

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 18, 2008

TO: K. Fortenberry, Technical Director
FROM: R. Quirk and W. Linzau, Hanford Site Representatives
SUBJECT: Activity Report for the Week Ending January 18, 2008

Electrical Safety: A number of electrical safety issues have been identified during the last two weeks. Although the events involve different contractors, they point to a need for more attention to electrical safety. Last week a new subcontractor worker at the Environmental Restoration Disposal Facility received a shock from a welding rod oven. The worker had previously plugged the oven into two different circuits with GFCIs, but the GFCIs tripped. The worker then plugged the oven into a circuit without GFCI protection and the oven started to work. The worker was shocked when he touched the oven. A number of basic electrical safety rules were not followed.

Last week a worker in the Waste Encapsulation and Storage Facility was shocked when a tool came in contact with the end of a leak detector. The facility drawings indicated that the installed equipment was a solid state relay with only 24V which would not require a lockout/tagout (LO/TO) because the potential was less than 50V. However, a modification to replace the old 300V probe had not been implemented; therefore a LO/TO was required. During the critique a number of other work control issues were identified.

This week the Tank Farms contractor issued an occurrence report for failure to comply with hazardous energy control program requirements because an energized component was identified after performing the safe-to-work check. There were two other tank farms electrical hazardous energy occurrence reports issued in the past few weeks, and the contractor identified five other similar but non-reportable problems in the Tank Farms in 2007. Based on this information, another occurrence report with a significance category of R, for recurring, was issued. In discussions with contractor managers, the site rep learned that standing orders were issued as a compensatory measure, and required walkdowns and subsequent meetings with mid-level managers before any electrical work is released to work. The walkdowns must include the field work supervisor, facility electrician, facility electrical engineer, and the LO/TO reviewer. Issues that must be addressed in the walkdown include the scope of the electrical work to be performed, electrical isolation boundaries, electrical safe-to-work check locations, and other controls such as barriers or avoiding contact with identified components. Walkdowns and briefings with managers were also performed for selected existing electrical LO/TOs.

Waste Treatment Plant: The site rep met with the contractor manager responsible for the Broad Based Review, a corrective action for the black cell piping issues (see Hanford Activity Report 10/26/07). There are approximately 20 experienced engineers assigned to the five vertical and three horizontal slice reviews, and additional experienced engineers are being hired. Review plans and schedules are being developed. Office of River Protection managers are evaluating how best to utilize their engineering and quality assurance resources to participate in and/or oversee these reviews, which are expected to last several months.