DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 3, 2025

TO: Acting Technical Director
FROM: Idaho National Laboratory (INL) Cognizant Engineer
SUBJECT: INL Report for December 2024

DNFSB Staff Activity: The Board's INL cognizant engineer held weekly meetings to maintain awareness of site activities, including attending event fact findings, management reviews, integrated project team reviews, and facility plan of the day meetings. The cognizant engineer also visited INL to observe and discuss waste management activities from December 2 to 5, 2024.

Advanced Mixed Waste Treatment Project (AMWTP) Treatment Facility Ventilation Failure: On December 3, 2024, a fan bearing failed in the one of the ventilation trains for the AMWTP treatment facility. This resulted in a week-long pause in operations in the treatment facility while waiting for spare parts to arrive, as the other ventilation fan was already out of service from a previous failure. The bearing failure fan had previously experienced a bearing failure in April 2023. This event highlights the continuing challenges of maintaining an aging ventilation system in the treatment facility (see May 2024 report).

AMWTP Air Sample Database Calculation Issue: While reviewing paperwork on December 11, 2024, an Idaho Environmental Coalition (IEC) radiation control manager identified an issue with some inputs to effective derived air concentration (DAC) calculations in the air sampling database. The manager identified that a less conservative value was selected in many cases for DAC for beta/gamma emitters as the value was templated in the database and re-used many times. A value for Cs-137 was selected instead of the more conservative default value for Sr-90, which would result in a DAC fraction reduction of about an order of magnitude. The IEC manager reviewed AMWTP air sample calculations going back to April 2023 and identified 365 cases where the calculation was affected but using the correct DAC value would still generate results well below the threshold values of concern. The Cs-137 DAC value could also be selected in the database for alpha emitters (instead of Pu-239/Am-241), which would result in a DAC fraction reduction of four orders of magnitude. However, the IEC manager did not find any cases where the Cs-137 DAC value was used for alpha emitter calculations. IEC personnel updated the database to prevent future use of the Cs-137 DAC value. DOE radiation protection personnel are reviewing this issue to determine other corrective actions.

Loaded Waste Trailer Detaches from Yard Dog Truck During Transport: On December 16, 2024, Idaho Nuclear Technology and Engineering Center (INTEC) operators were transporting a facility transport container loaded with waste between CPP-1617 and CPP-666 when the trailer detached from the yard dog truck hitch, landed on the trailer skids, and came to rest shortly thereafter. Prior to moving the trailer from CPP-1617, INTEC operators heard the hitch locking pin engage when connecting the truck and the trailer, and successfully performed a brief tug test to check for engagement. Operators did not perform a visual inspection of the engaged hitch as suggested by the applicable job safety analysis, as the configuration of the hitch on this truck limits visibility of the connection. Operators reconnected the same truck to the trailer, performed a more detailed inspection of the connection including air lines, and performed multiple successful tug tests prior to completing the transport to CPP-666. After the incident, INTEC mechanics demonstrated to INTEC operators methods for verifying hitch engagement on this truck, and INTEC management is reviewing hitch maintenance activities and training. Another incident involving a yard dog truck and trailer occurred this past fall where operators did not raise the landing skids prior to movement (see September 2024 report).