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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

L-61363

REPLY TO THE ATTENTION OF:

MAY 04 1998

Mr. Johnny W. Reising
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

SRF-5J

RE: Waste Pit Remedial
Design Package

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) waste pit remedial action project remedial design package.

The document contains three volumes including an overview of the remedial design and plant facilities engineering package, excavation plan and pre-operational schedule, and a site preparation package and project pre-operational plans.

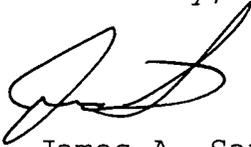
Overall, the document is well developed and conforms with generally accepted engineering practices. However, there are several issues and corrections that must be resolved. Several comments on the document were discussed at a April 8, 1998, meeting.

Therefore, U.S. EPA disapproves the waste pits remedial action project remedial design package. U.S. DOE must submit responses to comments within thirty (30) days receipt of this letter.

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•Please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,



James A. Saric
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO
Bill Murphie, U.S. DOE-HDQ
John Bradburne, FERMCO
Terry Hagen, FERMCO
Tom Walsh, FERMCO

disposal of other material going to the OSDF should be described. The RDP should be revised accordingly.

SPECIFIC COMMENTS

Volume 1

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.4 and 3.2 Page #: 7, 31 and 32 Line #: NA
Original Specific Comment #: 1
Comment: The text cites PFD D-10-10-001 for details of the dryer feed system. However, the PFD cited is not included in the RDP. The RDP should be revised to include the missing PFD.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.6 Page #: 10 Line #: 20, 21, and 24
Original Specific Comment #: 2
Comment: The text refers to a hydrocyclone recirculation pump (P5007), a hydrocyclone system (S-5009), and an oil and water (oil-water) separator (Z-7003). However, this equipment is not shown on any of the PFDs included in the RDP. The RDP should be revised to resolve this discrepancy between the text and the PFDs.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.6 Page #: 11 Line #: 2 and 3
Original Specific Comment #: 3
Comment: The text refers to a venturi sump (T-5001) and states that excess scrubbing water will be purged from the venturi sump to the oil-water separator. However, the venturi sump is not shown on PFD D-50-10-001, which indicates that all scrubbing water goes to the settling tank (T-5003). The RDP should be revised to resolve this discrepancy between the text and the PFD.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.6 Page #: 11 Line #: 27 and 28
Original Specific Comment #: 4
Comment: The text states that condensed and purged liquids from the gas cleaning system will be directed through the oil-water separator shown on PFD D-70-10-001. However, PFD D-70-10-001 does not show an oil-water separator. The RDP should be revised to resolve this discrepancy between the text and the PFD.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.6 Page #: 11 Line #: 30 through 33
Original Specific Comment #: 5
Comment: The text states that if the characteristics of the oil fraction do not meet the WAC for the Commercial Disposal Facility (CDF), the oil fraction will be used for dust suppression at the dryer discharge conveyor. However, the text does not specify whether health risks to workers from

exposure to the potentially contaminated oil fraction have been evaluated and found to be acceptable. The text should be revised to clarify this matter.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.7 Page #: 12 Line #: 4 through 6

Original Specific Comment #: 6

Comment: The text states that during storage bin filling, a composite sample will be obtained such that the waste in the filled bin is characterized to meet the CDF WAC. The statement implies that the collection of the composite sample will be manipulated so as to indicate that the waste in the bins meets the CDF WAC even when this is not the case. The text should be revised to reflect the true nature and purpose of the sampling. Also, considering that the CDF will reject railcars containing waste that does not meet the CDF WAC, it would be prudent to ensure that waste not meeting these WAC is not shipped to the CDF. Therefore, IT should consider collecting a composite sample from each section of the storage bin containing enough waste to fill one railcar. The text should be revised as appropriate.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.7 Page #: 12 Line #: 30 through 34

Original Specific Comment #: 7

Comment: The text states that the railcar liners will help contain waste in the event of an incident. However, the text does not provide details regarding the liner material, construction, or sealing. Considering the importance of the liners during waste storage and shipment in railcars, the text should be revised to present these details.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.7.1 Page #: 13 Line #: 12 through 16

Original Specific Comment #: 8

Comment: The text presents a bulleted list of operations to be performed for completion of railcar loadout. The list should be revised to include railcar liner seaming.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.7.1 Page #: 14 Line #: 22 and 23

Original Specific Comment #: 9

Comment: The text states that FDF will transfer railcars containing waste to an on-site railyard after they are verified for radiological release. However, the text does not specify what will happen to a railcar if the radiological testing indicates that it cannot be released for off-site shipment. The text should be revised to discuss exactly what steps will be taken for a railcar that fails the radiological testing in order to make it fit for off-site shipment.

compositing scheme, or whether a composite sample will be prepared to represent each bin or all bins together. The text should be revised to provide this information.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.2 Page #: 44 Line #: 33
Original Specific Comment #: 21
Comment: The text "water. The" should be revised to read "water and to adjust the pH of the influent to the inclined plate clarifier. The" because, according to PFD D-65-10-001, caustic will also be used to adjust the pH of the influent to the inclined plate clarifier.

Design Criteria and Assumptions

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.0 Page #: 1 and 2 Line #: NA
Original Specific Comment #: 22
Comment: The text presents a list of key activities comprising the remedial action. However, the list does not include backfilling the excavated ponds with clean soil or developing them as ponds. The text should be revised to explain what will happen to the excavated ponds.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.0 Page #: 2 Line #: 21 through 31
Original Specific Comment #: 23
Comment: The text states that design assumptions requiring field verification include the assumptions that the material is suitable for (1) conveyance along vertical hopper sidewalls and via positive material moving devices such as screws and (2) drying in an indirect-fired dryer without excessive fouling. These two assumptions are crucial to the remedial design presented in the RDP. Modifying the material handling and drying system after its fabrication might not be easy if actual operation of the system reveals that the design assumptions cited above are not true. Therefore, IT and FDF should consider testing the material handling and drying system on a pilot scale and then modifying the RDP based on the pilot test results, if necessary.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.0 Page #: 3 Line #: 1 and 2
Original Specific Comment #: 24
Comment: The text states that the thermal dryer off-gas treatment system may not operate continuously because of organic fouling if the total organic carbon (TOC) content of the pit material and the fixed carbon fraction of the TOC are greater than those assumed in the RDP. However, the text does not present any modifications to the off-gas treatment system that may be necessary for continuous operation of the system. IT and FDF should consider the system modifications that may be necessary and revise the relevant design components, such as the off-gas treatment building size and

layout, to accommodate the modifications in the event that they become necessary.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1 Page #: 4 Line #: 26

Original Specific Comment #: 25
Comment: The text states that large debris will be segregated from waste in the pit area but does not specify how segregated large debris will be managed. The text should be revised to specify the disposition of the large debris segregated from the waste.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1 Page #: 5 Line #: 4 through 8

Original Specific Comment #: 26
Comment: The text states that pumps, utility lines, monitoring wells, and other appurtenances within the waste pit area boundary will be removed and handled in a manner consistent with the handling of debris from the waste pits. However, as discussed in Original Specific Comment 25, the text does not specify how the large debris from the waste pits will be handled. The text should be revised based on the response to Original Specific Comment 25.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1 Page #: 5 Line #: 21

Original Specific Comment #: 27
Comment: The text states that water collected in the pit excavation area will be discharged to the bio surge lagoon. However, the site water balance shown in PFD D-90-10-001 indicates that water from the pit excavation area will be discharged to the clearwell. The text or PFD should be revised to resolve this discrepancy.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1 Page #: 6 Line #: 4 through 6

Original Specific Comment #: 28
Comment: The text states that any nontypical waste encountered in the pit waste that does not meet the CDF WAC and that cannot be processed to meet the CDF WAC will be segregated for transfer to FDF. However, the text does not state whether such waste will be transferred to FDF immediately following its excavation or stored at some location until its transfer to FDF. The text should be revised to clarify this matter and, if the waste is to be temporarily stored on site, to identify the location and means of its storage.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.3.1 Page #: 8 Line #: 1 and 2

Original Specific Comment #: 29
Comment: The text states that uranium debris and other nontypical wastes will be removed from the pit wastes and segregated for disposal in accordance with site procedures. However, the text does not specify whether the site procedures

limit for radon and (2) a contingency plan to be implemented in the event that radon emissions from the stack exceed the FDF-determined limit.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.7.1 Page #: 11 Line #: 44 and 45
Original Specific Comment #: 34

Comment: The text states that filled and decontaminated railcars will be radiologically surveyed to meet the requirements of the U.S. Department of Energy (DOE) and the U.S. Department of Transportation (DOT). This statement implies that conducting a radiological survey of the railcars, irrespective of the survey results, is sufficient to meet the DOE and DOT requirements, which is incorrect. The text should be revised to specify (1) the DOE and DOT requirements regarding the radiological survey of the railcars, (2) any radioactive emission limit that the railcars are expected to meet under the DOE and DOT requirements, and (3) procedures that will be implemented if the radiological survey of a railcar indicates that the railcar does not meet the DOE and DOT requirements.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.8.1 Page #: 15 Line #: 40
Original Specific Comment #: 35

Comment: The phrase "Storm water will" should be revised to read "Noncontact storm water will."

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.8.2 Page #: 16 Line #: 28 through 35
Original Specific Comment #: 36

Comment: The text presents criteria for designing the storm water management system. The design criteria include a 25-year, 24-hour storm for designing the new storm water system but only a 5-year storm for evaluating the flow velocity in open channels. Use of the 5-year storm criterion might lead to construction of open channels that overflow during a 25-year, 24-hour storm event. The text should be revised to provide the rationale for specifying a criterion for evaluation of flow velocity in open channels whose use might result in inadequate storm water management on site.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.2.3 Page #: 29 Line #: 1 and 2
Original Specific Comment #: 37

Comment: The text states that materials determined to be mixed wastes will be loaded into boxes and managed as nontypical wastes. However, the specifications for mixed waste storage boxes are not included in the text. In addition, procedures for managing nontypical wastes are not presented in the RDP. The RDP should be revised to specify material, construction, and size requirements for mixed waste storage boxes and the procedures, storage areas, and holding time requirements for managing nontypical wastes.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.0 Page #: 31 Line #: 23 and 24
Original Specific Comment #: 38

Comment: The text requires installation of impermeable barriers under "dirty haul roads." If the intention of the text is to require installation of impermeable barriers under dirt roads, the text should be revised accordingly. If installation of impermeable barriers under "dirty haul roads" is required, the RDP should be revised to define a dirty haul road and to include a site plan identifying the roads under which impermeable barriers must be installed. In addition, the text should be revised to include specifications, such as material and thickness requirements, for the impermeable barriers and their installation.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.0 Page #: 31 Line #: 28
Original Specific Comment #: 39

Comment: The text requires use of "effective flow logic" for waste transportation. The text should be revised to explain exactly what is meant by "effective flow logic."

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.0 Page #: 31 Line #: 31 and 32
Original Specific Comment #: 40

Comment: The text states that during operations, standard operating procedures (SOP) will provide direction for controlling the spread of contamination. However, the SOPs are not included in the RDP, and no document containing them is cited in the text. Either the RDP should be revised to include all the relevant SOPs, or the text should be revised to clearly cite a document containing the SOPs.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 7.3.6 Page #: 41 Line #: 33 through 35
Original Specific Comment #: 41

Comment: The text specifies the minimum slope for various surfaces. The text specifies a minimum slope of 3 horizontal to 1 vertical (3H:1V) but does not specify the surface type to which this slope applies. The text should be revised to specify the surface type to which a 3H:1V slope applies.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 7.5.2.5 Page #: 48 Line #: NA
Original Specific Comment #: 42

Comment: The text specifies a dryer enclosure with open sides. Considering that (1) rotary dryers and material feed equipment can be noisy and (2) the dryer enclosure will be located in an area that contains several other facilities, use of a dryer enclosure with closed sides should be considered to minimize noise outside the dryer enclosure. Also, based on discussions during the April 8, 1998, meeting, the enclosure size should be reviewed and modified,

