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

SEP 27 2000

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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: Responses to the U.S. EPA and Ohio EPA Comments on the Remedial Design Package for the Silo 3 Project

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) reviewed the above-referenced response package as part of its oversight activities for the Fernald Environmental Management Project. The response package, dated August 23, 2000, was received by U.S. EPA on August 28, 2000. The document provides responses to U.S. EPA comments on the draft "Silo 3 Remedial Design Package." U.S. EPA also reviewed U.S. DOE responses to comments on the Silo 3 Project Transportation and Disposal Plan, faxed to U.S. EPA on September 8, 2000.

U.S. EPA's review focused on assessing whether the responses adequately addressed U.S. EPA comments and were properly incorporated into the revised design package. U.S. DOE's responses are generally adequate and were properly incorporated into the revised design package when evident. However, U.S. EPA found deficiencies in the piping and instrumentation drawings (P&ID) and the process control plan based on its review of the P&IDs provided as part of the comment responses. Further, U.S. EPA has yet to review a draft of the Silo 3 Remedial Design Package that incorporates the text revisions proposed in U.S. DOE's September 8, 2000 fax covering Transportation and Disposal Plan comment responses. U.S. EPA's general and specific comments on the P&IDs, and process control plan, are enclosed.

U.S. EPA conditionally approves the Silo 3 Remedial Design Package pending its revision consistent with U.S. EPA comments and proposed text revisions. Please contact me at (312) 886-4591 if you have any questions.

Sincerely,

E Jablonowski

Gene Jablonowski
Remedial Project Manager
Federal Facilities Section
Superfund Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO
Kim Chaney, U.S. DOE-HDQ
John Bradburne, Fluor Fernald
Terry Hagen, Fluor Fernald
Tim Poff, Fluor Fernald

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ENCLOSURE

TECHNICAL REVIEW COMMENTS ON RESPONSES TO COMMENTS ON DRAFT "SILO 3 REMEDIAL DESIGN PACKAGE"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

(Four Pages)

TECHNICAL REVIEW COMMENTS ON RESPONSES TO COMMENTS ON DRAFT "SILO 3 REMEDIAL DESIGN PACKAGE"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENTS

Piping and Instrumentation Drawings

Commenting Organization: U.S. EPA
Section #: Not Applicable (NA) Page #: NA Line #: NA
Original General Comment #: 1
Comment: The piping and instrumentation drawings (P&ID) included in the submittal are difficult to understand because no legend or list of abbreviations for the drawings has been submitted. The resubmittal should include a legend of all symbols and a list of all abbreviations and instrumentation letter designations used in the drawings to facilitate their review.

Commenting Organization: U.S. EPA
Section #: NA Page #: NA Line #: NA
Original General Comment #: 2
Comment: Some P&IDs appear to be missing from the submittal. It is not clear how many drawings should be included because no index of the drawings has been submitted. The resubmittal should include all required drawings as well as a drawing index.

Commenting Organization: U.S. EPA
Section #: NA Page #: NA Line #: NA
Original General Comment #: 3
Comment: The tag names shown on the P&IDs are not entirely consistent with the tag names used in the text. The text and drawings should be reviewed and made consistent in this regard.

Commenting Organization: U.S. EPA
Section #: NA Page #: NA Line #: NA
Original General Comment #: 4
Comment: A number of valves, dampers, and other devices are shown as being pneumatically operated or controlled. The instrument air system to be used for this purpose will need to be monitored. The P&IDs, however, do not indicate how the instrument air system will be monitored and controlled. In the event that this system fails (that is, instrument air pressure drops), there should be an interlock from a pressure switch to initiate shutdown of all systems that use instrument air for operation or control purposes as well as all systems upstream. System shutdown can be done by the programmable logic controllers (PLC). The P&IDs should be

reviewed to ensure that an interlock for emergency shutdown of these systems is included.

SPECIFIC COMMENTS

Process Control Plan

Commenting Organization: U.S. EPA
Section #: 1.3.1 Page #: 6 Item #: 3
Original Specific Comment #: 1
Comment: The text states that "the following controls may be included..." The word "may" should be replaced with the word "will," as it should be known by now what will be included in the local panels.

Commenting Organization: U.S. EPA
Section #: 1.3.1 Page #: 6 Item #: 6
Original Specific Comment #: 2
Comment: The text states that the limit switches will provide status information to the PLCs. The limit switches should also be used to initiate alarm and shutdown conditions should a valve fail to open or close because of a failure of the instrument air system. Each pneumatically controlled valve should be analyzed for the presence of limit switches, and the controls shown on the P&IDs should be revised accordingly.

Commenting Organization: U.S. EPA
Section #: 1.5.1 Page #: 13 Item #: 24
Original Specific Comment #: 3
Comment: The text states that the maximum pressure drop across the air conditioning outlet filter will be limited to "0.1" W.G. vacuum." According to the text, the pressure drop will be only displayed on the local indicator. Because the air supply will be drawn from the contamination reduction area and from outside (make-up air), the pressure drop across the filter will increase quickly and will exceed the 0.1" W.G. limit without anyone noticing the exceedance. The monitoring of pressure drop across the filter should be reviewed. An alarm may also be required to support maintenance or replacement of this filter. Also, revised PLC control or monitoring may be required if air balance will be affected. The P&IDs should be revised accordingly.

Commenting Organization: U.S. EPA
Section #: 1.5.3 Page #: 15 Item #: 4
Original Specific Comment #: 4
Comment: The text refers to the "Retrieval Enclosure Inlet Control Damper (CV-708)." However, P&ID No. 55-2003 does not show damper CV-708. The damper shown on the drawing is tagged

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FCV-708. The drawing or text should be revised to correct this discrepancy.

Commenting Organization: U.S. EPA
Section #: 1.5.3 Page #: 15 Item #: 6
Original Specific Comment #: 5
Comment: The text refers to the "Retrieval Enclosure Inlet Control Damper" as FCV-708. It is unclear whether this damper is the same as the one discussed in Item 4 (see Original Specific Comment No. 4). The text should be revised to clarify this matter.

Commenting Organization: U.S. EPA
Section #: 1.5.3 Page #: 15 Item #: NA
Original Specific Comment #: 6
Comment: The note at the end of this section refers to control dampers CV-708 and CV-775. These dampers, however, are not shown with these tags on the P&IDs. The control dampers shown on P&IDs are tagged as FCV-708 and FCV-775. The text and drawings should be reviewed and revised as necessary to eliminate these discrepancies.

Commenting Organization: U.S. EPA
Section #: 1.5.4 Page #: 15 Item #: NA
Original Specific Comment #: 7
Comment: This section describes the treatment system startup sequence. However, it is not clear whether the startup sequence will be performed manually or initiated by the PLC. The text suggests that the sequence will be performed manually. Because the PLC will be used for process control, the PLC should initiate the startup sequence to avoid operator errors and save time; this will not be very difficult because the emergency shutdown is initiated by the PLC (see Section 1.5.7). The text and P&IDs should be revised accordingly.

Commenting Organization: U.S. EPA
Section #: 3.8.1 Page #: 55 Item #: NA
Original Specific Comment #: 8
Comment: The text refers to P&ID No. 55-2020; however, this drawing is missing from the submittal. As a result, Section 3.8, Plant Air System, cannot be reviewed at this time. The resubmittal should include the required drawing for review.

Commenting Organization: U.S. EPA
Section #: 3.10.1 Page #: 60 Item #: NA
Original Specific Comment #:9
Comment: The text states that the plant water system is shown on P&ID No. 55-2019; however, this drawing is missing from the submittal. The plant water system cannot be reviewed without this P&ID. The resubmittal should include the required drawing for review.

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Piping and Instrumentation Drawings

Commenting Organization: U.S. EPA
Drawing #: 55-2003 Page #: NA Item #: NA
Original Specific Comment #: 10
Comment: This drawing shows a "vendor package," which includes an air-cooled water chiller. However, no interlocks are shown with this equipment. Typically, water temperature is monitored in such a system. Additionally, it is not clear how the chilled water pump and the chilled water flow rate will be controlled. Based on the drawing, it appears that the chilled water flow rate is not controlled. If this is the case, the temperature of the air leaving the chilled water coil heat exchanger may fluctuate, creating unnecessary pressure fluctuations in the return air ducting. The water chiller system should be reviewed in light of these issues and modified accordingly.

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