

INSTALL A DESIGNATED EVAPORATOR AT DWPF

Background

Defense Waste Processing Facility (DWPF) at Savannah River Site (SRS) began operations to process liquid radioactive material received from the H and F tank farms. The process is to solidify and make it immobile into glass form in steel containers.

However, this process involves that on an average 1.3 gallons of material is returned to the tank farm for every 1 gallon of waste that DWPF receives and processed. This significant increase in volume is due to DWPF off-gas scrubber condensates as well as material additions within DWPF processing operations and the recycled material returns to the Tank Farm as low-level salt waste.

The returned liquid waste does not go directly to an evaporator but rather is returned to Tank 22 in H-Tank Farm. From there it will be volume reduced by sending the material through the 2H evaporator. The 2H is used because it is set up to handle the concentrations of sodium aluminosilicate, present in the recycle stream, that produces scale buildup within the evaporator.

There are two evaporators located in the H and F Tank Farms (3H and 2H). The two evaporators are operational. However, the 2H, which located in F-Tank Farm, failed several years ago and was repaired to bring it to service. Similarly, 3H evaporator has failed a few times and the operation of evaporating the liquid had been stalled and reduction in liquid was also significantly minimized.

Recommendation

The Savannah River Site Citizens Advisory Board recommends that DOE conduct a study of the benefits of installing a separate designated evaporator, or equally effective and cost-efficient alternative technology, at the DWPF to support the reduction of liquid generated at DWPF so that the volume of liquid returned back to the tank farms is reduced.