

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 21, 2009

TO: T. J. Dwyer, Technical Director
FROM: D. L. Burnfield and M. T. Sautman, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending August 21, 2009

F-Canyon: Last Friday, Deactivation and Decommissioning (D&D) workers installed hot taps on an uncontaminated, 1" A-Line pipe that historically contained 64% nitric acid. Workers wore a face shield, chemical goggles, an acid suit, and leather and neoprene gloves during this activity. Workers did not finish draining the much larger than expected volume of liquid and left the tap on over the weekend. On Monday, the flow through the drain tubing was found to be obstructed so the workers decided to replace the tubing, connectors, and filters. While a D&D worker was attempting to attach the new hose to the tap Tuesday, he brushed against the drill bit extending out of the hot tap and acid flowed out of the tap. The worker pushed the drill bit back into the hot tap with his gloved hand to stop the leak. This worker and another one, who had acid splash behind his face shield onto his face, evacuated to the emergency shower while the first line manager requested assistance. The entire Fire Department arrived quickly and applied cream to help with a hand burn. Ambulances brought three workers to the hospital while an additional four workers went to site Medical. The worker who had grabbed the bit suffered a third degree burn to his hand and required a skin graft, but none of the other workers required anything beyond first aid.

The contractor conducted fact finding meetings of the event and response that were thorough and developed a long list of corrective actions. Until the tap is retrieved and examined, it is not known whether the tap failure was due to an equipment defect or the installation technique. The glove also needs to be inspected to determine how acid contacted the worker's hand. While workers at the scene told the Fire Department what had happened, nobody really assumed the role of Incident Scene Coordinator. The Facility Emergency Coordinator (FEC) was unable to provide the Area Emergency Coordinator (AEC) details about the spill because the AEC was tied up in a conference call with safety managers who were not directly involved with the response. As a result, the AEC issued a Remain Indoors Protective Action that the FEC had determined was not warranted. Despite repeated announcements to shelter, a reportedly large number of non-essential "support" personnel remained at the Incident Command Post, which was a distraction. F-Canyon Operations personnel declined the HazMat team's offer to inspect the spill area and cleanup any chemicals because the D&D Organization had a spill response procedure. However, recovery planning was hampered by hot weather, lack of focus, not initially using an Integrated Safety Management System approach, and unclear roles between the F-Canyon Operations and D&D organizations. While it is understandable not to rush the recovery, it is not apparent that much thought had gone into what the response actions would be for a spill of concentrated acid. On Saturday (4 days after the spill), the HazMat team will begin making entries to prepare the work area, sample the acid, neutralize any spilled acid, remove the drill bit, drain any residual acid, and cap the tap. (A brief thunderstorm Wednesday night may have already diluted any spilled acid).

H-Canyon: Management's response to the recent dropped fuel bundle made it clear that not reporting errors will not be tolerated (see 8/14/09 report). This message was reinforced during the quarterly Conduct of Operations refocus meetings this week. A third fuel bundle caught the side of the well while being inserted, became disengaged, and dropped. Notification of this event was immediate. All fuel charging is on hold until corrective actions are completed and a test is performed. The fact that the cans being charged are significantly lighter may allow the bundles to disengage from the hook easier when resistance is encountered during insertion. It appears that a tack weld on the side of the end cap was not ground smooth. The welds on all end caps in stock are being ground smooth. The monorail hook and fuel bundle end cap were redesigned.