

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 30, 2013

MEMORANDUM FOR: Steven Stokes, Acting Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending August 30, 2013

This is the Site Representative's final weekly report from LLNL prior to reassignment at the Los Alamos National Laboratory (LANL).

Conduct of Operations: Last month, the laboratory contractor issued a lesson learned to the Department of Energy's database (LL-2013-LLNL-13) regarding the acid eruption event at Site 300 that significantly injured two workers. The lesson learned indicated that a vague scope of work and lack of information on how or when to add chemicals hindered the ability of subject matter experts to identify hazards and effective controls. The lesson learned further indicated the need to define work scope in a step-by-step manner and produce work instructions that ensure personnel performing the work understand the controls to ensure safe work accomplishment.

The Site Representative notes that at the institutional level, the contractor has interpreted the requirements in Department of Energy Order 422.1, *Conduct of Operations* and applied industry best practices in a manner such that nuclear facility workers are rarely required to utilize a written procedure to accomplish programmatic activities. Instead, these workers utilize Operational Safety Plans (OSPs). The scopes of work for the OSPs do not typically include step-by-step task definition or provide work instructions as indicated by the lesson learned. Certain contractor line managers are now considering revising criteria to identify the need to use technical procedures—the Site Representative encouraged this positive action, particularly in light of the lesson learned and LANL's ongoing criticality safety and conops issues.

Plutonium Facility: Livermore Field Office (LFO) and contractor personnel recently reached agreement on the path forward for a new ion exchange separation activity involving plutonium-238. LFO noted several issues with the OSP for this activity, including vague scope of work and inadequate hazards analysis and control. To address the issues, the contractor developed a chemical process flow diagram to improve the specificity of chemical conditions, hazards, and controls throughout the process. The contractor will use the flow diagram and a work permit to refine steps necessary for process development under the existing approved OSP. Once refined, management intends to capture this information in a technical work procedure, which will be used for steady-state processing.

LFO emphasized consideration of the hazard and associated controls for radiologically-contaminated puncture wounds in the annual update of the safety basis currently under review (see weekly report dated March 29, 2013). In response, the contractor submitted a safety basis with new mitigative measures associated with the radiation protection program, such as wound evaluation and decontamination (e.g., excision or chelation). The only preventive control targets safe storage of sharp items. The Site Representative notes that identification and implementation of additional preventive controls could minimize the potential for puncture wounds on several activities with known sharps hazards (e.g., use of tool guards on machining activities). Based on this feedback, facility management is investigating the use of additional tooling guards.