

US EPA ARCHIVE DOCUMENT

**U.S. Department of Energy
Fernald Environmental Management Project
Operable Unit 3
Fernald, Ohio
(July 22, 1994)**

Facility/Unit Type: Uranium metal product manufacturer
Contaminants: Uranium and thorium and their decay products, along with various trace metals, solvents, PCBs, and asbestos
Media: Air, groundwater, surface water and sediments, and soil
Remedy: Removal of gross surface contaminants from material in facilities, dismantlement of facilities, and interim storage for the non-recoverable or non-recyclable wastes until a final decision concerning waste disposition

FACILITY DESCRIPTION

The Fernald Environmental Management Project (FEMP) is divided into five operable units, of which Operable Unit 3 (OU3) is one, under investigation pursuant to an amended Consent Agreement between DOE and EPA. Approximately 200 buildings and structures are located at the site and are included in the scope of OU3. While DOE maintains an active maintenance program, the former uranium processing support facilities contained within OU3 are, in general, at or beyond their design life and in a state of advancing deterioration. These conditions indicate an increasing probability of future releases of hazardous substances to the environment due to structural collapse or other failure mechanisms.

The FEMP is a government-owned, contractor-operated federal facility that produced high-purity uranium metal products for DOE and its predecessor agencies from 1952 until 1989. Thorium was also processed on-site, however, on a smaller scale. The production operations generated a wide variety of waste materials containing both radiological and chemical constituents. Production activities were stopped in 1989, and the production mission of the facility was formally ended in 1991.

The FEMP is located on a 1,050 acre site in a rural agricultural area approximately 18 miles northwest of Cincinnati, Ohio. The land adjacent to the site is primarily devoted to open land use such as agriculture and recreation, however, there is some commercial activity. Industrial usage is concentrated in the areas south of the FEMP in Fernald and in a small industrial park. An estimated 23,000 residents live within a 5-mile radius of the site.

EXPOSURE PATHWAYS

Contaminants in OU3 could potentially migrate via numerous pathways. Exposure via air could include inhalation, dermal contact, and ingestion. Exposure via groundwater could include ingestion, inhalation and dermal contact during showering, dermal contact during incidental activities, and human consumption of livestock and crops that used groundwater. Exposure via surface water and sediments could include dermal contact during recreational activities, direct radiation exposure, and direct human consumption of contaminated water, sediments ingestion, consumption of livestock and crops watered with contaminated surface waters, and consumption of fish from contaminated surface waters. Exposure via soil could include incidental ingestion, pica, dermal contact, and direct radiation.

CONTAMINATION DETECTED AND CLEANUP GOALS

Media	Estimated Volume	Contaminant	Maximum Concentration (l)	Action Level	Cleanup Goal	Point of Compliance
Groundwater and soil	Not given	Uranium Thorium Metals Solvents PCBs Asbestos	Not given	Not given	Not given	Not given

SELECTED REMEDY

The most significant potential contaminants in OU3 are expected to be uranium and thorium and their decay products, along with various trace metals, solvents, PCBs, and asbestos. The selected interim remedy consists primarily of the excavating of gross surface contaminants from material in facilities, dismantlement of facilities, and interim storage for the non-recoverable or non-recyclable wastes until a final decision concerning waste disposition has been made.

After above-grade decontamination and dismantlement, foundations, slabs, and pads would be decontaminated or stabilized to minimize further soil contamination. Materials resulting from dismantlement would be segregated into two groups: one would go to a interim storage facility until the final remedial action for OU3; the other would be containerized and transported off-site. To address the public's concern regarding a potential increase in airborne radionuclides concentrations above natural background levels, stringent engineering controls will be applied to ensure the safety of workers and the general public.

Decontamination and dismantlement actions would take approximately 16 years and cost approximately \$1.5 million.

INNOVATIVE TECHNOLOGIES CONSIDERED

None.

PUBLIC PARTICIPATION

The proposed plan/environmental assessment for interim remedial action was developed and submitted to the public for review and comment on December 8, 1993. A notice of availability for a 30-day public comment period was published on December 8, 1993 in the legal sections of the *Cincinnati Enquirer*, *Hamilton Journal-News*, and *Harrison Press* newspapers. A second notice was published in two of the newspapers on December 15, 1993 and in the third newspaper on January 2, 1994. Also on December 15, 1993 an announcement of the public comment period and a fact sheet were mailed to approximately 1,000 stakeholders within the 3-mile radius of the site as well as other key stakeholders and the media. During the public meeting which began on January 5, 1994, DOE extended the public comment period another 30 days until February 8, 1994. Many public comments were received and considered. Issues of particular concern to the public were material transportation, interim storage facilities, air monitoring, and integration of the requirements of CERCLA and NEPA. To provide more information on the regulatory process, DOE held a roundtable meeting on January 24, 1994. The comments received resulted in no significant changes to the interim remedy.

NEXT STEPS

Submittal and approval of an interim remedial design/remedial action plan.

KEY WORDS:

groundwater, soil; uranium, thorium, PCBs; direct contact, dermal contact, inhalation, radiation, ingestion; excavation, interim remedy, dismantlement, decontamination

CONTACT:

James Saric
U.S. EPA, Region V
77 W. Jackson Boulevard
Chicago, IL 60604