DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending October 6, 2017

Building 9212: Recently, the accountable steam condensate isolation interlock activated in response to a leak of fissile solution into tray dissolver steam lines (see 9/22/17 report). Last week, CNS convened a critique to identify corrective actions. Attendees noted that the most likely cause of the leak was from aged steam coils located in the tray dissolvers. As such, CNS engineers plan to evaluate the condition of coils on all tray dissolvers and offer recommendations regarding remedial actions before tray dissolver operations resume. Additionally, CNS system engineers plan to develop and implement a steam coil preventive maintenance program.

Transuranic (TRU) Waste Processing Center (TWPC): In September, North Wind management reported a positive unreviewed safety question (USQ) following the identification of an as-found discrepant condition in a macro-encapsulated waste box. North Wind workers recently began a campaign to repackage unvented waste drums contained within these boxes. As part of this campaign, workers remove an inner polyethylene liner lid using several tools designed with passive features that limit penetration depth. The tools are credited within the Documented Safety Analysis (DSA) to prevent an inadvertent breach of the unvented drums contained within the liner. When workers opened the exterior lid on the first macro-encapsulated waste box, they noticed deformation and "sagging" of the inner lid. North Wind reported a positive USQ because the penetration depth assumed in the DSA may not be sufficient to prevent inadvertent puncture of unvented drums. North Wind engineers are currently evaluating potential modifications to the tooling that they will implement via an upcoming DSA revision.

Conduct of Operations: CNS maintenance personnel recently reinsulated steam lines following work to repair leaks on a steam system that serves Building 9212. The lockout/tagout (LO/TO) for the insulation activity isolated the steam supply to several portions of Building 9212, including the high capacity evaporator. Due to several miscommunications between maintenance and operations personnel regarding the status of the maintenance work and the impact of the LO/TO, the shift manager granted work start approval for the maintenance activity while high capacity evaporator operations were ongoing. As such, operators reported an unexpected loss of steam pressure to the high capacity evaporator when maintenance workers applied the LO/TO. This week, CNS maintenance and operations personnel held fact finding and critique meetings to further discuss this event. They identified several corrective actions to improve the formality of work planning communications.

In a separate event, operations and maintenance personnel convened a critique this week to identify corrective actions for an event in which maintenance personnel entered a Building 9204-2E criticality accident alarm system (CAAS) inaudible area without personal radiation detection instruments. The critique identified several factors that contributed to the event, including a hazard analysis for the maintenance activity that did not identify the CAAS inaudibility condition and a miscommunication between the shift manager and the work crew regarding authorization to access the CAAS inaudible area. Key corrective actions include evaluating the process for controlling access to CAAS inaudible areas and evaluating the effectiveness of the maintenance hazard analysis process at addressing CAAS inaudibility hazards. The events described above mark the third and fourth time in the last two months that breakdowns in communication and operating practices led to undesirable conditions in a Y-12 production facility (see 8/18/17 and 9/1/17 reports). CNS Y-12 production management plans to evaluate these events collectively for common cause failures.