DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 12, 2012

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending October 12, 2012

Board staff members S. Seprish and B. Boser were on-site observing the hazard analysis process for the Low Activity Waste facility at the Waste Treatment Plant.

Waste Treatment Plant (WTP): The Manager of the Office of River Protection (ORP) presented changes in the project's direction that are being considered as a result of the ongoing reviews by the Secretary of Energy and his team. The Secretary's team started their on-site reviews in early September and they are evaluating the capability to detect vulnerabilities and failures of black cell equipment; assessing the ability to repair those systems; and recommending changes. The ORP Manager said that the details on the planned changes are not finalized but indicated that integrated teams are being assembled to address the most significant issues at WTP. These teams would be composed of people from ORP and the WTP contractor, and may have experts from other DOE offices, such as the Office of Science and the national labs. In addition, the project is planning to move away from the use of computational fluid dynamics as the primary method for verifying the designs of vessels in the Pretreatment facility (PTF). Rather, the project will evaluate what full-scale testing will be required to verify the designs. The project is also considering other options, such as constructing a preconditioning facility to control the feed to the PTF and investigating the possibility of sending limited feed directly to the High Level Waste facility. Other ideas, such as developing a monitoring capability in the black cells and evaluating the redundancy of isolated equipment, were also discussed. The ORP Manager said that more details on these plans will be available in about a week.

The contractor's Environmental and Nuclear Safety organization drafted a differing professional opinion (DPO) concerning the fire protection systems in the Analytical Laboratory. Groups inside the contractor's organizations disagree if the design is adequate. The dispute focuses on whether the installed fire suppression system is code-compliant, and more specifically, if the number and spacing of pipe supports meets the NFPA code. The issues were identified several years ago and have continued without resolution. The entry into the DPO process indicates that it may take significant additional time and effort to provide resolution.

Tank Farms: The contractor is still evaluating if waste in double-shell tank AY-102 leaked into the annulus (see Activity Report 8/17/12). They retrieved a sample from one of the three anomalous locations in the bottom of the annulus and expect to complete sampling the other two early next week. The preliminary analysis of the first sample indicates it is likely tank waste, but the low levels of cesium are not consistent with typical waste. The contractor panel that is evaluating if the tank has leaked identified conditions that could result in the low cesium levels, including the cesium being preferentially absorbed in the insulating concrete pad beneath the primary waste tank before reaching the annulus floor. The contractor panel will present their conclusions to their senior management next week.

River Corridor Closure: The Richland Operations Office concluded that the 105-N Reactor has been successfully placed in interim safe storage.