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JUL 13 1997
DOE-1202-97

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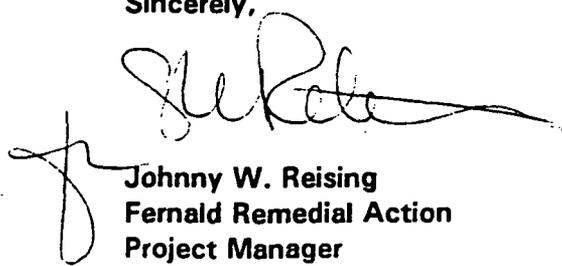
Dear Mr. Saric and Mr. Schneider:

RESPONSES TO THE OHIO ENVIRONMENTAL PROTECTION AGENCY SUPPLEMENTAL COMMENTS ON THE INTEGRATED ENVIRONMENTAL MONITORING PLAN

This letter provides formal transmittal of the Department of Energy (DOE) responses to the Ohio Environmental Protection Agency (OEPA) supplemental comments on Section 6 of the Integrated Environmental Monitoring Plan. The supplemental comments were received via fax on June 10, 1997, and draft responses were returned to the OEPA on June 27, 1997. A conditional approval of the Integrated Environmental Monitoring Plan (IEMP), based on the draft responses, was received from the OEPA on July 11, 1997.

Should you have any questions regarding this submittal, please contact Kathleen Nickel at (513) 648-3166.

Sincerely,


Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Nickel

Enclosure: As Stated

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**RESPONSES TO OEPA SUPPLEMENTAL COMMENTS
ON SECTION 6.0 OF THE DRAFT FINAL
INTEGRATED ENVIRONMENTAL MONITORING PLAN
FOR MARCH 1997**

**FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO**

JULY 1997

**U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE**

RESPONSES TO OEPA SUPPLEMENTAL COMMENTS
ON SECTION 6.0 OF THE DRAFT FINAL
INTEGRATED ENVIRONMENTAL MONITORING PLAN
FOR MARCH 1997

1. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.2.1 Pg.#: 6-3 Line#: 6-12 Code: c
Original Comment#

Comment: All airborne emissions from any of the individual projects on site may have "sitewide implication". There needs to be uniformity between the individual projects and the IEMP. Provide information on how the individual projects will report ARAR and TBC-specific information.

Response: Ohio EPA recommends the central "entity" approach mentioned previously. A fundamental integration objective of the IEMP is to bring together all environmental monitoring data (IEMP and project-specific) as necessary to develop a comprehensive picture of the environmental conditions at the site which can be used to support site-wide decision making. Reporting of project-specific monitoring data will be accommodated through the IEMP quarterly and annual reports as necessary to support site-wide data interpretations and to justify any associated actions. The projects are responsible for defining the monitoring programs and associated reporting for all monitoring data required to fill project-specific ARAR or TBC requirements. This information will be provided within the applicable project remedial design, implementation and/or operations documents. The IEMP provides, within each media section, an analysis of the regulatory drivers, DOE policies and FEMP-specific agreements for conducting monitoring activities and delineates IEMP and project-specific responsibilities. Furthermore, where possible the IEMP identifies the project document(s) where information on the project-specific monitoring activities can be found. The Environmental Monitoring Project will serve as the central point of integration for monitoring data and development of the IEMP reports.

Action: No revision of the draft final IEMP is required.

2. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.2.2 Pg.#:6-3 Line#: 18-24 Code: C
Original Comment#

Comment: Where does the IEMP contain the design criteria and rationale for routine air effluent monitoring (i.e., stack sampling)? The IEMP appears to only address environmental surveillance.

Response: Ohio EPA recommends that the IEMP utilize a checklist of ARARs and TBCs for the individual projects to use when designing their stack designs and perform their dose assessments. As a minimum these list should contain the modeling requirements outline in NESHAP for Radionuclides.

Point source monitoring (i.e. stacks and vents) is designated as a project responsibility in the IEMP due to the direct emission and process control nature of this monitoring activity. The technical approach and design of stack monitoring systems will be an integral part of the process control scheme and overall system design of remediation units. The data collected from stack monitoring systems associated with remediation treatment units will provide critical information that will serve as process control feedback on unit operations. As such, the individual remediation project responsible for the process must maintain responsibility for the monitoring system design and operation. However, the data collected from point source emissions will be integrated into the IEMP reporting framework as necessary to support sitewide data interpretations, compliance reporting and the collective decision

making process discussed in Section 1 of the IEMP.

In response to the comment on the IEMP only addressing environmental surveillance; the IEMP air monitoring program serves a dual role as both the airborne effluent monitoring and environmental surveillance program for the remediation of the site. Since the primary emission sources during remediation will be fugitive dusts from construction, demolition, and waste handling activities, the ring of fence line monitors is a practical means of providing effluent monitoring for these diffuse source activities. The fence line location of the monitors also qualifies the monitors as environmental surveillance monitors capable of quantifying the environmental impact from the mix of remediation activity.

DOE acknowledges OEPA's recommendation of an ARAR and TBC checklist for use on individual projects requiring stack design and dose assessment. Table 6-1 of the IEMP includes a list of the ARARs and TBC-based regulations which are applicable to individual remediation projects. The requirement (40 CFR 61, Subpart H) to monitor point sources will be added to the list of project-specific regulatory drivers in the IEMP.

Action: Add the following text under project-specific regulatory drivers for point sources (page 6-5, line 38):

- National Emissions Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61, Subpart H, provides national emissions standards for radionuclides other than radon. Per this requirement, emission measurements shall be made at point sources with a potential to discharge radionuclides into the air in quantities which could cause an effective dose equivalent in excess of 1% of the standard (10 mrem/year).

Revise Table 6-1 to include the following:

NESHAP 40 CFR 61 Subpart H National emissions standards for emissions of radionuclides other radon from DOE facilities	Air monitoring at stacks/vents as determined necessary by modeling	Remedial Design/Remedial Action Documents and implementation and operations documents.
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3. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: 6.2.2 Pg.#: 6-4 Line#: 7-8 Code: C
 Original Comment#

Comment: Compliance with Proposed 10 CFR 834 meets nearly all of the requirements of DOE Order 5400.5 with a few minor exceptions. Development of a compliance strategy to meet the requirements of this new standard would be proactive and may save money by preventing redundancy.

Ohio EPA recommends fence line monitoring for radionuclides. This allows for accurate measurement of the amount of radionuclides emitted into the atmosphere. FEMP should propose alternative modeling strategies to USEPA to demonstrate compliance with the dose requirements in 40 CFR 61 Subpart H.

Response: DOE has evaluated the proposed rule (10 CFR 834) and is aware that when promulgated, the final rule may require changes to the IEMP. However, until such time as the final rule is promulgated and any associated implementing guidance is made available, developing a compliance strategy would be premature and potentially not aligned with the final rule.

Regarding OEPA's recommendation on fence line monitoring, please see response to similar comment #4.

Action: See action associated with similar comment #4.

4. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.2.2 Pg.#: 6-4 Line#: 1-8 Code: C
Original Comment#

Comment: Proposed 10 CFR 834.102 states that "A DOE activity shall be conducted in a manner such that the release to the atmosphere of radioactive materials from the activity or in combination with other DOE activities shall (1) Comply with ALARA; and (2) not cause an EDE in excess of 10 mrem per year." How will releases to the atmosphere be measured/monitored. Monitoring at potential receptor locations will not measure releases from the site.

Response: Again, OEPA recommends fence line monitoring to measure releases to the atmosphere, as well as, ensuring that the releases and subsequent doses are ALARA.
The referenced provisions, as currently proposed under the draft rule 10 CFR 834.201, are consistent with the existing requirements of DOE Order 5400.5 which serves as a primary driver for the IEMP. The commentor relates two separate issues in the comment: 1) how will emissions from the site be measured/monitored and 2) how will the site ensure that these emissions are ALARA? The following response addresses issue 1. Issue 2 is addressed in similar comment # 5.

- 1) As you are aware, in developing the monitoring-based approach for demonstrating NESHAP Subpart H compliance presented in the draft final IEMP, the DOE has been attempting to reach agreement with selected local property owners to place air monitoring stations on private property. These off-property monitoring locations were selected to coincide with the nearest potential receptor or group of receptors to the FEMP property in designated wind rose sectors and thus provide a measure of site emissions at receptor locations where the NESHAP Subpart H and proposed 10 CFR 834 10 mrem standard applies. Every effort has been made to secure access at or near these off-property locations, however, to date, these efforts have not been successful. As a result, DOE has proposed, through separate transmittal, a modification to the IEMP air particulate monitoring program that will place all high volume air monitors (excluding background locations) on the facility fence line. Included in DOE's proposal is maintaining three of the four existing east fence line monitoring locations. Furthermore, the draft final IEMP provides a decision making framework (Section 1.5) and air-specific data evaluation and associated actions (Section 6.6.1) to ensure that the 10 mrem standard is not exceeded at any receptor location. This will address OEPA's first issue and recommendation.

2) Please see response to similar comment #5.
Action: Change pages to the IEMP will be issued following U.S. EPA and OEPA review and approval of DOE's proposed modifications which were transmitted previously (Letter, J. Reising, DOE-FEMP to J.Saric U.S. EPA and T. Schneider, OEPA, "Implementation Schedule for the Integrated Environmental Monitoring Plan Air Particulate Monitoring Program and Request for Approval of Proposed Program Modifications," dated June 13, 1997).

5. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.2.2 Pg.#: 6-4 Line#: 36-40 Code: C
Original Comment#

Comment: DOE Order 5400.5 and 10 CFR 834 (Proposed) both require compliance with ALARA. The 10 mrem/yr dose limit is a compliance point. DOE should strive to limit dose to the public by employing ALARA.

Response: Agree. The ALARA principle is embedded in the design, planning, and execution of individual remediation projects which will be collectively monitored under the IEMP. The site-wide administrative and project-specific administrative and engineered controls are designed and implemented to limit site emissions to as low as reasonably achievable. Therefore, the

determination of whether the ALARA principal is being applied must be made at the project level through the routine evaluation of the design and implementation of administrative and engineered controls against design specifications, procedural requirements governing design and operations, and relevant regulatory standards. The IEMP monitoring program will provide feedback to the projects on the collective effectiveness of emission controls on maintaining site compliance with applicable regulatory standards. Furthermore, the IEMP provides a decision framework and routine data evaluation process for ensuring that these standards are not exceeded.

Action: No revision of the draft final IEMP is required.

6. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.2.2 Pg.#: 6-5 Line#: 4-36 Code: C

Original Comment#

Comment: The "BAT Determination for Remedial Construction Activities on the FEMP Site" should be included in the appendices of the IEMP since it documents the compliance strategy for OAC air emissions standards.

Response: DOE believes that the site-wide BAT determination for control and abatement of fugitive dust emissions should be maintained as a stand alone document at this time based on the current level of OEPA and stakeholder interest in fugitive dust issues. The BAT determination may be added as an appendix to the IEMP during future revisions.

Action: No revision of the draft final IEMP is required.

7. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.2.2 Pg.#: 6-6 Line#: 1-2 Code: C

Original Comment#

Comment: The IEMP should include a listing of sources at the site which are subject to Subpart Q requirements and how each source meets the compliance standards.

Response: The K-65 Silos (1 and 2) are the only source that exceeds the radon flux limits specified in 40 CFR 61.190. However, in lieu of the Subpart Q standard, radon monitoring and reporting requirements were established under the, "Federal Facility Agreement Control and Abatement of Radon-222 Emissions," to address this source of radon emissions prior to remedial action. Other potential sources such as the waste pits have had flux measurements conducted and are in compliance with the limit. As such, no further measurements are required so long as the pits remain in the condition for which compliance was demonstrated. As remediation progresses, activities regarding the waste pits will be addressed in future updates of the IEMP.

Action: No revision of the draft final IEMP is required

8. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.2.2 Pg.#: 6-6 Line#: 4-41 Code: C

Original Comment#

Comment: Again, the IEMP should include a comprehensive listing of potential sources and how each source meets the substantive requirements for the appropriate OAC standards for air emissions.

Response: See response to comment #2

Action: No revision of the draft final IEMP is required.

9. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: Table 6-1 Pg.#: 6-7 Line#: n/a Code: C

Original Comment#

Comment: Does the IEMP meet the requirements for an "Environmental Monitoring Plan" as described in DOE order 5400.1?

Response: The IEMP meets the substantive requirements for an environmental monitoring plan as described in DOE Order 5400.1.

Action: No revision of the draft final IEMP is required.

10. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: Table 6-1 Pg.#: 6-7 Line#: Code: C
 Original Comment#
 Comment: DOE Order 5400.5 and 10 CFR 834 (Proposed) require that airborne emissions comply with ALARA. The IEMP does not address ALARA, it should.
 Response: See response to similar comment #5.
 Action: No revision of the draft final IEMP is required.
11. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: Table 6-1 Pg.#: 6-8 Line#: n/a Code: C
 Original Comment#
 Comment: Compliance reporting for all sources should be included in the IEMP. There should be some administrative controls in place such that one organization on site has sufficient information on all airborne emission sources.
 Response: As-stated in the response to comment #1, the Environmental Monitoring Project will be responsible for integrating and reporting monitoring data under the IEMP. The IEMP annual report will include the NESHAP Subpart H compliance demonstration and will provide the monitoring data (project-specific and IEMP) necessary to meet the compliance requirements of Subpart H.
 Action: No revision of the draft final IEMP is required.
12. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: 6.4.2.1 Pg.#: 6-12 Line#: 17-28 Code: C
 Original Comment#
 Comment: The design expectations should also include releases of radionuclides to the atmosphere as monitored at the current fence line locations. Historically, the FEMP has reported these releases in the Site Environmental Report. Will these monitors remain in place? These monitors are important to show the historical trends of releases of radionuclides to the atmosphere throughout the remediation of the site. These monitors would also be useful in ensuring that airborne releases to adjacent properties are monitored and minimized.
 Response: See response to similar comment #4.
 Action: See action for similar comment #4.
13. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: Figure 6-2 Pg.#: 6-14 Line#: n/a Code: C
 Original Comment#
 Comment: The proposed off-property locations, AMS-28, 29, 30 and 31 may be subject to unforeseen interferences. Also, there is no baseline data for these new locations, and trending of data to show impacts from remedial activities will not be possible without baseline data. OEPA recommends utilizing existing fence line locations to maintain historical trends and to save money by avoiding costly installation costs at these proposed locations. The DOE has just recently spent a large amount of money to move monitors from within the OSDF footprint to the facility fence line.
 Response: See response to similar comment #4.
 Action: See action for similar comment #4.
14. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: Figure 6-2 Pg.#: 6-14 Line#: Code: C

Original Comment#

Comment: The DOE Environmental Regulatory Guide states that "...Sample locations should include the following...locations of maximum predicted ground-level concentration...the maximum predicted concentrations may actually be onsite. In this case, onsite sampling may include the locations of predicted maximum concentration(s) and any other locations needed to interpret the offsite sample results." There are the points of predicted maximum concentration(s)?

Response: The maximum concentrations will be highly variable based on the mix and spacial distribution of remediation activities at any given time and the associated weather conditions. Therefore, placement of an air monitor at the location of the maximum predicted concentration, as suggested in the DOE regulatory guide, would be of little value during the FEMP remediation since any assumptions (source conditions, weather patterns, etc) which were used in predicting the location may not be representative of actual field conditions. In practical terms, it will be increasingly difficult to site monitors on the FEMP property that are not impacted by remediation activities (i.e., in the way of remedial actions or subjected to power interruptions as a result of remediation activities). Furthermore, as discussed with OEPA previously, it is unclear how data would be used or interpreted from monitors placed on-site during remediation activities.

Action: No revision of the draft final IEMP is required.

15. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.4.2 Pg.#: 6-15 Line#: 25-31 Code: C

Original Comment#

Comment: The daughters of Th-232 should be included in the analytical suite. The relatively short half life of Ra-228 indicates that some degree of equilibrium exists between the daughters and the parents. Also, for consistency, Th-234 and Pa-234 should be added to the analytical suite (or assume equilibrium) even though they are not likely to be major contributors to the dose. The sum of fractions method for determining compliance should include these isotopes.

Response: As provided in Table C-2 of the IEMP, Th-232 and Th-228 are part of the quarterly composite analytical regime. Ra-228 and Ac-228, the immediate daughters of Th-232, will be considered to be in equilibrium with the Th-232 concentration measured in the quarterly composite. Ra-224, a daughter of Th-228, will be considered to be in equilibrium with the Th-228 measured in the quarterly composite. The basis for the quarterly analysis of Th-232 and Th-228 and the explanation of how Th-232 and Th-228 and their daughters will be incorporated into the NESHAP compliance demonstration is provided in pgs. C-10 through C-16 of the IEMP.

Th-234 and Pa-234m will be considered to be in equilibrium with their parent, U-238, which will be measured in the quarterly composite sample. As indicated in Appendix C of the IEMP (page C-15) the sum of the fractions method will be used to demonstrate compliance.

Action: No revision of the draft final IEMP is required.

16. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: Table 6-2 Pg.#: 6-18 Line#: n/a Code: C
 Original Comment#
 Comment: The detection levels listed for the analytical suite should be listed as units of pCi/sample not pCi/m³.
 Response: The units of pCi/m³ were chosen so that an easy comparison between the detection limits and the NESHAP Table 2, Appendix E values could be made. The units of pCi/sample are not as easy to work with in this instance and would require a set of assumptions about the volume of air each sample represents in order to make the comparison.
 Action: No revision of the draft final IEMP is required.
17. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: Table 6-3 Pg.#: 6-19 Line#: n/a Code: C
 Original Comment#
 Comment: The detection levels shown for both radon detectors appear to be extremely low. Provide information and/or calculations used to determine the detection level for each of the radon detectors listed in table 6-3.
 Response: The determination of the detection level for the alpha track-etch detectors has been developed based on information provided by the analytical vendor. A detection limit of 30 pCi/L-days radon exposure has been stated by the vendor. To determine the detection limit for long-term exposures the following formula is used:
- 30 pCi/L-days**
 Length of exposure in days
- Since our exposure periods have been variable and often in excess of 180 days, 0.15 pCi/L-days has been stated as the detection limit. To be further conservative the detection limit can be stated as 0.2 pCi/L-days.
- The detection level for continuous monitors was incorrectly stated in the draft final IEMP as 0.3 pCi/L. Vendor literature states that the detection limit for data collection at one hour intervals is 1 pCi/L.
- Action: Table 6-3 will be revised in the Final IEMP to reflect a 0.2 pCi/L detection limit for alpha track-etch detectors and 1 pCi/L for continuous detectors.
18. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: 6.5.2 Pg.#: 6-25 Line#: 6-12 Code: C
 Original Comment#
 Comment: This sampling program is not designed to measure releases of radiological contaminants to the atmosphere as required by 10 CFR 834 (proposed). The use of fence line samplers would address this shortfall.
 Response: See response to similar comment #4
 Action: See action for similar comment #4
19. Commenting Organization: Ohio EPA Commentor: OFFO
 Section#: 6.5.2 Pg.#: 6-25 Line#: 17 Code: C
 Original Comment#
 Comment: Table 6-2 lists the ASL for quarterly composites as ASL B, while the text here states ASL D.
 Response: Agree.
- Action: Table 6-2 will be changed to show that quarterly composite samples will be analyzed at ASL D.

20. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.5.2.1 Pg.#: 6-26 Line#: 30-32 Code: C

Original Comment#

Comment: Submit the siting procedures, sampling procedures, analytical methodologies, calibration procedures, and auditing procedures for the high volume sampling and radon monitoring programs to the OEPA and USEPA for review.

Response: Air monitoring locations are based on criteria and guidance in DOE/EH-0173T "Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance" and 40 CFR 58 Appendix E. Radon monitors are sited in accordance with DOE/EH-0173T. DOE does not maintain siting procedures for high volume air samplers and radon monitors.

Sampling, analytical, and calibration procedures for high volume air sampling have been forwarded to OEPA(Dayton) in the recent past. Revisions to these procedures will be forwarded as the procedures are updated. Radon sampling procedures have also been forwarded to OEPA previously. Radon monitoring equipment is calibrated by the vendor, a copy of the vendors calibration procedure will be forwarded to the OEPA.

The environmental monitoring program is audited under the QA/QC programs in place at the FEMP. Copies of the auditing procedures will be forwarded to OEPA.

Copies of the subject procedures will be forwarded to the U.S.EPA upon their request.

Action: Forward copies of procedures as indicated in comment response.

21. Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 6.5.3 Pg.#: General Line#: n/a Code: C

Original Comment#

Comment: 10 CFR 834 (proposed) requires that radon concentrations at the fence lines be less than 0.5 pCi/L above background. The sensitivity of either detector is probably not sufficient to measure radon at this concentration. How will DOE address this apparent issue?

Response: The DOE has concerns regarding the technical feasibility of demonstrating compliance with the proposed requirements of 10 CFR 834 using currently available environmental radon monitoring instruments. Based on the natural fluctuations observed in background radon concentrations, the currently proposed radon limit of 0.5 pCi/L annual average above background at the facility boundary will be difficult to distinguish from these natural fluctuations. For example, the four year average background concentration is 0.5 +/- 0.6 pCi/L with 95% confidence and the average fence line concentration is 0.9 +/- 1.2 pCi/L with 95% confidence. At these low radon concentrations with such high uncertainty, an increase of 0.5 pCi/L may not be discernable from background.

Action: No revision of the IEMP required. However, at such time as 10 CFR 834 is promulgated, the DOE will evaluate the requirements of the final and any associated implementing guidance to determine the appropriate application of the rule within the context of the CERCLA remediation and within the technical limitations of the available monitoring equipment.