Information Bulletin

Inadequate Hazard Reevaluation and Recognition Causes Electrical Shock

December 11, 2007 **2007-RL-HNF-0044** **Tracking No: 731**

Summary: Most facilities contain hazards which are difficult to discern for the uninformed. Only facility knowledge and a close inspection will identify the true nature of a hazard. When conducting inspections and pre-job walk-downs at facilities, it is important to look not only for expected hazards, but for unexpected ones. In most cases this is incumbent upon facility personnel with the appropriate knowledge to identify and disseminate information relative to the identified hazards to both facility and non-facility personnel who will be performing work.

When preparing to conduct a work activity it is critical to evaluate and mitigate all hazards prior to conducting the work activity - especially when the work activity was planned months in the past. Analyzing task-specific hazards as well as co-located hazards which may be encountered during the execution of maintenance, operations, construction, decontamination and decommissioning (D&D), surveillance, and environmental remediation work is a responsibility shared by those that plan, supervise, and conduct work. As recommended in a prior Lessons Learned (2007-RL-HNF-0033), "When a hazard analysis is performed of an activity, all aspects of the activity should be analyzed for hazards - not just the end work."

Discussion of Activities: While installing sprinkler piping in the T Plant Facility, a non-facility pipefitter went up on a ladder to attempt to repair a leak. When handing down a piece of pipe, his right elbow contacted an unused stem-hung incandescent lighting fixture and felt a slight tingling sensation in his elbow. Closer examination of the fixture found that the base of a broken-off incandescent lamp was still present in the fixture and that the fixture was energized at 120 volts. The fixture has been out of service for approximately twenty years.

Hazard seen from the floor level

Hazard from close view

Analysis: Many older fixtures, similar to the lighting fixture (see photos), have a physical appearance which mask their potential for harm. The fixture involved appeared, to those in the area to be a nonfunctioning and unelectrified lighting hanger. These fixtures were installed during the construction of T Plant in the 1940's. During a walk-down to review for similar hazards, additional legacy equipment posing a similar hazard was identified, most of which was located in out of the way, non-routinely accessed areas. Because construction personnel were unaware of the fixture's true function the recognition of the potential hazard was negatively impacted.

A pre-work walk-down of the area was an unsuccessful barrier in identifying the hazard. The pre-construction initial walk-downs were conducted over a year ago and ceiling panels were still up when these walk-downs were performed. After the ceiling panels were removed, there was not a follow-up inspection to review for new or changed hazards. Had actual site conditions been reviewed as required, the probability of identifying the previously unidentified hazard and establishing appropriate controls would have been increased.

Recommended Actions:

- Perform a facility evaluation for equipment which is obsolete or no longer used. This equipment should be properly removed from service, which includes removal or appropriate lock out and tag out.
- Do not authorize work to progress until proper job walk-downs have been conducted. A proper inspection includes timeliness and quality.

Cost Savings/Avoidance: Not evaluated

Work Function: OS&H - General

Hazards: Electrical

ISM Core Functions: Analyze Hazards

Keywords: Shock

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References: EM-RL—PHMC-TPLANT-2007-0004