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PRELIMINARY RADIOLOGICAL SURVEY OF THE FORMER HAVENS PLANT
OF THE BRIDGEPORT BRASS COMPANY, BRIDGEPORT, CONNECTICUT

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OAK RIDGE NATIONAL LABORATORY
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INTRODUCTION

The Bridgeport Brass Company's Havens plant located at Kossuth and Pulaski Streets, Bridgeport, Connecticut, was used under contract with the Atomic Energy Commission (AEC) to process uranium during the period 1953-1962. Contract work involved developmental cold forming (extrusion) of natural uranium metal and associated cutting, storage, and laboratory support. This operation was moved to the Bridgeport Brass Company's Seymour, Connecticut, site in 1962 and the vacated plant was subsequently sold. Record files at Old Reactive Metals, Inc. contain information which indicates that the Havens plant was successfully decontaminated to meet the then current "limits for uncontrolled occupancy" (memorandum, D. R. Jefferson, Bridgeport Brass to J. W. Ruch, AEC, August 1962 [copy attached]). However, under the Department of Energy's Formerly Utilized Sites Remedial Action Program (FUSRAP), the Havens site was identified as a candidate site to be investigated relative to present radiological conditions onsite.

Since the time of the AEC work, the former Havens plant building has apparently undergone extensive remodeling. The building is now owned by the city of Bridgeport, and has been converted to use as Kolbe High School. At the request of the Department of Energy, a preliminary radiological survey was conducted at Kolbe High School on August 26 and August 27, 1980 by members of the Health and Safety Research Division of Oak Ridge National Laboratory.

RESULTS OF THE SURVEY

The extensive remodeling of the old plant building into its present state made positive identification of specific areas that had been previously used for uranium processing extremely difficult. Mr. Crawford Hayes of Bridgeport Brass, Inc. provided background information and made

* The survey was performed by members of the Radiological Survey Activities Group of the Health and Safety Research Division at Oak Ridge National Laboratory under DOE contract DE-AC05-84OR21400.

contact with people who were familiar with processes that were carried out in the Havens plant. Based on recollections of these people and on information obtained from a layout map of the old Havens plant, sections of the Kolbe High School building were identified as being the areas that were most likely used for uranium processing during operation of the Havens plant. Areas identified for surveying included rooms of Kolbe High School presently numbered 108, 201, 202, 204 and entrance way, hallway and room 209, and a portion of the roof including a room vent which was believed to have been over the chemical laboratory of the Havens plant.

The preliminary radiological survey included the following measurements:

1. A gamma scan of indoor surfaces, floors, walls, and accessible support beams.
2. Beta-gamma dose rate measurements at selected locations on indoor surfaces.
3. Measurement of direct alpha activity on building surfaces.
4. Measurement of transferable alpha and beta-gamma activity on indoor surfaces.
5. Alpha and beta-gamma measurements on roof surfaces and room vents exhausting onto the roof.
6. A walkover gamma scan of grounds outside the school building.

Gamma scan measurements and beta-gamma dose rate measurements were all in the range of background except for measurements made on and near brick walls where measurements were found to be up to twice background. Gamma background levels in most areas of the United States range from 5 to 10 $\mu\text{R}/\text{h}$, and beta-gamma dose rates are of the order of 0.02 mrad/h. Brick walls usually show elevated gamma radiation levels due to the presence of small amounts of naturally-occurring radioactive materials in the raw materials from which the bricks are made. The elevated gamma levels measured on and near the brick walls of Kolbe High appear to be caused by naturally-occurring radioactive materials contained in the

brick. Measurements made on the bonnet of a room vent over the area formerly used as a laboratory in the old Havens plant gave a maximum value of 156 dpm/1000 cm² direct alpha and 0.02 mrad/h beta-gamma. All other direct alpha measurements both on the roof and inside the building were at background levels. Results of analyses of smear samples taken on the roof vent bonnet as well as those taken on top of suspended ceiling panels and steel supports in rooms of the building were all within background levels.

SIGNIFICANCE OF FINDINGS

The most probable areas of work with the former Bridgeport Brass Company's Havens plant were surveyed by ORNL for evidence of residual radioactivity above background radiation levels. No evidence was found at these locations where measurements were made to indicate the presence of any radiation levels in excess of those levels typically expected.