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COMMENTS--OU4 SILO RESIDUE RETRIEVAL SYSTEM 30% DESIGN

05/16/96

OEPA
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OU4

DOE-FN



State of Ohio Environmental Protection Agency

Southwest District Office

401 East Fifth Street
Dayton, Ohio 45402-2911
(513) 285-6357
FAX (513) 285-6249

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George V. Voinovich
Governor

May 16, 1996

RE: DOE FEMP
MSL 531-0297
HAMILTON COUNTY
COMMENTS--OU4 SILO
RESIDUE RETRIEVAL SYSTEM
30% DESIGN

Mr. Johnny Reising
U.S. Department of Energy, Fernald Area Office
P.O. Box 538705
Cincinnati, OH 45253-8705

Dear Mr. Reising:

Ohio EPA has received DOE's Operable Unit 4 Conceptual Design Plan for Residue Retrieval System for the Fernald Residues Vitrification Plant Silo Superstructure document submitted on April 16, 1996. Attached are Ohio EPA and ODH comments.

If you have any questions, please contact Kelly Kaletsky (513-285-6454) or me.

Sincerely,

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric, U.S. EPA
Terry Hagen, FERMCO
Ruth Vandergrift, ODH
Mike Proffitt, DD&GW
Sharon McLellan, PRC
Manager, TPSS/DERR,CO
Dave Ward, GeoTrans

Comments on OU-4 Silo Residue Retrieval System 30% Design

- 1) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: General Comment Pg #: Line #: Code: C
 Original Comment #:
 Comment: DOE should consider the use of recycled steel from other buildings in this project whenever possible.
 Response:
 Action:
- 2) Commenting Organization: Ohio EPA Commentor: ODH
 Section #: General Comment Pg #: Line #: Code: C
 Original Comment #:
 Comment: For the New Radon Treatment System, there is reference to a consumable desiccant and carbon beds which can be recharged and presumably reused. It would seem both of these will accumulate particulate radon daughters from the silo headspace effluent. Provide details as to how these systems are treated to be recycled back into the NRTS.
 Response:
 Action:
- 3) Commenting Organization: Ohio EPA Commentor: ODH
 Section #: General Comment Pg #: Line #: Code: C
 Original Comment #:
 Comment: As removal operations inside each silo will proceed more efficiently with a clear field of view for the remote operators, is there any contingency to minimize the potential of airborne particulates, splashing, or fogging of the camera lenses and obstruction of vision?
 Response:
 Action:
- 4) Commenting Organization: Ohio EPA Commentor: ODH
 Section #: General Comment Pg #: Line #: Code: C
 Original Comment #:
 Comment: The direct exposure modeling conducted for the silo residues compares favorably with the prior survey data. Once the operational parameters are determined for the NRTS and direct exposures remodeled, we would advocate use of new survey data to compare the modeled exposures and make enhancements in the code as necessary.
 Response:
 Action:
- 5) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: General Comment Pg #: Line #: Code: C
 Original Comment #:
 Comment: Section 3 briefly states the advantages of retrieving the wastes as described in this design plan. A brief statement outlining the advantages of using the methods in this design plan for silos 1 & 2 should also be provided.
 Response:

Action:

- 6) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.1.3 Pg #: 2-5 Line #: Code: C
 Original Comment #:
 Comment: Maintenance is described as taking place in the ER. How often is maintenance expected to take place? Is there or will there be a regular maintenance schedule?
 Response:
 Action:

- 7) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.2.1 Pg #: 2-7 Line #: Code: C
 Original Comment #:
 Comment: Will the operator practice maneuvering the Houdini in an enclosed area before using it in the silos? This practice would be advisable as it would decrease the chances of possibly damaging the silo or any retrieval equipment.
 Response:
 Action:

- 8) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.4.3 Pg #: 2-15 Line #: Code: C
 Original Comment #:
 Comment: Under the Maintenance Section it is stated that seal between the silo and the containment insert will be monitored on a regular basis to ensure the integrity of the seal. Recommend that pressure be monitored continuously to prevent complete and unknown failure of this seal. Continuous monitoring and an annunciator would allow for prompt recognition of impending or complete failure, and would allow time for maintenance activities to commence prior to a release of contamination.
 Response:
 Action:

- 9) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.5.1 Pg #: 2-16 Line #: Code: C
 Original Comment #:
 Comment: Throughout this document it is indicated that the ventilation to the ER will only be used when workers are using the ER. Radon monitoring inside the ER should be employed to ensure that personnel are not exposed to elevated concentrations of radon. (Will personnel in the ER always use breathing air?)
 Response:
 Action:

Ohio EPA Comments
May 16, 1996
Page 3

- 10) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.2 Pg #: 2-17 Line #: Code: C
Original Comment #:
Comment: Piping the exhaust gases to FRVP off-gas system, and eliminating the need for multiple stacks appears to be a good idea and should be further investigated. Is the off-gas system for FRVP designed for these additional loads? Can it be modified?
Response:
Action:
- 11) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.2 Pg #: 2-17 Line #: Code: C
Original Comment #:
Comment: Provide details describing the steps to be taken if the isokinetic sampling shows emissions to be above set standards.
Response:
Action:
- 12) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.3 Pg #: 2-18 Line #: Code: C
Original Comment #:
Comment: Instrumentation and/or /monitoring should be used to ensure that the air flows from the ER to the silo are maintained. These instruments should be connected to an annunciator indicating to operators that there may be a problem with this critical air flow.
Response:
Action:
- 13) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.6.1 Pg #: 2-19 Line #: Code: C
Original Comment #:
Comment: A function that should be included in the NRTS is to reduce/minimize radon releases from the silos during these activities. The releases to the environment and public should be ALARA.
Response:
Action:
- 14) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.6.3 Pg #: 2-21 Line #: Code: C
Original Comment #:
Comment: Will when the NRTS design be submitted?
Response:
Action:

Ohio EPA Comments

May 16, 1996

Page 4

- 15) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.8.2 Pg #: 2-25 Line #: Code: C
 Original Comment #:
 Comment: How will the control room and vestibule be monitored for radiation and radon?
 Response:
 Action:
- 16) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.11.1 Pg #: 2-30 Line #: Code: C
 Original Comment #:
 Comment: Will the superstructure get in the way of berm reduction? Extreme care should be taken if the berm material will be removed using machinery around the superstructure support structure.
 Response:
 Action:
- 17) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3 Pg #: 3-1 Line #: Code: C
 Original Comment #:
 Comment: Has Silo 3 material recently been sampled to assure the materials has not been exposed to water or hardened?
 Response:
 Action:
- 18) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.4.2 Pg #: 3-11 Line #: Code: C
 Original Comment #:
 Comment: The document describes the option of piping the exhausts from the stack directly into the FRVP off-gas system or the NRTS to eliminate the need for the stack. Would it not be preferable to proceed with this plan to eliminate the need for isokinetic sampling and possible exceedances of set emission standards? If it is determined that this diversion is necessary, valuable time may be lost in rerouting the exhaust after the pilot plant is operational.
 Response:
 Action:
- 19) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.4.1 Pg #: 3-10 Line #: Code: C
 Original Comment #:
 Comment: It is stated that "the silo headspace discharge air may be treated to reduce radon levels, if necessary." What criteria will be used to determine if this is necessary. ALARA principles suggest that the silo headspace be treated to reduce radon levels, especially since the NRTS will be operational and could be utilized.
 Response:

Ohio EPA Comments
 May 16, 1996
 Page 5

Action:

- 20) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.4.2 Pg #: 3-11 Line #: Code: C
 Original Comment #:
 Comment: As mentioned in a previous comment on the silos 1 & 2 air discharges. The ability to pipe the discharges to the FRVP should be further investigated. Providing the FRVP can withstand the additional load.
 Response:
 Action:
- 21) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.5.2 Pg #: 3-14 Line #: Code: C
 Original Comment #:
 Comment: If the Houdini is to be used aid in emptying the final material from the silos, would it not be preferable to have the Houdini and removal equipment operated from the same location? The document describes the equipment being operated from two locations. It would reason that a better coordination of effort could be accomplished by controlling from the same location.
 Response:
 Action:
- 22) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: App. C Pg #: Table C-1 Line #: Code: E
 Original Comment #:
 Comment: Table C-1 should be identified as DIRECT EXPOSURE.
 Response:
 Action:
- 23) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: App. C Pg #: General Comment Line #: Code: C
 Original Comment #:
 Comment: The activities outlined in this design plan indicate that silo headspace will be breached. This will cause an imminent release of radon. The dose estimate does not take into account the possible increase in ambient radon concentrations around the silos due to these and other associated activities around the silos. Adequate radon dosimetry must be used by workers in this area in addition to the standard TLD.
 Response:
 Action:
- 24) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: App. C Pg #: General Comment Line #: Code: C
 Original Comment #:

Comment: The dose estimate should include a estimate of the dose to the public (FEMP fenceline). This estimate should include increases in direct radiation exposure and inhalation exposure.

Response:

Action:

25) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: App. C Pg #: General Comment Line #: Code: C
Original Comment #:

Comment: The design plan should include a section on radiation monitoring of the workers and for the public. The section should include current and supplemental monitoring that will be in place prior to commencing with the activities in this design plan.

Response:

Action: