

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 9, 2011

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending September 9, 2011

Plutonium Finishing Plant: Workers continue to operate the ventilation system under a Limiting Condition of Operation (LCO) with the non-safety-significant backup fans. After one of the seven electric safety-significant (SS) fans failed (see Activity Report 9/2/11), the contractor identified excessive vibration in two of the SS fans and what appear to be fatigue cracks in two others. The contractor completed the repairs to the fans with excessive vibration and is restarting these and the two other operable SS fans. Richland Operations Office is evaluating if they will require the contractor to submit a Justification for Continued Operation that addresses the increased risk with having only the minimum number of SS fans operable. The LCO required action prohibits most routine D&D activities except it allows removing radioactive waste and combustible material that is outside of hoods and gloveboxes.

T-Plant: A motor for a SS exhaust fan failed last week, but operators were able to quickly switch to a standby fan and restore differential pressure in the canyon. Nobody was working in the canyon at the time and no spread of contamination was found afterwards. The contractor has a spare motor and is writing the work package to replace the failed motor.

Waste Treatment Plant: Last month, the contractor's mechanical engineering organization identified a concern about plugging of the air lines that supply the pulse jet mixers (PJMs) and the air-operated waste transfer mechanisms inside the vessels in the Pretreatment facility. These air lines were designed with long horizontal lengths of pipe and, because they do not have a slope, they are more susceptible to a build-up of solids. In addition, during operations it is expected that some of these lines will become wetted with waste leaving a film, layers of solids, or precipitates on the pipe walls. The issue tracking form generated by engineering notes that over a short period of time these lines could become restricted, plugged, or require excessive flushing. These air lines are in the black cells and would not be accessible for the 40-year life of the plant after the start of operations. The PJMs are credited for performing a safety-class hydrogen mitigation function, and some of this piping was installed in the Pretreatment facility last month.

Tank Farms: The site rep discussed his observations related to the readiness to start a waste transfer last week (see Activity Report 9/2/11) with both ORP and contractor management. Both believe that they were ready to start a transfer but were not fully ready for the additional tasks associated with operating the new transfer pump for the first time. The contractor plans to develop lessons learned from the transfer.

Solid Waste Operations: The site rep met with the contractor emergency preparedness manager to discuss how the upcoming layoffs would affect their ability to respond to emergencies. The project has identified the gaps that will occur due to the loss of specific personnel and have identified suitable replacements. In addition, some personnel in emergency response roles, such as a hazard communicator, will no longer be responsible for a single facility, but rather they will be required to respond to emergencies at all the Solid Waste facilities. The contractor plans to run drills to ensure these new roles and responsibilities are understood.