

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 8, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: J. S. Contardi/M.T. Sautman, SRS Site Representatives
SUBJECT: SRS Report for Week Ending December 8, 2006

H-Canyon: During the neutralization of acidic waste from the solvent extraction process (before transfer to tank farms), ammonia gas is formed which can combine with nitric acid vapors to form and accumulate ammonium nitrate (AN) crystals on the process vessel vent (PVV) filters. This hazard is controlled by 1) requiring the use of ammonia scrubbers during waste neutralization when there is a potential for ammonia generation and 2) performing a calculation to ensure that the PVV filters will be flushed or replaced prior to reaching the AN accumulation limit. Engineers mistakenly believed that these controls were no longer needed since ferrous sulfamate (an ammonia precursor) was no longer being used. However, recent samples indicate that impurities in process cold chemicals caused an estimated extra 600+ kg of AN to accumulate on the hot canyon PVV filters. Furthermore, waste containing ammonia concentrations exceeding the H Tank Farm Waste Acceptance Criteria (WAC) were transferred, which caused a noncompliance with the implementation of tank farms ammonia lower flammability limit controls. All told, three Technical Safety Requirement Administrative Controls at H-Canyon were violated. Contributing causes to this event likely include heavy reliance on process knowledge, indirect sampling of ammonium, and a possible discrepancy between the H-Canyon Waste Compliance Plan and the H Tank Farm WAC. H-Canyon processes have been isolated and a Limiting Condition for Operation Required Action was implemented at H Tank Farm. Furthermore, the PVV filter will be flushed and H-Canyon intends to directly sample for ammonium. (3/12/04 Site Rep Weekly)

Tritium Extraction Facility (TEF): The Site Rep observed workers unload the first Legal Weight Truck Cask from the ISO Container and transfer it by crane to the Cask Decon Area. The ISO Container's lid was still attached to the container when workers initially tried to lift it off with the crane because the lid latches were not unlatched correctly. Some minor contamination was found on the cask underneath an Impact Limiter, which was easily cleaned. Engineers also had to get permission from the cask owner to lift the cask after one of the cask lifting trunions would not rotate. Finally, there were some instances of individuals exiting the radiological buffer area without frisking first. Tritium gas was also transferred to TEF to support system leak checks.

Defense Waste Processing Facility: Although the shift manager had discussed the correct valve position to use during restoration from a lockout, he wrote the wrong position on the lockout order. This caused the melter pressure to increase and inadvertently start pouring glass into a staged, empty container under the pour spout. The pour was stopped within three minutes.

Saltstone: The Site Rep observed the transfer of approximately 4,300 gallons of liquid waste from Tank 50 to the salt feed tank. The liquid waste was primarily inhibited water that had been placed in the transfer line prior to shutting down the Saltstone Production Facility in 2002. Construction debris in the leachate piping has been removed and the contractor is developing a temporary modification to the ad-mix system to allow additional processing next week.