

**PROPOSED CHANGES IN THE COLLECTION OF DATA ASSOCIATED WITH
THE K-65 SILOS**

06/16/95

**DOE-1103-95
DOE-FN EPAS
3
LETTER**



Department of Energy
Fernald Environmental Management Project
 P. O. Box 398705
 Cincinnati, Ohio 45239-8705
 (513) 648-3155

JUN 16 1995

DOE-1103-95

Mr. James A. Saric, Remedial Project Director
 U.S. Environmental Protection Agency
 Region V - 5HRE-8J
 77 W. 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. Saric and Mr. Schneider:

PROPOSED CHANGES IN THE COLLECTION OF DATA ASSOCIATED WITH THE K-65 SILOS

In accordance with the Work Plan for Removal Action Number 4, the U.S. Department of Energy, Fernald Area Office (DOE-FN) committed to a modified monitoring program which included the collection and analysis of radon concentrations within the silo head space and at numerous locations both on-property and off-property. In addition, the monitoring program was designed to collect non-radon data which included temperature, pressure, and humidity measurements inside of Silos 1 and 2 headspace. This data was collected on a continuous basis and reported in the Consolidated Consent Agreement/Federal Facility Compliance Agreement monthly report to provide the U.S. Environmental Protection Agency (U.S. EPA) and the Ohio Environmental Protection Agency (OEPA) with critical information pertaining to the control and abatement of radon emissions at the K-65 silos.

Initially, all the data was used to verify the effectiveness of the bentonite to mitigate radon releases from the K-65 Silos by performing several related evaluations: (1) the absolute reduction in radon concentrations in each of the K-65 Silos (Silo 1 has seen an average reduction of more than 90 percent and Silo 2 has had an average reduction of more than 86 percent); (2) reduction in radon concentrations at the K-65 exclusion fence (observed reductions are on the order of 60 percent); (3) observed radon concentrations at the site property line; (4) reduction in gamma ray measurements on top of the Silo domes; (5) temperature and pressure measurements inside and outside the K-65 Silos; and (6) measurements of humidity within the Silo domes. All of this data was intended to serve as the basis for evaluating the effectiveness.

The objectives of collection of the radon concentrations data are obvious, but what may not be so apparent is the need for the humidity, temperature, and pressure data. The temperature and pressure data were initially thought to be required to determine the quantity of radon that is actually being released from the silos and the humidity data was used as a means to determine if the bentonite was retaining moisture. The temperature and pressure data were not found to be significant in the radon release and transport model (developed jointly by the U.S. EPA and U.S. DOE). Additionally, the humidity data has shown essentially constant values, but was not considered as significant as the radon concentration data in determining whether the bentonite has shown any signs of drying out. After three years of data collection and evaluation it is clear that: (1) the bentonite was effective in reducing the radon released; (2) the bentonite remains wet at approximately the same moisture content; (3) the performance goal has been achieved; (4) the silos maintain a pressure gradient, which is correlated strongly with radon concentrations; and (5) the estimates of the radon concentrations at the nearest resident are conservative and below background.

There appears to be no additional need at this time to continue to collect the temperature, pressure and humidity data. The radon concentration in the head space and at the surrounding monitor locations will continue to be collected. As a result of three years of data collection and evaluation, the position of DOE-FN is that the headspace and environmental locations radon concentrations are the only significant data points needed to determine the effectiveness of the bentonite.

As discussed with you on June 8, 1995, the Data Logging System (DLS), used to collect the non-radon data, malfunctioned on May 12, 1995, as a result of equipment failure. The system has not been operable since that time. Currently, no data is being collected by the DLS. The silo radon headspace concentrations are currently being collected manually. The radon data from two-system radon monitors are electronically downloaded at two-day intervals (dictated by the internal memory capacity of the instrument). This data is also being concurrently sent to a printer as a hard copy backup. The non-radon data (temperature, differential pressure, and humidity) from within the silos, however, cannot be electronically collected in this same manner.

Due to the condition of the DLS and the insignificance of the non-radon data, the DOE-FN is formally requesting relief from collecting and reporting of non-radon parameter data. The DOE-FN hopes that the information provided here along with a commitment to include an evaluation of general monitoring needs in the final report for the Operable Unit 4 (OU4) Vitrification Pilot Plant, will satisfy U.S. EPA concerns about data collection associated with the K-65 Silos.

If you have any additional questions regarding this submittal, please contact Randi Allen at (513) 648-3102.

Sincerely,

Johnny Reising

for

Jack R. Craig
Fernald Remediation Action
Project Manager

FN:R.C. Janke

cc:

- K. H. Chaney, EM-423/GTN
- B. Skokan, EM-423/GTN
- G. Jablonowski, USEPA-V, 5HRE-8J
- J. Kwasniewski, OEPA-Columbus
- P. Harris, OEPA-Dayton
- M. Proffitt, OEPA-Dayton
- S. McClellan, PRC
- R. Cohen, GeoTrans
- F. Bell, ATSDR
- R. Owen, ODO
- R. D. George, FERMCO/52-2
- T. Hagen, FERMCO/65-2
- C. Little, FERMCO
- M. Yates, FERMCO/9
- AR Coordinator