



Department of Energy

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SEP 12 2005

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

DOE-0327-05

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

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

APPROACH FOR THE REDUCTION OF SITE BOUNDARY INTEGRATED ENVIRONMENTAL MONITORING PLAN (IEMP) AIR MONITORS

- Reference:
- 1) Letter, W. Taylor to J. Saric and T. Schneider, "Transmittal of Responses to OEPA Comments on the IEMP, Revision 4 and Associated Change Pages," dated March 25, 2005
 - 2) Letter, W. Taylor to M. Murphy, J. Saric and T. Schneider, "Transmittal of Approach for the Phased Reduction of Project Related Air Monitors in the IEMP," dated March 22, 2005
 - 3) Letter, W. Taylor to M. Murphy, J. Saric and T. Schneider, "Responses to OEPA Comments on the Phased Reduction of Project Related Air Monitors in the IEMP," dated August 4, 2005
 - 4) Letter, J. Saric to J. Reising, "IEMP Air Monitor Reduction," dated June 16, 2005

This correspondence transmits for your review and approval the proposed approach for reduction of the site boundary IEMP air monitors. The IEMP includes project related air monitors, site boundary air monitors, and background air monitors.

Mr. Michael Murphy
Mr. James A. Saric
Mr. Tom Schneider

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The reduction of site boundary IEMP air monitors is in accordance with the Comment Response/Action #1 to OEPA Comments on the IEMP, Revision 4, Draft Final (Reference 1). The general approach for the reducing site boundary IEMP air monitors is provided in Enclosure A and includes the following monitoring programs:

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

In addition, a separate correspondence has previously been transmitted to the EPA and OEPA regarding the approach for the phased reduction of project related IEMP air monitors (Reference 2). Comment responses have also been provided to EPA and OEPA regarding these phased reductions (Reference 3). Note that EPA had no comments on the phased approach (Reference 4).

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

Sincerely,


for William J. Taylor
Director

FCP:Skintik

Mr. Michael Murphy
Mr. James A. Saric
Mr. Tom Schneider

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DOE-0327-05

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Enclosure: As Stated

cc w/enclosure:

J. Reising, OH/FCP
E. Skintik, DOE-OH
J. Powell, DOE-LM
J. Craig, DOE-LM
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C. Connell, 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 enclosure:

K. Alkema, Fluor Fernald, Inc., MS1
S. Beckman, Fluor Fernald, Inc., MS20
H. Bilson, Fluor Fernald, Inc., MS1
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ENCLOSURE A

**APPROACH FOR THE REDUCTION OF
IEMP SITE BOUNDARY MONITORS**

A.1 BACKGROUND

In May 1997, the Fernald site submitted a written request to the United States Environmental Protection Agency (EPA) for approval to use an alternate approach for demonstrating compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart H requirements (DOE 1997). The alternate approach used environmental measurements of airborne radionuclide concentrations rather than the standard method of air dispersion modeling (i.e., CAP88). This request for approval of the alternate approach was driven by the recognition that the dominant sources of radiological airborne emissions at Fernald had changed as the mission changed from uranium metal production (which ended in 1989) to environmental remediation. During the production years, the primary emission sources were point sources (stacks and vents), while during environmental remediation, the primary emission sources were fugitive emissions from diffuse sources (i.e., large scale excavations, wind erosion from stockpiled materials, decontamination and dismantlement [D&D] projects, etc.). In August 1997, the EPA granted approval to Fernald to begin using environmental measurements as an alternate method for demonstrating NESHAP compliance, beginning in 1998 (EPA 1997). At that time, eight new air monitoring locations were installed at the site boundary (AMS-22 through AMS-29).

Currently, the Fernald site is changing from environmental remediation to environmental restoration and transition to long-term stewardship. With the majority of the large-scale excavations, stock piled materials, and D&D projects to be completed by the end of 2005, DOE proposes and seeks prior approval for returning to the standard method of CAP88 modeling to demonstrate NESHAP compliance for the transition year of 2006.

This letter specifically identifies the recommended path forward for the Fernald site air monitoring at the site boundary during 2006 (specifically post-closure) and addresses the following air monitoring programs:

- Particulate
- Radon
- Direct Radiation

Note: As indicated, this letter only addresses the site boundary monitors. The phased approach for reducing the IEMP-project monitors was addressed in the March 2005 letter (DOE 2005a), and was approved by EPA in June 2005 (EPA 2005); OEPA comments were addressed in August 2005 (DOE 2005b). It is understood that some IEMP-project monitors may be in place until the criteria and activities identified in the phased approach are met and completed.

A.2 PARTICULATE MONITORING

DOE requests to remove from service the eight air monitoring stations (AMS-22 through AMS-29) that were added for a measurement-based compliance method, and three additional air monitoring stations (AMS-2, AMS-5, and AMS-7) in December 2005. Upon approval, these monitors will be removed from service on December 20, 2005; this coincides with the filter collection schedule and will complete the 52-week monitoring period for 2005. The CAP88-based compliance method will begin on December 20, 2005 for the 2006 modeling period.

In addition to modeling performed in 2006, the remaining five site boundary air monitoring stations (AMS-3, AMS-4, AMS-6, AMS-8A, and AMS-9C) and the background monitor (AMS-12) will remain in service. These monitors will supplement the CAP88 modeling and will be a vital resource in the unlikely event of an upset condition. The operation of these supplemental monitors will continue through the transition year and end in December 2006. Refer to Figure 1 for monitoring locations.

Note: Monitoring locations were chosen based on the following reasons:

- AMS-3, 8A, and 9C - prominent downwind direction
- AMS-4 - secondary wind direction
- AMS-6 - representing the upwind direction.

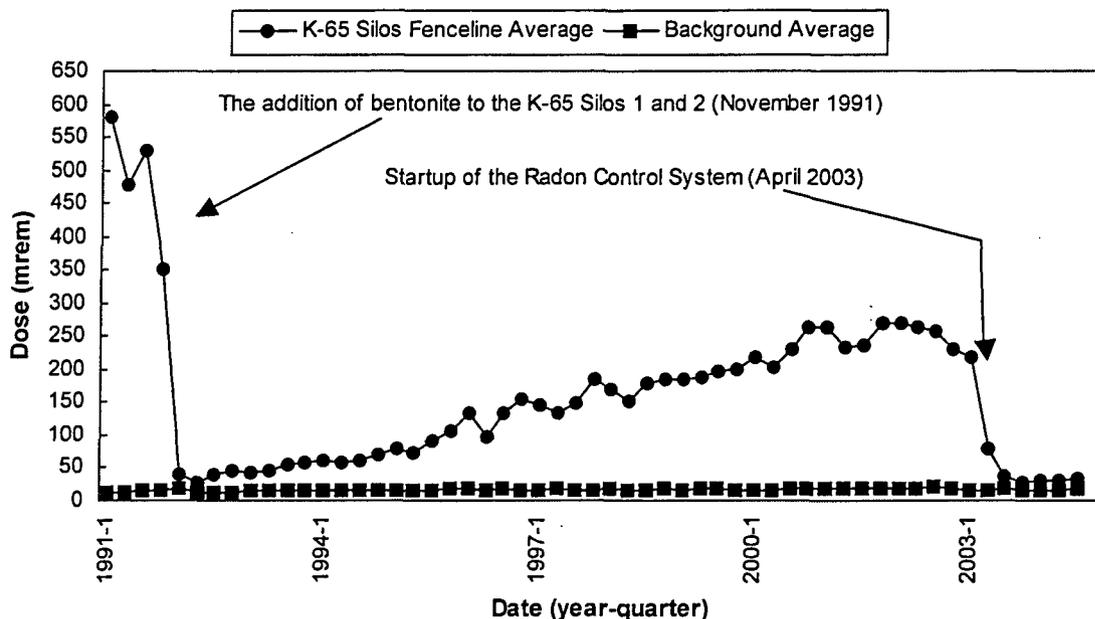
A.3 RADON MONITORING

The site boundary 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. DOE proposes to remove from service 11 site boundary radon monitoring locations on December 20, 2005 (AMS-2, AMS-5, AMS-7, and AMS-22 through AMS-29). This will coincide with the removal from service of the collocated particulate monitors, associated electrical services, and support structures. In addition, DOE proposes to remove the radon monitor PR-1 from service on December 20, 2005. The remaining five site boundary radon monitors (AMS-3, AMS-4, AMS-6, AMS-8A, and AMS-9C) and the background monitor (AMS-12) will remain in service during the transition year and will end in December 2006. Refer to Figure 1 for monitoring locations.

A.4 DIRECT RADIATION MONITORING

The site boundary direct radiation monitoring component of the IEMP program is designed to collect measurements of environmental radiation levels resulting from radioactive materials on site. Historically, the K-65 Silos have been the largest source of radiation at the Fernald site. During the last ten years (1995 through 2004), the direct radiation levels at the site boundary have ranged from non-detectable (not

statistically different from background) to a maximum of 14.2 millirem (mrem) in 2002, which represents 14.2 percent of the 100 mrem All-Pathways dose limit. There has always been a direct correlation between site boundary radiation levels and the radiation levels measured at the Silos Project. From the chart below (Figure 5-8 from the 2003 Site Environmental Report, with the first three quarters of 2004 included), the affect of silos materials processing and remediation is clearly evident and correlated to a 53 percent reduction of site boundary radiation levels (2002 through 2003).



Note: Current radiation levels in 2005 are similar to those in 2003. Note that the higher levels in fourth quarter 2004 reflect the transfer of silos materials from the K-65 Silos to the Tank Transfer Area (TTA). This operation was preplanned to keep exposure as low as reasonable achievable (ALARA).

Currently, the transfers of silos waste materials to the TTA, the D&D of the silos structures, and the debris removal operations have been completed, and waste stabilization and shipping operations are ongoing. Therefore, DOE proposes and seeks prior approval for removing 16 site boundary TLD monitoring locations (TLD 2, TLD 5, TLD 7, TLDs 13 through 17, and TLDs 34 through 41) and four background TLD monitoring locations (TLD 19, TLD 20, TLD 33, and TLD 42) from service on December 20, 2005. This will coincide with the removal of various air particulate and radon monitoring locations and their associated support structures. The remaining five site boundary monitoring locations (TLD 3, TLD 4, TLD 6, TLD 8A, and TLD 9C) and the background (TLD 27) will remain in service during the transition year and will be removed from service in December 2006. Refer to Figure 1 for monitoring locations.

REFERENCES

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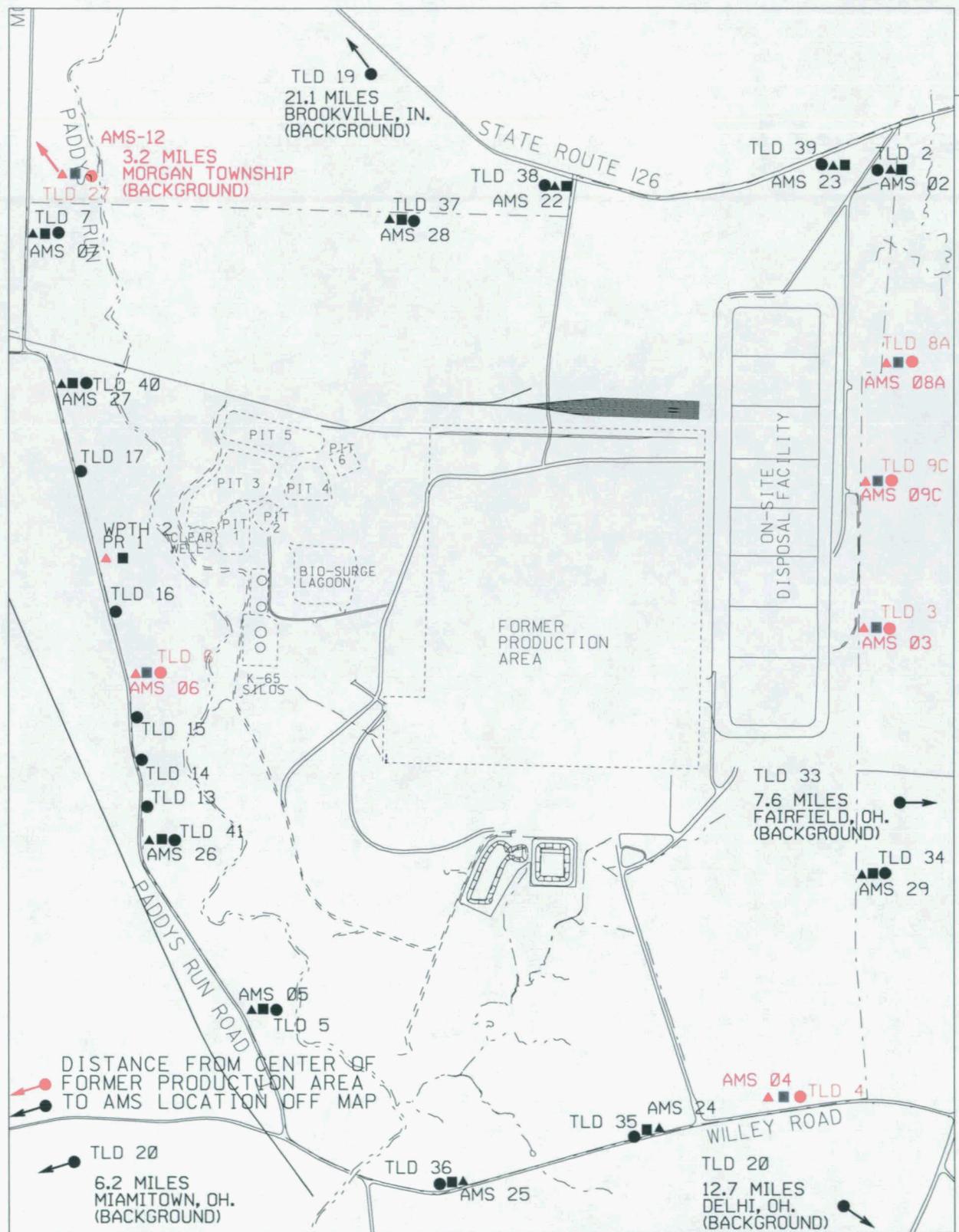
U.S. Department of Energy (DOE), 2005a, "Approach for the Phased Reduction of Project-Related Air Monitoring in the IEMP," letter #DOE-0197-05, William J. Taylor of DOE to Michael Murphy of EPA, James A. Saric of EPA, and Tom Schneider of OEPA, Fernald Closure Project, Cincinnati, OH, March 22.

U.S. Department of Energy (DOE), 2005b, "Responses to Ohio Environmental Protection Agency Comments on the Approach for the Phased Reduction of Project-Related Air Monitors in the IEMP," letter #DOE-0297-05, William J. Taylor of DOE to Michael Murphy of EPA, James A. Saric of EPA, and Tom Schneider of OEPA, Fernald Closure Project, Cincinnati, OH, August 4.

U.S. Department of Energy (DOE), 1997, "Application for Approval to Use Environmental Measurements to Demonstrate Compliance with the National Emission Standards for Hazardous Air Pollutants, Subpart H," letter #DOE-0980-97, Johnny W. Reising of DOE to James A. Saric of EPA and Michael Murphy of EPA, Fernald Environmental Management Project, Cincinnati, OH, May 23.

U.S. Environmental Protection Agency (EPA), 2005, "IEMP Air Monitor Reduction," letter #SR-6J, James A. Saric of EPA to Johnny W. Reising of DOE, Fernald Closure Project, Cincinnati, OH, June 16.

U.S. Environmental Protection Agency (EPA), 1997, "Application for Approval to Use Environmental Measurement to Demonstrate Compliance with the National Emission Standards for Hazardous Air Pollutants, Subpart H," Jack Barnett of EPA to Johnny W. Reising of DOE, Fernald Environmental Management Project, Cincinnati, OH, August 11.



LEGEND:

- FERNALD SITE BOUNDARY
- ▲ PARTICULATE MONITOR
- RADON MONITOR
- DIRECT RADIATION (TLD) MONITOR

NOTE:

COLOR LOCATIONS WILL BE MAINTAINED DURING POST-CLOSURE AND BLACK/WHITE LOCATIONS WILL BE REMOVED FROM SERVICE.

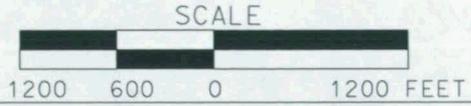


FIGURE 1. RECOMMENDATIONS FOR POST-CLOSURE AIR MONITORING LOCATIONS