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## NNSA Completes Security Upgrades At 25 Russian Nuclear Warhead Sites

With the completion of U.S.-funded security upgrades at a Russian Strategic Rocket Forces base in Siberia, all of the security work at 25 Russian nuclear missile sites outlined in a 2005 agreement between Presidents Bush and Putin has been finished. The work was carried out through NNSA's Material Protection, Control and Accounting program by experts from Sandia and Oak Ridge national laboratories.

"Completing this security work at the Strategic Rocket Forces sites helps to fulfill President Bush's commitment under the Bratislava joint statement with Russia, and shows our continued partnership with the Russians," said NNSA Deputy Administrator for Defense Nuclear

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## Nuclear Weapons Dismantlements Up 146 Percent

Nuclear weapon dismantlements have increased over last fiscal year's level by 146 percent, according to NNSA Administrator Thomas D'Agostino. This increase far surpasses NNSA's original goal of increasing dismantlement rates by 50 percent.

D'Agostino said NNSA's focus on dismantling nuclear weapons supports President Bush's goal of having the lowest number of nuclear weapons consistent with the nation's national security needs.

"This is an outstanding achievement by our dedicated employees. By greatly exceeding our dismantlement goal, NNSA is supporting the U.S. leadership role in global nonproliferation and disarmament efforts," D'Agostino said. "Our success ensures that these weapons cannot be used again and sends a clear message to the world that this administration remains committed to reducing the number of nuclear weapons in the U.S. nuclear stockpile."

In 2004, President Bush directed that the stockpile be reduced

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**BODMAN TOURS PANTEX PLANT:** BWXT Pantex Weapons Training Specialist Tina Morgan (left) and Manufacturing Manager Tom Gallegos (right) speak with Energy Secretary Samuel W. Bodman about the B61 weapons program as part of his tour through the Pantex Plant. Read about NNSA's 'Getting The Job Done' highlights on pages 4 and 5.

## NNSA Completes Security Upgrades

(continued from page 1)

Nonproliferation William Tobey. "We remain dedicated to working as quickly as possible to secure nuclear weapons and other dangerous materials in Russia and around the world to prevent unauthorized access."

The U.S.-funded security upgrades are part of a 2005 joint nuclear security statement issued by Presidents Bush and Putin at Bratislava, which covers 25 rocket sites at 11 Russian missile bases and calls for NNSA to do this work as part of its overall, annual \$1.7 billion global nuclear nonproliferation and threat reduction mission. Since 2003, NNSA has spent approximately \$150 million to improve security at the 25 sites, including upgrading state-of-the-art intrusion detection and monitoring systems, metal and explosives detectors, new entry control portals, and nuclear material detectors. Additionally, security guard forces at the sites received strengthened fighting positions, a centralized response facility and look-out towers.

To date, NNSA has secured enough Russian nuclear material for thousands of warheads and has completed upgrades at more than 85 percent of the Russian nuclear warhead, material and missile storage sites of concern with work underway at the balance of sites to be completed by 2008.

## Nuclear Weapons Dismantlements Up 146 Percent

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nearly 50 percent by 2012, making it the smallest level since the Eisenhower administration in the 1950s. This means that in five years the stockpile will be one-quarter of its size at the end of the Cold War.

Many sites throughout the nuclear weapons complex contributed to the dismantlement effort. Initial assessments of the dismantlement process were made at the laboratories, the plutonium cores were removed at the Pantex Plant, the uranium components were processed at the Y-12 National Security Complex, and the remainder of the weapons components were taken apart at the Savannah River Site and the Kansas City Plant.

Dismantling excess warheads is not only central to the President's goal of reducing the U.S. nuclear weapons stockpile, but also an instrumental part of NNSA's vision to transform the nuclear weapons complex into one that is smaller, more modern, and more efficient to meet future challenges.

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***"We commend Will Tobey and his nonproliferation team at NNSA and their Russian counterparts for their continuing efforts securing nuclear materials and weapons at sites throughout Russia. They are heroes in the battle to prevent nuclear terrorism... Much remains to be done on nuclear weapons materials security in the former Soviet Union and around the globe, but installation of these state-of-the-art upgrades to the network of Russian nuclear missile sites is a big step forward."***

**Former Senator Sam Nunn  
Co-Chairman of the Nuclear Threat Initiative**

**PEP TALK:** NNSA's Sandia Site Office (SSO) and Sandia National Laboratories (SNL) managers sign the annual Performance Evaluation Plan (PEP), which sets the negotiated performance criteria by which the site office will appraise Sandia Corporation performance in its management and operation of SNL in fiscal year 2008. Pictured from left to right: Seated, Patty Wagner, SSO manager, and Tom Hunter, SNL president and laboratories director. Standing: John Stichman, SNL executive vice president and laboratories deputy director; Joe Polito, SNL vice president of enterprise transformation;



Michael Cassady, SNL contract compliance manager; Kim Davis, SSO deputy manager; Jeff Petraglia, SSO executive officer; and Michael Perez, on temporary assignment to SSO's Contract Administration & Business Management. The roles of the team members ranged from preparation, review and concurrence to approving and signing the PEP.

# NNSA Acts In Emergency Response Exercise

In cooperation with the fourth full-scale, national terrorism preparedness exercise, NNSA worked with the U.S. Department of Homeland Security (DHS) to respond to three simulated dirty bomb attacks in Guam, Arizona, and Oregon.

TOPOFF4 required interactive play from NNSA's Office of Emergency Response, which provided necessary assets to affected sites, and from NNSA public affairs officials, who participated in interagency coordination and in media support. NNSA emergency response personnel

Monitoring and Assessments Center, Aerial Measuring Systems, National Atmospheric Release Advisory Capability, and the Radiation Emergency Assistance Center/Training Sites. All activity was closely monitored from NNSA's



**INTERACTIVE PLAY:** During the exercise, a team of field technicians enter field monitoring information into a portable electronic tablet. This new wireless system used at TOPOFF4 provided real-time data to the Federal Radiological Monitoring and Assessment Center much faster than previous methods. This information was used to make data maps for use by local, county and state decision makers in regard to protective actions for local residents.

Emergency Operations Center in Washington, D.C., which determined the type and number of assets to use during the exercise.

NNSA public affairs officials also played a key role in TOPOFF4 and kept the public, the media (both real and simulated), and other agencies

informed of response efforts. Senior NNSA officials, including Associate Administrator for Emergency Operations Joseph Krol, participated

Called TOPOFF4, the exercise was the fourth congressionally-mandated exercise for "Top Officials." It involved participants from all levels of the United States government, international partners and the private sector. This year's exercise drew more than 15,000 participants in an effort to enhance interagency coordination, planning, and emergency preparedness in case of a terrorist attack.

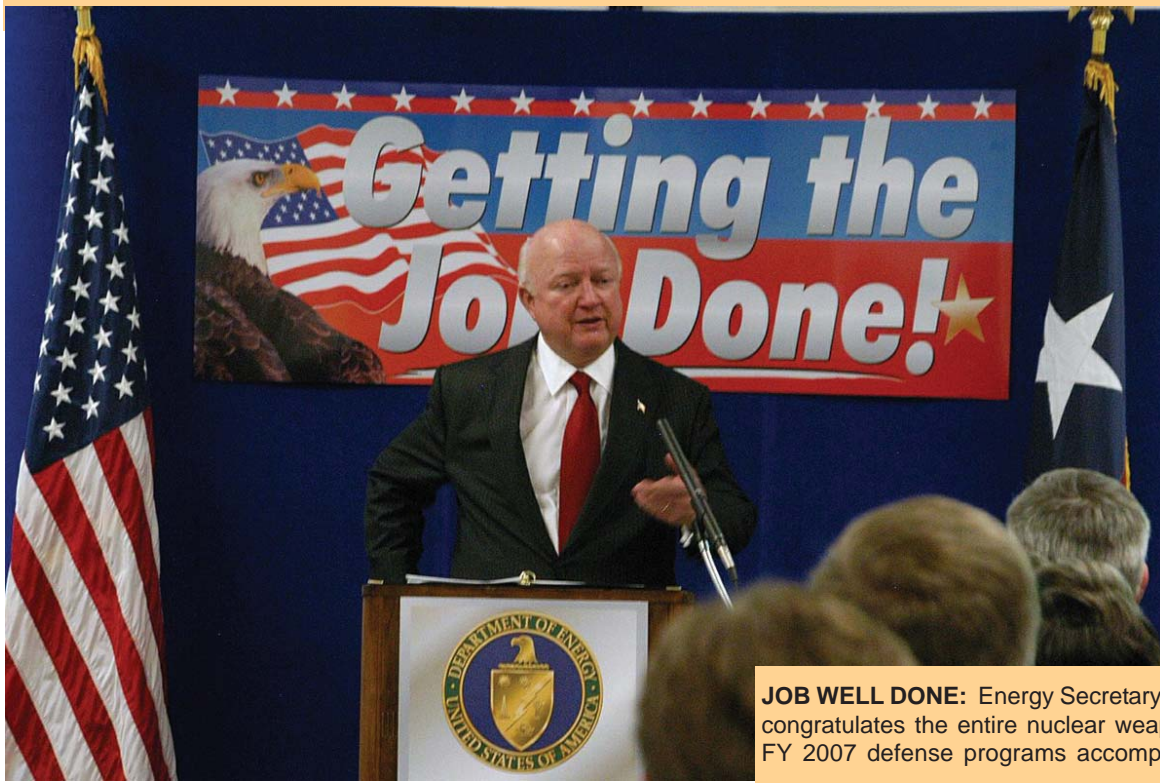
began preparing and supporting DHS for the exercise in January 2006.

With over 50 years of nuclear weapons experience in responding to nuclear accidents and incidents, DHS relied on NNSA's first responders and experts to assess the damages and provide support in recovery efforts. NNSA activated, and in some cases deployed, assets including: the Radiological Assistance Program teams, the Federal Radiological

in news conferences while subject matter experts briefed observers and reporters on dirty bombs and NNSA's emergency response assets. Public affairs officials interacted with the Portland and National Joint Information Centers to prepare necessary materials, and participated in interagency coordination conference calls.

# NNSA

FY 2007



**JOB WELL DONE:** Energy Secretary Samuel W. Bodman congratulates the entire nuclear weapons complex on their FY 2007 defense programs accomplishments.

Energy Secretary Samuel Bodman, NNSA Administrator Thomas D'Agostino, and Principal Assistant Deputy Administrator for Operations Marty Schoenbauer joined representatives from each of the nuclear weapons complex sites at NNSA's Pantex Plant to celebrate a successful fiscal year 2007. The event, aired complex-wide via video teleconference, was a celebration of the impressive achievements of NNSA's Office of Defense Programs over the last year.

Defense Programs works to improve capabilities to maintain and assess the safety, security and reliability of existing nuclear warheads without the use of nuclear testing. To help achieve this goal, the office developed a list of priorities, deemed the "Getting the Job Done" list, to focus attention on the top 10 high-profile items. This list shows ways in which the nuclear weapons complex will work to support Defense Programs' overall mission.

To employees watching across the complex, Secretary Bodman

noted the great progress he has seen NNSA make during his tenure and spoke about his renewed confidence every year to report to the President about the safety, performance and reliability of the nuclear weapons stockpile. "I've come a long way to say thank you to the men and women of this part of the department," said Secretary Bodman. "I am very proud of all of you."

Administrator D'Agostino also highlighted NNSA's pivotal role in making the world a safer place through work that cuts across all of NNSA's programs, including continued accomplishments in nonproliferation, counterterrorism and emergency operations missions. Looking ahead to the next fiscal year, Administrator D'Agostino reiterated the importance of creating a better and more integrated complex.

During a multimedia presentation depicting each of the "Getting the Job Done"

achievements for the previous fiscal year, Principal Assistant Deputy Administrator for Operations Schoenbauer commented, "Individually, all of the accomplishments are significant. Together, they are remarkable."

Fiscal year 2008 brings a new set of ambitious challenges to Defense Programs and to NNSA,

**"I've come a long way to say thank you to the men and women of this part of the department. I am very proud of all of you."**

*Energy Secretary*

but the enhanced integration of the complex and renewed focus on NNSA's priorities will help ensure success.

# 's Defense Programs Is Getting The Job Done

## 07 "Getting The Job Done" Highlights

- *An increase of 146 percent over FY 2006 in the dismantlement of retired weapons;*
- *Rebuilt a W88 warhead with a new gas transfer system and the first pit manufactured in over 18 years;*
- *The first U.S. tritium produced in over 15 years;*
- *A 99.99 percent on-time delivery rate from the Kansas City Plant and consistently high quality from the entire complex;*
- *Significant progress on the Reliable Replacement Warhead program, complex transformation and a wide variety of other critical stockpile stewardship activities.*

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y Samuel W. Bodman



**MILITARY SERVICE AT PANTEX:** Energy Secretary Samuel W. Bodman meets with NNSA's Pantex Plant employees who have recently served in the military.

## Successful 'Shots' Signal Re-opening Sandia's Giant Z Accelerator

The Z machine at Sandia National Laboratories in New Mexico, the world's largest producer of X-rays, recently shook the ground for several hundred yards in every direction for the first time since July 2006, when the 22-year-old facility was gutted to undergo a complete refurbishment at a total project cost of \$90 million.

Z has been overbooked in recent years with requests for experiment time from national labs, universities, and the international community. The facility is in demand because of Z's capability to subject materials to immense pressures, compress spherical capsules to produce thermonuclear fusion reactions, fire objects much faster than a rifle bullet, and produce data for models of nuclear weapons effects - as well as the conditions surrounding black holes in space. Given its complex mission, it was time for a more modern Z.

The improved version is capable of firing more often, at higher energies, and with improved precision. Optimized for both z-pinch and material properties work, the new facility will increase the strength of its electrical pulse from 18 million amps to an anticipated 26 million amps. A z-pinch is known for its large current passing in the vertical direction - the Z direction in cylindrical geometry which creates a magnetic field that pinches together the ions of thin wires that serve as electrical conductors until the current vaporizes them. The facility will improve control over the shape of its electrical pulse for better reproducibility as it enters new experimental regimes.

Over the next several months, Z will conduct more tests to verify, validate and optimize the performance and predictive models for the accelerator and determine reliable operating points for science program operation, its ultimate purpose.

Z's roots go back to 1985 when it was constructed as the Particle Beam Fusion Accelerator II, designed for light-ion fusion research. Lithium ions were shot at a target. Z-pinch technology breakthroughs used simple electricity and the z-pinch effect. Improvements led to modifying the center portion of the machine in 1996 to utilize this approach to successfully produce high energy density environments.

## Eight NNSA Employees Receive The Presidential Rank Award

Eight NNSA federal employees have received the Presidential Rank Award. The award is given by the President on an annual basis to recognize senior government executives for their strong leadership, accomplishments and dedication to public service.

"The recipients of this award have established significant records of accomplishment and demonstrated exceptional leadership and dedication to duty," said NNSA Administrator Thomas D'Agostino. "These awards are a tremendous honor for each of the recipients and for the NNSA. I would like to congratulate each of the award winners and to thank them for their overall contributions to U.S. national security."

NNSA's eight award winners were recipients of the Meritorious Presidential Rank award, which is only given to five percent of the total federal career senior executive service employees each year. They were nominated by Energy Secretary Samuel W. Bodman and then carefully evaluated by boards of private citizens before being honored by the President. In addition to a certificate signed by the President, the honorees will receive an award equal to 20 percent of their basic pay.

The following is a list of NNSA's Meritorious Presidential Rank award recipients:

- Associate Administrator for Defense Nuclear Security William J. Desmond;
- Assistant Deputy Administrator for International Material Protection and Cooperation David G. Huizenga;
- Associate Administrator for Management and Administration Michael C. Kane;
- Associate Administrator for Emergency Operations Joseph J. Krol;
- Director of Nuclear Technology Division for Naval Reactors Troy J. Mueller;
- Program Manager for Surface Ship Nuclear Propulsion Elmer Michael Naples;
- Assistant Deputy Administrator for Program Integration Antonio F. Tavares; and
- Deputy Associate Administrator for Infrastructure and Environment Alice C. Williams.

# LLNL Safeguards Nuclear Materials Using Antineutrinos

Scientists at NNSA's Lawrence Livermore National Laboratory

that occurs in a reactor's core and if detected early, they can help researchers monitor plutonium levels, which could be used in nuclear weapons.

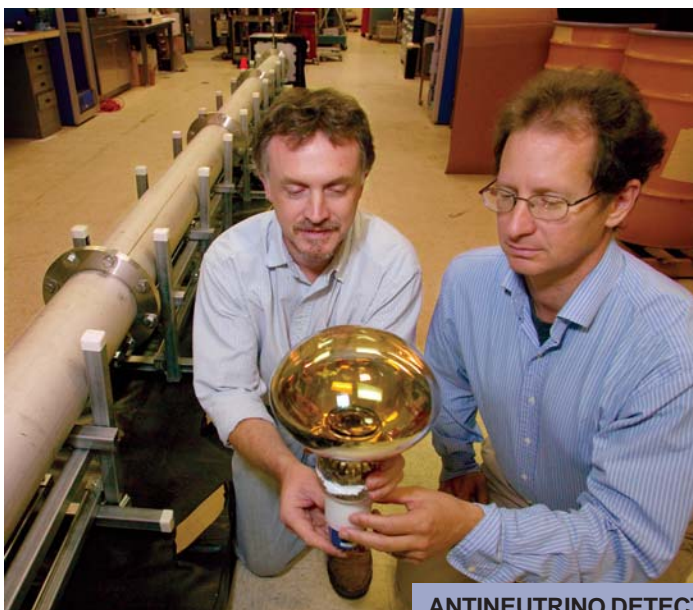
Nuclear Generating Station in California, where they will be operated at all stages of a planned reactor shut-down to hopefully confirm the detectors' ability at tracking the state of reactor operations in real time, thereby helping to ensure that excess plutonium is not being created or diverted.

NNSA's Office of Nonproliferation Research and Development supports this research with the overarching goal of assisting the international safeguards

"The antineutrino monitor provides the earliest possible estimate of fissile content (in a reactor), starting from the moment the plutonium is born in the core," said Adam Bernstein, LLNL's principal investigator on the project.

"It's attractive because it offers direct monitoring in real time. The method is also non-intrusive, requiring neither access to the core nor removal of the reactor fuel."

In the future, scientists will be able to reduce both the physical and environmental footprint of this detector, making it a cost-effective, technology that can be deployed at hundreds of reactors around the world.



**ANTINEUTRINO DETECTOR:** Lawrence Livermore National Laboratory researchers Steve Dazeley (left) and Adam Bernstein examine one of the photomultiplier tubes used to collect light generated by antineutrino interactions in detectors.

(LLNL) and Sandia National Laboratories are developing monitors for antineutrinos - subatomic particles that have no electric charge and virtually no mass - at civilian nuclear reactors to guard against undeclared nuclear weapons programs.

Antineutrinos are released during the nuclear fission process

community to ensure that governments are not operating undeclared weapons programs. In August, the research team shipped two newly designed antineutrino detectors to the San Onofre

**D'AGOSTINO MEETS WITH GRADUATE FELLOWS:** Administrator Thomas D'Agostino (right) meets with NNSA Nonproliferation Graduate Program (NGP) fellows to brief them on nuclear weapons technology. D'Agostino offered encouraging words to the new NGP class, who started their assignments with NNSA this summer. "It is very important to bring in people like you who challenge the status quo; and that is what we hope you will do," he said. "We have a tremendously important mission ahead of us and you're a part of that." Also present at the discussion was William Tobey, deputy administrator for NNSA's Office of Defense Nuclear Nonproliferation. The NGP was created in 1995 to allow select young people to work within NNSA's Office of Defense Nuclear Nonproliferation on programs designed to detect, prevent and reverse the proliferation of nuclear weapons. The program has 125 alumni, 48 of whom have returned to NNSA to become office directors, program managers and team leaders.



## New Super Vault Type Room Open For Business

Capitalizing on the digital revolution, NNSA's Los Alamos National Laboratory in New Mexico recently opened a prototype Super Vault Type Room (S-VTR) following certification of the facility for classified operations by NNSA. It's the first such security facility of its kind in the NNSA complex.

The S-VTR turns the dynamic challenges of information technology into a solution for security. "By utilizing tens of miles of encrypted digital fiber optics at the laboratory, we can remove distance as an element of convenience and greatly consolidate our management of cyber information," said Roger Hagengruber, the laboratory's chief security officer.

"The S-VTR represents a new era in how this laboratory uses, handles and protects electronic classified information," said laboratory Director Michael Anastasio. "It's a higher level of accountability and accessibility that in many ways mimics the way a bank handles assets, both physically and electronically. Ease of appropriate access is coupled with aggressive security in a way that should enable both great science and great security."

Demonstrating the close partnership of cyber security and physical security at the laboratory, the S-VTR employs the latest in technology and uses a tried-and-true physical system for delivery of some classified items: a Diebold bank teller's window. Researchers are now able to pick up and drop off accountable classified removable electronic media, or A-CREM, without the S-VTR staff having to open the vault door - a simple, but major step in improved security.

Instead of pickup and delivery, employees also have the option, depending on their circumstances, of having the professional security staff of the facility make their A-CREM available on secure servers connected to the laboratory's classified computing network.

## NNSA Moving Forward On Foreign Travel Improvements

Much of NNSA's work requires traveling overseas, making it important that travel procedures be as efficient and user-friendly as possible. NNSA's Office of International Operations, which carries out many of the foreign travel functions within NNSA, is engaged in three efforts to improve the management of official foreign travel for all of NNSA's federal and contractor employees.

The first improvement is a pilot project with Sandia National Laboratories (SNL) in New Mexico to streamline the approval process for traveling abroad. This pilot project being implemented at the laboratory will help redesign the federal-contractor relationship. Tasked by NNSA Administrator Thomas D'Agostino to improve the travel process, International Operations' Director Nicholas Carlson worked directly with the laboratory and the Sandia Site

Office to develop a "model contract initiative."

After an assessment revealed more than 60 unnecessary steps, the travel approval process was reengineered and the travel information processing was transferred to the Department of Energy's (DOE) Foreign Travel Management System. As a result, the cycle time for travel processing was reduced from 26-135 days down to 7-53 days with an estimated annual cost savings of \$400,000 for SNL and \$300,000 for NNSA. Assuming successful completion of the pilot project, this model will be expanded to include the rest of the NNSA complex.

Another modification project addresses employee and management concerns about travel on foreign airlines. International Operations recently worked with DOE's Office of Aviation Management to develop a plan that formally incorporates employee safety considerations into the travel approval process

and makes use of an accepted carriers list, which provides travelers with air travel options that are based upon data from international aviation safety regimes, industry databases and other sources.

The final task involved working with DOE's Office of International Travel and Visitor Exchange Program to ensure a successful transition to the State Department's new "e-Country Clearance Initiative," which will fundamentally change how all U.S. government agencies receive permission to travel. The new system will no longer require employees to send country clearance cables through the official State Department telegram ("cable") process. Instead, travelers will use a new Internet-based application that sends country clearance requests and responses to the embassy or mission and back to the requesting office in a much shorter time frame than currently exists.