

Project on
Nuclear Issues

2010 Summer Conference Tour Options

Tour Option 1: Defense Threat Reduction University, Kirtland Air Force Base

Restrictions: DoE and DoD Security Clearance Required

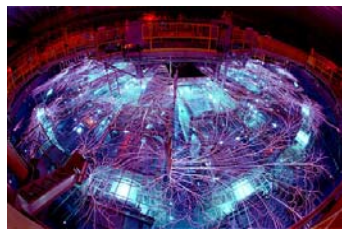
Defense Threat Reduction University (DTRU), located at Kirtland Air Force Base, N.M., is the Defense Threat Reduction Agency's flagship training institution. It is composed of two branches: the Defense Nuclear Weapons School (DNWS) and the Defense Threat Reduction Information Analysis Center (DTRIAC). DNWS, which traces its history back to the Manhattan Project, is a unique entity that provides education and training in radiological and nuclear weapons, nuclear and radiological incident command and control, incident response, and chemical, biological, radiological, and nuclear modeling for DoD and other federal, state, and local agencies. It offers courses in three instructional modes (in-residence, distance learning, and mobile training team), provides professional certification regimens in WMD-related disciplines, and is partnered with colleges and universities to offer undergraduate-level college credit for many of its courses.

DTRIAC is the nation's library for scientific and technical data spanning the entire history of the nuclear age. It establishes and maintains comprehensive knowledge bases, which include historical, technical, scientific, and other information collected throughout the world and pertinent to the nuclear community. The **Weapons Display Area (WDA)**, an important part of the DNWS training program, includes a one-of-kind collection of each U.S. nuclear weapon to have been deployed.

DoE personnel must submit a 5631-20 form and DoD personnel must submit their clearance information to the DTRA badge office by July 12.

Tour Option 2: Pulsed Power Technology and National Security Technologies and Systems Tour

Restrictions: U.S. Citizens Only



Pulsed Power Technology (PPT) is used to generate and apply energetic beams and high-power energy pulses. It is distinguished by the development of repetitive pulsed power technologies, x-ray and energetic beam sources, and electromagnetic and radiation hydrodynamic codes for a wide variety of applications. Some examples of these applications include: nuclear survivability and hardness testing; measurement of material properties; Z-pinch-driven inertial confinement fusion; high energy density physics; radiation hydrodynamics and radiation science; interpreting data from x-ray binaries and galactic nuclei. The PPT corridor includes the Z Accelerator and the Z-Backlighter Laser. The **Z Accelerator**, known simply as "Z" at Sandia, is the world's most efficient (15%) and powerful laboratory x-ray source, producing x-ray powers in excess of 200 trillion watts. When the five-year project to refurbish Z is completed in 2007, x-ray energies of nearly three million joules and x-ray powers exceeding 300 trillion

watts should be possible. The **Z-Backlighter Laser (ZBL)** is the third largest pulsed laser in the world. It provides x-ray images of imploding capsules and wire-array dynamics on Z experiments.

The **National Security Technologies and Systems (NSTS)** tour is an "Integrated Technologies and Systems Exhibit" that includes interactive displays and demonstrations on the technologies and capabilities related to homeland security, homeland defense, and nonproliferation and assessment. The exhibit takes the form of a host-guided walking tour set up around a series of stations, each of which gathers together technologies related to a Sandia capability. These stations include Border and Transportation Security (including detection and identification of explosives and radiation sources), Information Analysis and Infrastructure Protection (including tags and tracking), Emergency Preparedness and Response (including bomb disablement), and Science and Technology (including chem/bio detection and identification with an emphasis on microelectronics). Particular attention is paid to Sandia's systems approach to solving problems and developing technologies that can be deployed in the field. Unlimited release fact sheets are available on many of the technologies displayed.

Tour Option 3: National Solar Thermal Test Facility and International Programs

Restrictions: None



Operated by Sandia National Laboratories for the U.S. Department of Energy (DOE), the National **Solar Thermal Test Facility (NSTTF)** is the only test facility of this type in the United States. The primary goal of the NSTTF is to provide experimental engineering data for the design, construction, and operation of unique components and systems in proposed solar thermal electrical plants planned for large-scale power generation. In addition the facility can provide: high heat flux and temperatures for materials testing or aerodynamic heating simulation; large fields of optics

for astronomical observations or satellite calibrations; a solar furnace; and a rotating platform for parabolic trough evaluation. The site was built and instrumented to provide test facilities for a variety of solar and non-solar applications. Several mechanisms are available for users to contract with Sandia for use of the facility. Previous users include other researchers, including government contractors and agencies, research institutes, universities, and private companies.

Visitors to the **International Programs Building (IPB)** will have the opportunity to view the Cooperative Monitoring Center, which was established in 1994 to provide a forum for technical and policy experts from around the world to explore how unclassified, shareable technology could help implement confidence building measures (CBMs), treaties or other agreements. The CMC encompasses a wide range of facilities and partnerships that enable all stages of international technical cooperation, including: training on the technologies, procedures, and approaches (e.g., on-site inspection, remote monitoring, imagery analysis, sensors, tags and seals); analysis of security issues and development of options for implementing solutions; test and evaluation of technical approaches; and implementation and operation of technical measures.