

Assessing the Weapons Capabilities of Others

Since the early days of Livermore, intelligence agencies have sought Laboratory expertise in nuclear weapons design to analyze atmospheric nuclear tests conducted by the Soviets and to develop an understanding of the Soviet nuclear program and weapon designs. The Soviet Union's first test of an atomic weapon in the late 1940s took the West by surprise, and monitoring the Soviet effort to rapidly develop nuclear weapons became a paramount concern of U.S. intelligence agencies. As the Cold War raged, the Laboratory's efforts expanded, and the Central Intelligence Agency (CIA) found itself needing a more formal mechanism for obtaining expert analysis of information about Soviet nuclear weapons tests.

In 1965, Laboratory scientists and engineers helping intelligence agencies understand the significance of Soviet nuclear weapons tests were consolidated into Z Division, today known as the International Assessments Program. ("Z" was chosen as the division title because it was one of the few remaining unused letters.) Under Laboratory Director John Foster, a formal relationship with the U.S. Intelligence Community was established in a memorandum of understanding signed between the CIA and the Atomic Energy Commission, a predecessor to the Department of Energy.

Z Division set up shop in Building 261. When more space was needed, a specially designed and secure addition was built to intelligence agency specifications. Scientists and engineers in Z Division analyzed radiological samples from Soviet, and later Chinese, nuclear tests. They also developed new technologies for monitoring tests and collecting data that allowed analysts to tell what kind of weapons were being tested—atomic or thermonuclear. In addition, the Laboratory's technical expertise was tapped by intelligence agencies to develop instruments, such as a "bug sniffer" for detecting minute electronic monitoring devices.

Anticipating that nuclear proliferation could become a major problem, Z Division started a proliferation monitoring program in the mid-1970s. That effort has continued to grow together with the Intelligence Community's need for all-source analyses of the nuclear programs of an expanding list of countries of concern. Involving both regional

specialists and technical experts, these multidisciplinary analyses draw on general technical knowledge about nuclear testing, specifics about each country's nuclear capabilities, and evaluations of nontechnical issues that motivate nuclear programs. With the end of the Cold War, proliferation analysis activities are now a principal mission of Z Division, including examining activities related to other types of weapons of mass destruction (WMD) and their delivery systems.

Z Division was a primary building block of Livermore's Nonproliferation, Arms Control, and International Security (NAI) Directorate. Director John Nuckolls established NAI in 1992 in response to what was then an emerging threat—WMD proliferation and terrorism. The principal program elements of NAI are International Assessments (Z Division), Proliferation Prevention and Arms Control (PPAC), Proliferation Detection and Defense Systems (Q Division), and Counterterrorism and Incident Response (R Division).



Models of early Soviet nuclear weapons are on display at the Nuclear Weapons Museum at Arzamas-16, the Soviet Los Alamos, shown in an early photograph.



Construction began in 2002 on the \$25-million International Security Research Facility, which will consolidate Livermore's nonproliferation and intelligence-related operations into a single building with cutting-edge information technology tools.