TA-55 PF-4

LANL Plutonium-Processing Facilities

National Security

At the Los Alamos National Laboratory (LANL), virtually all plutonium operations occur within the Plutonium Facility at Technical Area 55 (TA-55). TA-55 is the nation's most modern plutonium science and manufacturing facility, and it is the only fully operational, full capability plutonium facility in the nation. Thus, TA-55 supports a wide range of national security programs that involve stockpile stewardship, plutonium processing, nuclear materials stabilization, materials disposition, nuclear forensics, nuclear counter-terrorism, and nuclear energy.

Operations at TA-55 maintain a critical skill base of plutonium expertise across a broad suite of technical capabilities. These capabilities form a center of excellence for actinide science and technology, including world-class manufacturing capabilities for solving significant national security challenges.

The TA-55 Plutonium Facility

The Plutonium Facility at TA-55, also referred to as PF-4, began operations in 1978. The 233,000 square-foot PF-4 building was constructed to withstand 200-mile-per-hour winds, and any credible seismic event.

Beyond efforts in the area of stockpile stewardship, TA-55 facilities support national interests in plutonium-238 heat source fabrication, surveillance, production, dismantlement, and materials management. Among other things, these efforts support requests for power sources for unmanned or unmaintained situations, such as NASA space missions.

Capabilities

In support of national security missions, the key capabilities at TA-55 include basic and applied research in plutonium and actinide chemistry; nuclear materials separation, processing, and recovery; plutonium metallurgy, preparation, casting, fabrication, and recovery; machining and metallurgy laboratories; and destructive and nondestructive analysis laboratories. Additionally, TA-55 can safely and securely ship, receive, handle, and store nuclear materials, as well as manage wastes and residues.

TA-55 supports LANL plutonium sustainment pit manufacturing and surveillance programs. Scientists in these programs perform plutonium metal preparation and recovery operations.

Foundry, machining, welding, and assembly operations also are required for pit manufacturing, as well as a complete suite of nondestructive analyses to ensure product acceptability.

Plutonium experiments at TA-55 support the nation's stockpile assessment, without the need to conduct actual nuclear tests.