



Department of Energy
Ohio Field Office
Fernald Environmental Management Project
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155



4544

OCT 22 2002

Mr. Gene Jablonowski, Remedial Project Manager
United States Environmental Protection Agency
Region V, SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0041-03

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

Dear Mr. Jablonowski and Mr. Schneider:

**RESPONSE TO THE OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE
REVISED REMEDIAL ACTION WORK PLAN FOR RADON CONTROL SYSTEM PHASE 1
OPERATION**

- References:
1. Letter from T. Schneider to J. W. Reising, "Comments – Remedial Action Work Plan for Radon Control System (RCS) Phase 1 Operation," dated October 9, 2002
 2. Letter DOE-0606-02 from J. Reising to G. Jablonowski and T. Schneider, "Revised Remedial Action Work Plan for Radon Control System Phase 1 Operation," dated September 6, 2002
 3. Letter from G. Jablonowski to J. W. Reising, "Approval of the Revised Remedial Action Work Plan for Radon Control System Phase 1 Operation," dated October 4, 2002

The purpose of this letter is to transmit the responses to the Ohio Environmental Protection Agency (OEPA) comments and the revised Remedial Action (RA) Work Plan for the Radon Control System (RCS) Phase 1. Reference 1 provided comments from the OEPA on the Revised RA Work Plan for RCS Phase 1 Operation (Reference 2).

The comment responses were discussed with the OEPA on October 21, 2002. The enclosed comment responses and revised RA Work Plan incorporates the results of those discussions. The previous draft of the RA Work Plan received the approval of the United States Environmental Protection Agency (USEPA) on October 4, 2002 (Reference 3).

OCT 22 2002

DOE-0041-03

Mr. Gene Jablonowski
Mr. Tom Schneider

-2-

If there are any questions or concerns, please contact Nina Akgündüz at (513) 648-3110.

Sincerely,



Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Hall

Enclosure: As Stated

cc w/enclosure:

N. Akgündüz, OH/FEMP
G. Brown, OH/FEMP
J. Hall, OH/FEMP
J. Saric, USEPA-V, SRF-5J
T. Schneider, OEPA-Dayton (three copies of enclosure)
M. Cullerton, Tetra Tech
M. Shupe, HSI GeoTrans
R. Vandegrift, ODH
AR Coordinator, Fluor Fernald, Inc./MS78

cc w/o enclosure:

R. Greenberg, EM-31/CLOV
S. Beckman, Fluor Fernald, Inc./MS52-4
D. Carr, Fluor Fernald, Inc./MS2
R. Corradi, Fluor Fernald, Inc./MS52-4
T. Hagen, Fluor Fernald, Inc./MS9
S. Hinnefeld, Fluor Fernald, Inc./MS52-2
D. Nixon, Fluor Fernald, Inc./MS65-2
T. Walsh, Fluor Fernald, Inc./MS52-3
ECDC, Fluor Fernald, Inc./MS52-7

- B) The Hot Systems Operability Test (SOT) which takes place immediately following the initiation of RCS Phase 1 operation will include sufficient periods of operation to allow collection of operational data and experience to support the finalization of Standard Operating Procedures, training of operations personnel, fine-tuning of operating parameters, and development of lessons learned for future phases of RCS operation. In addition, subsequent intermittent Phase 1 operation will require periods of extended operation to support construction activities above the silo domes. The Hot SOT, any subsequent testing runs, and operations in support of construction activities will provide sufficient periods of extended operation during Phase 1 to ensure the ability of the facility and operations staff to support continuous operation, and ensure the sustainability and endurance of the system. System sustainability and endurance will be specifically evaluated during the periods of data collection mentioned above.
- C) A conference call was held with OEPA technical representatives on October 18, 2002 to resolve OEPA's comment. As was discussed during the conference call, DOE recognizes that, as indicated in OEPA's comment, continuous operation of the RCS would yield overall lower radon concentrations in the Silos 1&2 headspaces and in the immediate vicinity of the Silo domes, as compared to an intermittent operational strategy. However, the cost-effective criteria we are proposing for intermittent operations, as specified in the draft RA Work plan, were developed based upon fair and objective consideration of the technical tradeoffs in environmental benefits/risks outside the project boundary compared to the incremental potential for worker exposures inside the project boundary, that would result from the additional operation of the RCS during the non-construction periods of Phase 1. The initial data and calculations supporting the evaluation and the proposed operational strategy are discussed below. (As discussed in the response to Comment No. 1, the need for reassessment of the current criteria to develop a final Phase 1 RCS operations strategy will be determined based upon review of fenceline and onsite exposure data collected during the Hot SOT, and any subsequent testing)

Data from the 2001 FEMP Site Environmental Report indicate that the maximum dose at the FEMP fenceline from all site radon emissions, using a highly conservative exposure scenario, was 36 mrem/year (0.004 mrem/hour) above background. Based upon the FEMP's current ALARA analyses, the calculated reduction in dose at the FEMP fenceline resulting from continuous RCS operation is expected to be accompanied by a significantly larger increase in dose to construction, operations, and maintenance workers in the vicinity of the carbon beds. Therefore, the primary ALARA concern during periods when no workers are in the vicinity of the Silo domes has been identified to be the operations and maintenance and construction personnel working in the Silos construction area outside the exclusion zone.

Current measurements in the Silos project construction area outside of the exclusion zone are well below the criterion of a weekly average 10% of the Derived Air Concentration (DAC). External exposure rates in the construction area outside of the exclusion zone are currently between 25 and 50 micro-roentgen/hour (.025-.05 mrem/hour). Operation of the RCS results in the headspace source term of radon and its progeny being captured within the RCS, and increases exposure in the vicinity of the carbon beds. During continuous operation of the RCS, the dose rates outside of the RCS on the shield wall will be approximately 400 micro-roentgen/hour (0.4 mrem/hr). Although this level at the shield wall is within allowable levels, it is significantly above (10x) the external exposure rates to which construction and operations personnel in silos construction area are exposed when the RCS is not in operation. Intermittent

Response: The RCS exhaust stack includes sufficient sample ports to accommodate any necessary stack testing. Requirements for stack testing, including the need for testing during Phase 1, the parameters to be tested for, locations, methods, etc. will be developed in conjunction with Hamilton County Environmental Services based upon continuous monitoring data collected during initial Phase 1 Operation.

Action: The requirement to finalize requirements for any necessary stack testing in conjunction with the Hamilton County Department of Environmental Services has been incorporated into Section 4.1.1 of the RA Work Plan.

Specific Comments:

4. Commenting Organization: Ohio EPA Commentor: OFFO

Section #: 3 Pg #: 6 Line #: 3-9 Code: C

Original Comment #:

Comment: The language for when intermittent operation of the RCS is ambiguous. Phrases such as "moderate or significant job duration and exposure potential" should be replaced with actual dose rates and/or stay times.

Response: After completion of the Hot SOT, the RCS will be fully capable of continuous operation. However, as discussed in the response to Comments Nos. 1 and 2, an intermittent Phase 1 operations strategy provides the best path forward from a cost and ALARA risk-reduction perspective (considering exposure pathways both inside and outside the project boundary). The Phase 1 operations strategy will be refined and finalized based on data obtained and conditions observed during the Hot SOT and subsequent operations. The final Phase 1 operations strategy will be utilized until the initiation of Silos 1&2 waste retrieval, at which time the continuous operations strategy will be activated.

After the completion of the Hot SOT, the RCS will be operated to maintain the radiation field on the surface of the domes of Silos 1 and 2 below 10mrem/hour during the following construction activities, currently scheduled to begin in late spring 2003:

- Penetration of the Silo 1 and 2 domes
- Installation/construction of waste retrieval superstructure/modules
- Removal of the silo plywood covers
- Installation/construction of bridges over-top of silos
- Installation of new risers for equipment modules

Operation of RCS may be initiated as required to minimize exposure to personnel performing other activities over the top of the silos, the top of the silo berm, and near the silo handrails. The need to operate the RCS during any such activities will be determined in accordance with the FEMP ALARA process based upon analysis of the specific task, its location and duration, measured radiation levels at the time the task is being initiated, and the potential radiation exposure to affected personnel.

Action: The referenced text has been revised to clarify the criteria for intermittent operation during Phase 1.