7251 R-019-208.4

THE REMOVAL ACTION NUMBER 13, PLANT 1 ORE SILOS, FINAL REPORT (RESPONSES TO COMMENTS RECEIVED FROM OEPA)

11/06/95

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DOE-FN EPAS
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RESPONSES

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Department of Energy
Fernald Environmental Management Project
P. O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 648-3155

NOV 06 1995

DOE-0127-96

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HSF-5J
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:

THE REMOVAL ACTION NUMBER 13, PLANT 1 ORE SILOS, FINAL REPORT

Reference: Final Report, Removal Action Number 13, "Plant 1 Ore Silos," dated June 1995, Ohio Environmental Protection Agency Comments.

The Removal Action Number 13, Plant 1 Ore Silos Final Report was submitted to the U.S. Environmental Protection Agency (U.S. EPA) and the Ohio Environmental Protection Agency (OEPA) on June 9, 1995. Per a phone conversation between U.S. EPA and the Department of Energy (DOE), the U.S. EPA may no longer provide an approval letter. If no comments are received within 30 days, it is assumed that the Final Report is approved. The OEPA provided two comments on July 3, 1995, requiring responses for final approval of the report. Responses to those comments are enclosed.

If you have any questions, please contact Anand Shah at (513) 648-3146.

Sincerely,

for Susan M Peterman

Johnny W. Reising
Fernald Remedial Action
Project Manager

FN:Shah

Enclosures: As Stated

000001

Recycled and Recyclable

cc w/encs:

K. H. Chaney, EM-423/GTN
B. Skokan, EM-423/GTN
G. Jablonowski, USEPA-V, 5HRE-8J
Manager, TSPP/DERR, OEPA-Columbus
F. Bell, ATSDR
D. S. Ward, GeoTrans
R. Vandergrift, ODOH
S. McClellan, PRC
R. D. George, FERMCO/52-2
T. Hagen, FERMCO/65-2
AR Coordinator, FERMCO

cc w/o encs:

C. Little, FERMCO
M. Yates, FERMCO

COMMENT DISPOSITION

1) Commenting Organization: Ohio EPA Commentor:OFFO
Section #: 2.4.3 Page#: 2-10 Line#: Code: C

Comment:
This section states that the Discharge Concentration Guidelines (DCG) for Thorium-230 was used because it is the most limiting of all radionuclides that may have been present in the ore silo storm water run-off. Please further define within the text what is meant by the term "most limiting."

Response:
Approximately 95% of the total Curie content from the Plant 1 Ore Silos project was from alpha emissions of Thorium-230. The Thorium-230 component of the total radiological inventory was 406 milliCuries (mCi). The Radium-226 component of the total radiological inventory was 6.6 mCi.

The DCG for Thorium-230 is 3.0×10^{-7} milliCuries per liter (mCi/l). The DCG for Radium-226 is 1.0×10^{-7} mCi/l. Since the Thorium-230 comprised such a large percentage of the specific activity and the total radiological inventory, the Thorium-230 DCG was used as the regulatory basis for allowing the collected stormwater run-off to be transferred to the site water treatment system.

The Removal Action Final Report, page 2-3, states that "Ninety-five percent of the total Curie inventory in the raffinate was attributed to the Th-230." Page 2-5 identifies that "Th-230 was the primary isotope of concern."

Action: The above text has been added to the Final Report and Final Report replacement pages are provided.

2) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 3-4 Page #: 3-20 Line #: Code: C

Comment:
Please provide the volume estimates of the Plant 1 Ore Silo waste materials broken down by waste type (steel, concrete, ore silo raffinate, etc.). This information is valuable since the proposed on-site disposal cell will be designed based on volume. We are also interested in determining how closely the predicted volumes agreed with the actual volumes of wastes that resulted from the removal action. All future Operable Unit 3 (OU3) Decontamination and Demolition (D&D) project reports should also list waste material volumes in a similar manner.

Response:
Volume estimates for the wastes generated by the D&D of the Plant 1 Ore Silos are summarized in the table below. Waste volumes for eight material categories are provided as both containerized and as waste only. The wastes resulting from the D&D of the Plant 1 Ore Silos are currently containerized and are being held in anticipation of disposal in the proposed on-property disposal cell. The waste only volume estimate represents the anticipated volume to be disposed (and space used) in the disposal cell.

Initial waste volume estimates were not developed in the Plant 1 Ore Silos Removal Action Work Plan. The final volumes reflected by the table include additional materials added to the project to facilitate safety of waste handling, such as waste-directing chutes. Since no initial project-specific waste estimate is available, a meaningful comparison cannot be made. However, as a result of a comprehensive evaluation of the operable unit materials, a detailed structural material volume database has been prepared for use in the Operable Unit 3 (OU3) Feasibility Study (FS) decision-making and for waste management planning for future D&D efforts. The FS study estimates do not include the Plant 1 Ore Silos, since the silos were removed prior to the completion of the estimate.

As requested, all future removal action final reports and D&D Remedial Action Reports will be accompanied by summary of waste volumes generated by category.

PLANT 1 ORE SILOS WASTE MATERIALS BY WASTE TYPE

	ISO Container	Top Loader	White Metal Box	Containerized Volume	Bulking Factor	Waste Volume
Concrete Debris	5,125		4,838	9,963	2.0	4,981.5
Concrete Rubble			2,214	2,214	2.0	1,107
Structural Steel	4,100	9,710	3,034	16,844	16.7	1,008.6
Tile Rubble			6,314	6,314	2.0	3,157
Silo Contents			574	574	1.0	574
PPE	3,075		2,132	5,207	1.2	4,339
Wood Scrap	1,025		1,066	2,091	2.0	1,045.5
Asbestos	1,025			1,025	4.0	256.3
Trash	2,050	1,942	1,476	5,468	2.0	2,734
Soil			246	246	1.25	197
Totals	16,400	11,652	21,894	49,946	N/A	19,400

Note: The external dimensions of the containers listed above are:

- ISO Container 1,025 ft^3
- Top Loader 971 ft^3
- White Metal Box 82 ft^3

Storm water run-off was collected and analyzed before disposition through the FEMP Wastewater Treatment System (WWTS). The WWTS removes radiological contamination using a filtration system. A limit of 300 pCi/l (alpha) was applied to the collected storm water. This value is the Derived Concentration Guide (DCG) limit for Th-230 from the table in DOE Order 5400.5. The DCG for Th-230 that was used because it is the most limiting of all radionuclides that may have been present in the ore silo storm water run-off. No storm water run-off exceeded this limit.

Approximately 95% of the total Curie content from the Plant 1 Ore Silos project was from alpha emissions of Thorium-230. The Thorium-230 component of the total radiological inventory was 406 milliCuries (mCi). The Radium-226 component of the total radiological inventory was 6.6 mCi.

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2.4.4 Groundwater and Soil Protection Control Measures

To protect groundwater, airborne release control measures were designed to prevent windborne releases from depositing on the ground. The storm water and storm water run-off control measures further reduced the radiological contamination present in the soil and reduced the mobility of the radiological contaminant through the soil. Groundwater and soil sampling events are discussed in Section 3.2 and Section 3.3, respectively.

2.5 REQUIRED SITE DOCUMENTATION

The following are FEMP documents that were developed and used to safely accomplish this specific removal action:

- Safety Assessment/Risk Assessment Report
- Hazard Analysis
- National Environmental Policy Act (NEPA) Documentation
- Task-Specific Health and Safety Plan
- Penetration and Excavation Permit identifying underground and overhead utilities in the work area
- Radiation Work Permit
- Material Evaluation Forms (MEFs) identifying the waste streams from the removal action.

COMMENT DISPOSITION

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