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FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

ELIMINATION REPORT
COPPERWELD STEEL COMPANY
4000 MAHONING AVENUE, N.W.
WARREN, OHIO

December 1991

U.S. Department of Energy
Office of Environmental Restoration and Waste Management
Office of Environmental Restoration
Office of Eastern Area Programs

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INTRODUCTION

The Department of Energy (DOE) Office of Environmental Restoration has reviewed the past activities of the Manhattan Engineer District (MED) with the Copperweld Steel Company in Warren, Ohio, and has completed a preliminary radiological survey of the site.[1] DOE has determined that the conditions at this site are in compliance with current radiological guidelines and standards.[2] Therefore, this site requires no remedial action and is no longer under consideration for inclusion in the Formerly Utilized Sites Remedial Action Program (FUSRAP).

The material in this report consists of information from documents supporting the determination that the radiological conditions at the Copperweld Steel Company site are in compliance with radiological guidelines and standards determined to apply to this site and provides assurances that use of this site will not result in any measurable radiological hazard to site occupants or the general public.

Through the Office of Administrative Services, this elimination report is being placed in DOE's Freedom of Information (FOI) Public Reading Room in Washington, D.C., so that it will be accessible to the general public.

BACKGROUND

Site Function

For a period of 18 to 21 months from mid-1943 to early-1945, the Copperweld Steel Company researched methods of straightening uranium metal rods and developed commercial practices for annealing and out-gassing uranium rods in support of MED operations. Copperweld out-gassed and mechanically straightened approximately 3000 uranium rods.

Work to straighten uranium rods was apparently underway by mid-May 1943. At that time it was estimated that it would only be necessary to operate approximately one day a week to perform the work required under the MED purchase order, scheduled for completion in early July. According to an MED memorandum to file concerning the protective security program at the contractor's plant, these operations were conducted on weekends. Material to be processed was shipped to the plant in freight cars and brought into the building on a railroad siding, was processed and shipped out on the same day received. Requirements to out-gas the uranium rods were subsequently added to the work performed under the purchase order. During out-gassing, approximately 300 ft^3 of argon gas was used while the uranium rods were heated to 620½C for six hours. The out-gassed rods were then machined, with samples analyzed for hydrogen-to-metal equilibrium.

Site Description

The site is located at 4000 Mahoning Avenue, N.W., Warren, Ohio. The Copperweld plant is a complex of buildings covering approximately 502 acres. The current plant layout is essentially the same as when work was performed for the MED. The work for the MED was restricted to weekends and carried out only in one area of the complex which houses annealing, finishing and shipping facilities. The one-story building is constructed of steel framing and sheet metal siding on a concrete floor. Old furnaces and straighteners which might have been used for MED operations have been removed. The Copperweld Steel Company still owns and operates the site.

Radiological History and Status

Due to the limited historical information available, a preliminary radiological screening survey was conducted by Oak Ridge National Laboratory (ORNL) in November 1988. The radiological survey included an indoor gamma scan, collection and analyses of floor debris samples, and measurement of direct and removable alpha and beta-gamma activity levels. Except for several slightly elevated gamma readings due to naturally radioactive substances occurring in fire bricks, all samples were near or below normal background levels for the Ohio area.[3] All sample were below the DOE guidelines value of 5 picoCuries per gram for radium and thorium, as well as values typically derived for uranium at similar sites.

Elimination Analysis

The results of the radiological survey performed by ORNL indicate radiation levels and radionuclide concentrations that are not significantly different from normal background levels in the Ohio area. Based on the information summarized in this report, DOE's Office of Environmental Restoration has eliminated the Copperweld Steel Company site in from further consideration under the Formerly Utilized Sites Remedial Action Program.

References

1. R.D. Foley and L.M. Floyd, "Preliminary Site Survey Report of the Copperweld Steel Company, 4000 Mahoning Avenue, N.W., Warren, Ohio (CWO 001)," Oak Ridge National Laboratory, Oak Ridge, Tennessee, ORNL/RASA-90/2 (December 1990).

2. U.S. Department of Energy, "Guidelines for Residual Radioactivity at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites," (Revision 2, March 1987).

3. U.S. Department of Energy, "Radiological Survey of the Middlesex Municipal Landfill, Middlesex, New Jersey," DOE/EV-00005/20 (April 1980).