

**FINAL OPERABLE UNIT 4 REMEDIAL DESIGN WORK PLAN (COMMENT
RESPONSES AND RESULTANT CHANGE PAGES)**

07/27/95

**DOE-1271-95
DOE-FN EPAS
8
RESPONSES**



Department of Energy
Fernald Environmental Management Project
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JUL 27 1995

DOE-1271-95

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HRE-8J
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

FINAL OPERABLE UNIT 4 REMEDIAL DESIGN WORK PLAN

Enclosed are the comment responses to the two Ohio Environmental Protection Agency (OEPA) comments on the Operable Unit 4 (OU4) Final Remedial Design Work Plan (RDWP). As a result of the comments, changed pages to the final plan were required and are included for insertion into your plan.

If you have any additional comments, please contact Randi Allen at (513) 648-3102.

Sincerely,

Randi Allen

FN:Allen

for

Jack R. Craig
Fernald Remedial Action
Project Manager

Enclosures: As Stated

cc w/encs:

K. H. Chaney, EM-423/GTN
B. Skokan, EM-423/GTN
G. Jablonowski, USEPA-V, 5HRE-8J
J. Kwasniewski, OEPA-Columbus
P. Harris, OEPA-Dayton
M. Proffitt, OEPA-Dayton
S. McClellan, PRC
R. Cohen, GeoTrans
F. Bell, ATSDR
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R. D. George, FERMCO/52-2
T. Hagen, FERMCO/65-2
AR Coordinator, FERMCO

cc w/o encs:

C. Little, FERMCO
M. Yates, FERMCO/9

RESPONSES TO
OHIO EPA COMMENTS ON THE FINAL
OPERABLE UNIT 4 REMEDIAL DESIGN WORK PLAN
(May 1995)

1. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg. #: Line #: Code:
Original Comment #: 13

Comment: The original comment requested additional information as well as the modification of the OU4 project specific air monitoring program. In response, DOE described the monitoring program as one that is used for the entire site, not just OU4. Some data regarding specific air pollution control equipment was submitted as part of the Pilot Plant Phase II Test Plan, however, OEPA is still unclear where and when the project specific air monitoring program and detailed emission control material will be submitted. Please provide information regarding the document that will detail this data and the anticipated submission date.

Response: The project specific air monitoring program for Operable Unit 4 will utilize a significant portion of the FEMP sitewide monitoring program.

The OU4 remedial facility monitoring program will be separate from the sitewide environmental monitoring program that is managed by another division at the FEMP. OU4 will utilize several of the Environmental Monitoring (EM) programs' monitoring stations and the radon data collected while fulfilling their EM programmatic function. Also, OU4 will share radon data collected from stack monitoring with the EM group for use in the sitewide environmental monitoring program. The two programs will not be combined.

The requirements and design of the OU4 project specific air monitoring program will be included within several of the submittals listed in the Remedial Design Work Plan (Table 5-1). Requirements and design criteria associated with air emissions and environmental monitoring will be included in the Design Criteria Package (both preliminary and pre-final submittals). System configuration and expected emissions will be defined by the Process and Instrumentation Diagrams and Material Balance included in the Vitrification Plant Title I Design submittal. The detailed design of the system will be defined in the Vitrification Plant Title II Design submittal. The submittals describing the OU4 air monitoring system will address any portion of the FEMP sitewide monitoring program that will be utilized in the project-specific system. These same submittals will also address process and occupational radon monitoring systems.

Action: No further action required.

2. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.2.3 Pg. #: 4-10 Line #: Code: C
Original Comment #:

Comment: DOE describes the Title I/II - Radon Treatment System Review Package Submittal as a Pre-Final (90%) document only. OEPA feels that the efficient operation of the treatment system is vital to the success of the project. Valuable time and effort will be lost if DOE's 90% submittal does not meet OEPA's specifications, therefore a [formal] review and comment period is suggested by OEPA for the Preliminary (30%) submittal for the Radon Treatment System.

Response: DOE agrees that the efficient operation of the Radon Treatment System is a vital component of the overall success of the Operable Unit 4 remediation efforts. The DOE will formally submit to the OEPA and USEPA for review, comment and approval a Preliminary (30%) submittal for the Radon Treatment system.

Action: Section 4.2.3 and Table 5-1 will be modified to include a Title I/II Radon Treatment System - Preliminary (30%) review package submittal on September 30, 1996. The revised "change pages" are attached and amend the Final Remedial Design Work Plan.

piping used to fill the silos may be removed or filled-in as part of the site preparation activities. Currently, the trench contains an active airline and potable water supply to the Waste Pit Area. The demolition of the K-65 trench will be closely coordinated with Operable Units 3 and 5. All active piping interfering with the Vitrification Plant will be relocated.

4.2.2.2 Silo Superstructures Design

Silo residues will be removed hydraulically from Silos 1 and 2 and pneumatically from Silo 3. This work will be accomplished from an enclosed work platform, suspended over each silo dome. The work platform will be structurally mounted to a steel superstructure which will span each silo. As discussed in Section 4.1.4, a study will be performed to investigate the possibility of relocating the Silo 4 superstructure (constructed as part of the Pilot Plant Phases I and II Treatability Study Program) for re-use over Silos 1, 2, or 3. If this is not practical, a new superstructure will be designed for the hydraulic and pneumatic removal operations. The design and construction will be based upon the Silo 4 superstructure design concept to support waste retrieval operations without adversely affecting the structural integrity of the Silos.

4.2.2.3 Radon Treatment System (Silos 1 and 2) Design

In 1991, a removal action was completed during which, a bentonite cap was placed over the contents of Silos 1 and 2 in effort to attenuate the radon emanation rate from the silos. Immediately following the removal action, the radon concentration in each silos' headspace dropped dramatically; however, over time radon concentrations have gradually increased to approximately 1,000,000 pCi/L and 3,500,000 pCi/L in Silos 1 and 2 respectively. Once the bentonite caps in each silo are breached during waste retrieval operations, the attenuation barrier will be compromised and it is anticipated that the silos' radon headspace concentrations may increase. A radon treatment system capable of treating both silo's headspace to reduce radon concentrations to acceptable levels will be designed and constructed.

The design of the radon treatment system (RTS) for the Silos 1 and 2 headspace will be based on the operational data and specific performance measurements to be obtained from the completion of the ongoing Pilot Plant Phases I and II Treatability Study Program. To date, the design of a RTS capable of treating on a continuous basis large volumes of air containing relatively high concentrations of radon

has never been performed. The final design of the RTS will be based on the performance and design of previous successful off-gas treatment systems from both the existing silo RTS and the radon treatment system to be used in the Pilot Plant.

4.2.3 Task 2 Deliverables and Milestones

The efforts expended under Task 2 will result in the development and submittal of four design packages in accordance with the project schedule as follows:

<u>Task 2 Deliverable</u>	<u>Date</u>
● Title I/II - Underground Utilities/Site Preparation - Pre-final (90%) Review Package	September 1, 1995
● Title I/II - Silo Superstructures - Pre-final (90%) Review Package	May 2, 1996
● Title I/II - Radon Treatment System - Preliminary (30%) Review Package	September 30, 1996
● Title I/II - Radon Treatment System - Pre-final (90%) Review Package	January 2, 1997

Due to their relatively straightforward design, two of the aforementioned Pre-final (90%) deliverables have been selected by DOE to be submitted to the agencies without first undergoing formal Preliminary (30%) design review package submittals in order to expedite the remedial design schedule. However, in an effort to facilitate the ongoing communication of the technical issues and concerns between the parties, the DOE will informally submit Preliminary (30%) design review packages for informational purposes only to both agencies, in parallel with its own review.

4.3 Task 3, Title I/II Design - Vitrification Plant

The Title I/II design of the vitrification plant includes the following design areas:

- Personnel support/plant buildings and services/process plant
- Melter/product-forming and handling/off-gas

- Underground Utilities/Site Preparation;
- Silo Superstructure Construction; and
- Silo Headspace Radon Treatment System

The Phase II Remedial Action Work Plan will address the remaining remedial actions:

- Vitrification Plant Construction and Operation; and
- Final Site Remediation

This two-phased approach to the development and submittal of the Operable Unit 4 Remedial Action Work Plan is necessary to support the implementation of the remedial design strategy adopted for this project.

5.3 Deliverables/Remedial Design

The EPA and OEPA will be provided with design review packages (see Table 5-1) in accordance with the remedial design schedule. Based on the aggressive schedule necessary to support the Operable Unit 4 remedial design, the management strategy to satisfy CERCLA Section 120(e)(2) requirements preclude a formal submittal and comment period to be conducted by DOE at the (intermediate level) 60 percent stage of a remedial design development.

In general, the level of detail presented in the Preliminary (30%), and Pre-final (90%)/Final (100%) design submittals will be similar with the EPA OSWER Directive 9355.0-4A, "Superfund Remedial Design and Remedial Action Guidance," dated June 1986. The following subsections discuss the level of detail to be presented in the various Title I/II design review packages.

5.3.1 Preliminary (30%) Design

In order to expedite the remedial design schedule, the Operable Unit 4 remedial design strategy has identified several combined Title I/II design packages for which only Pre-final (90%) design review packages will be formally prepared and submitted to the agencies. In order to facilitate communication of technical issues and concerns between the parties, the DOE will informally submit for informational purposes only, the related Preliminary (30%) design review package, in parallel to DOE's internal review of the documents.

The remedial design schedule has been prepared on the basis that the Preliminary (30%) Design Review package submittals identified in Table 5-1 are considered "primary" documents as defined by Section XII of the Amended Consent Agreement. The following describes the level of detail to be provided in each of the formal Preliminary Design Review submittals.

TABLE 5-1 MILESTONE SCHEDULE		
SUBMITTAL DESCRIPTION	TYPE	DATE
REMEDIAL DESIGN WORK PLAN		
Submit Draft Work Plan to EPA Receive EPA Comments on Draft Work Plan Submit Final Work Plan to EPA EPA Approve Final RD Work Plan		26-Jan-95A 27-Mar-95A 16-May-95A 15-Jun-95A
REMEDIAL DESIGN		
Functional Requirements Document	Pre-final, 90%	15-Aug-95
Design Criteria Package	Preliminary, 30%	15-Aug-95
Underground Utilities/Site Prep, Title I/II Design	Pre-final, 90%	01-Sep-95
Silo Superstructures, Title I/II Design	Pre-final, 90%	02-May-96
Radon Treatment System, Title I/II Design	Preliminary, 30%	30-Sep-96
Radon Treatment System, Title I/II Design	Pre-final, 90%	02-Jan-97
Vitrification Plant, Title I Design	Preliminary, 30%	04-Dec-96
Design Criteria Package	Pre-final, 90%	04-Dec-96
Vitrification Plant, Title II Design	Pre-final, 90%	01-Sep-97
D&D/Waste Management, Title I/II Design	Pre-final, 90%	07-Dec-00
Final Site Remediation, Title I/II Design	Pre-final, 90%	07-Dec-01
REMEDIAL ACTION WORK PLAN		
Submit Phase I Remedial Action Work Plan Submit Phase II Remedial Action Work Plan		06-Oct-95 07-Oct-96

A - Actual Completion Date