

Information Bulletin

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Title: Aging Facility Degradation Introduces Hazards Requiring Analysis

Date: November 16, 2006

Identifier: 2006-RL-HNF-0050

Lessons Learned Summary: New hazards are introduced in aging facilities simply through the degradation of materials over time. Even when the work to be performed has been analyzed for hazards specific to the work activity - other hazards may still be present. When performing job hazard analyses for work within abandoned structures (especially those with overhead structures/components) the work planning must take into consideration the potential for structure/component degradation and subsequent failure. Any structure with the potential to fall always poses a risk to workers.

Discussion of Activities: On September 1, 2006 during D&D activities within an abandoned tank pit at the Plutonium Finishing Plant, a 3/8" X 4' all-thread rod disengaged from the ceiling after being accidentally struck by the repositioning of a ladder within the pit. This caused it to break loose from the ceiling and fall to the bottom of the tank pit (about 17 feet), landing approximately 5 feet behind a worker on the lower level.

Ongoing D&D activities within the tank pit had removed the majority of piping and equipment from the grating level. Several existing pipe supports (some were previously cut off for bump protection), at a level above worker's heads, were left attached to the ceiling.

Initial characterization and hazard analysis of the tank pit identified a potential corrosion issue with the metal structures within the tank. This corrosion was evaluated by engineering and structural experts to attempt to fully understand the risk to the worker due to this corrosion. However, the focus of the analysis was based on structures that the worker would definitely come into contact with (ladders, grating, tank surfaces, etc.) to ensure the worker was provided adequate protection. At this time, the corrosion to the conduit supports was not believed to be significant to worker safety. As a result, the work scope focused on the removal of safety hazards, which in this case was believed to be the potential bump hazards. As such, the integrity of the remaining brackets was not questioned as work was not to be conducted in the area of these brackets.

Analysis: The all-thread rod within the abandoned tank pit was severely corroded from its time in service. When contacted by the ladder it could not absorb the lateral shock without failure. This condition was known however the planning did not perceive this condition as a hazard to the workers.

Recommendations: When planning work activities, ensure all potential hazards are analyzed.

Cost Savings/Avoidance: Not evaluated.

Work Function: Construction, D&D, Demolition

Hazards: Personal Injury/ Exposure - Striking

Keywords: Falling Objects, Demolition, D&D

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References: Occurrence Report EM-RL--PHMC-PFP-2006-0027

Distribution: General