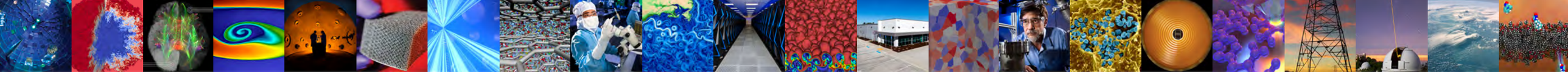

SAFE, SECURE, AND SUSTAINABLE OPERATIONS

Conducting safe, secure, and environmentally sound operations and modernizing the Laboratory's infrastructure to meet evolving mission needs

Work is underway at the Applied Materials and Engineering campus. The multiyear undertaking entails upgrades to several existing facilities and construction of two new laboratories and an office building.

Committed to the highest level of operational performance, LLNL implements best practices in environment, safety, and health (ES&H), and security. Management systems support continuous improvement in work practices. Prudent risk management coupled with active measures to prevent accidents ensures the safety of employees and the public. Investments are targeted to modernize the Laboratory's infrastructure.

ATTENTION TO ES&H

Safe, secure, and environmentally responsible operations are of special importance with the ongoing high-priority life-extension and weapon modification programs, nuclear operations and waste disposal activities, work involving hazardous materials, and numerous new construction and maintenance initiatives. Many construction projects are in progress, and the subcontractor record was excellent in FY 2019. More than 280,000 hours of work were performed without an Occupational Safety and Health Act (OSHA) recordable case or lost time incident.

Overall ES&H performance under Livermore's Integrated Safety Management System exceeded contract expectations. Performance metrics were positive and improvement initiatives in many functional areas were completed or are underway. LLNL achieved recertification for the International Organization for Standardization (ISO) 14001 Environmental Management System and the Occupational Health and Safety Management System 18001 standards with 15 noteworthy practices identified. In addition, LLNL continues implementing its new work planning and control process designed to ensure consistent Laboratory-wide practices, increase rigor and efficiency, and add value to work control documents. The goal is to convert all existing work control documents to the new system by the end of FY 2020.

EFFECTIVE AND SECURE OPERATIONS

In FY 2019, operations at LLNL were well managed, with significant accomplishments in many areas in addition to ES&H. The Laboratory conducted efficient, effective business operations and financial management. Individuals and teams achieved many notable successes in nuclear operations, information technology management, and emergency management. Personnel in the Supply Chain Management Department were honored with more than 20 awards this year. They are streamlining procurement services and delivering on socioeconomic, customer satisfaction, and procurement quality goals. The Laboratory is also benefiting from continuing efforts to enhance awareness, modernize and upgrade the physical security infrastructure, and reduce the security footprint. Employees' strong commitment to security is exemplified by a reduced number of significant security incidents compared to the prior year. In addition, fence relocations at the Laboratory reduced the Limited Area footprint by 15 percent, which lowers security costs.

PROGRESS TOWARD SITE SUSTAINABILITY GOALS

Environmentally responsible work practices are ensured by LLNL's Environmental Management System. These practices provide a systematic approach to identifying and reducing the environmental impact of Laboratory activities. Issued in October 2019, the 2018 *Site Annual Environmental Report* documents LLNL's compliance with environmental standards.

Overall, LLNL is on track to meet many of its sustainability goals. The 2025 goals for clean and renewable energy usage, reduction of fleet petroleum usage, acquisition of zero-emission vehicles, electronic stewardship, and pollution prevention–waste reduction are on track or have already been achieved. However, goals in areas such as energy intensity (including associated greenhouse gas emissions) and water usage reduction are challenged by mission requirements for high-performance computing that demand substantial energy and water for cooling. The new Advanced Manufacturing Laboratory achieved LEED Gold certification, but aging facilities onsite limit options for improving overall energy efficiency of buildings.

INFRASTRUCTURE INVESTMENTS

In response to rapid growth in capital projects at the Laboratory, LLNL established an institutional Project Management (PM) Office in FY 2019 and modernized its PM processes and procedures to ensure on-cost, on-schedule project execution. At the end of the year, the large portfolio of work consisted of 216 projects (103 in active execution) with a total project cost of $613 million.

The $34-million Expand Electrical Distribution System (EEDS) Project was nearing completion—it was recently finished ahead of schedule and nearly $1 million under budget. New 15-kilovolt power cables were installed to eliminate single-point failures to existing facilities and support planned development. In June 2019, Laboratory and NNSA officials celebrated the groundbreaking for the jointly sponsored Applied Materials and Engineering (AME) campus at LLNL. The "area plan" collocates synergistic capabilities into new and renovated repurposed buildings on the campus to gain efficiencies and reduce overall site footprint. AME is urgently needed to support the warhead modernization programs.

A ribbon-cutting ceremony celebrated the completion of an extensive renovation of Livermore's radiochemistry laboratories.

The Laboratory also continuously upgrades facilities and equipment to help carry out LLNL's mission safely and effectively. In November 2018, radiochemists in the Nuclear and Chemical Sciences Division celebrated completion of a $5.1-million renovation of their laboratory space—now modernized with new equipment that support multiple mission areas.

SUSTAINABLE LANDSCAPE ALONG EAST AVENUE

East Avenue, the busy thoroughfare that runs between Lawrence Livermore and Sandia national laboratories, is graced with a new look, thanks to the efforts of LLNL's Landscape and Pest Management team. They eagerly took on the task of creating a landscaping design that is both environmentally sustainable and aesthetically appealing, using drought-resistant plants and other natural materials. The team hopes to follow this successful effort with more such projects at other locations around the LLNL main site.