



On aiEDGE for Innovation Day, LLNL employees from an array of job roles explored AI models through demonstrations and breakout sessions focused on real-world applications, evaluating the models for their ability to enhance productivity, streamline operations, and accelerate scientific research.

SAFE, SECURE, AND SUSTAINABLE OPERATIONS

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

COMMITTED to the highest level of operational performance, LLNL staff follow best practices in environment, safety, and health (ESH), 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 and continually improve operations.

ENABLING MISSIONS AND TRANSFORMING OPERATIONS

In FY 2025, operations at the Laboratory were well managed, with attention to security, significant accomplishments, and focused efforts to streamline operations as part of an institution-

wide transformation initiative. LLNL conducted efficient, effective business operations and financial management. Individual and team efforts achieved many notable successes in ESH, information technology management, legal services, and nuclear operations. The transformation initiative achieved a major goal in FY 2025 with the return of 1 million hours to the workforce through process improvements. With the aid of AI, efforts to transform the workplace are expanding, often through suggestions to management from employees. In FY 2025, more than 40 institutional process improvements were implemented—focused on efficiency, automation, compliance, data management, and user experience. These improvements span areas such as travel, shipping and receiving, asset

management, training, safety, hiring, and environmental operations.

In addition, LLNL launched the AI Education for Development, Growth, and Excellence (aiEDGE) campaign in late FY 2024 to empower the workforce to integrate AI into their daily work. The campaign included an aiEDGE for Innovation Day in March 2025. At locations across the site and virtually, more than 3,200 employees from a wide array of job roles explored AI models through demonstrations and breakout sessions. Activities focused on real-world applications and evaluating the models for their ability to enhance productivity, streamline operations, and accelerate scientific research. Partnerships with major AI companies are now making available to LLNL staff new tools for testing and learning.

SUPERBLOCK IMPROVEMENTS

LLNL’s Superblock activities are essential for pit certification; research in plutonium science and the science of aging; manufacturing support for subcritical experiments and targets used in the National Ignition Facility; and nuclear forensic work for nonproliferation. A comprehensive review of Superblock program and operational requirements identified opportunities to improve productivity and enhance efficiency and to develop a plan for Superblock modernization, equipment upgrades, and staffing needs. A program reorganization consolidates responsibility and improves decision-making processes.

Changes are underway to streamline operations while paying required special attention to assure personnel and environmental protection, security, and programmatic efficacy. For example, LLNL experts are leveraging AI to reason across an integrated Superblock Documented Safety Analysis (DSA) and related data as a digital safety basis management system. The DSA is a complex 1,400-page document. This transformation will enable more efficient tracking, updating, and linking of information. Many other operational activities around the Laboratory will benefit from similar AI-assisted

data efforts. In addition, a change in particular operational procedures at Superblock will save about 5,300 staff hours annually. This savings was identified by the Comprehensive Operational Risk Pilot (CORP), carried out with the DOE Livermore Field Office, which examined risks in several program areas to determine whether they can be exempted from select DOE requirements to achieve mission goals more efficiently. Other NNSA sites may follow the CORP pilot model.

INFRASTRUCTURE INVESTMENTS

A key enabler for mission success, infrastructure transformation is addressed through the Laboratory’s infrastructure planning cycle, which identifies the need for new construction and facility modernization. LLNL is currently executing 148 active projects and completed 88 projects during FY 2025. In January, stakeholders celebrated the completion of a four-year project to convert an atrium area at the High Explosives Application Facility into 1,200 square feet (sq.ft.) of critically needed high explosive laboratory and utility space. Construction of the Digital Infrastructure Capability Expansion (DICE) was completed under budget and met all scheduled milestones. DICE replaces a pre-internet facility

built in the 1980s. It addresses LLNL’s networking and telecommunications needs and growth projections for the next 40 years. The 13,000-sq.ft. facility is designed to be highly resistant to earthquakes and provide redundancies to safeguard against outages.

Moreover, LLNL is revitalizing key capabilities by safely and securely executing a large portfolio of both direct and indirectly funded minor construction projects. Many minor construction, recapitalization, and demolition and disposal projects are underway. Construction has also begun on an employee center. The all-purpose, 23,000-sq.ft. facility will provide modernized, centrally located space for staff to engage in collaborations, wellness activities, and recreation. These investments greatly enhance the workspace for the current and future generations of employees delivering on LLNL’s vital national security missions.

ENVIRONMENT, SAFETY, AND HEALTH

LLNL strives to maintain a safe, secure, and efficient operational environment for its employees and neighboring communities. In FY 2025, the Laboratory improved injury and illness performance with about 25 percent reductions in both the Day Away Restricted Time and Day Away Case rates. In addition to better safety performance, a notable accomplishment was the completion of a multiyear effort to improve lockout-tagout (LOTO) operations. LOTO is a safety procedure for ensuring that equipment is properly shut off, isolated from hazardous energy sources, and not restarted until safe operating conditions are verified. Operational safety will benefit from the many upgrades made to LOTO policy, training, work planning and control, and facility design and engineering.

The 2024 Annual Site Environmental Report (issued in October 2025) documents monitoring results and LLNL’s compliance with environmental standards. Livermore’s environmental functional areas conducted more than 300 Management Observations and Inspections this year and used findings to inform continuous improvement and ensure compliance. Examinations by 17 external inspectors concluded with zero violations. All reporting requirements to DOE and other environmental agencies were met on time or ahead of schedule.



LLNL’s Superblock, where a materials scientist is shown studying properties of plutonium, is an essential NNSA facility for nuclear operations. It is undergoing actions to improve productivity, enhance efficiency, and modernize processes and equipment to meet important mission responsibilities.