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FORMERLY UTILIZED SITES
REMEDIAL ACTION PROGRAM

ELIMINATION REPORT

FORMER VITRO LABORATORIES
VITRO CORPORATION
WEST ORANGE, NEW JERSEY

SEP 30 1985

Department of Energy
Office of Nuclear Waste
Office of Remedial Action and Waste Technology
Division of Facility and Site Decommissioning Projects

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INTRODUCTION

The Department of Energy (DOE), Office of Nuclear Energy, Office of Remedial Action and Waste Technology, Division of Facility and Site Decommissioning Projects (and/or predecessor offices and divisions), has reviewed the past activities of the Atomic Energy Commission (AEC) at the former Vitro Laboratories, Division of the Vitro Corporation, West Orange, New Jersey, and has completed a preliminary radiological survey of the site. DOE has determined that the conditions at this site are in compliance with current radiological guidelines and standards and that no potential for DOE predecessor agency-related radiological exposure exists beyond those resulting from natural background. Therefore, this site requires no remedial action and will not be included in the Formerly Utilized Sites Remedial Action Program.

This report presents information supporting the determination that the radiological conditions at the former Vitro Laboratories site are in compliance with current DOE radiological guidelines and standards¹ and provides assurance that use of this site will not result in any measurable hazard to site occupants or the general public.

¹U.S. Department of Energy Guidelines for Radioactivity at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites (Rev. 1, July 1985).

This elimination report will be archived by DOE through the Assistant Secretary for Management and Administration. A copy of this package will be available for public review between 8:00 a.m. and 4:00 p.m., Monday through Friday (except Federal holidays), at the DOE Public Document Room located in Room 1E-190 of the Forrestal Building, 1000 Independence Avenue, SW., Washington, D.C.

BACKGROUND

Site Function

Vitro Laboratories performed work that involved conversion of low enrichment uranium dioxide to uranium carbide spheres. Apparently, there were two contracts with AEC involving two levels of enrichment, 3.68 percent and 4.9 percent. Vitro also conducted work under contract to the Oak Ridge Operations Office for the separation of fission products. The facility was operated in the late 1950s and early 1960s.

Site Description

This site was initially owned by Vitro Laboratories, Division of the Vitro Corporation. The original site covered approximately 3 acres. The radiological operations were carried out on the second floor of the Vitro building which was demolished prior to the site visit described below. The site is now owned and occupied by the West Orange Tennis Club, Inc. The tennis club is located at 200 Pleasant Valley Way, West Orange, New Jersey.

Radiological History and Status

On November 30, 1977, personnel from Oak Ridge National Laboratory and Oak Ridge Operations Office visited the site. Direct radiation measurements and samples of water and surface soil showed only

background levels except for one soil sample having an elevated concentration (7.9 picocuries per gram) of thorium-232. In December 1951, AEC invited Vitro to submit a proposal for research on thorium fluoride production. However, to date no records have been found that indicate that Vitro actually conducted work with thorium at this site. Thus, it is not known if the thorium anomaly was due to Vitro activities. This uncertainty notwithstanding, the elevated reading was within permissible levels prescribed by criteria determined by DOE to apply to this site. Thus, no residual radioactivity traceable to AEC operations and exceeding remedial action criteria was detected.

ELIMINATION ANALYSIS

The structure in which the AEC work was performed has been removed. No operational records have been found that would indicate that any radioactive material was buried on-site. The results of a radiological survey of the former site of the plant tended to support this. Direct radiation levels are typical of natural background in the area. Environmental samples were also comparable to background except for one surface soil sample with a slightly elevated thorium concentration of 7.9 pCi/g. The presence of this radionuclide may not be related to the AEC work. In any case, the activity is only two to three times background and within permissible levels.

Based on the information summarized in this report, DOE's Division of Remedial Action Projects has determined that no remedial action is necessary at this site and has eliminated the former West Orange, New Jersey, site of Vitro Laboratories from further consideration under the Formerly Utilized Sites Remedial Action Program.

REFERENCES

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