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

DOE-0248-03

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

Dear Mr. Jablonowski and Mr. Schneider:

RADON CONTROL SYSTEM PHASE I OPERATION

References:
1. Letter from G. Jablonowski to J. Reising, "Radon Control System," dated January 07, 2003
2. Letter from T. Schneider to J. Reising, "Radon Control System," dated January 09, 2003

The purpose of this letter is to respond to the referenced letters above. The United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) requested that the Department of Energy (DOE) develop and submit a schedule and plan for testing of the Radon Control System (RCS). Specifically, this letter responds to the following: 1) DOE's commitment for the proper testing of the RCS facility and training of the operators prior to initiating continuous Phase I operation; 2) DOE's removal action goals and obligations under Removal Action #4; and 3) anticipated date for the continuous operation and the proposed objectives for the next performance testing.

Testing and Operator Training
The initial Hot Testing of the RCS facility was successfully completed on December 6 through 7, 2002. During this time, the system demonstrated the capability to reduce the concentration of radon in the headspace of Silos 1 and 2 from their initial radon concentration of 18.5 million pCi/liter and 19.6 million pCi/liter to 500,000 pCi/liter and

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890,000 pCi/liter, respectively. From this initial hot test, a number of engineering changes were deemed appropriate which were discussed and shared with the USEPA and OEPA during the Weekly teleconference calls following the hot test. The changes currently being implemented are the following:

1) Feedback circuitry for the monitoring of the heat tracing needs to be installed
2) Re-piping of the return lines from two Radiation Quantity Indicating Transmitters (RQIT)
3) Provision of an improved Programmable Logic Controller (PLC) interface between the desiccant dryer and the chiller is needed to enable improved operational monitoring of this equipment
4) Improvement of the cold weather operation of the chiller by providing greater heat capacity to the coolant loop is required to assure uninterrupted chiller operation
5) Placement of pressure control valves having a wider range of set points atop the Silos to allow a wider range of differential pressures between silos' headspace and the atmosphere during system startup

Planning for additional RCS hot performance testing is currently underway to test both the functioning of the above-defined changes and to ascertain system performance under an extended operating duration. The additional operators will be trained and qualified to operate the RCS prior to the start of the continuous operation.

The RCS will be operated continuously subject only to outages or downtime required by equipment failure, maintenance, emergencies, interconnections with the Transfer Tank Area (TTA), or bridge equipment, or when an outage is needed to add equipment or features necessary to improve or optimize the function of the RCS.

Removal Action Goals and Obligations

The schedule for the construction of the Balance of Plant (BOP) was examined, and it was determined that the activities on the top or in near proximity to the silo domes will be intermittent during the period from May 2003 to the estimated completion date for BOP construction in December 2003.

During periods when actual construction activities are occurring in the vicinity of the dome, the controlling criterion for RCS operation will be the maximum concentration of radon in the headspace of the silos that assures a dose rate of less than 10 mrem/hr on the surfaces of the domes.

After construction has been completed, the RCS will continue to operate in the same manner as during the construction period. However, operation of the RCS will only be controlled to the numerical limit of 10 mrem/hr during periods when personnel access to the dome is required. Access will be necessary to support a variety of activities including system operability testing, punch-list completion, Quality Assurance (QA) checks, training, pre-operational demonstrations, inspections and maintenance.

A limiting rate of 10 mrem/hr is established in the Remedial Action Work Plan for RCS Phase I Operation (October 2002) for the radiation level on top of the silo domes during any construction activity requiring personnel to work in the immediate vicinity of the Silo domes. The hot test demonstrated that a 10 mrem/hr rate at the dome surfaces would be associated with radon concentrations in the headspaces of approximately 3.4 million pCi/liter. DOE believes that the practice of controlling the radiation level atop the silos at 10 mrem/hr during periods when construction exposure is possible coupled with continuous operation during non-construction periods meets the intent of Removal Action 4.

Test Plan Objectives and Schedule
The performance test objectives for the next test run, to ensure RCS can sustain continuous operation, is outlined below:

- Operate at maximum design flow rates through the Silos, approximately 500 cfm/silo. Verify capability and process flow balances. Measure flow rates.
- Operate at maximum design flow rates through the dryers, approximately 1,000 cfm. Verify capability and process efficiency. Measure flow rates, temperature, and humidity of the stream entering and leaving the dryer.
- Operate at maximum design flow rates through the carbon beds, approximately 500 cfm/bed. Verify capability and process efficiency. Measure flow rates and the reduction of radon.
- Operate all equipment that did not operate during the initial Functional Hot Test.
- Evaluate the system repairs and enhancements made after the initial Functional Hot Test.
- Operate for an extended period of time to:
  - Demonstrate the capability to operate continuously
  - Establish timing and characteristics of carbon bed breakthrough
  - Determine the effective K factor for the carbon beds

Similar to the first hot test plan procedures conducted in December 2002, detailed test/operating procedures will be developed and approved based on the above performance objectives. These procedures are written in accordance with the Operations and Maintenance/Conduct of Operations guidelines.

All testing, validation of final procedures for Phase I operation, and training of the additional operating staff required to run the RCS must be completed prior to commencing the Contractor Management Assessment for the continuous RCS operation. Following a successful completion of the Contractor Management Assessment, the RCS is expected to go into continuous operation during the week of May 19.

DOE is committed to safe and timely Remedial Action and appreciates USEPA and OEPA's continuous feedback and interaction on matters that concern stakeholders and regulators.

Should you have any questions on the above matters, please contact Nina Akgündüz at (513) 648-3110.

Sincerely,

Johnny Reising

FCP:Akgündüz

Johnny W. Reising
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