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**EE/CA K-65 REMOVAL #4
U.S. DOE FERNALD
OH6 890 008 976**

9-4-90

**USEPA/DOE
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LETTER**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

230 SOUTH DEARBORN ST.

CHICAGO, ILLINOIS 60604

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SEP 04 1990

FACSIMILE AND FEDERAL EXPRESS

REPLY IN ATTENTION OF: 12

Mr. Bobby Davis
U.S. Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: EE/CA K-65 Removal #4
U.S. DOE Fernald
OH6 890 008 976

Dear Mr. Davis:

On August 1, 1990, the United States Department of Energy (U.S DOE) submitted a draft Engineering Evaluation/Cost Analysis (EE/CA) for removal action #4 to address the K-65 silos (silos 1 and 2). The United States Environmental Protection Agency (U.S. EPA) has reviewed this document and in accordance with provisions of Section IX.C of the 1990 Consent Agreement, U.S. EPA is approving the EE/CA with the following modifications:

- 1. The initial phase of this removal action will include the placement of slurried bentonite into the K-65 silos. The amount of bentonite to be placed in the silos will be determined by U.S. EPA after U.S. DOE submits detailed information on the radon attenuation capabilities of the bentonite. U.S. DOE shall submit this information within thirty (30) days of the date of this approval. The amount of bentonite that will be approved to be installed into the silos will be based on a number of considerations including: radon attenuation estimates and waste minimization considerations.
2. In accordance with requirements of Section IX of the 1990 Consent Agreement, U.S. DOE shall submit a work plan for completion of the above task within thirty (30) days of this approval letter. The work plan shall include radon air monitoring systems, as required by number 4 below, capable of measuring the effectiveness of the bentonite layer. Notification and emergency procedures in the event of dome failure must also be included in the work plan.
3. U.S. DOE shall complete the installation of the bentonite layer into the K-65 Silos within one-hundred and eighty days (180) days of the date of this approval.
4. Within sixty (60) days of the date of this approval, U.S. DOE shall monitor radon emissions in accordance with the following specifications:

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- A. Install pressure transducers (sensitivity 1 Pascal, range - up to several inches of water) in Silos 1, 2, and 3 (silos 3 may exceed the radon flux standard of 40 CFR 61, subpart Q, and as such should be monitored).
- B. Install temperature sensors in Silos 1, 2, and 3, and in the ambient air outside the silos.
- C. Install three or four additional continuous radon monitors at the outer fence line air monitoring stations that are in proximity to nearby residents (AMS 5, 6, and 7) and at a location near the western edge of the Production Area, so as to form a triangular (or square)
- D. Use a continuous radon monitor equipped with an environmental radon detector having a sensitivity of approximately 0.1 picocurie per liter (pCi/l), for example, a Pylon AB-5 equipped with "Pylon kettle" to accurately measure background radon levels at AMS BK1, or AMS BK2, or both.
- E. U.S. DOE shall use continuous radon monitors to monitor inside the head space of Silos 1, 2, and 3.
- F. Data from all of the above monitoring systems, except D, and meteorological data from the on-site met tower (wind speed, wind direction, indicators of stability class, etc.) must be fed into real time data loggers. The data loggers must be installed within sixty (60) days of the date of this letter.
5. Data collected from the radon monitoring and pressure/temperature monitoring systems must be collected in accordance with the requirements of number 4.F above for radon, and continuously for pressure/temperature. This data must be submitted to U.S. EPA by the 20th of each month, for the previous month. This data should be submitted with the monthly reports required by the 1990 Consent Agreement.
6. U.S. DOE shall reduce radon emissions, as measured in accordance with requirements of number 4 above, with the above-mentioned bentonite layer to a level of no greater than 0.015 pCi/l above background at the location of the maximally exposed individual at a non-FMPC location. This level is to be determined by monitoring, as required in number 4, above, and computational methods approved by U.S. EPA. These computational methods must be submitted in the work plan required in number 2, above. U.S. EPA will evaluate the performance of the bentonite layer in reducing radon emissions. If U.S. EPA determines that this reduction is insufficient, additional removal response action(s) will be required.

Please contact me at (312/FTS) 886-4436 if you have any questions regarding this matter.

Sincerely,



Catherine A. McCord
On-Scene Coordinator

cc: Richard Shank, OEPA
Graham Mitchell, OEPA - SWDO
Leo Duffy, U.S. DOE - HDQ
Joe LaGrone, U.S. DOE - ORO

