

Building Number/Name: 272-AW
Date prepared: Feb 10,2012
Responsible Contractor: WRPS
Contact: C M Smith; E A Hill

PAST OPERATIONS

Beryllium brought in facility: YES

Form of beryllium: SOLID

Period of beryllium operations (dates): Start: Early 1980s End: Present

Location(s) in facility that contained beryllium materials: Tool Crib and adjacent Supply Room, and Mechanical Maintenance Area.

Description of beryllium activities: Beryllium tools (beryllium-copper alloy containing about 2% beryllium) are stored in the Tool Crib and given to employees for use in Tank Farms, and in the past, possibly the Mechanical Maintenance Area. These tools are then returned to the Tool Crib, and may have small amounts of dust containing beryllium on them. Based on contacts with tool manufacturers, the potential for significant airborne exposure to beryllium from these tools is very low. However, because air sampling was not performed prior to the FDH beryllium assessment project, nor were measures taken to reduce the potential for employee exposure, the Tool Crib is considered a potential source of past airborne beryllium exposure.

Building monitoring data summary: None identified.

Personnel monitoring data summary: Four breathing zone and two area samples related to personnel were collected in 1998 to evaluate worker exposures to beryllium in the vicinity of the tool cribs. All six samples were below the detection limits of 0.2 mg/m³.

Specify Engineering/Administrative controls used during operations: Tools are wet-wiped before and after use.

CURRENT OPERATIONS

Building still present: YES

BCF: YES

BERYLLIUM SAMPLING DATA

1997-2006 Beryllium Sampling

419 surface samples and 63 air samples were collected in 272AW and analyzed for Be between 1997 and 2006. Surface samples were collected in the touchable work environment, above-ceiling areas, in ductwork, maintenance areas, vehicle tool boxes, tool crib drawers, grinding and welding areas, and on the crane. 37 general area air samples and 26 personal samples were collected in the facility.

Surface Be was found to exceed the DOE release criterion of 0.2 ug/100 cm² in tool drawers #7 and #8, Cabinet D, where Be-Cu tools were stored; in one vehicle tool box; and at two locations in the ACU-I ductwork. The tool drawers were cleaned, disposed of, and replaced. Ductwork was cleaned and replaced in areas of concern. Re-sample results were found to be <0.2 ug/100cm². Tool boxes were cleaned and the vehicle tool box was re-sampled and found to be <0.05 ug/100cm². Airborne Be was ND in all 63 general area and personal samples.

2010 Beryllium Characterization

On June 23 and 24, and July 14 and 21, 2010, IH staff conducted wipe and bulk sampling in the above facility to determine surface concentrations of beryllium (Be). Personal air samples were also collected on IH staff conducting surface sampling. 272AW had been sampled for Be between 1997-2006 (419 wipe and 63 air samples) and results were summarized in a memo, WRPS-10000780

Laboratory sample results for the Tank Farm Operations Support Facility, 272AW, indicate detectable Be in wipe samples in several locations. Bulk sample results were uniform throughout the facility, ranging between <0.2 and 0.59 ppm, consistent with natural background Be levels in soils and below the Trigger Level for bulks.

Detectable Be in wipe samples resulted in follow-up activities including inspections, re-sampling, and follow-up sampling.

The Instrument Shop and Loading Bay area above the 6-foot level has detectable Be in several areas, with the crane rail showing results above the Trigger Level for wipe samples. The crane rail has been posted and controlled as a Beryllium Controlled Area. It is recommended that the facility status be maintained as "Beryllium-Controlled" until the crane rail and overhead fixtures in the Instrument Shop and Loading Bay are cleaned and cleared.

Areas of previous concern, beneath Cabinet D in the Tool Crib and the ACU3/R05 duct in the Electrician shop, did not show detectable Be. The area under Cabinet D is no longer an area of Be concern and does not need to be controlled as a BCA. The ACU-3/R05 duct grill does not have detectable Be so the grill may be safely removed and follow-up bulk sampling in the duct can be accomplished to address the area of previous concern.

The above-ceiling area over the western addition (HPT lunchroom and HPT shared area) showed wipe samples greater than the Trigger Level of 0.1 ug/100 cm². These areas were evaluated and because of excessive dust loading additional bulk samples were collected. All bulk samples were less than the Trigger Level for bulks. Bulk sample results are useful in framing the detectable wipe samples collected in the plenum space and other settling surfaces not routinely cleaned.

The hygiene check of surfaces not regularly cleaned in lunchrooms and change rooms do not indicate surface Be contamination above the Trigger Levels. The lunchrooms and change rooms did not have enough settled dust for bulk sampling. The detectable wipe sample on the speaker in the Women's change room was below the Trigger Level for wipes and appears to be an isolated area where Be was detected on a heavily-loaded wipe sample.