UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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CHICAGO, IL 60604-3590

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REPLY TO THE ATTENTION OF: SRF-5J

Mr. Johnny W. Reising
United States Department of Energy
Fernald Area Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705

Subject: U.S. EPA Review of the Revised Draft Proposed Plan for Operable Unit 4, Silo 3 Remedial Action

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the above-referenced document, dated December 16, 2002 and received by U.S. EPA on December 17, 2002. On January 7, 2003, U.S. EPA extended its review time for this document to February 4, 2003 in accordance with Section XII G of the 1991 Amended Consent Agreement. The document was revised in response to U.S. EPA comments on the previous draft "Proposed Plan for Operable Unit 4 Silo 3 Remedial Action" dated August 2002 and presents the proposed alternate remedy for the Operable Unit 4 Silo 3 remedial action.

Because the U.S. Department of Energy (DOE) responses to U.S. EPA comments on the previous version of this document resulted in a significantly different approach to remedial action at Silo 3, U.S. EPA has new comments on the document, especially with regard to treatment to reduce dispersibility and the process for implementing the contingent remedy should the need arise. In general, the revised document adequately addresses U.S. EPA comments on the previous draft, but further revisions are needed to clarify DOE's approach to remedial action at Silo 3.

Therefore, U.S. EPA disapproves the document until the new comments are addressed. DOE should revise the document appropriately and resubmit it to U.S. EPA within 30 days. U.S. EPA's general and specific review comments on the document are enclosed. If you have any questions or concerns, please contact me at (312) 886-4591.

Sincerely,

Gene Jablonowski
Project Manager
Federal Facilities Section
Superfund Division

Enclosure

cc: Tom Schneider, OEPA-SWDO
Sally Robison, U.S. DOE-HDQ
Jamie Jameson, Fluor Fernald
Terry Hagen, Fluor Fernald
Tim Poff, Fluor Fernald



1

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ENCLOSURE

TECHNICAL REVIEW COMMENTS ON
"REVISED DRAFT PROPOSED PLAN FOR OPERABLE UNIT 4 SILO 3
REMEDIAL ACTION"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

(Seven Pages)

# ATTACHMENT TO:

2

TECHNICAL REVIEW COMMENTS ON
"REVISED DRAFT PROPOSED PLAN FOR OPERABLE UNIT 4 SILO 3
REMEDIAL ACTION"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENTS

Commenting Organization: U.S. EPA Commentor: Barwick
General Comment #: 1
Comment: DOE includes five specific examples of the problems it anticipates may develop with respect to implementing the full scale dispersibility treatment but only references heightened worker risk and/or costs as concerns that would accompany such problems. DOE should provide more detail about the worker risk and cost concerns. The point is to better illustrate why it may become necessary to alter or abandon the dispersibility treatment once full scale operations have started.

Commenting Organization: U.S. EPA Commentor: Barwick
General Comment #: 2
Comment: Once full scale operations begin, if it becomes necessary to switch to the contingent remedy, are there any implementation issues associated with that switch? For example, will DOE have enough bags to start double bagging immediately? Are these bags readily available? Does double bagging provide the same level of protectiveness in the event of a severe transportation accident? Can double bagging really be performed; either by placing one bag inside another prior to filling, or maneuvering a large filled bag into another as an overpack?

Commenting Organization: U.S. EPA Commentor: Barwick
General Comment #: 3
Comment: In the draft Proposed Plan, DOE commits to "interact" with EPA, OEPA, and stakeholders when deciding whether to alter or abandon dispersability treatment. During the meeting in Chicago, DOE explained that this decision would require balancing a number of concerns, some of which may not be foreseeable at this time, and so devising an objective standard for determining the success or failure of the dispersability treatment in the Proposed Plan or ROD would be very difficult and inappropriately limiting. While EPA agreed that it would be good to retain flexibility, especially in light of possible worker exposure risk, EPA understood that in the absence of an objective standard DOE would obtain EPA and OEPA concurrence prior to altering or abandoning treatment. In the absence of an objective standard, EPA believes that the decision process must be open to stakeholders and include EPA and OEPA concurrence.

Commenting Organization: U.S. EPA Commentor: Barwick
General Comment #: 4
Comment: DOE should expressly state that since the contingent remedy would meet all remedial action objectives and the dispersibility treatment is not required to meet any legal requirement, switching to the contingent remedy will be considered a minor change. DOE would not prepare an ESD for a minor change but instead document the decision in the post-decision document file, which is

equivalent to the RD/RA case file for a remedial action. The documentation of non-significant differences should not be part of the administrative record file for the ROD. If DOE chooses, non-significant changes can be documented for the public in an optional Remedial Design Fact Sheet. These fact sheets generally are used to inform citizens of the schedule for public participation activities as well as progress being made in the design and implementation of the remedy. These fact sheets also can be used to notify the public of any minor changes made to the remedy.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Emergence of a Commercial Disposal Facility to Accept DOE 11e.(2) Materials
Page #: 5 (first paragraph of the section) Line #: Not applicable (NA)
Specific Comment #: 1
Comment: DOE states that a commercial disposal facility that can accept 11e.(2) regulated materials for disposal is in the process of working with their regulatory agency to gain approval for accepting the Silo 3 materials untreated into their 11e.(2) disposal cell. It is EPA's understanding that DOE and the Nuclear Regulatory Agency (NRC) are currently working to facilitate the disposal of DOE-designated 11e.(2) material at Envirocare's 11e.(2) disposal cell; if this can't be accomplished then use of a commercial disposal facility will not be possible. DOE should summarize the actions that need to be performed to facilitate disposal of Silo 3 11e.(2) material at Envirocare, and a timetable for when those actions need to be completed for the Silo 3 Project to proceed without delay.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Emergence of a Commercial Disposal Facility to Accept DOE 11e.(2) Materials
Page #: 5 (second paragraph of the section) Line #: NA
Specific Comment #: 2
Comment: DOE states that the actual disposal facility will be selected as part of the design process and may include the Nevada Test Site (NTS), an appropriately permitted commercial disposal facility that can accept the Silo 3 materials, or a combination of both. DOE should remember that 30 days after EPA approval of the ROD Amendment for Silo 3, DOE is required to submit a revised draft Silo 3 Remedial Design (RD) package to EPA (enforceable milestone). The Silo 3 Proposed Plan should emphasize the ultimate dependence upon Nevada Test Site for disposal given the numerous uncertainties surrounding the use of a commercial disposal facility for Silo 3 material disposal. EPA supports DOE having as many disposal options available as possible, but is concerned about the Silo 3 remedy proceeding in a way that emphasizes use of a commercial disposal facility that may later prove to be unavailable. The Silo 3 RD package should also include flexibility in the disposal facility utilized and should accommodate Silo 3 waste disposal at the NTS or a permitted commercial disposal facility.

Commenting Organization: U.S. EPA Commentor: Barwick
Section Title: Rationale For Proposed Change
Page #: 5 (last paragraph) Line #: NA
Specific Comment #: 3
Comment: The fact that DOE is modeling transportation accident scenarios means that a severe transportation accident is not "unforeseen." "Unlikely" might be a better term.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Remedy Comparison Table
Page #: 6 (Remedy Comparison Table) Line #: NA
Specific Comment #: 4
Comment: "Maintain transportation risk to less than $1x10^{-6}$" should be included as a bullet item under *Proposed Revised Cleanup Plan*.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Proposed Revised Cleanup Plan
Page #: 7 Line #: NA
Specific Comment #: 5
Comment: Text under the second bullet in this section states that Silo 3 waste will be treated "to the degree reasonably implementable." The text should be revised to further describe what will be considered "reasonably implementable" treatment. Specifically, the text should discuss the impact of worker exposure and operational efficiency on implementability.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Detailed Description of the Proposed Revised Cleanup Plan
Page #: 7 Line #: NA
Specific Comment #: 6
Comment: The last sentence of the paragraph titled "Waste Treatment" states that a liquid solution will be added to the dry waste material as it enters the package. The text should be revised to state that a liquid solution will be added to the waste to reduce the waste's dispersibility and mobility.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Detailed Description of the Proposed Revised Cleanup Plan
Page #: 7 (last paragraph) Line #: NA
Specific Comment #: 7
Comment: It is stated that bench scale testing yielded encouraging results indicating that a liquid solution could be successfully added as waste is loaded into packages. U.S. EPA has not seen these test results; these test results should be provided to EPA within 30 days and included in the revised Silo 3 Remedial Design package.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Detailed Description of the Proposed Revised Cleanup Plan
Page #: 8 Line #: NA
Specific Comment #: 8
Comment: The text states, "It is recognized that once the final formulation for delivery is selected, the actual application of additives defines the best management approach and no further testing on the materials will be conducted during full scale operations." The text should be revised to clarify that standards for additive application will be defined by best management practice levels to be determined from mock-up testing.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Contingency Backup Actions
Page #: 8 Line #: NA
Specific Comment #: 9
Comment: The mockup test plan should be submitted to EPA for review and approval. EPA should also be provided the opportunity to observe the testing, review and evaluate the mockup test results, as well as the performance criteria established from the mockup test. Also, since best management practice levels will be set during the mockup test and no subsequent testing will take place during full scale operation, it is important that the mockup test include representative samples that will yield statistically significant results.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Contingency Backup Actions
Page #: 9 Line #: NA
Specific Comment #: 10
Comment: Details need to be provided on the contingent double packaging system, what it consists of and why it is equivalent to the dispersibility treatment.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Waste Packaging and Shipping
Page #: 9 Line #: NA
Specific Comment #: 11
Comment: Terms such as "package" and "container" are used interchangeably and ambiguously to the extent that it is unclear what exactly will be performed as far as waste packaging and shipment. EPA expects that Silo 3 waste will be loaded into a lined soft-sided package, and subsequently placed into steel Sea/Land containers that will be transported via truck and/or rail to the disposal facility(ies). EPA also expects the continued use of dedicated unit trains if rail shipment of Silo 3 waste is necessary. These points should be clarified in the Proposed Plan.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: Balancing Criterion No. 2 Reduction of Toxicity Mobility, or Volume Through Treatment
Page #: 12 Line #: NA
Specific Comment #: 12
Comment: The text states that treatment specified in the currently proposed plan would result in an increase in waste volume of about 50 percent over the treatment proposed in the revised plan because of the types of additives required to stabilize the waste to toxicity characteristic leaching procedure (TCLP) levels. Later, the text states that the volume of waste under the treatment specified in the proposed revised plan is expected to increase by approximately 11 percent because of air entrainment during retrieval. However, this increase does not take into account any volume change from addition of a waste treatment solution. Because the impact of the proposed waste treatment solution on volume is not specified, the previous statement specifying a 50 percent decrease in volume relative to treatment in the currently approved plan cannot be supported. The text should be revised to either provide information regarding the impact of the waste treatment solution or volume or to state that mock-up testing will verify if the

waste treatment solution will decrease the volume of waste relative to the currently approved treatment method.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Balancing Criterion No. 3 Short Term Effectiveness
Page #: 13 through 15 Line #:NA
Specific Comment #: 13
Comment: Various inconsistencies were identified between Attachment 3 and the section entitled "Balancing Criterion No. 3, Short-Term Effectiveness." These inconsistencies are listed below.

- Attachment 3 refers to "Sea/Land" containers, but the section refers to "sealand" containers. This section should be revised to refer to "Sea/Land" containers.

- The fifth paragraph of this section refers to "the supplement to this Proposed Plan." Because the transportation risk evaluation is presented in Attachment 3, the fifth paragraph of this section should be revised to refer to "Attachment 3 to this Proposed Plan."

- The eighth paragraph of this section refers to "1910 bags." Attachment 3 consistently refers to "soft-sided containers." This section should be revised to refer consistently to "soft-sided containers" and not "1910 bags."

- Attachment 3 defines intermodal transport as "combined rail and truck." The section does not define this term. This section should be revised to define intermodal transport in a manner consistent with Attachment 3.

- The section presents information regarding the number of direct rail and truck shipments estimated in the current cleanup plan and the proposed revised cleanup plan. However, this section does not discuss the number of rail and truck shipments required as part of intermodal transport. This information is presented in Attachment 3. The section should be revised to include information on the number of rail and truck shipments associated with intermodal transport under both the current and proposed revised cleanup plans.

- This section refers to a "47.9 percent waste loading rate." The basis for this rate is not explained. A waste loading rate is not discussed in Attachment 3. Both this section and Attachment 3 should be revised to consistently refer to and explain any waste loading rate used in transportation risk calculations.

- The numbers of required rail shipments associated with direct rail and intermodal transportation options in the current and proposed revised plans do not match. Neither this section nor Attachment 3 explains the basis for this discrepancy. This section and Attachment 3 should be revised to clarify the basis for the difference in the numbers of required rail shipments associated with direct rail and intermodal transportation options.

- This section discusses the probability of a maximum severity truck accident and a maximum severity rail incident. Probabilities are presented in both cases for accidents occurring in rural and urban areas. However, this section does not present probabilities for accidents occurring in suburban areas, and this information is presented in Attachment 3. This section should be revised to present probabilities for accidents occurring in suburban areas.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Balancing Criterion No. 3 Short Term Effectiveness
Page #: 14 Lines #: NA
Specific Comment #: 14
Comment: It is stated that essentially 100 percent of the waste materials are assumed to be released and available for resuspension as a result of the most severe hypothetical accident. RADTRAN 5 has a feature to determine the Maximum Individual Downwind Doses following a dispersion accident (RADTRAN 5 User Guide, Section 4.7.2, May 2000) . These values may be used, for example, to determine whether Federal exposure guidelines might be exceeded and, if so, at what distances from an accident site. This information should be provided in the Supplemental Information attachment to the Revised Proposed Plan, primarily to estimate the doses to accident victims and first responders (including those lacking adequate personal protective equipment) following the dispersion of untreated Silo 3 material.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Balancing Criterion No. 3 Short Term Effectiveness
Page #: 14 Lines #: NA
Specific Comment #: 15
Comment: The following changes should be made to the table at the bottom of this page:

- The table should specify if the incremental lifetime cancer risk (ILCR) provided is for suburban, rural, or urban scenarios.
- The table should identify the severity category of the accident scenario ILCR.
- The table should include ILCRs calculated in Attachment 3. Specifically, ILCRs for intermodal transport to NTS and truck transport to Envirocare should be added.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Balancing Criterion No. 3 Short Term Effectiveness
Page #: 15 Lines #: NA
Specific Comment #: 16
Comment: It is stated that in the event of an accident, the truck driver has been directed to immediately contact the appropriate response authority, the carrier company representative, and the Fernald communications center. What happens if the truck driver is incapable of performing these tasks as a result of an accident? Describe how a first responder is supposed to attain this contact information and perform the driver's tasks. While the truck driver is briefed on emergency response techniques, are there

8214

formal training and certification requirements for the driver? Is the driver obligated to respond appropriately to control a spill if capable of performing such duties?

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Balancing Criterion No. 4 Implementability
Page #: 16 Lines #: NA
Specific Comment #: 17
Comment: This paragraph states that permits and licenses are not required for either the current or approved cleanup plans. The text also states that "these activities will comply with the substantive requirements that would otherwise be required for permitting." The text should be revised to briefly describe the types of permitting and licenses referred to.

Commenting Organization: U.S. EPA Commentor: Jablonowski
Section Title: Findings and Conclusions
Page #: 18 Lines #: NA
Specific Comment #: 18
Comment: The findings and conclusions section should be revised to include a summary of the current and approved plans relative to Balancing Criterion No. 2, Reduction of Toxicity, Mobility, or Volume through Treatment.