

**HSS Independent Activity Report****Report Number:** HIAR LANL-2013-07-08**Site:** Los Alamos National Laboratory**Subject:** Office of Enforcement and Oversight's Office of Safety and Emergency Management Evaluations Activity Report for Follow-up on the Progress and Issues in the Implementation of the Los Alamos National Laboratory Worker Exposure Assessment Process**Dates of Activity :** 07/08/2013**Report Preparer:** James Lockridge, Certified Industrial Hygienist**Activity Description/Purpose:**

This activity reviewed progress and issues in the development and implementation of the Los Alamos National Laboratory (LANL) industrial hygiene (IH) worker exposure assessment program.

**LANL Worker Exposure Program:** 10 Code of Federal Regulation (CFR) 851 requires LANL to assess worker exposures to chemical, physical, biological, and safety hazards through appropriate workplace monitoring and document this assessment using recognized exposure assessment and testing methodologies. P101-32 and Chapter 45 of the LANL IH Manual define the LANL worker exposure assessment program and are intended to meet this requirement. This program includes initial or baseline surveys, periodic resurveys, and documented exposure assessments of all work areas or operations to identify and evaluate potential worker health risks. The contractor, Los Alamos National Security, LLC (LANS), uses the LANL Chemical Tracking System (CTS) to track and document workplace exposures as part of this program.

**Background:** In 2007, as part of a LANL-wide integrated safety management inspection, Independent Oversight evaluated environment, safety, and health (ES&H) programs and work planning and control systems as applied to various LANL facilities and organizations. That inspection identified a number of findings related to deficiencies in implementation of integrated work management requirements, including Finding C-6, which stated that: "Many worker exposures to chemical, physical or biological hazards have not been adequately evaluated, assessed, documented, and/or communicated in both research activities and fabrication shop activities, as required by 10 CFR 851." Since that inspection, LANL has improved its exposure assessment process, as documented in the Independent Oversight report "Facility Centered Assessment of the Los Alamos National Laboratory Science and Technology Operations - Facility Operations Director Managed Facilities," dated August 2011. However, based on a limited sampling of completed health risk assessment reports and associated integrated work documents at that time, the implementation of the LANL exposure assessment process was a work in progress, and continued improvement and management attention was warranted.

On February 21, 2013, Independent Oversight, in coordination with the Los Alamos Field Office (NA-00-LA), participated in a status meeting with LANL regarding recent developments in the LANL IH worker exposure assessment program to fully address the weaknesses identified during the 2007 Independent Oversight ES&H program inspection. This was the second time representatives of these organizations had met to discuss current issues and progress in implementing this LANL program. Independent Oversight delayed its activity report on this second meeting to await feedback from LANL on final management decisions about the best method for integrating the LANL work control process with worker exposure assessments. To date, this feedback remains pending.

From June 3-14, 2013, Independent Oversight participated in a voluntary protection program (VPP) review of LANL. The Los Alamos Field Office industrial hygienists also participated in the VPP review from an oversight perspective. Worksite analysis, including an assessment of the LANL IH exposure assessment program and its implementation, was one of the VPP tenets that were reviewed. The results of the VPP review with respect to the status of the development and implementation of the LANL IH worker exposure assessment program are summarized in the following paragraphs.

**Results of the 2013 LANL VPP Team Review:** As noted by the VPP Review Team, LANS collects exposure assessment data in many areas to comply with 10 CFR 851. For example, for LANL Maintenance and Site Services (MSS) work, exposure assessment data was available, grouped by site hazards, and was reviewed by the VPP team. More recently, MSS initiated an effort to bin the data by similar exposure groups (SEGs) or group exposure data by crafts. This effort led to the creation of craft-specific hazard assessment survey reports. To date, MSS has generated 25 SEGs, and the effort is approximately 70 percent complete. At the Dual-Axis Radiographic Hydrodynamic Test facility (DARHT), the ES&H group leader confirmed active management of the IH survey and sampling process for DARHT. Qualified safety professionals have conducted a number of comprehensive baseline surveys at the Environmental Restoration and Waste Management facilities, including survey for ergonomics, lead, and noise. In addition, many groups conduct baseline and personal monitoring on a regular basis.

Although LANS has established program requirements and the CTS database and has performed a significant number of exposure assessments throughout the site, subject matter experts (SMEs) estimate that they still need to perform a considerable number of additional exposure assessments. For example, LANS has completed only about 30 percent of the baseline exposure assessments and 10 percent of the confirmatory sampling for Environmental Management and Waste Operations at Area G. While the subcontractor that operates most of the waste remediation activities routinely conducts workplace monitoring in support of assigned tasks, they estimate a similar 30 percent baseline exposure assessment completion rate as well. At the Los Alamos Neutron Science Center (LANSCE), only one of the four work activities that were examined had a documented exposure assessment in accordance with lab procedures. At TA-55, a variety of worker exposure data is available (e.g., sound level surveys and air sampling data), but limited information has been entered into the CTS in part due to computer security issues.

The VPP Review Team noted that LANS has recognized the current deficiencies in implementing the workplace exposure program, and identified the site-wide exposure assessment process as an area for improvement in the June 7, 2013, *Risk Register and Executive Dashboard Notes*. The LANS SME for the LANL exposure assessment program has also drafted an implementation plan to address the shortfalls in the exposure assessment program, although the draft plan lacks formal management support and does not identify an implementation schedule or resources. As a result of their review, the VPP Review Team recommended, as an opportunity for improvement (OFI), that “LANS needs to implement an effective industrial hygiene exposure assessment process across all directorates for all applicable hazards.”

The VPP Review Team’s conclusions and the lack of a defined path forward for integrating the LANL work control process with worker exposure assessments lead Independent Oversight to conclude that there has not yet been sufficient progress to support closure of Finding C-6. Since the VPP Review Team intends to revisit the status of the OFIs resulting from the June 2013 VPP Review (including the OFI on the IH exposure assessment process), Independent Oversight will re-evaluate closure of Finding C-6 after the VPP Review Team follows up on its 2013 assessment.

HSS Participants	References
<ol style="list-style-type: none"> <li>James Lockridge (PE, CIH, CSP)</li> </ol>	<ol style="list-style-type: none"> <li>Inspection of Environment, Safety and Health Programs at the Los Alamos National Laboratory, January 2008.</li> <li>Independent Review Report Facility Centered Assessment of the Los Alamos National Laboratory Science and Technology Operations – Facility Operations Director Managed Facilities, August 2011.</li> <li>Los Alamos National Security, LLC; Los Alamos National Laboratory.</li> <li>Los Alamos, New Mexico; Report from the Department of Energy.</li> <li>Voluntary Protection Program Onsite Review June 3-13, 2013.</li> </ol>

Were there any items for HSS follow up?  Yes  No

**HSS Follow Up Items:**

- HSS will follow up with subsequent VPP Review Team efforts at LANL on the implementation status of the IH worker exposure assessment process.
- HSS will follow up on implementation of the worker exposure assessment program during targeted reviews of work planning and control planned for fiscal year 2014.