

TX.08-1

Formerly Utilized Sites
Remedial Action Program

Formal Elimination Report
for
The Former American Manufacturing Company of Texas (AMCOT)
in Fort Worth, Texas

U.S. Department of Energy
Office of Environmental Restoration

**Elimination Report
Former AMCOT Facility, Ft. Worth, TX**

INTRODUCTION

The Department of Energy (DOE), Office of Environmental Restoration, has reviewed the past activities of the Manhattan Engineer District (MED) and the Atomic Energy Commission (AEC) at the former American Manufacturing Company of Texas (AMCOT) in Fort Worth, TX. DOE has determined that the conditions at this site have little or no potential for contamination since radioactive materials are at background levels in soil and surface radioactive levels are all below DOE surface contamination guidelines. 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 information in this report is from documents (Adams & Morton, 1995; Williams, 1994) that support the determination that the radiological conditions at the former AMCOT site are in compliance with the DOE radiological guidelines (DOE, 1987, & DOE 1990) which apply to this site. These documents provide assurance that use of this site will not result in any measurable radiological hazard to site occupants or the general public.

BACKGROUND

Site Description

AMCOT is located in Fort Worth, TX. Approximately twenty buildings occupy most of the 3300 block of North Sylvania Ave. The building of concern (800A) is constructed primarily of sheet-metal with steel foundation and frames; flooring consists of concrete and dirt covered brick. Equipment in this building occupies approximately 60% of the floor space; the equipment includes the Number 1 Witter Mill, a rotary furnace, feed tables, and a hydraulic press. The ceiling, which is 60 feet tall, has vent openings along the apex. At the time of the uranium metal testing, AMCOT owned the site and the equipment. Ownership of the company and site has subsequently changed several times. AMCOT and its successors manufacture oil well and drilling equipment (Stout, 1991). The site is currently owned by PRR, Inc.

Site Function

AMCOT was subcontracted by National Lead of Ohio (NLO) from 1960 to 1962 to conduct specialized tube elongation and billet piercing tests on uranium metal for the Atomic Energy Commission (AEC). Both series of tests used AMCOT's Assel-type, Number 1 Witter Mill in a fenced-off area of the plant. According to NLO accountability reports from 1961 and 1962, approximately 30 tons of uranium were used during elongating and piercing tests.

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In rotary piercing test, a solid heated billet is passed horizontally between driven rolls which feed the piece over a steel piercer point. The rolls are barrel shaped and are positioned so that their faces form a converging angle from inlet to the roll center and a diverging angle away from the roll center. The roll axes are skewed in relation to the mill centerline, and it is this angle, called the feed angle, that imparts a forward thrust to the billet and feeds it through the mill. The piercer point is between the rolls with its tip slightly in front of the narrowest opening between the rolls.

The mills used for these tests were modified three-roll Witter mills that were originally designed for forming artillery shells. As the billets passed through the mill, water was sprayed on the piercer rolls and the billet to reduce the temperature rise in the billet induced by working.

In rotary elongating test, the hollow feedstock is fed through the mill on a mandrel. At the junction of the inlet and outlet angles of the roll faces, there is a sharp offset or hump on the rolls which provides a sudden reduction in diameter and wall thickness.

Before elongation, both the hollow billet and the mandrel were preheated; the billet in a gas-fired muffle furnace with an argon atmosphere to retard oxidation and the mandrel over an open flame furnace. After reaching the proper temperature for working, the billet was removed from the furnace, the mandrel was inserted, and the mandrel was fed into the mill. After rolling was complete, the mandrel was pulled by hydraulic pressure from the elongated tube (Williams, 1994).

During the testing process, NLO exercised considerable effort to minimize contamination, and to cleanup (according to DOE predecessor guidelines) after the tests were complete.

RADIOLOGICAL HISTORY and STATUS

Extensive site surveying and personnel monitoring was conducted by NLO. Personnel from AMCOT and NLO were provided with respirators, film badges and urine samples were collected to monitor exposure. Air dust surveys were conducted during mill operations and readings ranged from background to alpha activity approximately 10,000 disintegrations per minute per cubic meter.

Three separate decontamination campaigns are documented. After completing tube elongation tests in September 1961, the site was decontaminated to background levels. Contaminated liquid and sludge were drummed and shipped to Fernald. Uranium chips and fines were oxidized in the muffle furnace and also returned to Fernald. Approximately 300 pounds of

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black oxide and contaminated residues were shipped. The site was decontaminated in September 1962 after the second series of tests. Cleaning the of area, the mill, and the catchpan below the mill is documented. Again, chips and debris were oxidized in the furnace. Additional decontamination was conducted in April 1963 although no further tests were planned. The 1963 report indicates that the radiation measurement showed the AMCOT equipment and oven to be free of radioactive contamination, although the report does not give any specific cleanup levels or readings.

A radiological survey was conducted at the site in October 1994. The survey indicates that surface activity levels are within the DOE surface contamination guidelines. All exposure rate measurements are within the guideline value of 20 μ R/h above background levels. The soil sample results within the suspect area are comparable to the background soil sample results; and the water sample results are within the derived concentration guide values for ingested water listed in DOE Order 5400.5. In summary, all measurements and readings were typical of background levels of radioactive elements, and no radiation levels above background were identified (Adams & Morton, 1995).

ELIMINATION ANALYSIS

Based on information from the recent radiological survey, DOE has determined that there is no potential for radiological contamination or exposure at the AMCOT facility due to DOE predecessor activities. Based on this finding, the former American Manufacturing Company of Texas, Fort Worth, TX is eliminated from the list of considered sites under the Formerly Utilized Site Remedial Program.

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REFERENCES

1. Adams, W. C. and J. R. Morton, 1995. Radiological Survey of the Former American Manufacturing Company of Texas Site, Fort Worth, Texas, ORISE 95/B-82.
2. Williams, A. W., 1994. Authority Review for the Former American Manufacturing Company of Texas, Forth Worth , Texas.
3. DOE, 1987: Guidelines for Residual Radioactive Material at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites. Revision 2. U.S. Department of Energy, March 1987.
4. Stout, D., 1991. Weston phone conversation record with American International Manufacturing, Inc., June 26.
5. DOE, 1990: DOE Order 5400.5, Radiation Protection of the Public and the Environment, Office of Environment, Safety and Health, February 8.