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**RECLASSIFICATION OF FERNALD ENVIRONMENTAL MANAGEMENT PROJ
U308 RESIDUES**

06/11/1996

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LETTER

OEPA



Department of Energy

Ohio Field Office
Fernald Area Office

P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155



JUN 11 1996

DOE-1970-96

Mr. Paul Pardi, Group Leader
Southwest District Office
Division of Hazardous Waste Management
Ohio Environmental Protection Agency
401 East Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Pardi:

RECLASSIFICATION OF FERNALD ENVIRONMENTAL MANAGEMENT PROJECT U_3O_8 RESIDUES

The Fernald Environmental Management Project (FEMP) is providing notification to the Ohio Environmental Protection Agency (OEPA) on the reclassification of a portion of the U_3O_8 residues (1341 pounds) previously characterized as mixed waste in our Sitewide Waste Information and Forecasting and Tracking System (SWIFTS) data inventory. This reclassification was discussed in a telephone conversation between John Sattler of the Department of Energy, Fernald Area Office (DOE-FN) and yourself on May 16, 1996. The reclassification results from the intended use of the U_3O_8 as an ingredient in an industrial process to make a product. Therefore, the U_3O_8 would not be classified as a waste, but rather a material. This is consistent with the information provided in Ohio Administrative Code (OAC) 3745-51-01 (C)(5)(a) whereby a material is defined as being "employed as an ingredient ... in an industrial process to make a product."

The U_3O_8 is triuranium oxide which occurs in a powder form ranging in color from olive green to black. The U_3O_8 is insoluble in water and soluble in nitric or sulfuric acid. The material has a specific gravity of 8.39 and decomposes to uranium dioxide when heated to approximately 1300 degrees centigrade.

The U_3O_8 which the FEMP reclassified resulted from the Plant 5 crucible burnout process. The burnout process occurred during the Plant 5 metal casting process when uranium metal in a crucible was heated in an induction furnace to a molten state. A plug in the bottom of the crucible was then sheared allowing the molten metal to flow into a graphite mold located directly beneath the crucible. The crucible was cleaned by inverting it and oxidizing any residue remaining on the crucible's interior surface with a flame from a natural gas fired source.

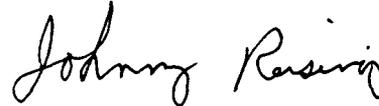
The U_3O_8 was originally characterized as mixed waste since the arsenic concentration (5.34 mg/l) exceeded the toxicity characteristic concentration of 5.0 mg/l. The FEMP believes the original characterization was premature since the U_3O_8 can be used without reclamation by a company in the United States to produce UF_4 , a step in their process of making UF_6 for commercial use.

The company uses a similar process as the FEMP employed to make UF_4 . The FEMP converted the U_3O_8 into UO_3 and then used a hydrofluorination process to produce UF_4 . The company's process converts the U_3O_8 into UO_2 and then uses a hydrofluorination process to produce UF_4 .

The FEMP believes that since the company uses the U_3O_8 as a feedstock or ingredient in their UF_4 production process, the U_3O_8 residues should be classified as product nuclear material. In addition, the company has stated a specific desire to obtain the residues. The FEMP intends to ship the U_3O_8 by the end of June 1996.

If you or your staff have any questions or require additional information, please contact John Sattler at (513) 648-3145 prior to the shipment.

Sincerely,



Johnny W. Reising
Associate Director
Environmental Management

FN:Sattler

P. Harris, OEPA, Dayton
G. Mitchell, OEPA-Dayton
T. Schneider, OEPA-Dayton
J. Saric, USEPA-V, SRF-5J
M. Gareis, DOE-FN
P. Yerace, DOE-FN
T. Hagen, FERMCO/65-2
S. Kaushiva, FERMCO/28
AR Coordinator/78