



Results in Brief



Audit Report on "Implementation of Beryllium Controls at Lawrence Livermore National Laboratory"

DOE/IG-0851

June 22, 2011

Why we performed this review...

Lawrence Livermore National Laboratory (Livermore) has a Chronic Beryllium Disease Prevention Program. The National Nuclear Security Administration (NNSA) reviewed and the Department of Energy's Office of Enforcement (Enforcement) investigated Livermore's Prevention Program in October 2008 and July 2009, respectively. The NNSA review identified weaknesses in Livermore's Prevention Program and the Enforcement investigation identified issues in the vital areas of identifying the presence of beryllium in facilities, communicating beryllium hazards to workers, training workers in beryllium control procedures, and monitoring personnel for medical effects of exposures. Due to the significance risk to the work force of beryllium exposure, we initiated this audit to determine whether Livermore had fully implemented controls to resolve previously identified weaknesses in its Beryllium Prevention Program.

Background

The Department of Energy (Department) has a long history of using beryllium – a metal essential for nuclear operations and other processes. Exposure to beryllium can cause beryllium sensitization or even Chronic Beryllium Disease, an often debilitating, and sometimes fatal, lung condition. In December 1999, the Department established a Prevention Program to reduce the number of workers exposed to beryllium at Department facilities, minimize the levels of, and potential for, exposure to beryllium, and to establish medical surveillance requirements to ensure early detection of the disease.

What we found...

Livermore expended significant effort and had completed a number of corrective actions designed to improve its Beryllium Prevention Program. However, in certain instances, all actions necessary to completely resolve previously observed weaknesses had not been completed. Specifically, we found that Livermore had not always: 1) Identified the presence of beryllium and provided adequate notice to workers through the consistent use of facility maps, signs and labels; 2) Utilized and documented reviews of historical records and interviews with employees to identify the presence of beryllium when completing the baseline inventory of beryllium contamination; 3) Tested equipment to determine whether it was contaminated when beryllium was detected at a specific location in a facility; 4) Established training requirements for all employees and ensured that managers and other employees attended training necessary to inform them of beryllium control procedures; 5) Performed hazard assessments for 94 of its legacy facilities which may have housed beryllium operations in the past; and, 6) Provided updates to its website to communicate the current status of onsite beryllium contamination to workers.

Implementation issues we observed occurred, at least in part, because the Livermore Site Office's (Site Office) oversight efforts during the implementation of Livermore's corrective actions were not completely effective. According to Site Office officials, they exercised required due diligence over the implementation of Livermore's corrective actions. However, we found that neither the Site Office nor Livermore corrective action verification and closure processes ensured that initiated actions were always fully implemented. For example, Livermore officials told us that they had completed corrective actions to communicate beryllium hazards, in part, through the use of facility maps. However, we determined that although it had developed the maps, Livermore had not posted the maps in any of the seven known beryllium facilities that we toured. Both the Site Office and Livermore had not taken action to verify that facility maps were actually used and posted to alert workers to the presence of beryllium. Site Office and Livermore officials explained that actual field inspection of corrective action implementation is not required as part of the verification process prior to closing a corrective action. Symptomatic of problems with the process, we found that inspections had not been performed for corrective actions that had been closed for over six months.

Beryllium exposure is not a trivial matter, potentially affecting the health and safety of the Department's workforce. Livermore had developed some positive corrective procedures to strengthen controls in its Prevention Program. According to Livermore officials, they have analyzed all beryllium-related events, internal and external audits and worker feedback, and have developed, and, for the most part, implemented comprehensive corrective actions to improve worker safety. While Livermore officials told us that they planned to implement corrective actions to address the issues we identified, additional effort is required to ensure complete resolution of these weaknesses. We made several recommendations designed to help address these issues.

To view the full report, click on the following link:

<http://www.ig.energy.gov/documents/IG-0851.pdf>

For more information, contact felicia.jones@hq.doe.gov