



**National Nuclear Security Administration
U.S. Department of Energy**

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NNSA Conducts Experiment to Improve U.S. Ability to Detect Foreign Nuclear Explosions

WASHINGTON, D.C. – Last week, a National Nuclear Security Administration's (NNSA) led-team successfully conducted the fourth in a series of experiments designed to improve our ability to detect underground nuclear explosions. The Source Physics Experiment (SPE-4 Prime) is a fundamental step forward in the U.S. effort to improve arms control verification, and will eventually be used to assure compliance with the Comprehensive Nuclear Test Ban Treaty (CTBT).

NNSA Deputy Administrator for Defense Nuclear Nonproliferation, Anne Harrington, noted that “The seismic Source Physics Experiments substantially advance the United States’ efforts to develop, validate and improve on emerging technology. The work conducted at the NNSS and by the NNSA’s Defense Nuclear Nonproliferation programs serves to advance the implementation of President Obama’s nuclear nonproliferation agenda.”

The SPE-4 Prime experiment used a chemical explosive equivalent to 196 pounds of TNT in a contained, confined environment 286 feet below ground. Information gathered from this experiment includes high-resolution accelerometer, infrasound, seismic, explosive performance, electromagnetic, ground-based LIDAR (light detection and ranging), digital photogrammetry data, and satellite-based Synthetic Aperture Radar. These data are then used to validate modeling, theory, and improve tools that the US can use to independently verify international compliance with treaties and commitments.

Nevada National Security Site, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratories, the University of Nevada (Reno) and the Defense Threat Reduction Agency all participated in the SPE-4 Prime team.

NNSA’s three national laboratories have already used the data from the first three experiments in the series (SPE-1, executed in May, 2011, SPE-2, executed in October, 2011, SPE-3 executed in July, 2012). Data from these experiments are archived and available on the IRIS (Incorporated Research Institutions for Seismology) web site: <http://www.iris.edu/hq/>.

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