

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 16, 2018

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and Z. C. McCabe, Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending March 16, 2018

Recommendation 2012-1: One of the goals of the Board recommendation was to ensure that personnel in adjacent facilities would know how to respond to a 235-F accident. SRNS uses the Waste Solidification Building (WSB), currently in layup, as a training area for staff working on their qualifications while they are waiting for their security clearances. After the resident inspector (RI) asked what training was provided to these personnel regarding 235-F hazards and emergency response, the training organization decided to add a section on 235-F to the WSB facility entrance training.

F-Canyon: SRNS has reanalyzed the F-Canyon seismic event consequences and has proposed to no longer credit the sand filter, canyon exhaust ventilation system, or the diesel generator in the safety basis. Last May, the RI and DOE questioned the applicability of using DOE-STD-5506, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*, to conclude that only 10% of the material-at-risk would be impacted during an earthquake (see 5/19/17 report). Using the total footprint of the cell floor area and the rack pan floor area and the total impact area due to falling debris, SRNS has recently concluded that the seismic impact fraction (SIF) for F-Canyon is really 0.03 although they plan to use 0.1. Their qualitative analysis concluded that the SIF for FB-Line was actual 0.2 and needed to be considered separately.

Tank Farms: The Documented Safety Analysis (DSA) states that all new or revised calculations performed after December 2014 will utilize the total effective dose factors that take into account the new atmospheric dispersion methodology. While SRR uses both the old and new methodology in their evaluations for natural phenomena hazards (NPH), they are only reporting the dose consequences using the old methodology in DSA revisions. The reason for this is NPH accidents roll up the doses from several individual events into one overall dose. Thus, when DOE is reviewing the proposed control set for a new or modified activity, the dose consequence contribution for that activity is artificially low by a factor of 3 for the public and 2 for the collocated workers. This affects items like operating the 3H Evaporator with known pot leaks when a seismic event is a credible initiator for a 3H Evaporator cell or pot explosion.

Savannah River National Laboratory (SRNL): SRNL personnel convened a meeting of the Facility Radiological Action Team (FRAT) this week to discuss two planned entries into the high activity waste (HAW) piping gallery (see 3/9/2018 report). Currently, there is an unknown quantity (estimated more than 20) of old strainers with unknown holdup on the piping gallery floor. These strainers were and are still used to remove solid material from the liquid HAW drain line. The strainers were removed and discarded in the piping gallery in the past. SRNL personnel have reviewed photographs and video of the area from the most recent entry in 2008. They suspect multiple piles of lead pieces and blankets to be covering strainers with unknown holdup. The FRAT discussed the scope and expected radiological conditions of the planned entries to take radiological measurements of the piles to better characterize the holdup material.