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PROGRESS REPORT OPERABLE UNIT 1 WASTE PIT AREA JUNE 1994

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PROGRESS REPORT

JUNE 1994

Operable Unit 1
WASTE PIT AREA

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Introduction

The Remedial Investigation/Feasibility Study (RI/FS) is the blueprint for cleanup at the U.S. Department of Energy's Fernald Environmental Management Project. The objective of the Remedial Investigation is to develop a comprehensive understanding of the nature of stored waste materials, the extent to which the surrounding environment has been impacted, and the potential threat that the materials and contaminated media pose to human health and the environment.

The Feasibility Study utilizes the data provided in the Remedial Investigation report to develop and evaluate cleanup alternatives that are protective of human health and the environment.

To promote a structured and expeditious cleanup of the Fernald site, the facility and the environmental issues associated with it have been segmented into five operable units. Operable unit is a term used to logically group similar environmental issues at a cleanup site. Separate RI/FS documentation, including RI and FS reports and Records of Decision, will be issued for each of Fernald's five operable units.

Records of Decision are issued by the U.S. EPA, and is the document that formally announces the preferred cleanup alternative for an operable unit and the reasons for its selection.

Following is a progress report on Operable Unit 1 including its history, the current status of RI/FS activities, and cleanup alternatives under consideration.

Background

Operable Unit 1 consists of Waste Pits 1, 2, 3, 4, 5, and 6; the Burn Pit (used for the disposal and burning of waste); the Clearwell (a settling basin for surface water runoff); miscellaneous structures and facilities such as berms, liners, concrete pads, underground piping, utilities, railroad tracks, fencing; and soil within the Operable Unit 1 boundary.

Operable Unit 1 is located in the northwest quadrant of the Fernald site (west of the former production area) and covers approximately 37 acres. Paddy's Run, an intermittent tributary of the Great Miami River, runs along the west side of Fernald property between Operable Unit 1 and the site boundary.

The six waste pits, built between 1952 and 1979, were used for storing low-level radioactive wastes generated by the various chemical and metallurgical processes used at the facility for uranium production operations. Two types of disposal methods were generally used in placing wastes into the pits: (1) a "wet" system for slurries where the wastes were pumped to the pit, and (2) "dry" backfill-type operations. All pits have been closed and no waste has been placed in any of the pits since the mid-1980s.

Waste Pits 1, 2, and 3 are covered with soil. Waste Pit 4 is lined with bentonite clay and covered with a synthetic cap. Waste Pits 5 and 6 are lined with synthetic membranes and have a water cover. The pits range in size from that of a baseball diamond to a football field and vary in depth from 13 to 30 feet. It is estimated that in excess of 600,000 cubic yards of contaminated materials will be associated with the cleanup of the waste pits.

RI/FS Activities

The Remedial Investigation (RI) report for Operable Unit 1 was conditionally approved by the U.S. EPA on April 1, 1994. Final comments

are being resolved and a comment-resolution package was submitted to the U.S. EPA on May 4, 1994.

The Feasibility Study/Proposed Plan (FS/PP) report for Operable Unit 1 was submitted to the U.S. EPA on March 4, 1994. Data obtained from the Remedial Investigation was used in the Feasibility Study to identify potential treatment and remedial technology options, screen those options, and assemble the information into a preferred cleanup alternative for the waste pits.

DOE received U.S. EPA comments on the Operable Unit 1 Feasibility Study report on June 2, 1994. DOE and FERMCO are presently addressing those comments.

Dewatering Excavation Evaluation Program (DEEP)

The Dewatering Excavation Evaluation Program (DEEP), is a short-term field program aimed at determining the best technique to excavate the waste pit material. The field work will involve digging trenches in Waste Pits 1,2, and 3 to test various types of excavation equipment and methods. Several different techniques are available for excavating wastes like those found in Operable Unit 1, and the DEEP tests will help identify the most efficient method. This field program will begin later this summer in Operable Unit 1.

The DEEP program will conduct tests in Waste Pits 1,2, and 3. Although they are covered with soil, these pits contain water saturated wastes. Because "wet" excavation presents special challenges, the field program will provide information on the best way to remove water from the excavation area and help identify the best methods and equipment for excavation.

Affected surfaces will be graded prior to excavation to control water drainage, dust controls will be used, and monitors will be located to check for emissions. The integrity of the waste pit liners will not be impacted by this program. Waste Pit 6 Pilot Study

Waste Pit 6 Pilot Study

DOE will be undertaking a pilot study to excavate, treat and dispose of the waste materials from Waste Pit 6. The Waste Pit 6 Pilot Study project will involve handling about 9,600 cubic yards of waste, as well as 485,000 gallons of water and 2,400 cubic yards of soil. Once the materials have been excavated from Waste Pit 6, they will be treated by thermal drying and shipped to an off-site disposal facility. Project planning and engineering has begun; field excavation work and waste treatment are scheduled for Fall 1995.

The information gathered during this pilot study will help DOE:

- optimize waste handling
- determine optimal dryer operation
- demonstrate the effectiveness of the emissions controls
- evaluate infrastructure requirements
- refine cost estimates and schedules for full remediation of all the waste pits

The removal and drying of the entire contents of Waste Pit 6 will constitute the bulk of pilot study activities. This pilot study will allow DOE to test how well the dryer operates 24 hours a day for five days a week, and at (up to) 200 tons per day capacity. The pilot study will provide information about whether the waste materials need to be reduced in size for easier handling.

In addition to Pit 6 testing, the pilot program will also test 10-cubic-yard samples from Waste Pits 1,2, and 3 to gather and compare information on the best drying temperature and how long to dry wastes from these different pits.

Safeguards will be used to protect workers and the public during the pilot study. Present plans call for workers to be "dressed out" in protective clothing and the excavation equipment to be supplied with air to the cabs. In addition to the existing monitoring system at the Fernald site, the perimeter of Operable Unit 1 also will be monitored for emissions.

To control the spread of dust, it is anticipated that tarps will cover excavation areas and water or surfactants will be applied to exposed surfaces. Runoff control through grading and berms will be put in place as well.

The crusher/mixer, which will reduce the size of the waste, and the dryer will be in enclosed structures; air filters and engineered controls will be used to protect workers and the environment. The dried waste will be transported in an enclosed conveyor to the loading area. Loading

will be done under a ventilated hood, with appropriate dust suppression controls.

Cleanup Alternatives

DOE's preferred cleanup alternative for Operable Unit 1 calls for excavating the waste pits, treating the waste materials through thermal drying, and shipping the waste by rail for disposal at a permitted commercial disposal facility.

On March 29, 1994, DOE held a public workshop discussing how the remedial action alternatives for Operable Unit 1 were developed and evaluated. DOE plans to hold another public workshop later this summer to support the formal public comment period.

For More Information

Additional information about Operable Unit 1 is available in the Public Environmental Information Center (PEIC), where Fernald Project cleanup documents are kept in the Administrative Record. The PEIC is located in the JAMTEK building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030. The telephone number is (513) 738-0164. The hours are 9 a.m. to 8 p.m. Monday and Thursday; 9 a.m. to 4:30 p.m. Tuesday, Wednesday, and Friday, and 9 a.m. to 1 p.m. Saturday.