



Department of Energy

**Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246
(513) 648-3155**



MAR 22 2005

Mr. Michael Murphy, Health Physicist
U.S. Environmental Protection Agency
Region V-SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0197-05

Mr. James A. Saric, Remedial Project Manager
U.S. Environmental Protection Agency
Region V-SRF-5J
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 E. 5th St.
Dayton, OH 45402-2911

Dear Mr. Murphy, Mr. Saric and Mr. Schneider:

APPROACH FOR THE PHASED REDUCTION OF PROJECT RELATED AIR MONITORS IN THE IEMP

Reference: Letter, W. Taylor to J. Saric and T. Schneider, "Transmittal of Responses to Ohio Environmental Protection Agency Comments on the Integrated Environmental Plan, Revision 4 and Associated Change Pages" dated January 20, 2005

This correspondence transmits for your review and approval the proposed approach for phased reductions to the project related air monitors covered in the Integrated Environmental Monitoring Plan (IEMP). The IEMP includes project related air monitors, site fence-line air monitors, and background air monitors.

This phased approach for the project related air monitors is in accordance with the Comment Response/Action #1 to Ohio Environmental Protection Agency (OEPA) Comments on the Integrated Environmental Monitoring Plan, Revision 4, Draft Final (referenced above). It is expected that monitors will be removed in a phased approach upon completion of remediation activities and it is acknowledged that DOE will need to work closely with both the U.S.

Mr. Murphy
Mr. Saric
Mr. Schneider

Environmental Protection Agency (EPA) and the OEPA to ensure that monitors are removed at an acceptable time.

The general approach for the reducing IEMP project air monitors is provided in Enclosure A and includes the following monitoring programs:

- Particulate Monitoring
- Radon Monitoring
- Direct Radiation Monitoring using thermoluminescent dosimetry (TLD).

For each type of monitoring program, the series of events (criteria) expected to occur prior to terminating or suspending monitoring are identified. The completion of these events (i.e., project completion) will determine when monitoring activities are no longer necessary.

Documentation will be provided to EPA and OEPA, which will identify that the defined criteria have been met regarding proposed air monitoring reductions. It should be noted that it is possible this approach will need to be altered slightly since it might be necessary to relocate/remove an air monitor during remediation efforts due to construction activities. Removal or relocation of air monitors will be communicated to the agencies via the weekly conference calls.

In addition, a separate correspondence will be submitted later in the year to outline and seek approval for the path forward for the remaining monitors (site fence line and background monitors). These submittals and subsequent approvals will complete the required actions as identified in the Comment Response/Action #1 to OEPA Comments on the Integrated Environmental Monitoring Plan, Revision 4, Draft Final.

If you have any questions or require additional information, please contact Ed Skintik at (513) 246-1369.

Sincerely,


William J. Taylor
Director

FCP:Skintik

Enclosure: As Stated

Mr. Murphy
Mr. Saric
Mr. Schneider

cc: w/enclosure

J. Reising, OH/FCP

J. Powell, DOE-LM

J. Craig, DOE-LM

F. Bell, ATSDR

M. Cullerton, Tetra Tech

G. Jablonowski, USEPA-V, SR-6J

T. Schneider, OEPA-Dayton (3 copies of enclosures)

M. Shupe, HSI GeoTrans

R. Vandegrift, ODH

AR Coordinator, Fluor Fernald, Inc., MS78

cc: w/o enclosures:

K. Alkema, Fluor Fernald, Inc., MS 1

J. D. Chiou, Fluor Fernald, Inc., MS64

C. Murphy, Fluor Fernald, Inc., MS77

D. Nixon, Fluor Fernald, Inc., MS 1

D. Powell, Fluor Fernald, Inc., MS64

C. Tabor, Fluor Fernald, Inc., MS12

ECDC, Fluor Fernald, Inc., MS52-7

ENCLOSURE A
APPROACH FOR THE PHASED REDUCTION OF
IEMP PROJECT AIR MONITORS

A.1 PARTICULATE MONITORING

Project thorium analysis is performed at both a specific location (i.e., WPTH-2) and at an increased frequency (i.e., monthly) at the fenceline. For this reason, the phased approach for particulate monitoring is discussed in the following two subsections:

- Air Monitors
- Frequency of Analysis.

A.1.1 Air Monitors

The WPTH-2 monitor is a Waste Pits Project-specific air monitor dedicated for additional thorium analysis because of the project's potential to generate particulate emissions containing elevated levels of thorium. The additional monitoring for thorium will no longer be required when the criteria below have been met.

Criterion 1

The waste in the Waste Pits has been excavated and loaded into railcars.

Criterion 2

The Waste Pits area footprint has been transferred to Operable Unit 5 for final excavations and Decontamination & Dismantlement (D&D) activities associated with the Waste Pits Project have been completed.

Criterion 3

The air inhalation dose calculated from the most current monthly or quarterly thorium data shall represent a dose contribution that would not require monitoring.

40 CFR 61.93 (b)(5)(iii) indicates that radionuclides, which would cause an effective dose equivalent of 10% of the standard, shall be readily detectable and distinguishable from background. Additionally, Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance (DOE/EH-0173T) identifies significant radionuclides as those that could contribute 10% of the dose equivalent. Based on both of these guidances, DOE proposes that dose contributions not requiring monitoring would be less than 10% of the standard above background (i.e., Th-228 <3.1E-4 pCi/M³; Th-230 <3.4E-4 pCi/M³; and Th-232 <6.2E-5 pCi/m³).

Note: Quarterly thorium analysis will continue on the filters collected at the site fenceline and background locations in order to demonstrate NESAHF compliance. A separate correspondence will be submitted later in the year regarding the site fenceline monitors.

A.1.2 Frequency of Analysis

During certain remediation projects, thorium may surpass uranium as the major contributor to dose. The Waste Pits Project and Silos Accelerated Waste Retrieval Project, including Silo 3 remediation, has the potential to generate particulate emissions containing elevated levels of thorium. Although thorium isotopes are measured quarterly at AMS-2 through AMS-29 (the site fenceline and background locations), more frequent analysis (i.e., monthly analysis) was judged necessary in order to provide early feedback on the effectiveness of project emissions controls. The increased frequency for thorium monitoring will no longer be required when the criteria below have been met.

Criterion 1

The waste in the Waste Pits has been excavated and loaded into rail cars. The Accelerated Waste Retrieval Project and Silo 3 remediation, have been completed and the waste materials have been removed from the Silos and is either in temporary on site storage (in sealed shipping containers) or removed from the site.

Criterion 2

The Waste Pits area footprint has been transferred to Operable Unit 5 for final excavations and Decontamination & Dismantlement (D&D) activities associated with the Waste Pits Project have been completed.

Criterion 3

The air inhalation dose calculated from the most current monthly or quarterly thorium data shall represent a dose contribution that would not require monitoring.

40 CFR 61.93 (b)(5)(iii) indicates that radionuclides, which would cause an effective dose equivalent of 10% of the standard, shall be readily detectable and distinguishable from background.

Additionally, Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance (DOE/EH-0173T) identifies significant radionuclides as those that could contribute 10% of the dose equivalent. Based on both of these guidances, DOE proposes that dose contributions not requiring monitoring would be less than 10% of the standard above background (i.e., Th-228 <3.1E-4 pCi/M³; Th-230 <3.4E-4 pCi/M³; and Th-232 <6.2E-5 pCi/m³).

Note: Quarterly thorium analysis will continue on the filters collected at the site fenceline and background locations in order to demonstrate NESAHp compliance. A separate correspondence will be submitted later in the year regarding the site fenceline monitors.

A.2 RADON MONITORING

The radon monitoring component of the IEMP program is designed to collect continuous environmental radon measurements in order to gauge emissions from radon-generating materials contained on site. The expected radium-bearing waste locations on site are Silos 1, 2, and 3; the Silos treatment facility; the Silos Radon Control System (RCS); the waste dryer; the waste pit material handling building; the railcar loadout building; and the waste pit area. In the IEMP, Revision 3, the need to relocate or add radon monitoring locations to account for the pending relocation, treatment, or storage of radium-bearing waste was anticipated and addressed by the addition of five radon monitoring locations (KNO, KSO, LP2, T117, and PR1) to the radon monitoring network at the Silos area.

With the anticipated completion of the Silos Project and Waste Pits Project, and the removal of radium-bearing waste from the site, the radon monitoring locations (KNE, KNO, KNWA, KSE, KSO, KSWA, LP2, Rally Point 4, Bio-Surge Lagoon, T117A, T28A, and WP17A) will no longer be required when the criteria below have been met.

Criterion 1

The radium-bearing waste in the Waste Pits has been excavated and loaded into rail cars. The Accelerated Waste Retrieval Project and Silo 3 remediation, have been completed and the radium-bearing waste material has been removed from the Silos and is either in temporary on site storage (in sealed shipping containers) or removed from the site.

Criterion 2

The Waste Pits Project and Silos Project D&D activities are complete.

Note: Occupational radon working-level monitors will be operational during the D&D of the Silos treatment facility; Silos RCS; temporary storage areas; waste pits materials handling building; and the rail car loadout building. Additionally, the radon monitoring network at the site boundary (currently the site fenceline) and the background location will continue to measure radon concentrations to ensure compliance with 10 CFR 834.

A.3 DIRECT RADIATION MONITORING

The direct radiation component of the IEMP program is designed to collect measurements of environmental radiation levels resulting from radioactive materials on site. Silos 1 and 2 are the single largest source of direct radiation at the Fernald site. Therefore, TLD locations radiate outward from the Silos area. Additional TLDs are located at air monitoring stations at the Fernald site fenceline and at a background location. In the IEMP, Revision 3, the need to relocate or add TLD monitoring locations to account for the pending relocation, treatment, or storage of radium-bearing waste was anticipated and addressed by adding five TLD locations (43, 44, 45, 46, and 47) to the TLD monitoring network at the Silos area.

With the anticipated completion of the Silos Accelerated Waste Retrieval Project and the removal of the source material, the on-site TLD locations (22, 23A, 24, 25, 26, 43, 44, 45, 46, and 47) will no longer be required when the criteria below have been met.

Criterion 1

The Silos Project waste material has been removed from the Silos and is either in temporary on site storage (in sealed shipping containers) or removed from site.

Criterion 2

Quarterly TLD data indicate an annual average of less than 100 millirem (mrem) per year (< 25 mrem above background for a quarter).

Note: Occupational radiation surveys will continue during the D&D and area excavations of the Silos treatment facility, Silos RCS, and any temporary storage area(s). Additionally, the TLD network at the site fenceline will continue to measure radiation levels at the site boundary.

The supporting documentation will include an inventory of the gamma-emitting sources remaining on site.