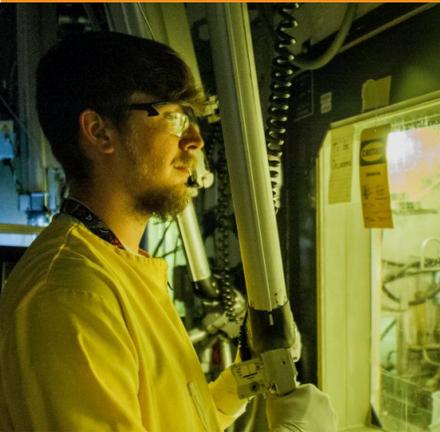


Savannah River National Laboratory

Discovery Today for a Better Tomorrow



In FY20

SRNL experienced an increase in funding dedicated to growing current work and establishing new programs. Additionally, during this year the Laboratory worked to increase its operational and programmatic budgets while identifying significant cost savings initiatives through innovative approaches to work.

Our Laboratory remained committed to executing important work for the Savannah River Site, the nation and the world. Below is evidence of the success of the past year.

- Our Laboratory was nationally recognized for its outstanding safety performance by the National Safety Council (NSC). The NSC awarded SRNL with two prestigious safety awards for safety statistics recorded in 2019 and 2020 and the Occupational Excellence Achievement Award for achieving a lost workday case incident rate better than 50% of the industry average in 2019.
- SRNL achieved \$282M in program execution despite COVID-19 implications. A focus on direct charge activities helped mitigate the impact of COVID-19 as well as reduce cost to overhead accounts.
- SRNL continued the hiring process to bring in strong, enduring talent, using virtual interviews to work around the current COVID-19 work posture and increase our FTE by 59 new staff members. The SRNL average age continues to decrease from FY19's average age of 47 to FY20's 46 years of age. This hiring focus included an increase in Postdoctoral Researchers from 1 in FY19 to 23 in FY20.
- SRNL received notification of 17 U.S. Patent Awards and 2 European Patents and, since implementing a publication tracking system at the start of the calendar year, tracked more than 110 peer-reviewed scientific/engineering publications.

Safety

Safety for our employees and our work is, and has consistently been, a priority at SRNL. We remain at the top of the safest laboratories in the nation, while executing work of the highest scientific importance in the energy arena. Identifying ways to safely work (in the office and remotely) during the COVID-19 pandemic proved a challenge this year but one that our Laboratory took on successfully.



2019



OSHA Safety Performance Metrics:

TRC: Total Recordable Case (DART + MTC) DART: Days Away, Restricted or Transferred MTC: Medical Treatment Case

Data obtained from DOE Computerized Accident/Incident Reporting System
Data not included for government-operated NETL laboratory

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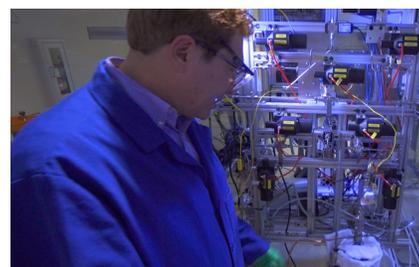


SRNL Collaboration Across the DOE Complex

SRNL led a multi-lab Technical Review Team (TRT) to assess the potential reactivity of LANL remediated nitrate salt drums stored at the Waste Control Specialists facility. TRT concluded that the drums remain vulnerable because of the content uncertainty, but the nitric acid chemistry has caused an increased stability, which should improve with engineering controls (temperature and venting) during removal and transport.

Improving Energy Storage

Our laboratory developed novel high temperature thermal energy storage (TES) material based on a ternary alloy of low-cost and highly abundant elements. The novel metal hydride has a higher gravimetric and volumetric energy densities than other materials, as well as enhanced thermal conductivity and reaction rates under operating conditions. This allows for a reduction in heat exchangers, thereby reducing system costs.



Recovering Rare Nuclear Material

In an ongoing project to harvest Pu-244, a material not found anywhere else in the world, SRNL built a full-scale mock-up of equipment for training and process development. The equipment, training, and processes will be used for the future transfer of the MK-18A targets into SRNL hot cells. The targets will be reduced in size, and chemical processes will be applied to recover plutonium, americium/curium, and other isotopes, that will then be packaged for shipment.

Pioneering Robotics for Safety

SRNL Demonstrated the transport of 9975 packaging with an Automated Guided Vehicle (AGV) and the retrieval of a 3013 container from a 9975 package with an industrial 6-axis robot. Use of robotic and automation technologies for handling and processing nuclear material packages has the potential to significantly reduce or eliminate personnel radiation dose.



SRNL Fellows Program

We established the SRNL Fellows Program to recognize outstanding scientific achievement and exceptional accomplishments for SRNL with four inaugural recipients: Dr. Dave Diprete, Mr. Joe Cordaro, Dr. Ralph James and Dr. Robert Sindelar.



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