F.R. Part 1904: OSHA - Record keeping, Reporting, and Related Regulations

5.1.6 Other Standards and Requirements

Other standards or requirements related to the actual implementation of the response action may be identified subsequently during the design phase and will be incorporated into the Work Plan for E Building decontamination.

5.1.7 Project Schedule

The schedule established for planning and implementing the removal action is shown in Figure 5.1.

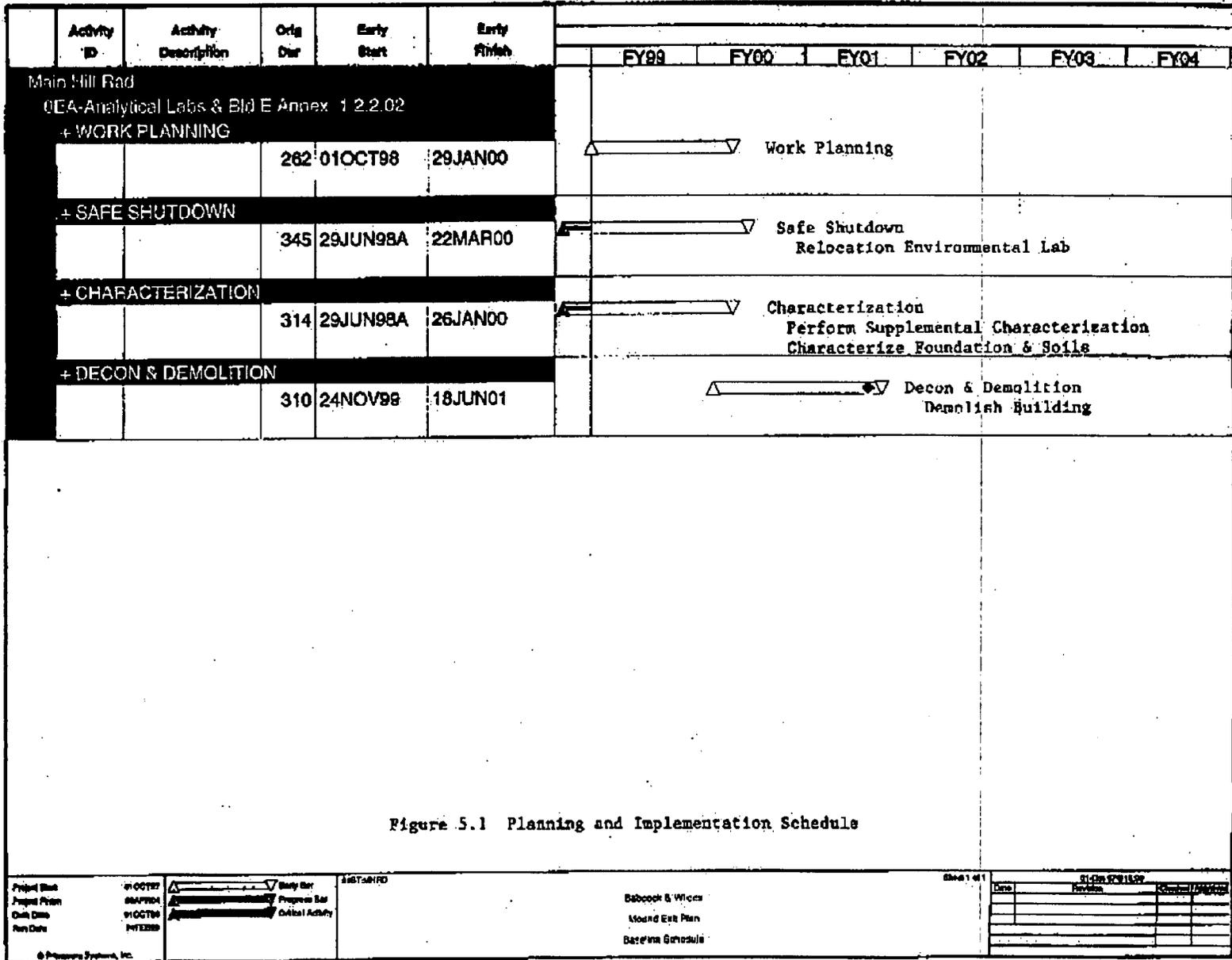
5.2 ESTIMATED COSTS

The cost estimate to perform the removal action is shown in Table 5.2. The costs include the construction activities, all engineering and construction management, waste disposal, and site restoration.

Table 5.2 Project Cost Estimate

ESTIMATE COSTS	
Work Plan	34,832
Safe Shutdown	447,930
Characterization	709,743
Decon & Demolition	610,301
OSC Report	5,190
TOTAL (1999 dollars)	1,807,996

Figure 5.1 Planning and Implementation Schedule



**6. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE
DELAYED OR NOT TAKEN**

Radioactive or hazardous waste contamination, if present in the soil, could migrate to groundwater.

7. OUTSTANDING POLICY ISSUES

There are currently no outstanding policy issues affecting performance of this removal action.

8. ENFORCEMENT

The core team consisting of DOE, USEPA, and OEPA has agreed on the need to perform the removal. The work described in this document does not create a waiver of any rights under the Federal Facility Agreement, nor is it intended to create a waiver of any rights under the Federal Facility Agreement. The DOE is the sole party responsible for implementing this clean-up. Therefore, DOE is undertaking the role of lead agency, per the CERCLA and NCP, for the performance of this removal action. The funding for this removal action will be through DOE budget authorization and no Superfund monies will be required.

9. RECOMMENDATION

This decision document represents the selected removal action for E Building, developed in accordance with CERCLA as amended by SARA, and consistent with the NCP. This decision is based on the administrative record for the site.

Conditions at the site meet the NCP Section 300.415 (b)(2) criteria for a removal and we recommend initiation of the response action.

Approved:

Art K. Kleinrath
Art Kleinrath, Remedial Project Manager, DOE/MEMP

Dec 15 1994
Date

Brian K. Nickel
Brian K. Nickel, Project Manager, OEPA

12/15/99
Date

Timothy J. Fisher
Timothy J. Fisher, Remedial Project Manager, USEPA

12/16/99
Date

10. REFERENCES

DOE 1995 Policy on Decommissioning Department of Energy Facilities Under CERCLA, U.S. Department of Energy, U.S. Environmental Protection Agency, May, 1995

USEPA 1990. Superfund Removal Procedures Action Memorandum Guidance. Office of Emergency and Remedial Response. U.S. Environmental Protection Agency. December 1990.

Environmental Appraisal Report of the Mound Plant, March 1996

DOE 1993 Draft Comprehensive Listing of State of Ohio ARARs, Letter from Hatcher to Kleinrath, May, 1993

OEPA 1998. List of Ohio Administrative Code and Ohio Revised Code ARARs, letter from Nickel to Kleinrath, August 19, 1998.

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