

Beryllium Exposure Awareness

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PURPOSE

This Advisory provides information on a safety concern that may impact operations at Department of Energy (DOE) facilities. Specifically, the concern is the potential exposure of workers to beryllium (Be) during routine activities not associated with beryllium work.

BACKGROUND

The DOE Office of Inspector General has recently published three audit reports addressing beryllium issues in DOE. These reports include recommendations for improving the implementation of chronic beryllium disease prevention programs throughout the DOE complex.

In addition, 15 incidents involving beryllium have been reported in the DOE Occurrence Reporting and Processing System (ORPS) over the past 3 years. Of the 15 incidents; two involved Be exposures; nine involved Be contaminations; four involved posting, labeling, and implementation issues; and one involved the unexpected discovery of beryllium.

WHAT ARE THE HAZARDS?

Inhalation of beryllium dust or particles can cause beryllium sensitization (BeS) or chronic beryllium disease (CBD). BeS is a condition in which a person's immune system becomes highly responsive (allergic) to the presence of beryllium in the body. CBD is a chronic, often debilitating, and sometimes fatal lung condition. There has long been scientific consensus that exposure to airborne beryllium is the only cause of CBD.

The DOE promulgated the Chronic Beryllium Disease Prevention Program rule (10 CFR 850) to address complex-wide concerns over potential beryllium exposures. The purpose of the rule is to reduce the number of workers exposed to Be, minimize the levels of exposure, and provide medical surveillance to ensure early detection of CBD. The rule also requires the collection of job, exposure, and health data, which will be used to better understand the cause of BeS and CBD. DOE currently is drafting amendments to improve the rule based on implementation experience gained since its publication in 1999.

CONTROLLING THE HAZARDS:

The findings in the Office of Inspector General audit and DOE ORPS reports provide good reasons to reassess current Chronic Beryllium Disease Prevention Programs (CBDPP) emphasizing the following:

- Ensuring there is a documented assessment for the need, or lack of a need, for a CBDPP;
- Performing and documenting Be hazard assessments including statistical analyses of the Be inventory data;
- Ensuring that warnings are posted and access controls are established where necessary for Be controls consistent with the local CBDPP;
- Fully identifying, formally notifying, and offering medical evaluations to employees who were potentially exposed to Be; and
- Reporting required data to the Be registry (established by the rule) and correcting existing errors and omissions in previous data submissions.

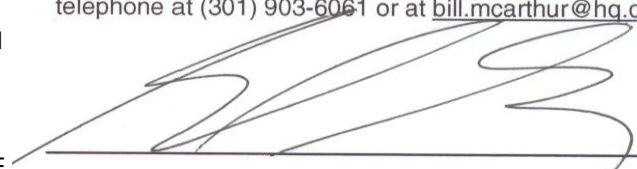
ADDITIONAL SOURCES OF INFORMATION

- Your Safety and Health Office
- Office of Inspector General Audit Reports:
 - [Implementation of the Department of Energy's Beryllium-Associated Worker Registry](#) (April 2006)
 - [Beryllium Controls at the Oak Ridge National Laboratory](#) (September 2006)
 - [Beryllium Surface Contamination at the Y-12 National Security Complex](#) (December 2007)
- DOE Chronic Beryllium Disease Prevention Program Web site at:
<http://www.hss.energy.gov/healthsafety/wshp/be/>
- Chronic Beryllium Disease Prevention Program Rule www.hss.energy.gov/healthsafety/wshp/be/docs/berule.pdf

SUMMARY

Past or present Be contamination can lead to serious health consequences. All sites that have Be hazards should ensure they have fully documented their Be hazard assessment and are following their DOE-approved CBDPP.

If you have any questions, please contact Dr. Bill McArthur by telephone at (301) 903-6061 or at bill.mcarthur@hq.doe.gov.



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PREVENT EVENTS

Learning from Industry Experience

PREVENT EVENTS is intended for use by personnel during morning meetings, pre-job briefings, and work unit meetings to communicate key industry experience.

Management:

1. What are we doing to determine if those older facilities, with an uncertain history of use, are free of beryllium contamination?
2. Have we developed statistical survey methods and plans to assess suspect facilities for beryllium contamination?
3. Is there an up-to-date inventory of beryllium-contaminated facilities and equipment?
4. Are the locations of contaminated facilities and equipment identified to workers and posted?
5. Do we have a CBDPP that conforms to 10 CFR 850?
6. What training have we provided our workers on working with beryllium?
7. Does the site CBDPP address handling beryllium and beryllium compounds?
8. Are our safety and health personnel keeping informed of the latest developments in beryllium safety and guidance?
9. Have we made available to our workforce the engineering and administrative controls and personal protective equipment needed to do the work safely?
10. Have we evaluated opportunities to remove beryllium from ongoing operations or to reduce the number of operations in which beryllium is used, in order to reduce the need for engineering and administrative controls?
11. What training have we provided our workers on characterization of beryllium-containing wastes and reporting of unpermitted beryllium releases?

Supervisors and Workers:

1. Are jobs screened for potential beryllium exposure when work packages are developed?
2. Do we need respiratory and other PPE, and special procedures, for the job?
3. Could we use PPE, regardless of measured exposure levels, if it is determined not to introduce new hazards?
4. Are there separate segregated and sealed containers for nondisposable company-issued protective clothing for transfer to the laundry?
5. Is the air in the work area being sampled to confirm an acceptable air quality for work?
6. Have surface swipes been taken to assure a controlled work environment?
7. How do we know if beryllium dust or particles are not hidden in equipment or crevices in formerly contaminated areas?
8. Under what conditions can equipment and material from contaminated areas be transferred or declared excess and therefore available for re-use?
9. Have all employees received the appropriate level of training?