SAVANNAH RIVER NATIONAL LABORATORY

"Despite numerous challenges, 2021 has been a year marked by successful transition for SRNL, becoming a truly independent national lab. In the year ahead, I am excited to lead SRNL as operated by Battelle Savannah River Alliance and firmly establish it as a best-in-class federally funded research and development center for the Department of Energy."

– *Dr. Vahid Majidi, Director, Savannah River National Laboratory*

HIGHLIGHTS

- Opened the Critical Infrastructure, Industrial Control System Cybersecurity Laboratory at the Georgia Cyber Center in downtown Augusta, Georgia, establishing SRNL's physical presence in Georgia.
- Received the DOE Unmanned Aircraft System (UAS) Unit Award, an award given by the Office of Aviation Management, for the SRNL UAS team.
- Authorized to conduct unmanned aircraft flights at SRS Beyond Visual Line of Sight, the first issued by the Federal Aviation Administration in the eastern sector (Mississippi to Maine) at altitudes up to 1,200 feet above mean sea-level. This will allow for expanded UAS operations in support of national security objectives.
- As part of the NNLEMS, initiated development of an EM R&D Roadmap for accelerating Hanford tank waste cleanup.
- Nominated to be a member of the International Atomic Energy Agency's Network of Analytical Laboratories for particle reference materials to support international nuclear safeguards programs.
- Completed technical baseline testing to allow the disposition of higher quantities of fissile material to the Defense Waste Processing Facility (DWPF) glass to enable disposition of excess nuclear material at SRS.

TRANSITION TO NEW MANAGEMENT

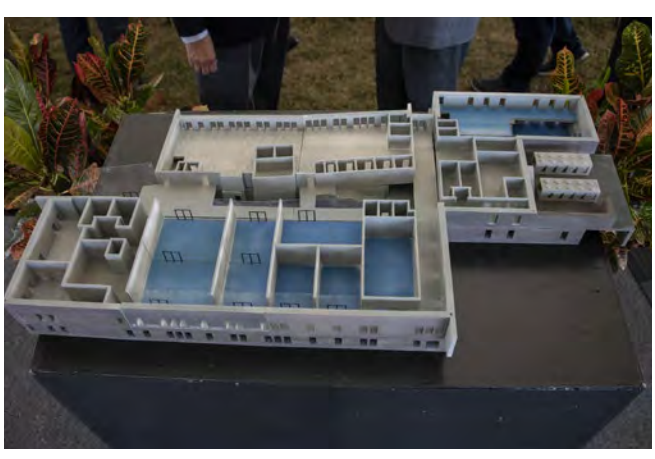
After a four-month period, SRNL transitioned to a new M&O contractor in June. Being an independent national laboratory under new management offers an exciting, compelling vision for the future of SRNL and provides DOE a leadership team and strategy to deliver excellence in science and technology, operations, and continued community engagement.

The new contractor includes an alliance of five regional universities – Clemson University, Georgia Institute of Technology, South Carolina State University, University of Georgia and University of South Carolina – as well as small business partners. Extensive effort was put into standing up independent business systems, developing interface agreements, and preparing for the transfer of employees.

The SRNL Modifications Team reached a milestone of shuttering F/H Laboratory on January 31 and transitioning activities and staff into new facilities.

ADVANCED MANUFACTURING COLLABORATIVE

In April, DOE awarded a contract for the design and construction of the Advanced Manufacturing Collaborative (AMC) facility on the campus of the University of South Carolina Aiken. Once constructed, the AMC will provide SRNL with an accessible, modern facility for R&D that brings government, industry, and academia together to develop and share advanced manufacturing technology. It will also support STEM education to train the next generation of advanced manufacturing workers to support both DOE missions and U.S. industry that will increase manufacturing competitiveness across the state, region and nation.



A 3-D model of the proposed Advanced Manufacturing Collaborative facility to be built at the University of South Carolina-Aiken.

LABORATORY CONSOLIDATION

Consolidation of the F/H Analytical Laboratory was successfully completed, providing operational cost savings of more than $20 million. The F/H Analytical Laboratory has been providing vital and quality analytical results to support SRS in almost every critical mission over the last 60 years. In an effort to close F Area legacy facilities, Savannah River's M&O contractor and SRNL began a phased approach in 2015 to close the laboratory and relocate the lab's capabilities, programs, and personnel to SRNL's main campus. The final phase was completed successfully two years ahead of schedule, despite COVID-19 and other competing SRNL priorities.

NUCLEAR MATERIALS INFRASTRUCTURE AND HANDLING INITIATIVE

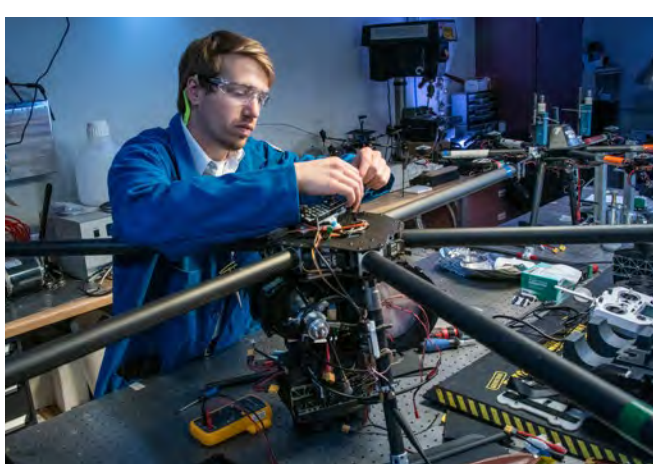
The Nuclear Materials Infrastructure and Handling Initiative was created to establish a comprehensive assessment of the nuclear materials processing and handling infrastructure capabilities and needs across the DOE complex. The initiative worked to provide an integrated, complex-wide understanding of current, emerging and future nuclear materials mission needs, schedule drivers and required processing capabilities, including associated infrastructure. SRNL played a key role in each of the four pillars of the initiative – Infrastructure, Mission Needs, Inventory and Integration. The most significant role was in the development of the Inventory pillar, including the identification of the significant groups of nuclear materials with no defined disposition path and potential alternatives to address them. DOE awarded a special achievement award to the SRNL team for their efforts across all the pillars of the initiative.

DOE-EM/ADVANCED LONG-TERM MONITORING SYSTEMS

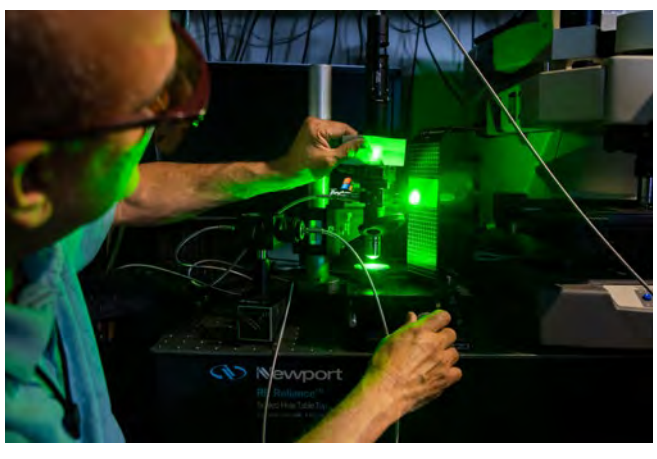
SRNL is the lead of a multi-laboratory and multi-institution project sponsored by the EM Technology Development office to support better design of long-term monitoring strategies for complex groundwater sites and offers a potential to reduce monitoring costs by 90 percent over the next five decades through real-time monitoring systems. This program will aid in developing various machine learning tools for improving soil and groundwater data and estimations using real-time sensor data.

NETWORK OF NATIONAL LABORATORIES FOR ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

SRNL leads the NNLEMS facilitating technical evaluations and consulting by 11 National Laboratories for EM and the DOE Office of Legacy Management (LM). This year, the NNLEMS has been chartered to perform a review of Technology Development efforts across the EM complex to assess alignment with the needs and priorities of the site and EM; perform a National Defense Authorization Act study of supplemental low-activity waste treatment for the Hanford Site in parallel with the National Academies of Sciences, Engineering, and Medicine's review; develop an R&D Roadmap to identify technologies for accelerating the Hanford tank waste cleanup mission; perform an analysis of DOE-LM sites to identify and quantify potential risks; and review the groundwater remediation strategies for plumes of hexavalent chromium and explosives at the Los Alamos site. These teams have been supplemented by experts from academia and industry to ensure relevant technologies are considered.



A mechanical engineer at SRNL prepares a large Hex Copter to be used to demonstrate extended flight time using hydrogen fuel metal hydrides.



An SRNL Laboratory Fellow demonstrates SRNL's capabilities using laser technology.