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FOR IMMEDIATE RELEASE

SRS Tritium Extraction Facility achieves record number of operations

AIKEN, S.C. (September 27, 2021) – The Savannah River Site (SRS) Tritium Extraction Facility (TEF), which provides the hydrogen isotope needed for the Nation’s nuclear deterrent, has exceeded all previous records for the number of extractions completed in a single fiscal year, surpassing the number of extractions SRS committed to complete during the year.

TEF completed seven tritium extractions during Fiscal Year (FY) 2021 (which runs Oct. 1, 2020 through Sept. 30, 2021) – the five that were promised for FY21 and the first two for next fiscal year. This more than doubles the previous record of three extractions in a single year.

Tritium is the radioactive isotope of hydrogen needed for modern nuclear weapons. “It’s absolutely vital for our nuclear deterrent,” explained Jason Armstrong, National Nuclear Security Administration (NNSA) – Field Office Manager. “Without tritium, there wouldn’t be a nuclear stockpile, but it has a relatively short half-life, so it has to be replenished on an on-going basis.” SRS is the only place in the country that provides the tritium used in the Nation’s stockpile.

NNSA is the semi-autonomous agency within the U.S. Department of Energy responsible for ensuring the United States maintains a safe, secure and reliable nuclear stockpile.

“I’m exceptionally proud of our employees for achieving this record level of operation,” said Mark Davis, Senior Vice President – NNSA Operations and Programs with Savannah River Nuclear Solutions (SRNS), the company responsible for operating and managing SRS. “They had been working hard over the past few years to prepare for this, because they know how important it is to the Nation. Then, they had to add the measures necessary to protect themselves and their coworkers from COVID-19 and adjusted to those.”



TEF personnel receive rods shipped from the Tennessee Valley Authority in preparation for extracting tritium for the nation’s nuclear deterrent

SRS has been providing the Nation's tritium since the 1950s, originally generated in the Site's now-decommissioned nuclear reactors. In the contemporary process, rods called tritium-producing burnable absorber rods (or TPBARS) are irradiated in reactors operated by the Tennessee Valley Authority, then transported to SRS. There, in the TEF, the tritium is extracted from the rods, processed, transferred to SRS' H Area New Manufacturing (HANM) facility and loaded into reservoirs for shipment to the military.

From its startup in 2006 through 2016, TEF was only required to conduct a single extraction each year to meet Department of Defense demands. Then, in FY17, the facility's employees conducted three extractions for the first time.

The facility was scheduled to conduct a minimum of five extractions for FY21, marking the beginning of a multiyear increase that will see operations grow to eight extractions per year in 2026.

Actions to be ready for the increased workload began with the preparations for the 2017 milestone, including the start of hiring, training, and qualifying additional operators and other facility personnel. Today, TEF has reached full operational staffing in readiness for the increasing number of extractions.

Other preparations included bringing a second furnace online in the facility in 2019 to enhance operational flexibility and capability for the multiple annual extractions. In late 2020, SRNS also began operating a new diffuser/stacking system for TEF's waste gases. The new system allows TEF to handle its own gases, rather than having them processed along with other waste gases at HANM, increasing capacity and decreasing waste gas.

Established by Congress in 2000, NNSA is a semi-autonomous agency within the U.S. Department of Energy responsible for enhancing national security through the military application of nuclear science. NNSA maintains and enhances the safety, security, and effectiveness of the U.S. nuclear weapons stockpile; works to reduce the global danger from weapons of mass destruction; provides the U.S. Navy with safe and militarily effective nuclear propulsion; and responds to nuclear and radiological emergencies in the U.S. and abroad.

Savannah River Nuclear Solutions, a Fluor Corporation-led company with Newport News Nuclear and Honeywell, is responsible for the management and operations of the Department of Energy's Savannah River Site, located near Aiken, South Carolina.

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