



ANS-SR TECHNICAL MEETING APRIL 24, 2018

Location: Newberry Hall
117 Newberry St SW
Aiken, SC 29801
(803) 641-7087

Attendance: 40 **Presenter:** Brandon Hodges, Savannah River Remediation

Tonight's speakers was Mr. Brandon Hodges, principle engineer for Savannah River Remediation. He spoke on the replacement of Melter 2 at the DWPF. Brandon has a B.S. from Clemson in materials and ceramics and is responsible for the success of the DWPF melter operation. The melter is the heart of the DWPF where High Level radioactive Waste (HLW) is mixed with borosilicate frit and heated to for the final vitrified glass that is the stable disposal form of SRS's legacy HLW.

The failure of Melter 2 was not planned and it had far exceeded its 2 year design life. It was delivered to SRS in 1989 but operated from 2003 – 2017 pouring 2819 canisters of HLW. It was refitted only once, in 2010, to increase the melting rate and had several design improvements over Metler 1. The pour spout was lost in January of 2017, electrodes failed in February 2017, and by March a thermowell cooling water leak was detected. It was decided to de-inventory the melter and replace it.

This was a significant effort on the part of SRR, DWPF, and SRNL. Melter 2 had lasted so long that the decision was made to wait until failure to prep the disposal pathway for Metler 2 and to get Melter 3 ready to install. Parallel project to get Metler 2 out of DWPF and into a waste vault and to get Metler 3 prepped were started. The maximize the disposal of contamination waste (anything from DWPF that has HLW glass stuck to it) the box for Melter 2's disposal was also filled with accrued contaminated equipment and scrap (e.g. piping) from DWPF before being sealed in its concrete vault. To further reduce the risk of contamination, the box was sprayed with a fixative before leaving DWPF. Melter 3 meanwhile was prepped for operation and preloaded with a clean batch of glass frit.

Melter 3 was in DWPF by June 2017, in its cell by July, and operational by December. DWPF also to the opportunity to complete maintenance and improvements that could only be done during a Melter replacement outage. Hanford Site observers were on hand to watch the evolution.



Melter 3 had arrived at SRS in the 1990s. Melter 4 is already on site and in storage. Procurement has begun on Melter 5.

In addition to Brandon's talk, Tracy Stover made a short presentation promoting the FE and Nuclear PE examinations. Anyone interested in more information is welcome to contact Tracy through ANS-SR.

