

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 2, 2024

TO: Katherine R. Herrera, Acting Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending February 2, 2024

Building 9212: CNS was performing a functional test of the level detection system for the secondary cyclone separators and bag filter tank trap on the building's dry vacuum system when the level transmitter failed to actuate, resulting in a failure of the surveillance. The building's shift manager was notified, who then declared the system inoperable and entered the limiting condition for operation (LCO) due to the surveillance requirement not being met. CNS reported an occurrence for a failure of a safety significant system to perform its designed safety function. CNS placed the system into warm standby mode to prevent exceeding the time limits of the action statement of the LCO while CNS works towards repairing the transmitter. The resident inspector attended the event investigation. One resultant action of note was the action of Reliability Engineering to perform an evaluation to determine the cause of the failure, whether other failures are related (see 7/17/2020 report), and to evaluate the overall reliability of the dry vacuum level detection system.

Special Nuclear Material Vehicle (SNMV): CNS declared a potential inadequacy in the safety analysis (PISA) when it was discovered the SNMV safety basis does not address the criticality safety control for neutron poisons as required. CNS utilizes neutron poisons in the rackable can storage boxes, which are regularly shipped on-site between buildings. The SNMV criticality safety evaluation assumes that the same configuration for the containers is maintained during shipping and therefore does not require any additional controls. However, the sitewide criticality control review criteria requires controls associated with neutron poison to be elevated to the safety basis. As a result of this requirement, a PISA was determined to exist. CNS determined that no operational restrictions are required due to the implementation of container controls in the shipping and receiving buildings.

Conduct of Operations: The RI attended one of the new Trend Analysis and Problem Prevention (TAPP) meetings. This meeting is based on a charter that was developed as part of the actions of the revised Conduct of Operations Continuum Plan that was issued in December of 2023. As an effort to maintain accountability, the TAPP team will define tracking methods and potential reporting metrics for the visible leadership floor/field observation time using guidelines from the charter. During this meeting, the TAPP team discussed trends from the issues management board, nuclear criticality safety issues, disciplined operations observations, and both NPO and DNFSB observations. The notable item of interest was a demonstration of a search algorithm that could be used in certain databases within the contractor assurance system to identify similarities in issues based on key words. The algorithm appeared to be efficient, running quickly despite the large dataset it analyzed, and returned a score next to the results giving indication of the level of similarity to the key words. The TAPP team is engaged with the developer to further enhance the algorithm's use. In the resident inspector's opinion, this tool has the ability to significantly enhance CNS's ability to reduce recurrence of issues by instituting effective corrective actions.