

3004

**RESPONSE TO THE OHIO COMMENTS
OPERABLE UNIT 4 TREATABILITY STUDY
WORK PLAN FOR THE VITRIFICATION OF THE
RESIDUES FROM SILOS 1, 2, AND 3**

3-24-92

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ENCLOSURE**

Response to the Ohio
Operable Unit 4 Treatability Study Work Plan
for the Vitrification of the Residues
from Silos 1, 2, and 3

3004

General Comments

1. Ohio EPA Comment: How does DOE intend to conduct an evaluation of the vitrified wastes' ability to meet disposal requirements for low-level radioactive waste? The work plan fails to incorporate the PCT test proposed in the OU 1 Treatability Study for vitrified material. The work plan should incorporate the requirements of the NRC Technical Position on Waste Form (i.e., durability). Additionally, DOE should consider vitrified product requirements developed at other radioactive waste vitrification facilities, such as Savannah River Plant. These product requirements may be TBC's.

Response: Will modify work plan. The PCT will be performed in duplicate for each testing sequence in the same manner that the TCLP will be performed.

The NRC Technical Position on Waste Form (i.e. durability) is specific to cement stabilization waste forms.

2. Ohio EPA Comment: The PNL criteria are very general and need to be more specific. The lack of specific requirements during testing will make it very difficult to conduct comparisons between the various vitrification batches. DOE needs to be aware of how this data will be incorporated into the FS for comparisons between and within waste types. The TCLP appears to be the only test consistent between the cementation and vitrification treatment technologies. DOE should consider additional tests which are applicable to both waste types. These tests should allow for the comparison of both treatment options' ability to meet the nine evaluation criteria in the FS.

Response: No change required. Durability type tests are being conducted for both waste forms, PCT for vitrified waste and the freeze/thaw and wet/dry tests for cementation waste. The data from these tests will be utilized in the fate and transport modeling required to perform the detailed analysis of alternatives.

3. Ohio EPA Comment: Until such time as the work plan is complete and all procedures are included, it cannot be approved by the Ohio EPA. Procedures for some tests have been included in other Treatability Studies but still are not in this work plan. DOE needs to expedite the development and inclusion of procedures into this work plan.

Response: Will modify work plan. Procedures are included as an appendix.

4. Ohio EPA Comment: It is unclear how the fact that vitrification is BDAT (see response to OEPA General Comment #2 and Specific Comments #24 & #25) will be incorporated into the Feasibility Study. Does this mean that as long as vitrification is possible for a specific waste stream it will be the preferred alternative? A reference for the determination of vitrification as BDAT should be provided.

Response: No change required. The U.S. EPA has promulgated vitrification as the BDAT for high-level radioactive mixed waste, Federal Register June 1, 1990, and a BDAT for arsenic-containing hazardous wastes, Federal Register, May, 1990.

The remedial alternative that includes vitrification as the treatment option will be evaluated according to the criteria as required to complete the FS. Vitrification as the BDAT will be considered during evaluation of the alternatives along with all other risk-based criteria required to complete the FS.

Specific Comments

1. Ohio EPA Comment: Figure 1-1, pg. 5, 3-3: Add thorium to the bullet.

Response: Will modify work plan to add thorium to removal action objectives.

2. Ohio EPA Comment: Section 3.3, pg. 24, bullets: The procedures for these analyses need to be included in this work plan. See general comment #3.

Response: Will modify work plan. Procedures are included as an appendix.

3. Ohio EPA Comment: Section 4.1, pg. 27, bullets: How will the isotopic uranium and thorium be analyzed via gamma scan? An explanation of this needs to be incorporated into the text.

Response: Will modify work plan. Original text was not correct.

4. Ohio EPA Comment: Section 4.1, pg. 28, bullets: The bullets should include all isotopes detected via gamma scan during the previous K-65 vitrification study (i.e., Pb-214 & Bi-214). See Table 4-3.

Response: Will modify work plan.

5. Ohio EPA Comment: Section 4.2, pg. 35, last bullet: a) No Section 1.3.4 exists within this work plan. Please correct. b) The condensate should be analyzed for the full HSL and full RAD as well as the additional radionuclides detected in the previous vitrification study (see comment #4).

Response: a) Will modify. Should be 1.4.4.
b) No change required. HSL and radiological analysis are included in the required analyses.

6. Ohio EPA Comment: REFERENCES. p. 54: Add "Characteristics of Fernald's K-65 Residue Before, During, and After Vitrification" to the reference list.

Response: Will add to references.