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TRANSMITTAL LETTER OF COMMENTS FOR RESPONSE TO FFCA ITEMS

12/17/86

USEPA/DOE-FN
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LETTER

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

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REPLY TO THE ATTENTION OF:

17 DEC 1986

Mr. James A. Reafsnyder
Site Manager
U.S. Department of Energy
Feed Materials Production Center
P.O. Box E
Oak Ridge, Tennessee 37831

Dear Mr. Reafsnyder:

We have completed our review of the Department of Energy (DOE) submittals dated August 15, 1986, August 26, 1986, and September 12, 1986. These documents are the 30 day, 45 day and 60 day deliverables that the DOE provided as required by the Federal Facilities Compliance Agreement (FFCA). The documents reviewed include:

- Response to FFCA Item 1B of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Actions.
- Response to FFCA Items B1-B4 of Clean Air Act (CAA) Actions.
- Response to FFCA Items A1-A7 of Resource Conservation and Recovery Act (RCRA) Actions.
- Response to FFCA Items A1-A3 of Radiation Discharge Information.
- Response to FFCA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Item 2C - Laboratory Certification.
- Response to FFCA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Item 1A- Procedures and practices to control radioactive emissions.
- Response to FFCA Clean Air Act Item F-List of environmental air monitoring equipment.

The attached comments address our concerns with each submittal. They have been segregated by specific document to permit you to respond more easily to the comment. Two documents, responses to CERCLA Items 1A and 1B have been forwarded to EPA's contractors for additional review. Additional comments on these two items will be made at a later date. Preliminary comments on these two documents are enclosed.

DEC 23 1986

Pursuant to the Reports and Record Keeping provisions of the Federal Facilities Compliance Agreement, within thirty days of receipt of written notice of U.S.EPA's disapproval of any plan or report subject to our review and approval, DOE is required to submit a revised plan incorporating the required modifications or additions. The following plans and reports are hereby disapproved:

a. Item 1B CERCLA submittal and
b. Items A1-A7 RCRA submittals

The Item 1A CERCLA submittal is neither approved, nor disapproved at this time. USEPA will make that determination following receipt of a report from its contractors.

We look forward to your correcting the noted deficiencies in a timely fashion. If my staff can be of assistance to you in complying with the terms of our agreement or if you have any questions regarding our comments please contact William Franz, Chief, Environmental Review Branch, at 312/886-7500 (commercial) or 886-7500 (FTS).

Sincerely yours,

for Valdas V. Adamkus
Regional Administrator

Enclosure

U.S. Environmental Protection Agency Region V Response to the 30 day, 45 day and 60 day Deliverables from the Department of Energy

The documents submitted to the U.S. Environmental Protection Agency (USEPA) for review and approval discussed below were prepared as part of the Federal Facilities Compliance Agreement Docket No. VW-86-C-020 for the Feed Materials Production Center, at Fernald, Ohio.

° Item 1B of CERCLA Section

This report was prepared to address the need to develop control plans for the K-65 storage silos and the thorium storage structures. The control plans are for interim remedial measures. Comments on the report are provided below. Additional comments will be provided following review of the report by USEPA contractors.

K-65 Storage Silos

Planned Implementation Schedule

The report does not propose an implementation schedule for selection and installment of interim controls at the K-65 silos in violation of the agreement. Conceptual design, final design and installment are all contingent upon completion of temperature and pressure monitoring. The report fails to propose a schedule for completing this necessary monitoring. Without this critical information it is impossible to determine the acceptability of DOE's interim control and implementation schedule.

Interim Control of Radioactive Emissions

In order to fully assess and evaluate the proposed control measures we should be provided with the feasibility study assessing the merits of the various alternative control systems.

During the installation of the fluid roofing system the silos should be monitored to alert the contractors and DOE of any releases of radon gases, to record the levels of radon, and implement any emergency plans. Information and monitoring results of any such releases should be provided to the Ohio Environmental Protection Agency (EPA) and the Ohio Department of Public Health (DPH) and this Agency. The date(s) for applying the fluid roofing membrane should be provided to our Agency as well as Ohio EPA and Ohio DPH.

Section 4.2 provides a prediction of the radon concentration in the K-65 silos. DOE should provide the detailed calculations of these estimates.

Interim Controls to Ensure Structural Integrity

This report indicates that the base slab and walls of the K-65 silos should be structurally stable under the existing static loads for approximately 5 to 10 years. The report should provide information on the time frame for making a final decision regarding the ultimate solution to the disposal of the material in the K-65 silos.

The information provided on the background of the K-65 silos indicates that the silos have suffered deterioration. It should be determined whether or not the deterioration of the silos has led to materials escaping from them. The structural analysis considers the base to be in better condition than the dome and walls. If the base has deteriorated, leakage of radium waste could occur. It should be determined whether materials have escaped or migrated from the silos. Information should also be provided on the fate of the decant water during the filling of the silos.

The report needs to clarify some of the assumptions made regarding the structural integrity of the K-65 silos. For instance, ignoring holes in the concrete may be necessary for modeling the silos, however, in actuality these holes must be considered as potential emission points. Have the silos been inspected to determine whether the holes can be ignored?

Emergency Procedures for Unplanned Releases

The emergency procedures for unplanned radioactive releases from the K-65 silos are deficient. At a minimum the plan should describe the actions to be taken under differing scenarios ranging from uncontrolled venting to collapse of the silos. The plan must describe arrangements made with local emergency relief organizations, fire and police departments and local hospitals to coordinate emergency services. The plan must list the name, address and phone number of each emergency coordinator, and the order in which they should be contacted and also when they will assume responsibility. The plan should include a list of all emergency and decontamination equipment at the facility, including the location and brief description of the equipment. Finally, the plan should include an evacuation plan for facility personnel. The plan should describe signals to be used to begin evacuation, and the routes and alternate routes which would be used. Facility staff and local area officials should be trained in the emergency and evacuation procedures.

An evacuation plan for the surrounding community should also be conceptualized. A schedule for testing the plan should be developed. Emergency plans are only as good as their proven workability. The DOE should plan drills that involve offsite response groups to test these accident plans much as at nuclear power plants.

Section 7.3 provides definitions of accidents that could occur. We would prefer the use of the standard terminology (Unusual Event, Alert, Site Area Emergency and General Emergency).

The USEPA and Ohio EPA should be included in the notifications for all levels of accidents (Unusual Event to General Emergency). Section 7.4 omitted the USEPA and Ohio EPA.

The revised submittal must address the recommendations made by the DOE Release Incident Investigation Board in its report on the April 25, 1986, radon gas release at FMPC. DOE must identify how it will correct the light and bell alarm system deficiencies noted in the report in order to provide immediate detection and assessment of radon emissions.

Radon Monitoring Program

In addition to direct measurements of outdoor radon levels, there should be modeling based upon the K-65 emission rates. These rates if not now known, should be determined.

There is a lack of radon monitors to the southeast; additional monitors should be added in this area.

Table 1, RADON EMISSION CONTROL - The estimated schedule for completion of the Conceptual Design is unclear. "The document states 90 days after data is obtained and analyzed." A specific date should be set.

Thorium Storage Structures

Planned Implementations Schedule

The report fails to set out a schedule for analysis of the plant and building frame for structural support of the bins. In addition, a proposed schedule for installation of interim control measures, i.e., carbon filters and/or HEPA filters has not been provided.

Section 3 outlines several options for short and long-term storage of the thorium. Are the timeframes in Table 2 applicable to these options?

The Table 2 implementation schedule is unusually long. What will be done during Task 3 and can this task be run concurrent with Task 2? The DOE should explain why it will take eight months to complete Task 4, the repackaging effort. Is the schedule driven by a need to free up storage space for the material? If so, an alternate storage plan must be considered.

From our review of this portion of the report it appears that control of releases of thoron gas will not occur until May of 1987. Interim measures must be implemented to control releases before May, 1987. Where drums have deteriorated the material must be transferred promptly, rather than awaiting the Table 2 schedule.

Emergency Plan for Unplanned Releases

Comments on the emergency procedures developed for the K-65 silos are also applicable to this section of the deliverable.

Radon Monitoring Program

Section 6 fails to mention a thoron monitoring program. Although thoron has only a 55 second half-life, one of its decay products, lead-212, has a 10.64 hour half-life and could be expected to move a significant distance downwind. Thoron should be monitored, especially when there are uncontrolled sources such as the silo and bins. Alpha track will not allow for a specific thoron determination so another method will have to be found.

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General Comments

There are several terms in the report that should be defined: e.g.,AMK, ES&H, PMP, and HS.

The Ohio Environmental Protection Agency should be included in the notifications for all levels of accidents at the Feed Materials Production Center.

The report should provide information on the windspeed and earthquake levels used in the analysis.

° Deliverable for Items B1-B4 of Clean Air Act Section

No Comment

° Deliverable for Item A1-A7 of RCRA Section

Item A.1

DOE has failed to comply with Item A.1 in violation of the Federal Facilities Compliance Agreement. Contrary to the position taken by DOE, under the Agreement DOE has thirty days, not one year, to make a hazardous waste determination on all waste streams currently generated at the facility. Subsequent to execution of the Agreement, EPA provided further explanation of Item A.1 to clarify that the thirty day period applied only to waste streams currently generated at the facility. As additional streams are generated in the future, DOE must make a hazardous waste determination at the time of start-up of the waste stream.

Lab results from hazardous waste determinations should be submitted to both USEPA and Ohio EPA once they are completed.

The determination of waste streams, Table-1, Hazardous Waste Determination at FMPC, should be modified to identify the location of the process generating each of the listed waste streams.

Final determination of compliance with operating records requirements, and other container storage provisions, can only be made following completion of the hazardous waste determination for the 35,000 drums of process waste and 2500 drums of general waste.

Drums containing hazardous waste must be stored in a configuration which permits inspection of each container for leaks and deterioration of each container. The discussion in 4.1 Sampling Schedule and Locations indicates that many of the 37,250 drums may be inaccessible. While the contents of these drums have not been determined to be hazardous waste, it would be prudent to follow the hazardous waste container storage requirements. This is particularly true as DOE proposes a year-long program to complete the hazadous waste determination. The Part B permit application identifies two hazardous waste container storage areas with a combined capacity of 10,300 gallons. DOE is potentially storing over a million gallons of hazardous waste. The steps DOE proposes to take to deal with the excess capacity must be outlined and concurred with by our Agency.

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Item A.2

Operation of the incinerator should not resume without a prior hazardous waste determination of the materials to be incinerated. Operation must be in full compliance with the Clean Air Act and the Resource Conservation and Recovery Act (RCRA). Information submitted to our Agency following negotiation of the Federal Facility Compliance Agreement indicates that hazardous waste including spent solvents containing 1,1,1 trichloroethane (F001, F002), mineral spirits (D001) or paint thinners (D001) and a kerosene/tributyl phosphate mixture were burned in the past at the oil burner incinerator. This information was submitted to the Ohio Environmental Protection Agency by cover letter dated August 30, 1982, along with a statement that DOE considered the incinerator exempt from RCRA regulations.

The information was submitted to the U.S. EPA on August 19, 1986, in response to a Notice of Violation issued pursuant to Section 113 of the Clean Air Act. Notwithstanding DOE's prior determination that materials burned at the oil incinerator included hazardous waste materials, DOE's Part B Permit Application, filed November 4, 1985, did not include the oil burner incinerator as a hazardous waste process. The Part B Permit Application must be modified if DOE proposes to continue burning hazardous waste in the incinerator.

Waste analysis results from liquid wastes disposed of at the incinerator and those wastes disposed of in the landfill must be submitted to USEPA and the Ohio EPA.

Item A.3

We will review the operating record for compliance with 40 CFR 265.73 and parallel State program requirements. As hazardous waste determinations are made on the pits, drums, tanks, and incinerators at the facility, the operating record must be revised accordingly.

The revised operating record includes all the information as required by 40 CFR 265.73; however, the format must allow for sufficient space to note the common name of the waste, description of the method(s) used to treat, store or dispose of any hazardous waste, and any comments.

Item A.4

Copies of any manifests accompanying incoming shipments of hazardous waste should be submitted to USEPA and the Ohio EPA.

Item A.6

Results from lab tests on surface runoff collected at the landfill prior to discharge must be submitted to USEPA and the Ohio EPA when it is available.

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Item A.7

The compliance agreement calls for DOE to prepare and maintain onsite, a written outline for a groundwater quality assessment program for Waste Pit #4. This pit is subject to RCRA regulations for interim status landfills (40 CFR 265.300). Our Agency must be capable of identifying whether or not hazardous waste or hazardous waste constituents have entered groundwater, rate and extent of migration, and the concentration of hazardous waste or hazardous waste constituents in the groundwater.

In section 3.2 on Well Resampling or Sampling of Additional Existing Wells, page 47, paragraph 1, it should be specified which wells will be sampled quarterly and these wells should be indicated on a site map. In addition, Section 3.2 page 47, paragraph 2 is unclear. Are the wells installed to monitor Pit 4 going to be used to confirm the presence of hazardous constituents in the groundwater detected in other wells?

We concur with the selection of the hollow stem auger drilling technique for installation of new wells at the site. A method for avoiding or controlling cross-contamination during drilling and installation of wells should be proposed. The selection of stainless steel for the well pipe and screen is appropriate. The use of PVC is also appropriate as long as the PVC section of the well is in the unsaturated zone, and threaded couplings are used (no glue).

We have also found that the groundwater quality assessment program does not adhere to 40 CFR 265.93. The following inadequacies were identified:

A. If statistically significant changes are detected in the indicator parameters (pH, specific conductance, TOX, TOC) using the test, the facility must immediately resample and determine if this change was due to lab error. If a significant change in the indicator parameters is confirmed, the facility must enter assessment monitoring. A statistical re-evaluation of existing data using the Wilcoxon Two-Sampling Rank Sum Test does not comply with 40 CFR 265.93(c)(2);

B. Upon identification of hazardous waste or hazardous waste constituents in the groundwater, additional wells should be placed to define the limits of the contaminant plume. A minimum of seven well clusters should be installed, three downgradient of the well which showed a significant change and four clusters placed laterally. In the downgradient direction, two clusters should be completed within the plume and one cluster outside the plume. In the lateral direction, two clusters should be completed on both sides of the triggering well; one inside the plume and one beyond the limits of the plume. These wells should be installed using hollow stem augers. Rotary wash is not an acceptable drilling method;

C. The initial round of sampling should include analysis of Table 1, Appendix VII, and any hazardous wastes found at 40 CFR 261.33. Appendix VIII analysis should be updated to Appendix IX analysis, 40 CFR Part 264 (51 FR 26632, July 24, 1986).

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° Deliverables for Item A1-A3 of Radiation Discharge Information Section

Section 2.0 of the Environmental Monitoring Program at FMPC, sets forth the environmental standards used by DOE in assessing the significance of radiation exposure to the public as a result of releases from DOE facilities. DOE presently relies upon guidance by its Agency entitled "Radiation Standards for the protection of the public in the vicinity of DOE facilities." Under Section 121 the Superfund Amendment and Reauthorization Act of 1986, which amends CERCLA, DOE will be required, as part of the Remedial Investigation/Feasibility Study process, to utilize standards, requirements, criteria, or limitations developed by EPA when assessing the significance of radiation exposure to the public resulting from FMPC operations.

° Deliverables for Item 2C of CERCLA Section

It should be assured that the two contract labs listed will take radioactive samples or mixed radioactive and chemical samples. If these labs do not have these capabilities, additional labs that meet all the criteria must be found.

° Deliverables for Item 1A of CERCLA Section

For the K-65 storage area, the Department of Energy (DOE) proposes to restrict access, limit work time near the silos, and require prior technical review for any operations at or on the silos. For the thorium storage areas, work permits will be required for personnel to enter these areas. The opening of drums, silos, bins, etc., will require the development of a workplan prior to proceeding with any of these operations. These measures only address the minimization of worker exposure, but fails to address reduction or elimination of releases. No controls on known release points are discussed and no time tables for institution of controls are proposed.

The fundamental philosophy apparent in the DOE document is that air releases of radioactive materials can continue as long as access and exposure times are controlled. This is faulty health and safety practice and contrary to our compliance agreement which states,

> "U.S. DOE shall develop effective operation and maintenance procedures and work practices to control radioactive emissions, including radon gas and radon decay products, from production materials and onsite wastes to maintain all exposures As Low As Reasonably Achievable (ALARA). Within sixty (60) days of the effective date of this agreement, U.S. DOE shall implement effective operation and maintenance procedures and work practices for the control of radioactive emissions, including radon gas and radon decay product emissions. Progress reports shall be provided to U.S. EPA quarterly."

Again we note that this deliverable is presently undergoing further review by EPA contractors. Comments will be forwarded to you following their review. 9

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We note generally however that this document fails to address the deficiencies in operation and maintenance procedures and work practices that were identified by the DOE Release Incident Investigation Board who investigated the April 25, 1986, radon gas release from the K-65 silos. According to the Board report, results of its findings were forwarded to FMPC on July 7, 1986, two months prior to the Item 1A CERCLA submittal. It should be explained why this submittal fails to address the deficiencies noted by DOE's own investigation panel.

° Deliverables for Item F. of Clean Air Act Section

O&M Procedures for Air Pollution Control Equipment

The ambient air monitoring plan is satisfactory in regards to the Operation and Maintenance Procedures and the quality assurance plan.

The ambient air monitoring network is not an emergency response network to notify the public in the event of an accident; this should be noted in the document.