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

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AUG 06 2003

REPLY TO THE ATTENTION OF: SR-6J

LIBRARY:

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

Subject: Silos Dome Penetration and Riser Installation Plan

Dear Mr. Griffiths:

The United States Environmental Protection Agency (U.S. EPA) received the above-referenced document on July 11, 2003. The document, which is dated July 9, 2003, incorporates revisions based on the final design of (1) the slurry pump and sluicing risers and (2) the methodology for cutting the penetrations in the domes of the silos.

A number of contingencies have been addressed in the plan. However, it is not clear what will be done if a section of a silo dome collapses during cutting operationsor during installation of the risers. The plan should be revised to address this possibility.
Therefore, U.S. EPA disapproves this document; 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
Johnny Reising, U.S. DOE-Fernald
Sally Robison, U.S. DOE-HDQ
Jamie Jameson, Fluor Fernald
Terry Hagen, Fluor Fernald
Tim Poff, Fluor Fernald

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ENCLOSURE

U.S. EPA COMMENTS ON
"SILOS DOME PENETRATION AND RISER INSTALLATION PLAN"

FERNALD CLOSURE PROJECT

(Two Pages)

U.S. EPA COMMENTS ON "SILOS DOME PENETRATION AND RISER INSTALLATION PLAN"

FERNALD CLOSURE PROJECT

GENERAL COMMENT

Commenting Organization: U.S. EPA Commenter: Jablonowski
Section #: Not Applicable (NA) Page #: NA Line #: NA
Original General Comment #: 1
Comment: A number of contingencies have been addressed in the plan. However, it is not clear what will be done if a section of a silo dome collapses during cutting operations or during installation of the risers. The plan should be revised to address this possibility.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commenter: Jablonowski
Section #: 3.1 Page #: 5 of 12 Line #: NA
Original Specific Comment #: 1
Comment: The text states that the return air flow to the silo being worked on will be discontinued in order to reduce the possibility of positive pressure in the silo. It is not clear how this will be accomplished without causing the system to shut down as a result of high negative pressure (vacuum) inside the silo. When cutting operations start, air will be drawn into the silo through a cut gap that will be about 3/16 inch wide. However, the cutting speed will be only 2 to 3 inches per minute. Not much air will be drawn through the cut gap to make up the deficit created by shutting down the return air flow to the silo. However, the air flowing through this gap will be moving at a rather high velocity caused by the differential in pressure. Once the opening is fully cut and the cut-out section is lifted, conditions inside the silo will change rapidly. The negative pressure will drop as the plug is being lifted, which may cause nuisance tripping, alarms, and unnecessary shutdowns. It would be advisable to operate the Radon Control System (RCS) in manual mode during cutting operations. The return air should also be operated in manual mode to limit the velocity of air entering the silo through the cut gap until the time plug is ready to be lifted out, at which point the return air can be shut down. The plan should be revised accordingly.

Commenting Organization: U.S. EPA Commenter: Jablonowski
Section #: 3.1 Page #: 5 of 12 Line #: NA
Original Specific Comment #: 2
Comment: The text states that "to maximize the velocity of air entering the active penetration and significantly minimize the chance for radon release during this activity, flow from the silo may be increased to as high as 1,000 cfm to maximize inflow through the penetration, depending on the size of the penetration." It is not clear why the flow from the silo would be increased. Because there will be no

return air entering the silo, all the make-up air will be drawn into the silo through the gap created by the cutting operation, which will be about 3/16 inch wide. Initially, 500 cubic feet per minute (cfm) of air will be drawn into the silo through this cut gap, which will be enlarged at a rate of 2 to 3 inches per minute. Increasing the air flow out of the silo to 1,000 cfm would create very high air velocity at the cut gap and might shut down the RCS as a result of the negative pressure created inside the silo. The procedures discussed in the text should be reviewed and revised as necessary to address this issue.

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