DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 13, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending September 13, 2019

Building 9204-2E: Last week, a quarterly helium leak test on a positive pressure glovebox indicated the presence of a leak. Inspection of the glovebox led to the discovery of a crack in a viewing port. The initial plan to return the glovebox to service was to remove the cracked viewing port and install an additive manufactured cover as a temporary repair. This type of temporary repair was used approximately two years ago when a viewing port fell off of the glovebox while an operator was performing work in the glovebox (see 9/11/17 report).

The temporary cover was installed late last week, but did not pass the post maintenance test. The temporary cover was removed and a replacement viewing port was installed this week. The resident inspectors walked down the area prior to removal of the temporary cover and after installation of the replacement viewing port. During the repair work, a puncture was found in a glove port. It is suspected that this puncture occurred during the maintenance activities. The glove was replaced and the glove port seal was cleaned, re-glued and re-caulked. A successful helium leak test was performed on Thursday and personnel are completing valve alignments in preparation for resuming operations in this glovebox.

Development: CNS reported an occurrence on spread of radioactive contamination due to finding fixed contamination on several pages of a work package in a non-radiological maintenance office building. The work package was used in a room of Building 9202 (Development Organization) that performs non-radiological material work. The work package was stored in a plastic tray on a countertop in the Building 9202 room before being taken to the maintenance office building on September 9. On September 11, a maintenance supervisor noticed that the work package had a yellow stain and requested that radiological control personnel survey it. There was no removable contamination on the work package, but elevated levels of fixed beta and fixed alpha contamination were found. Surveys of personnel and areas of the maintenance office building where the work package was handled did not find any elevated activity. Surveys of the Building 9202 room only found elevated activity in the plastic tray where the work package had been stored. The tray and its contents were controlled, bagged and placed in a radiological area. The survey results indicated that the contamination was depleted uranium.

The source of contamination is under investigation. At the fact finding, it was speculated that a potential source of the contamination is leakage from an inactive blower that is above the plastic tray. The inactive blower is a known source of legacy contamination. The room has recently been operating with an air conditioner which may have resulted in condensation in the vent line that could have led to leakage from the blower. CNS plans to cap the unused vent line that leads to the blower and ultimately remove the blower from this room. After the fact finding, the resident inspector walked down the Building 9202 room. The countertop in the room is posted as a radiological area and radiological control personnel has not found any indication of leakage from the vent line.