

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 29, 2010

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending October 29, 2010

Waste Treatment Plant (WTP): The contractor conducted two sessions for their preliminary hazard and operability analysis (HAZOP) for the process vessel and piping vent system in the Pretreatment facility. During observation of the first session, the site rep noted poor and inconsistent use of the HAZOP process, which is driven by the identification of specific process piping “nodes” and the application of “key terms” that represent upset conditions, such as high flow, temperature, or pressure. The team repeatedly reverted to talking about previously analyzed event scenarios instead of using the key terms to evaluate the possible hazards. The poor application of the process led to the team missing a potentially hazardous condition that required evaluation. After the meeting, the site rep provided his observations to contractor management who committed to strengthening the rigor in application of the process. The site rep attended the second session and noted significant improvement. The team was able to demonstrate successful application of the process and identified several conditions that will require investigation to determine if additional controls are required. The site rep still questions if sufficient rigor was applied to previous HAZOPs and believes the contractor needs to take action to maintain and strengthen the application of the process in future studies.

The contractor conducted an integrated safety design meeting to discuss the application of single failure criteria (SFC) for safety-significant (SS) systems, structures and components (SSCs) in the High Level Waste facility. The application of the lower material at risk criteria will result in the reduction of many of the SSCs from safety-class (SC) to SS. The first system to be evaluated was the confinement ventilation system (C5V). The team could not reach consensus in the allotted time and will reconvene to come to a decision if SFC will apply to C5V.

Late last week, the contractor held a Safety Input Review Committee (SIRC) meeting to approve the results of an assessment of the toxicological hazard of the waste being processed at WTP. Previous evaluations assumed radiological consequences drove control classification and the safety basis does not currently address the toxicity of the waste. The chairman of the SIRC determined that an independent review of the analysis was required before approval. In addition, the Office of River Protection representative asked that the evaluation be expanded to include waste outside the facility confinement boundaries, such as in transfer lines on the WTP site.

Plateau Remediation Contractor D&D Projects: An event occurred in which a waste container leaked contaminated water during preparation for shipment for on-site disposal. The container, known as a roll-on/roll-off bulk waste container, had a load of heavy equipment from demolition of U-Plant ancillary facilities. The leak occurred when the operator tilted the container on the truck and caused the load to shift to the back doors, breaking the seal, and spilling about a gallon of contaminated water. While responders addressed the spill location and the container, they failed to secure the truck which had also been contaminated. The next day, the route of the truck had to be determined and surveys at various locations across the site had to be conducted. Contamination was found on the ground at the container maintenance facility. These types of events appear to be increasing in frequency (see Activity Reports 10/8/10 and 7/16/10), but to date, neither DOE nor the contractors have taken steps that prevent recurrence.