



Department of Energy

**Ohio Field Office
Fernald Area Office**

P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155



**JUN 26 1997
DOE-1123-97**

**Mr. James A. Saric, Remedial Project Manager
U.S. Environmental Protection Agency
Region V-SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590**

Dear Mr. Saric:

**TRANSMITTAL OF COMMENT RESPONSES AND CHANGE PAGES TO ADDRESS MAY 22,
1997, U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS**

**Reference: Letter, J. Saric, U.S. EPA to J. Reising, DOE-FEMP, "Thorium/Plant 9
Implementation Plan RTC," dated May 22, 1997.**

The purpose of this letter is to transmit to the U.S. Environmental Protection Agency (U.S. EPA) the enclosed comment response package for the Operable Unit 3 (OU3) Thorium/Plant 9 Complex Implementation Plan for Above-Grade Decontamination and Dismantlement (D&D). This comment response package provides the Department of Energy (DOE) responses and resulting change pages from the U.S. EPA comments to the April 1997 revisions to the implementation plan, which were received on May 27, 1997.

The comment responses and change pages also address the concerns that you expressed during the June 16, 1997, meeting held on-site. Based on the June 16, 1997, discussions, it is understood that these responses and change pages will resolve all outstanding comments to the implementation plan.

If you or your staff have any questions, please contact John Trygier at (513) 648-3154.

Sincerely,

**Johnny W. Reising
Fernald Remedial Action
Project Manager**

FEMP:Trygier

Enclosure: As Stated

cc w/enc:

N. Hallein, EM-42/CLOV
G. Jablonowski, USEPA-V, 5HRE-8J
R. Beaumier, TPSS/DERR, OEPA-Columbus
T. Schneider, OEPA-Dayton
F. Bell, ATSDR
D. S. Ward, GeoTrans
R. Vandegrift, ODOH
R. Geiger, PRC
T. Hagen, FDF/65-2
J. Harmon, FDF/90
AR Coordinator/78

cc w/o enc:

C. Little, FDF/2
EDC, FDF/52-7

U.S. EPA GENERAL COMMENTS

U.S. EPA Comment #1

The U.S. Department of Energy (DOE) responses to U.S. Environmental Protection Agency (U.S. EPA) comments do not follow the appropriate comment response format. For example, each DOE response includes U.S. EPA's comment and DOE's response but does not separately identify the specific DOE action taken to address the comment. The standard comment response format includes a separate DOE action item description that concisely summarizes the DOE action taken and assists in identifying and evaluating DOE's revised text in the document under review. In addition, DOE's current page and line references in the responses are inconsistent, and the responses are not numbered. DOE's responses to comments should be revised to follow the standard format.

DOE Response

- Although the comment response format used for the U.S. EPA/Ohio EPA comments to the Thorium/Plant 9 Complex Implementation Plan is the same that has been used for comment response packages for the OU3 Integrated Remedial Design/Remedial Action (RD/RA) Work Plan and all previous implementation plans since 1994 without objection, DOE will begin to use the suggested third subheading for future OU3 RD/RA responses to separately show action items.
- Since the response and action subheadings immediately follow the specifically numbered reiterated comment, additional numbering of the response and action subheadings does not appear to be necessary.
- U.S. EPA did not cite examples of page and line reference inconsistencies; however, a review of all April 1997 comment responses and change pages contained in the package revealed only one minor instance of any such inconsistencies — the citation in the table of Significant DOE Enhancements under item no. 5 did not also include the redline/strikeout text on lines 8-9 on page 57 of the draft final change pages. If U.S. EPA knows of any other specific instances, DOE will make the necessary corrections. (Note: there were several instances where minor editorial corrections were shown on change pages resulting in redline/strikeout markings but these were not considered significant enough to cite in the table in Section 2 of the response package.)

DOE Action

Future comment response submittals will provide a third subheading to separately show action items, as exemplified herein.

U.S. EPA Comment #2

Several of U.S. EPA's original comments request that DOE provide additional detail in the implementation plan instead of referencing general guidelines in the "Operable Unit (OU) 3 Integrated Remedial Design/Remedial Action Work Plan (IWP). The OU3 IWP provides general guidelines related to decontamination and dismantlement (D&D) activities at OU3 complexes, but the purpose of the implementation plan is to provide the specific details of how the guidelines will be applied to Thorium/Plant 9 Complex D&D activities. As requested in the U.S. EPA's original comments, DOE should revise the implementation plan to provide these details and should revise its responses accordingly.

**DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)**

DOE Response

- DOE and U.S. EPA jointly established the current remedial design documentation strategy during the development of the OU3 RD/RA Work Plan for Interim Remedial Action and improved on it with the development of the OU3 Integrated RD/RA Work Plan. This documentation strategy was implemented with each of the three previous implementation plans. This strategy allows general implementation strategies which have already been adequately described in the RD/RA Work Plan to be referenced to the appropriate section of the Work Plan and requires that project-specific details generated during project design be detailed in the implementation plans. The draft final version of the Thorium/Plant 9 Complex Implementation Plan properly fulfills the previously accepted remedial design documentation strategy by presenting all project-specific implementation details generated during remedial design for the Thorium/Plant 9 Complex. It should be noted that the detail currently in the Thorium/Plant 9 Complex Implementation Plan considerably exceeds the design details presented in all earlier implementation plans.

- It must be emphasized that most of the D&D implementation details are presented in the performance specifications prepared for a project. Performance specifications state what is to be done, what regulations/codes and standards apply, and identify any limitations or minimum requirements while leaving development of more specific details to the remediation subcontractor. Further basis for using performance specifications was discussed in detail in Section 3.2 of the OU3 Integrated RD/RA Work Plan. U.S. EPA was presented with the latest version of the D&D performance specifications, which were used for the Thorium/Plant 9 Complex D&D subcontract, in an attachment to the March 1997 Comment Response Package for the OU3 Integrated RD/RA Work. Appendix C of the April 1997 Thorium/Plant 9 comment response package lists those specifications. As described in Section 4.2.2 of the OU3 Integrated RD/RA Work Plan, the subcontractor's proposed implementation methods are defined in subcontractor work plans which are submitted for approval to the project management team during premobilization (i.e., after completion of design and implementation plan submittal). Although the subcontractor work plans may propose specific methods for performing activities, the performance specifications supply the requirements of what must be done to ensure that all implementation activities adhere to regulatory and other contractual requirements. The process whereby subcontractors submit their work plans for project management team approval is described in Section 4.2.2 of the OU3 Integrated RD/RA Work Plan

DOE Action

The change pages attached to these comment responses provide additional details, shown in redline/strikeout form, in the implementation plan which specifically address updated interim storage locations for bulk debris (see DOE response/action to Comment #3). Other details were added to elaborate further on wastewater handling details by adding more specific references to the applicable specifications (see DOE response/action to Comment # 4).

U.S. EPA Comment #3

The original general comment requests that DOE provide additional information on the planned interim storage locations for Thorium/Plant 9 Complex materials. DOE's response refers to "other" storage pads or slabs that may be used for interim storage. DOE should revise the response to specifically identify the "other" potential interim storage locations.

810

**DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)**

In addition, the original general comment requests that DOE provide greater detail regarding tracking and reporting of Thorium/Plant 9 Complex material using the Sitewide Waste Information, Forecasting and Tracking System (SWIFTS) database. DOE's response indicates that the OU3 IWP was revised to provide the detail requested in the U.S. EPA's original comment. However, the OU3 IWP provides no specific information regarding the Thorium/Plant 9 Complex materials to be placed in selected interim storage areas and no updated information on the overall quantity of materials currently present in these selected areas as well as in other interim storage areas. DOE has indicated that the SWIFTS database can provide this type of information. To fully address U.S. EPA's original comment, DOE should provide the appropriate SWIFTS database printouts or concise summaries of the database information in the complex-specific implementation plans and project completion reports.

DOE Response to First Issue (first paragraph)

Subsequent to the submittal of the draft final revisions to the implementation plan in April, the proposed location for interim storage of debris that may be bulk stored was further defined based on recent analysis of available storage space. That analysis resulted in projecting the interim storage of bulk debris (Debris Categories A, B, D, and E from all structures in the complex except from Buildings 64 and 65) to be on the Plant 9 slab rather than the Plant 1 Pad. Calculations show that approximately 360,000 ft³ of capacity will be available on the Plant 9 slab for debris stockpiling, assuming four stockpiles each at 10 feet in height, while the combined bulk volume requirement for Categories A, B, D, and E from the selected structures equals approximately 150,000 ft³. Containerized debris to be dispositioned off-site is still planned for interim storage on the Plant 1 Pad. As stated in the response to U.S. EPA's Original General Comment #1, debris from Buildings 64 and 65 will be containerized and placed on the Building 64/65 slabs for interim storage. Similar to the preparation and use of slabs from Plant 7 and Plant 4 for interim storage of debris, DOE will ensure that all proper engineering controls are provided for the Plant 9 slab. Such engineering controls would include storm water runoff collection and treatment, as necessary, in the site wastewater treatment system. Potential airborne contaminant releases would be prevented or minimized by reduction of surface contamination on surfaces of debris using approved decontamination methods. Additional treatment of debris would be employed (e.g., fixatives on debris surfaces) in the event of suspected contaminant release. The revision of the bulk storage location for this project is being performed consistent with the authority and criteria established under Removal Action 17. Removal Action 17 criteria specifies the selection of debris storage locations in decreasing order of preferred usage: Plant 1 Pad, Plant 7 Slab, Plant 4 Slab, Plant 8 Slab, and slabs of dismantled buildings, and specifies the use of engineering controls to prevent potential contaminant releases. Following that guidance, with the projection of insufficient space for Thorium/Plant 9 Complex debris on either of those locations (note: Plant 8 slab is not yet available), the decision to use the Plant 9 slab for stockpiling of certain debris was made.

DOE Action in Response to First Issue

Table 2-1 of the implementation plan was revised to add specific locations for interim storage of project-generated debris. Also, further explanation has been added to Section 2.3.4 of the implementation plan which elaborates on the need to use the Plant 9 slab for interim storage of bulk debris and the engineering controls that will be employed to ensure that the slabs meet the criteria established under Removal Action 17 for interim storage of bulk debris. Change

DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)

pages are attached to these comment responses which present in Table 2-1 (page 16) and Section 2.3.4 (pages 20 - 21) the new detail in redline/strikeout form.

DOE Response to Second Issue (second paragraph)

- It should be noted that SWIFTS data on the Thorium/Plant 9 Complex at this time (i.e., prior to debris generation) are only *estimated* volumes and weights of the various OU3 categories. Those data are provided in Tables 2-1, 2-2, and 2-3 of the implementation plan. *Actual* volumes, weights, and interim storage locations for project materials will not be available until after they have been generated and are placed into interim storage, whereupon they will be reported to U.S. EPA in the project completion report for the Thorium/Plant 9 Complex. Therefore, project design details regarding tracking and reporting of Thorium/Plant 9 Complex debris can only be related to how those activities *will* be performed after debris are generated. The overall strategy for tracking and reporting of debris was referenced in the original response to identify information that is applicable to the Thorium/Plant 9 Complex project, albeit common to other projects as well.

- Proposed interim storage locations are initially determined through conceptual planning for a project using the latest information on projected availability of interim storage space. That interim storage assessment for the Thorium/Plant 9 Complex effort utilized SWIFTS during this effort only to determine the footprint needed for Thorium/Plant 9 Complex materials. The proposed interim storage location(s) for Thorium/Plant 9 Complex materials was made during design by FEMP waste management managers based on current and projected future availability. The original projected interim storage location (i.e., Plant 1 Pad) was specified on page 19 (line 23) of the April submittal. DOE believes that only the SWIFTS reports pertaining to the Plant 9 waste volume estimating are relevant for inclusion in the implementation plan. It must be emphasized that any SWIFTS reports prepared for materials contained in specific interim storage locations during the Thorium/Plant 9 Complex design are representative of one point in time and do not necessarily provide projections on availability at a later point in time.

DOE Action in Response to Second Issue

Text has been added to Section 2.3.4 of the implementation plan which states that a SWIFTS database report will be included with the project completion report which identifies the actual volumes, weights, and interim storage locations for Thorium/Plant 9 Complex materials. Change page 22 attached to these comment responses shows the new text in redline form. As agreed at the U.S. EPA — DOE meeting on June 16, updates to the overall quantity of site-wide materials currently present in specific storage locations would be provided upon request but would be external to the implementation plan review/approval process.

U.S. EPA Comment #4

The original general comment requests that DOE provide additional detail regarding environmental monitoring activities associated with D&D of the Thorium/Plant 9 Complex. DOE's response includes a commitment to provide a summary of the sample analytical results for decontamination wastewater in the project completion report. DOE should also commit to providing the following: a description of the wastewater collection system, a description

DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)

810

of how DOE will monitor and maintain the integrity of the system, and a summary of the wastewater sample analytical results obtained during Thorium/Plant 9 Complex safe shutdown activities.

In addition, DOE's response includes a commitment to provide project specific air monitoring results in the project completion report. To allow full evaluation of potential releases of contaminants to air from the complex, DOE should also commit to providing results obtained during safe shutdown activities.

DOE Response to First Issue (first paragraph)

- The specific details regarding a description of the wastewater collection system are provided by Specification Section 01517, key portions of which were repeated in Section 2.3.2 of the implementation plan. Specification Section 01517 was provided to U.S. EPA in March 1997 with the OU3 Integrated RD/RA Work Plan comment response package. Additional detail regarding prospective sumps that may be used for wastewater collection has also been provided with this response package.

As discussed earlier in response to Comment #2, the performance specifications spell out the requirements for performing the various D&D activities. Accordingly, Specification Section 01517 describes the minimum requirements for a wastewater collection system. Please note that Part 1.5.A of Specification Section 01517 requires that the subcontractor submit for [project management team] approval a work plan in accordance with Part 7 of the subcontract that describes the system design for controlling, filtering, and transporting effluent produced during removal and/or fixing activities. DOE is only able to detail the requirements placed in the subcontract (i.e., performance specifications) at this time. To more clearly outline the wastewater collection system requirements, additional text has been added to Section 2.3.2 along with the appropriate specification references.

- For inquiries regarding the FEMP (i.e., sitewide) wastewater treatment system, which receives the effluent from D&D projects, the operation and maintenance of the site wastewater treatment system is governed under the conditions of the National Pollutant Discharge Elimination System (NPDES) permit and/or other applicable OU5 RD/RA documents.

DOE Action in Response to First Issue

The requirements contained in the performance specifications for the project-specific wastewater collection system have been outlined in summary form along with the appropriate references and were added to Section 2.3.2 of the implementation plan (in redline form). Also, specific sumps have been identified for potential use in wastewater collection. These text enhancements are contained on change pages 13 - 14, which are attached to these responses.

DOE Response to Second Issue (regarding Safe Shutdown activities)

- Please note that although the prior decisions made for management of Safe Shutdown (Removal Action 12) were adopted by the OU3 Record of Decision for Final Remedial Action, along with Removal Actions 9, 17, and 26, the OU3 Integrated RD/RA Work Plan

**DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)**

explains in Section 4.5 that DOE will provide the regulatory agencies with the removal action closeout reports upon programmatic completion of those removal actions. For project-specific tracking of key removal action data, which will facilitate compilation of final removal action closeout reports in the future, certain relevant information from Inventory Removal and Safe Shutdown removal actions were summarized (i.e., inventory and hold-up materials removed during preparatory actions) in the implementation plan.

- Safe Shutdown activities to date in components of the Thorium/Plant 9 Complex components did not include generation of wastewater. The gross contamination removal methods employed during Safe Shutdown typically do not include the use of water. Although monitoring was performed for worker exposures, environmental air monitoring was not performed since the building had not been opened to the environment.

DOE Action in Response to Second Issue

None.

U.S. EPA SPECIFIC COMMENTS

U.S. EPA Comment #5

The original specific comment requests that DOE clarify the type of change in the scope or intent of the implementation plan that would require U.S. EPA notification and approval. DOE's response indicates that changes such as the reduction in the number of air monitoring stations or modification of allowable residual contamination levels for opening a building to the environment are "nonsubstantive, but otherwise significant" changes. DOE then indicates that these changes would be reported to U.S. EPA before their implementation. The examples of changes in DOE's response are significant and would require U.S. EPA notification and approval before their implementation. DOE should revise its response to indicate that such changes require U.S. EPA notification and approval as opposed to mere reporting of the changes after they have been implemented.

DOE Response

- Comment acknowledged. DOE emphasizes that it has agreed to provide notification of *any significant* changes to the design *prior to* their implementation. Should U.S. EPA have any concerns regarding any significant design change, substantive or nonsubstantive, DOE will properly address those concerns as soon as practicable. It is also emphasized that there may be instances during field implementation of each D&D project where circumstances dictate that changes must occur rapidly to abate potentially serious situations (e.g., worker safety) and DOE may need to act immediately.
- It is believed that the DOE's practice of advance notification for any significant change (i.e., substantive and nonsubstantive), which has been in place for the first three D&D projects, meets the commitments made in the OU3 Integrated RD/RA Work Plan. The OU3 Integrated RD/RA Work Plan describes in Section 4.2.2 the process that has been agreed upon by both U.S. EPA and Ohio EPA to address design changes. That provision is provided below:

810

**DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)**

Construction Change Requests/Engineering Change Proposals

As OU3 remediation progresses, the original design may require modification. At that time the remedial design subcontractor will perform any additional design required to address the field modification. Significant changes to the design will require CFC modification and may require that affected activities be suspended until the revision has been completed and approved. At the same time, while the CFC remedial design is being revised, DOE will determine, in consultation with the U.S. EPA, if there is a need to perform either of the following: amend the RODs; submit to U.S. EPA an explanation of significant difference to the RODs; amend this work plan; and/or amend the implementation plan. Since each design package will provide performance-based specifications rather than detailed specifications, it is not anticipated that a CFC remedial design will require significant changes.

- The RD/RA Work Plan provision above outlines the commitment for DOE to consult with U.S. EPA for any significant change to determine the proper course of action. DOE believes that rather than list all potential examples of what would and would not require prior approval, both U.S. EPA and DOE will have an opportunity prior to implementation of a significant change to discuss any concerns related to a particular example and whether or not formal approval is required.

DOE Action

DOE has revised the text in Section 1.2 of the implementation plan, shown in redline/strikeout form on pages 3 - 4, to reference the above-referenced provision from the OU3 Integrated RD/RA Work Plan. Text has also been added that reaffirms the DOE commitment to consult with U.S. EPA in advance of any significant change to determine the proper course of action.

U.S. EPA Comment #6

The original specific comment [Original Specific Comment #7] requests that DOE provide more detail regarding management of dust-containing water. DOE's response indicates that no collectable runoff quantities will be generated from "dust-containing activities" and that the associated text was deleted from the implementation plan. This portion of DOE's response is acceptable. However, DOE also indicates in its response that U.S. EPA concerns regarding proper management of wastewater are adequately addressed in the OU3 IWP. U.S. EPA's concerns regarding proper management of wastewater generated from the Thorium/Plant 9 Complex are not addressed by the OU3 IWP. Complex-specific implementation plans are intended to identify the specific applications of the OU3 IWP guidelines to the unique aspects of each complex. Therefore, DOE should delete the reference to the OU3 IWP from its response.

DOE Response

- In response to U.S. EPA Comment #4, DOE inserted additional design references to Specification Section 01517 regarding management of wastewater for the Thorium/Plant 9 Complex.
- DOE's response to Original Specific Comment #7 addressed what appeared to be underlying concerns for how wastewater is managed. The response does apply to Thorium/Plant 9 Complex despite its reference to the OU3 Integrated RD/RA Work Plan since those referenced wastewater management strategies are standard for each project.

**DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)**

DOE Action

Changes pages 13 - 14 are attached, in response to U.S. EPA Comment #4, which show additional design detail references in redline form.

U.S. EPA Comment #7

The original specific comment requests that DOE specifically identify the locations to be used for interim storage of Thorium/Plant 9 Complex material and the expected duration of storage of the material. DOE's response refers to the response to U.S. EPA Original General Comment 1. However, DOE's response to Original General Comment 1 does not adequately address that comment. DOE should revise its responses to both U.S. EPA original comments in order to provide the information requested.

DOE Response

DOE response to Comment #3 of this submittal addresses a revision to *location*. DOE's original response to Original General Comment #1 stated that the projected *duration* of interim storage for materials generated from the project, which are destined for on-site disposal, would depend on the On-Site Disposal Facility placement schedule, and that materials to be dispositioned off-site are expected to be shipped off-site within six months from generation. No further details regarding duration are known at this time.

DOE Action

Addressed by the DOE action in response to the first issue in Comment #3.

U.S. EPA Comment #8

The original specific comment [Original Specific Comment #9] requests that DOE provide additional information regarding tracking of Thorium/Plant 9 Complex material before its final disposition and reporting of information on the material using the SWIFTS database. DOE's response refers to the response to the U.S. EPA Original General Comment 1. However, DOE's response to Original General Comment 1 does not adequately address that comment. DOE should revise its responses to both U.S. EPA original comments in order to provide the information requested.

DOE Response

The explanation provided in the DOE response to the second issue of Comment #3 regarding SWIFTS tracking and reporting applies to this comment as well. Any other inadequacies would have to be identified specifically and require further discussion.

DOE Action

Addressed by the DOE action in response to the second issue in Comment #3.

U.S. EPA Comment #9

The original specific comment [Original Specific Comment #12] requests that DOE provide detailed information regarding management of wash water, wastewater, and storm water associated with the Thorium/Plant 9 Complex. DOE's response refers to the OU3 IWP, which outlines strategies for collection, evaluation, treatment, and discharge of wastewater for D&D projects, but the response does not identify specific plans for managing wash water and

DOE Responses to May 1997 U.S. EPA Comments
Regarding the Thorium/Plant 9 Complex Implementation Plan
(Continued)

810

wastewater that are unique to the Thorium/Plant 9 Complex. DOE should revise its response to provide the detailed information requested.

DOE Response

- As discussed in DOE's response to the first issue of U.S. EPA Comment #4, project-specific plans for wastewater (a term that has been used interchangeably with "wash water") management are included in the performance specifications which were provided with the March 1997 comment responses to the OU3 Integrated RD/RA Work Plan. The stormwater management requirements for the project are provided by Specification Section 01515 (Part 1.5.A.1.c), which also requires that the subcontractor submit for project management team approval its plan for controlling stormwater runoff, migration of wash water, and erosion control. The reference to that specification was provided on page 21, lines 3 - 9 of the April 1997 comment response change pages.
- As noted for the DOE response to the first issue of Comment #4, DOE is only able to detail the requirements placed in the subcontract (i.e., performance specifications) at this time. Subcontractor work plans, which would describe subcontractor methods, are prepared and submitted for project management team approval during pre-mobilization. The process whereby subcontractors submit their work plans for project management team approval is described in Section 4.2.2 of the OU3 Integrated RD/RA Work Plan.

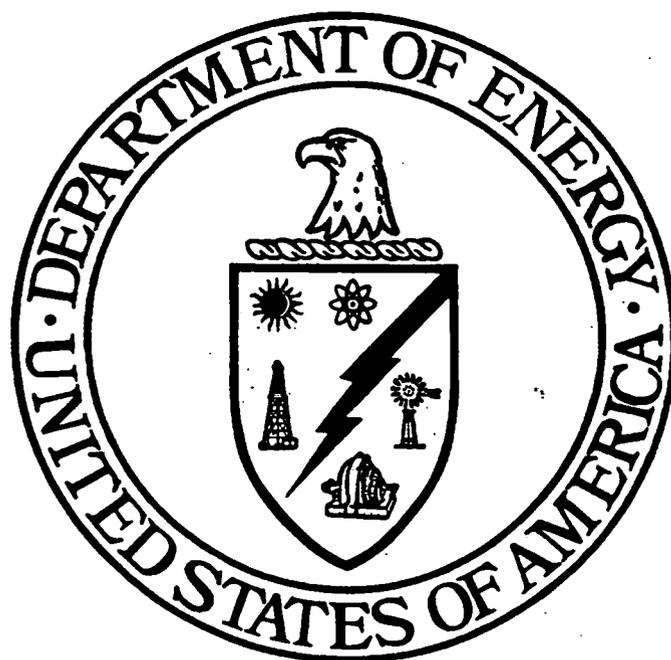
DOE Action

None.

**OPERABLE UNIT 3
INTEGRATED REMEDIAL ACTION**

**THORIUM/PLANT 9 COMPLEX IMPLEMENTATION PLAN FOR
ABOVE-GRADE DECONTAMINATION AND DISMANTLEMENT**

CHANGE PAGES



JUNE 1997

**FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO**

**U. S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE**

DRAFT FINAL

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The sequence, schedule, and component-specific remediation requirements for at- and below-grade dismantlement are contingent on RD/RA scheduling for soil remediation within the former Production Area and will be addressed in the appropriate RD/RA submittals for the Soil Characterization and Excavation Project (SCEP).

In accordance with the draft OU3 Integrated RD/RA Work Plan, the Thorium/Plant 9 Complex remediation activities have been planned utilizing a performance-based methodology using performance-based specifications as described in Section 3.1.3 and 4.1 of that work plan, and are also included in Appendix B of that work plan. Appendix C of this implementation plan provides a current list of those performance specifications which also apply to this project.

The use of performance specifications for project implementation requires that the remediation subcontractor develop work plans, subject to DOE approval, which will specify proposed remediation methods necessary to accomplish certain tasks and meet project objectives. The sequence for performance of remedial activities may differ from the sequence in which they are presented in this implementation plan since the remediation subcontractor's work plan may propose an alternate sequence.

~~DOE will provide notification to the regulatory agencies of any significant changes to the design prior to their implementation. Should the regulatory agencies have any concerns regarding any significant design change, DOE will properly address those concerns as soon as practicable and, if necessary, perform one or more of the following: amend the implementation plan, amend the OU3 Integrated RD/RA Work Plan, submit an explanation of significant difference to the RODs, and/or amend the RODs. Significant changes to the design will require formal design modification and may require that affected activities be suspended until the revision has been completed and approved. This course of action adheres to the commitments made in Section 4.2.2 of the OU3 Integrated RD/RA Work Plan for design changes.~~

~~Substantive changes in the scope or intent of this plan will require U.S. EPA and Ohio EPA notification/approval prior to implementation of the activities. The scope includes performance of six major activities involving the 17 components listed. Intent relates to the fulfillment of requirements and conditions specified in the OU3 Final Action ROD. A substantive change to~~

~~the scope would include a change that results in either performing additional major activities, not performing any of the six that are listed, or the addition or deletion of components for a project. Substantive changes of intent would include deviations from remediation strategies which affect regulatory based obligations such as the commitments defined in the OU3 Final Action ROD. An example of this case would be the deviation to Applicable or Relative and Appropriate Requirements (ARARs).~~

~~Notification to the Agencies will be made for nonsubstantive but otherwise significant deviations to specific methods or techniques proposed in this plan. Nonsubstantive, but otherwise significant deviations refer to specific methods or techniques described in the implementation plan which require notification to the regulatory agencies. Examples of such deviations would include the reduction of the number of air monitors for a project or revisions to the specifications (e.g., a modification of the allowable residual contamination levels for opening a building to the environment). These would be reported to the Agencies prior to implementation, and would be included in the project completion report.~~

1.3 Plan Organization

This implementation plan is comprised of five sections and five appendices. Section 1 contains the remedial action project statement, scope of work, an overview of this implementation plan, and a brief description of the Thorium/Plant 9 Complex. Section 2 describes the overall approach to implementing the Thorium/Plant 9 Complex remediation project, as applied from the OU3 Integrated RD/RA Work Plan. That approach includes a sequence for remediation of components, a plan for materials management, environmental monitoring activities, and an overview of the six-task approach for implementing above-grade remediation. Section 3 presents specific notable aspects of the six remedial tasks for each component. Section 4 presents the schedule for remediation and project reporting. Section 5 describes notable aspects of the project management approach.

Appendix A contains a summary table that estimates the types and quantities of environmental and occupational sampling for this project, based on the assumptions in the Sampling and Analysis Plan (SAP) for the OU3 integrated remedial action, contained in Appendix D of the OU3 Integrated RD/RA Work Plan, and on the remediation requirements presented in this plan.

15

2.3.2 Secondary Waste Management

Management of secondary wastes includes handling, sampling, storage, and disposition of secondary waste materials generated during remediation. Secondary waste includes vacuumed dust, filters, filter cake, personal protective equipment (PPE), spent consumables, and washwaters.

Depending on the subcontractor's approved method(s) of decontamination, wastewater may or may not be generated during that activity. It is expected that decontamination using high pressure water spray will be used for decontamination of at least the subcontractor's equipment to allow for unrestricted release of those materials back to the subcontractor. Specification Section 01517 describes the requirements for managing wastewater. Since the remedial design for this project utilizes performance specifications, it is the subcontractor's responsibility to adhere to propose and implement a wastewater management system that has been approved by the project management team. Part 1.5.A of Specification Section 01517 requires that the subcontractor submit for [project management team] approval a work plan in accordance with Part 7 of the subcontract that describes the system design for controlling, filtering, and transporting effluent produced during removal and/or fixing activities. The basic elements of the project wastewater collection system include effluent control through dikes or berms, collection using sumps or other portable collection devices, filtering using two stage filters to remove entrained particulate prior to discharge into holding tank(s), sampling and analysis of water and sludges for constituents of concern (see Section 2.4 for wastewater monitoring), discharge of approved effluent into the FEMP wastewater treatment system (Advanced Wastewater Treatment Facility), and sludge removal and containerization in 55-gallon drums. The particular requirements provided by Specification Section 01517 for wastewater management are highlighted in the following bullets:

- **Submittals:** Part 1.5.A of the specification addresses the requirements for the subcontractor's work plan, which describes the system design for controlling, filtering, and transporting effluent produced during removal and/or fixing activities.
- **Subcontractor's Equipment:** Part 2.1.B of the specification provides requirements related to methods and equipment needed for collection and filtration of wastewater.
- **Requirements Specific to Structure Decontamination:** Part 3.1.D of the specification addresses requirements that must be met prior to generating wash water from decontamination such as sealing floor cracks/seams and building cracks, use of existing building floor sumps for effluent collection, and precautions to prevent the spread of

30 constituents. Depending on contaminant concentration levels, pre-treatment may be required.
 29 concern, such as volatile organic compounds, heavy metals, uranium and RCRA-listed
 28 process information and existing data) to have potentially elevated levels of contaminants of
 27 collected for only those batches that have been determined (through a review of available
 26 Appendix D of the OU3 Integrated RD/RA Work Plan. Samples of washwaters will be
 25 FEMP WWTS. Waste water sampling is described in the SAP which is contained in
 24 (WWTS) Manager requires analytical data for treatment purposes prior to discharge into the
 23 Washwater may be sampled for constituents of concern if the Waste Water Treatment System

22 effluent discharge into containers.
 21 through a 20 micron pre-filter and a 5 micron filter to remove entrained particulate prior to
 20 sump may be used for collection of washwaters. Once collected, washwaters will be pumped
 19 foundations will be sealed to contain effluent to the building interior. The building's collection
 18 (Specification 01517). If washwaters are generated, floor cracks and edges around equipment
 17 the remediation subcontractor by minimizing its generation, providing proper containment, etc.
 16 If hydro-cleaning of component surfaces is used, washwaters generated will be controlled by

15 completion report to be submitted to regulatory agencies.
 14 devices), the actual wastewater collection system used will be described in the project
 13 Regardless of which collection method is chosen (i.e., sumps or other portable collection
 12 project management's approval of the subcontractor's work plan for wastewater collection.
 11 of the building). Whether or not these sumps are eventually used will be determined through
 10 adjacent to the northwest corner), and two in Building 78 (along the west and southwest sides
 9 inside the building near the southwest corner and one outside of the building on the pad
 8 two in Building 9A (one each in Process Areas 1 and 4), two associated with Building 69 (one
 7 The existing sumps that have been identified for potential use in collecting wastewater include

- 6 for individual drums from enriched washing operations.
- 5 ● **Sudge Drumming:** Part 3.1.F of the specification stipulates limits on sludge containment
- 4 and container requirements
- 3 effluent and sludge collection, sampling and analysis, commingling of effluents and sludges.
- 2 ● **Rinseate/Effluent Handling:** Part 3.1.E of the specification identifies requirements for
- 1 contamination from other more-contaminated areas of the facility

Table 2-1 Bulked Material Volume Estimates (ft³)

Component Designation	Accessible Metals	Inaccessible Metals	Process-Related Metals	Painted Light-Gauge Metals	Lead Flashing	Concrete	Concrete Containing Tc-99 ⁽⁸⁾	Acid Brick	Non-Regulated ACM	Regulated ACM ⁽⁹⁾	Misc. Materials ⁽²⁾	Component/Complex Totals
9A	25,244	63,525	23,717	876	6	303	1,699	1,866	4,319	3,473	8,686	133,714
9B	559	2,759	302	8	0	105	0	0	183	125	685	4,726
9C	102	93	0	7	0	0	0	0	0	39	38	279
9D	293	223	0	0	0	0	0	0	265	12	455	1,248
9E	14	0	0	0	0	0	0	0	7	4	19	44
9F	68	148	9	7	0	0	0	0	15	35	57	339
32A	1,658	663	0	5	0	6,530	0	0	0	93	2,724	11,673
32B	290	37	0	0	0	0	0	0	0	4	426	757
64	3,297	3,720	0	212	6	1,560	0	0	40	0	2,758	11,587
65	4,497	1,315	0	144	4	0	0	0	0	0	1,505	7,465
69	2,599	821	57	33	0	7,313	0	1,245	0	235	2,249	14,552
78	3,985	14,023	1,431	97	0	10,608	0	0	0	0	3,224	33,280
81	1,347	761	0	80	0	0	0	0	0	0	143	2,331
Misc ⁽⁹⁾	4,159	0	0	0	0	0	0	0	0	0	2,433	6,592
Total	48,112	88,080	25,516	1,469	16	26,419	1,699	3,111	4,741	4,020	25,402	228,585
Container/Quantity ⁽³⁾	None/ROB/10 ⁽¹⁰⁾	None/ROB/7 ⁽¹⁰⁾	TL ^{(5)/27}	None/ROB/1 ⁽¹⁰⁾	B-12 ^{(6)/1}	None/ROB/2 ⁽¹⁰⁾	B-12 ^{(6)/60}	SWMB ^{(6)/39}	ROB ^{(6)/7}	ISO ^{(6)/5}	ROB ^{(6)/31}	
Int. Storage Config. Location ⁽⁴⁾	Stockpile or ROB ^{(10)/ Plt. 9 Slab}	Stockpile or ROB ^{(10)/ Plt. 9 Slab}	TL ^{(5) Plt. 1 Pad}	Stockpile or ROB ^{(10)/ Plt. 9 Slab}	B-12 ^{(6) Plt. 1 Pad}	Stockpile or ROB ^{(10)/ Plt. 9 Slab}	B-12 ^{(6) Plt. 1 Pad}	SWMB ^{(6) Plt. 1 Pad}	ROB ^{(6) Plt. 1 Pad}	ISO ^{(6) Plt. 1 Pad}	ROB ^{(6) Plt. 1 Pad}	
Disposition	to be determined	On-Property	Offsite: NTS	On-Property	PCDF ⁽⁷⁾	On-Property	Offsite: NTS	Offsite: PCDF	On-Property	On-Property	On-Property	

- (1) Excludes gutter cleanout which will be placed in drums (volume estimated at less than one drum).
- (2) Excludes compactibles which will be placed in a dumpster as refuse for compaction. Miscellaneous materials can be containerized with Non-Regulated ACM.
- (3) TL: Top-Loading (also referred to as a Large Metal Box) holds 970 cubic feet and/or 18.0 tons of material; ISO: End-Loading Container/Sea-Land boxes) holds up to 971 cubic feet and/or 42,000 lbs. of material; ROB: Roll-Off Box holds 810 cubic feet and/or 16.95 tons of material; B-12: B-12 Box holds up to 44 cubic feet and/or 9,000 lbs. of material; and SWMB: Small White Metal Box holds approximately 80 cubic feet and/or 9,000 lbs. of material.
- (4) Locations identified are based on current planning projections. Currently, the preferred location for interim storage of containerized and stockpiled materials is the Plant 1 Storage Pad; structural steel is planned to be stockpiled on the Plant 9 slab. Containerized accessible metals, inaccessible metals, painted light-gauge metals, and concrete from Bldgs. 64/65 are planned to be placed on the 64/65 slabs.
- (5) Container is volume restricted.
- (6) Container is weight restricted.
- (7) PCDF: Permitted Commercial Disposal Facility.
- (8) Volumes of concrete containing Tc-99 removed from Process Areas 2 and 4 in Building 9A are at- and below-grade quantities.
- (9) Miscellaneous includes railroad tracks and pipe bridges.
- (10) Accessible metals, inaccessible metals, painted light gauge metals, and concrete from Bldgs. 64 and 65 to be placed in ROBs unless no thorium contamination concerns.

18

Full containers destined for off-site disposition will be delivered to an on-property packaging/staging area for sampling (if necessary), container inspection, and sealing. Materials destined for on-property temporary storage will be delivered directly to the designated interim storage area.

Pursuant to Specification 01120, waste materials that require movement outside to be containerized will be required to meet the decontamination requirements. If that requirement cannot be attained, the material may be encapsulated or wrapped in fiber reinforced sheeting and sealed prior to movement to prevent migration of contaminants during movement.

The Radiological Requirements Plan (RRP) outlines the requirements that must be met by the remediation subcontractor regarding radiological limits. The RRP is discussed in the OU3 Integrated RD/RA Work Plan, Section 3.2.5.

Interim Storage/Disposition

The strategy for interim storage of OU3 materials is described globally in the OU3 Integrated RD/RA Work Plan. ~~Based on the latest projection for availability of interim storage space, it was determined that materials to be generated from the Thorium/Plant 9 Complex will be temporarily stored in three separate locations as identified in Table 2-1. For Categories A (accessible metals), B (inaccessible metals), D (painted light-gauge metals, not including lead sheeting), and E (concrete, not including surface concrete removed from Process Areas 2 and 4 of Building 9A), it is currently planned that those materials will be stockpiled in bulk on the Plant 9 slab. Calculations show that approximately 360,000 ft³ of capacity will be available on the Plant 9 slab for debris stockpiling, assuming four stockpiles each having heights of 10 feet, while the combined bulk volume requirement for Categories A, B, D, and E from the selected structures equals approximately 150,000 ft³. The strategy for interim storage of accessible metals, inaccessible metals, painted light-gauge metals, and concrete from Buildings 64 and 65, which are currently assumed to be potentially contaminated with thorium, is to place those containerized materials on the Building 64/65 pads. All other materials generated from the project will be containerized, as stated in Table 2-1, and placed on the Plant 1 Pad. It is anticipated that all materials generated from the decontamination and dismantlement of the Thorium/Plant 9 Complex that are eligible for disposition in the On-Site Disposal Facility (OSDF), with the exception of structural steel, will be placed in interim storage at the Plant 1 Pad. The current strategy for the management of structural steel~~

~~identifies interim storage in bulk form on the Plant 9 concrete slab; however, placement on other storage pads or slabs with adequate engineering controls may be performed as needed. Another exception to this strategy is for accessible metals, inaccessible metals, painted light-gauge metals, and concrete from Buildings 64 and 65, which are currently assumed to be potentially contaminated with thorium. These materials will be containerized in covered roll-off boxes and it is currently anticipated that they will be placed on the Building 64/65 pads.~~

The duration for interim storage of materials to be placed in the On-Site Disposal Facility (OSDF) these materials will depends on the OSDF material placement schedule. Materials generated that do not meet the OSDF waste acceptance criteria are expected to be dispositioned off-site within six months of generation.

The decision to use the Plant 9 slab for bulk storage of Categories A, B, D, and E debris has been made consistent with the authority and criteria established under Removal Action 17. Removal Action 17 criteria specifies the selection of debris storage locations in decreasing order of preferred usage: Plant 1 Pad, Plant 7 Slab, Plant 4 Slab, Plant 8 Slab, and slabs of dismantled buildings, and specifies the use of engineering controls to prevent potential contaminant releases. Similar to the preparation and use of slabs from Plant 7 and Plant 4 for interim storage of debris, all necessary engineering controls will be provided for the Plant 9 slab as required by Removal Action 17. Such engineering controls would include storm water runoff collection and treatment, as necessary, in the site wastewater treatment system. Since all bulk stockpiled debris will have met release criteria for exposure to the environment (release criteria reference: Part 3.1.A of Specification Section 01517), along with the fact that any materials that fail to meet that release criteria will be containerized and stored on the Plant 1 Pad, potential contaminant releases will be negligible. Prevention or minimization of contaminant releases are achieved by reduction of surface contamination on surfaces of debris using approved in situ decontamination methods. Additional treatment of debris would be employed (e.g., amended water spray on debris surfaces) in the event of suspected contaminant release.

Although the Plant 1 Pad will likely serve as the primary storage location for most containerized debris, other existing storage pads, and/or foundations of dismantled buildings may be used if necessary. These interim storage locations will be maintained until such time as the materials achieve final disposition. Interim storage on the Plant 1 Pad, or other

~~designated pad, includes both stockpiling and container storage.~~

Materials not identified for immediate off-site disposition will be placed in the queuing area by the remediation subcontractor to allow FEMP waste management personnel to inspect them prior to their relocation to the designated interim storage facility.

Material tracking and reporting will be accomplished through use of the Site-Wide Information and Tracking System (SWIFTS). Section 3.3.2.2 (Segregation, Containerization, Tracking) of the OU3 Integrated RD/RA Work Plan describes material tracking and reporting using SWIFTS. Project-specific material tracking and reporting strategies for the Thorium/Plant 9 Complex project do not differ from the strategies laid out in the OU3 Integrated RD/RA Work Plan and therefore no additional details were developed during the Thorium/Plant 9 Complex design. It should be noted that SWIFTS data on the Thorium/Plant 9 Complex at this time (i.e., prior to debris generation) are only *estimated* volumes and weights of the various OU3 categories. Those data are provided in Tables 2-1, 2-2, and 2-3 of the implementation plan. Actual volumes, weights, and interim storage locations for project materials will not be available until after they have been generated and are placed into interim storage, whereupon they will be reported to U.S. EPA in the project completion report for the Thorium/Plant 9 Complex.

Treatment and Disposition

The project-specific disposition strategy for materials generated during this project is consistent with the strategies presented in the OU3 Integrated RD/RA Work Plan. Treatment and disposition decisions for project materials were made in accordance with the requirements stated in the OU3 Final Action ROD.

Table 2-1 identifies the disposition determination for project materials. Treatment will be required prior to the disposal of potential mixed waste acid brick and lead sheeting. Both materials are projected to be shipped to the Envirocare of Utah facility in Clive, Utah for treatment and burial. Accessible Metals (Category A) from the complex are currently being evaluated for potential recycling options. This evaluation will be performed using the "Decision Methodology for Fernald Scrap Metal Disposition Alternatives", which is being developed by DOE-FN to specifically address evaluation of disposition alternatives. This evaluation is briefly described in Appendix B.