Department of Energy

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AUG 16 2001

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

DOE-0816-01

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

Dear Mr. Jablonowski and Mr. Schneider:

REVISED DRAFT REMEDIAL ACTION WORK PLAN FOR RADON CONTROL SYSTEM PHASE 1 OPERATION

Reference: Letter from G. Jablonowski to J. W. Reising, "Disapproval of Revised Draft "Remedial Action Work Plan for Radon Control System (RCS) Phase 1 Operation," and "Responses to U.S. EPA Comments," dated July 23, 2001

Enclosed for your review and approval is the response to comment in the referenced letter. The subject document was approved by the Ohio Environmental Protection Agency (OEPA) on July 16, 2001.

The United States Environmental Protection Agency (USEPA) Comment: "When the emergency generator for the RCS is providing secondary power, there will be a time lag of at least a few seconds from the time when the generator starts to the time when it reaches full speed. The automatic transfer will then transfer the load from the primary to the secondary power source. During this period, all equipment motors for fans, blowers, valve and damper operators, and so on will stop. Typically, the system will signal alarms for either "Power Out" or "Fault." It is not clear how much time will elapse before all alarms are cleared and the system is restarted, assuming that there is no automatic restart for this system. Because electrical drawings are not included in the RA Work plan, it is difficult to estimate the system downtime in the event of a power outage. Also, it is not clear whether the programmable logic controller is powered through an uninterruptible

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power source or directly. The RA Work Plan should be revised to explain (1) how long the system will be down during a power outage and (2) the provisions made to minimize and measure associated releases of radon gas."

Response: Upon loss of primary power, the start-up sequence for the emergency generator will automatically be initiated. Approximately two minutes will be required for the startup sequence to be completed and the back-up generator to be supplying power to the RCS equipment. The Programmable Logic Controller (PLC) and the RCS controls are powered by an Uninterruptible Power Supply (UPS) with a battery backup. Process control and monitoring, including the stack monitoring system, and the dampers used to control silo headspace pressure, will remain in uninterrupted operation during transfer of main power to the emergency generator.

When power is lost, the exhaust/recirculation fans providing flow from the Silo 1 and 2 Headspaces through the RCS will cease operation; it will take approximately one minute for the fan to ramp down. The PLC will automatically close the Silo Supply Dampers, and open the Silo Exhaust Dampers. This will result in an "exhaust only" mode, directing flow through the RCS to the exhaust stack to prevent positive headspace pressure during ramp down of the fans. In the absence of ventilation from the exhaust fans, the only source of emissions to the atmosphere during the absence of power would be passive "breathing losses" from the silo headspaces. Since initial RCS Phase 1 operation will result in rapid reduction in headspace radon concentrations, the emission impact of the 1-2 minute lack of power will be minimal.

Once the emergency generator is online, the automatic restart sequence will be initiated to resume operation of the fans. The PLC will automatically notify designated on-call operations and maintenance personnel that a main power outage and transfer to backup power have occurred. Monitoring data will be available to quantify the emissions during transfer of power to the emergency generator.

The above details have been added to Section 1.3 of the revised draft Remedial Action Work Plan for RCS Phase 1 Operation. Replacement Pages 3 and 3(a) of the document, incorporating the necessary information, are enclosed.

If you have any questions, please contact Nina Akgündüz at (513) 648-3110.

Sincerely,

Johnny Reising

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Akgündüz

Enclosure: As Stated

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cc w/enclosure:
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N. Akgündüz, OH/FEMP
T. Schneider, OEPA-Dayton (three copies of enclosures)
F. Hodge, Tetra Tech
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T. Walsh, Fluor Fernald, Inc./MS46
ECDC, Fluor Fernald, Inc./MS52-7

The RCS Process has been designed so that its operation can be monitored and controlled remotely through the use a Programmable Logic Controller (PLC) / Human-Machine Interface (HMI) computer.

The PLC programming is designed to:

- Automatically monitor and control the unit operations within the RCS operating equipment to ensure correct operating conditions are maintained,
- Automatically switch between redundant process trains when operational, maintenance, or mechanical problems occur,
- Initiate carbon bed isolation and/or recirculation mode upon detection of an out-of-parameter radon level from radon monitoring instrumentation,
- Enunciate warning status alarms to inform operational personnel that conditions exist within acceptable design parameters, but outside desired operating conditions, and
- Enunciate emergency status alarms and automatically initiate system shutdown if conditions exist that are outside design parameters (e.g. unrelieved high-pressure in silos)

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1.3.1 In-line Radon Controllers

The In-line Radon Monitors are located in the ductwork prior to the Desiccant Dryer System and downstream of each of the four Carbon Beds to track the efficiency of the Carbon Bed System to remove radon. The individual carbon bed radon monitors are also used to control the flow of ventilated air to the Carbon Bed. In the event that an out-of-parameter high alarm condition is detected, the adjusting of the opposed blade damper on the inlet side of the carbon bed will automatically reduce the airflow through the affected bed. If the performance of the bed continues to degrade and an out-of-parameter high-high alarm is activated, the affected carbon bed discharge damper will close, taking it off-line. The HMI screen will provide information to the operator on the radon levels, the position of valves and any out-of parameter alarm conditions.

1.3.2 Process Pressure Controllers

The RCS Process has been designed so that equipment and associated ductwork that handle untreated air operates under negative pressure. The Process Pressure Controllers are used to monitor and control pressures throughout the RCS Process to ensure it operates within design parameters.

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