

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 19, 2024

**TO:** Timothy J. Dwyer, Technical Director  
**FROM:** B. Caleca, P. Fox, and P. Meyer, Resident Inspectors  
**SUBJECT:** Hanford Activity Report for the Week Ending April 19, 2024

**Board's Technical Staff Activities:** S. Abdi, R. Csillag, Z. Demeke, and J. Jarvis were onsite to review the Direct-Feed Low-Activity Waste (LAW) configuration management program. The review was well-supported by BNI, WTCC, and DOE managers and subject matter experts.

**Waste Treatment Plant:** The resident inspectors participated in a chemical screening workshop discussion, which was held to support ongoing work on High-Level Waste (HLW) Facility process hazard analyses. The discussion focused on implementation of toxic chemical hazard screening processes designed to comply with DOE-STD-3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, as supplemented by guidance from the DOE Office of Safety, Security, and Quality Assurance. The proposed approach included methods for addressing waste streams that contain both radiological and chemical constituents. Additionally, the approach discussed methods for addressing radiological contamination hazards within the hazard analysis process. The discussion group identified proposed process changes to ensure chemical hazard screening results reflect DOE-STD-3009-2014 requirements for protecting facility and collocated workers from significant chemical and radiological hazards.

The resident inspectors participated in the pre-job briefing for a workshop, which is being performed to re-evaluate the programmable protection system (PPJ), which operates process safety interlocks for the HLW Facility. Based on experience from commissioning of the LAW Facility, the contractor is concerned about the scale and complexity of planned PPJ controls. The workshop's goal is to identify PPJ controls that can be simplified, substituted, or removed altogether to increase operational reliability.

WTCC personnel have determined that a section of gasket material is missing from the LAW Facility selective catalytic oxidization (SCO) unit inlet flange. The SCO is part of the thermal catalytic oxidizer skid, which removes toxic organic compounds and oxides from the melter off gas prior to its release into the environment. This section of the system operates at vacuum pressures. However, a system upset could result in pressurization of the system, which would result in a release of untreated, toxic gases into the facility unless the gasket is present. The gasket is in a difficult to access area and the gasket material, which must withstand high temperatures, is not readily available. Since this repair is necessary to support commissioning tests, management has decided to attempt to close the flange gap with a thermal reactive paste sealing compound. They are preparing two backup plans in case this option fails. One of the backup options would be a repair using the original gasket material if it can be obtained.

**Fuels Facilities.** The contractor has completed safety basis development for the Waste Storage and Encapsulation Facility and the Capsule Storage Area in support of relocating cesium and strontium capsules to dry storage. The Plant Review Committee (PRC) met to evaluate the documented safety analysis and technical safety requirements for both facilities. The PRC concurred with submittal of the documents to DOE pending resolution of minor open items.