



NNSA Secures All Russian Navy Nuclear Sites

NNSA has completed security enhancements to protect against theft or terrorist attacks at 50 Russian navy nuclear sites two years ahead of schedule. This achievement signifies the completion of nuclear material protection, control and accounting upgrades at all Navy-affiliated sites in the Russian Federation that contain nuclear materials or warheads.

“Denying terrorists access to nuclear material is our top priority,” said NNSA Administrator Linton F. Brooks. “These upgrades to Russian navy sites make it that much harder for terrorists to get their hands on dangerous nuclear material. The fact that we have done this a full two years ahead of schedule shows the importance the administration places on securing nuclear weapons and material at

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ELITE FORCES: Pantex security police officers can now train in virtual environments to learn and perfect skills in different combat scenarios. See page 6 for more information on Pantex’s new Elite Force Training Facility.

NNSA To Prepare Complex 2030 EIS

NNSA plans to prepare an environmental impact statement (EIS) for the transformation and modernization of the Cold War-era nuclear weapons complex.

A Notice of Intent (NOI) to prepare an EIS, which will be entitled the “Complex 2030 Supplement to the Stockpile Stewardship and Management Programmatic Environmental Impact Statement,” has been published in the *Federal Register*. The NOI outlines the alternatives that NNSA will consider in transforming the nuclear weapons complex to better meet future national security requirements.

Earlier in the year, NNSA outlined its comprehensive plan, called

Complex 2030, for a smaller, more efficient nuclear weapons complex that is better able and more suited to respond to future national security challenges. Complex 2030’s goal is to achieve President Bush’s vision of the smallest stockpile consistent with national security needs.

By 2012, the U.S. nuclear weapons stockpile will be reduced by nearly 50 percent, making it the smallest stockpile since the Eisenhower administration.

Complex 2030 refers to the configuration of the nuclear

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NNSA To Prepare Complex 2030 EIS

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weapons complex that NNSA envisions by the year 2030. It includes significant dismantling of retired warheads, consolidating special nuclear materials, eliminating duplicative capabilities, establishing a consolidated plutonium center, and implementing more efficient and uniform business practices throughout the complex.

In order to further define the EIS and identify key issues, NNSA is requesting comments from the public. The public comment period will continue through January 18, 2007. Public comments will be accepted in writing or at one of the 17 meetings that NNSA will host in communities surrounding each site in the nuclear weapons complex and in Washington, D.C. The NOI includes additional public comment information.

After the comment period and public meetings, NNSA will prepare a draft of the EIS. This draft will be made public in the summer of 2007 and NNSA will hold hearings to solicit the public's comments. In the spring of 2008, NNSA will publish the final EIS and a record of decision will be reached in the fall of 2008.



NEW SES: Donald G. White (left), Deputy Manager at NNSA's Pantex Site Office in Amarillo, Texas, is sworn into the Senior Executive Service (SES) by NNSA Administrator Linton F. Brooks as White's wife Judy observes. White has more than 37 years experience with DOE and NNSA, working in finance, budget, contracts, training, security and other administrative areas. Early in his career with DOE, White served as an accountant at the former Albuquerque Operations Office and as a financial analyst at Pantex. He has been instrumental in implementing numerous DOE initiatives at Pantex.

Other NNSA employees sworn into the SES this year are: Robert F. Brese, Christopher Deeney, Marco S. Dicapua, Lowell V. Ely, James J. Hannigan, C. Robert D. Herrera, Storm R. Kauffman, William S. Knoll, Clay Harrison Ramsey, Adam M. Scheinman, Kenneth B. Sheely, Albert Talbot, Theodore D. Sherry, Albert J. Starnes, Craig A. Tucker, Teresa M. Tyner, Donald G. White, and Rhys M. Williams.

NNSA Secures All Russian Navy Nuclear Sites

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the source and for nonproliferation work in general."

After the 9/11 terrorist attacks, NNSA's effort to upgrade Russian military sites was greatly accelerated. The work was conducted under NNSA's International Materials Protection and Cooperation program in cooperation with the Moscow-based Kurchatov Institute and the Russian Ministry of Defense.

NNSA personnel, including technical experts from NNSA's Sandia and Lawrence Livermore National Laboratories, designed and oversaw the upgrades with the goal of protecting the nuclear sites against the risk of theft or attack by terrorists. Examples of security upgrades include the installation of physical protection systems such as intrusion detection sensors, access controls and hardened defensive positions.

"We are also working closely with Russia to ensure that the upgrades we provide are sustained and maintained," Brooks said. "Just last year, the Kola Technical Center was opened to train Russian guard forces and provide the technical infrastructure needed to make certain the upgrades are effective for the long term."

NNSA is also cooperating with the Russian Strategic Rocket Forces to upgrade security at 25 nuclear sites, which will be completed by the end of 2007. Additionally, NNSA recently completed contract negotiations and has begun upgrades at the Russian military storage sites assigned to it pursuant to the 2005 Joint Presidential Statement made by Presidents Bush and Putin at the Bratislava Summit.

Y-12 Infrastructure Reduction Program Reaches Milestone

With the demolition of the old foundry building at NNSA's Y-12 National Security Complex, BWXT Y-12's infrastructure reduction (IR) program recently reached a million square-foot milestone.

Another successful year for the IR team was marked in which 14 facilities were demolished, thus reducing the Y-12 Site's "footprint" by an additional 109,119 square feet.



MILESTONE MACHINE: A track hoe knocks down a portion of the roof of the former technical library at Y-12, one of 258 structures demolished so far.

Specifically in August, five buildings were demolished comprising a total of 74,935 square feet. The buildings demolished included Building 9711-1, which was the original cafeteria and more recently the site of the plant's technical library. This building was located within a few hundred feet of the new Jack Case Center, which is now 45 percent complete.

Also demolished in August were the old vehicle maintenance garage, which has been replaced by a newly constructed one, and an old support facility.

Since 2001, BWXT Y-12 has demolished 258 facilities or structures totaling 1,001,429 square feet.

"BWXT Y-12 is really excited about having achieved this milestone," said Scott Hood, manager of Infrastructure Projects. "Of equal or more importance to achieving the square-foot milestone is the fact it was done safely with no lost-time injuries. Over the next three years, BWXT Y-12 will demolish another 40 buildings—an additional 500,000 square feet."

Bush Honors Senior Execs

President Bush gave the highest honors in civil service to one former and five current NNSA senior executives.

Presidential Rank Awards for Meritorious Executives were given to Bill Brumley, recently retired site manager at Y-12; Dave Crandall, assistant deputy administrator for research development and simulation in defense programs; Dan Glenn, manager of the Pantex Site Office; Karen Henneberger of Naval Reactors; and, Kathy Izell, chief counsel at the Nevada Site Office.

Meritorious Executives are recognized by the President as the very best of the nation's civil servants.

"I am delighted to congratulate these senior executives on their designation by the President," NNSA Administrator Linton F. Brooks said. "The President has also named Tyler Przybylek, NNSA's acting chief operating officer, as a Distinguished Executive. This is the highest honor a career civil servant can receive. It is well deserved, as anyone who has ever worked with Tyler would agree."

Up to 1 percent of the about 8,000 eligible employees can receive the Distinguished Executive award, and 5 percent can receive the Meritorious Executive honor. This year, the winners were employed by 33 agencies and departments.

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KANSAS CITY PLANT From Conceptualization

Kansas City Plant Advances Telemetry Units And Hardware For JTA flights

The Kansas City Plant (KCP) is known for its skill at turning designs into reality – an expertise it recently applied to the joint test assembly (JTA) for the W80 cruise missile. A JTA is a set of sensors and hardware used during flight tests to ensure that weapons perform as designed.

Thanks to a strong partnership between the KCP, Sandia National Laboratories (SNL), Lawrence Livermore National Laboratory (LLNL), and the Pantex Plant, the new JTA was successful on its first fully functional flight.

Not only was the flight test a success, but the new data gathering method used will significantly advance the architecture of the JTA.

GTS: Getting Innovative
New JTA technology presented unique security and design challenges. The gas transfer system (GTS) supported the JTA flight test with hardware which included an A-Bottle, D-Bottle, and Dual Valve Assembly. There were particular challenges in the areas

of strength, machining, welding, and maintaining cleanliness, said Terry Yotter, KCP program manager who worked on the GTS. It took patience and ingenuity by KCP’s gas transfer team to get everything to work together that would meet the strength, shape and functional requirements. The GTS system was driven by a laser diode assembly to initiate the actuators. A technique new to the industry, this was also the first time it was used in a weapons application.

provided a fix in late-January. KCP reworked the firing set module and completed final level assembly, encapsulation, welding and electrical testing, and shipped it on February 13. As Vic Pace, a KCP principal engineer on the project pointed out, “this cut the normal flow time of six weeks in half.”

Telemetry: Teamwork
In support of the JTA flight test, the aft and forward assemblies (i.e., telemetry) were built, tested and delivered on



TEAM JTA : Senior Engineer Brenda White and Program Manager Terry Yotter were two of the KCP team members that helped the JTA on the W80 fly to success on its very first fully functional flight test. Not only was the flight test a success, but the new data gathering method used will significantly advance the architecture of the JTA.

Firing Assembly: A Need For Speed
The W80 firing set, which is part of the warhead electrical system (WES), also presented a challenge. Required ship dates for the WES subassemblies to SNL California were in February and April this year. In December 2005, one of the subassemblies experienced anomalies during cold temperature testing. The problem was identified and SNL

schedule. New technology was applied on the Forward Assembly to provide data not captured on W80-0/1 JTAs. KCP played an important role in that technology’s maturation process and in developing reliable production processes. Due to the telemetry’s complexity and multi-agency design, the project demanded integration of all the sites, and through strong work by the product realization teams,

To Product Realization

success was achieved, said KCP Senior Engineer Brenda White, a key player on the team.

The hard work by KCP and the

other sites paid off on August 3 when the JTA sailed to success during its first fully functional flight test. KCP

concluded another successfully

navigated journey from conceptualization to product realization.

Kansas City Plant's New Scanner Is Faster, Lighter, Better

Imagine you're an emergency responder alerted to a suspicious package that needs to be X-rayed right away. But your scanning equipment weighs 120 pounds and requires a generator to operate. Now imagine receiving that call, but you can throw a compact, light-weight scanner in your backpack, run to the site and operate the digital device from batteries. The outcome in these two scenarios could be dramatically different.

The new scanner was designed jointly by Alexander Dragt, senior engineer at the NNSA's Kansas City Plant's Kirtland Operations, and MSPT LLC, a two-man company located in San Jose, Calif. Its a field-portable, compact, flatbed computed radiography scanner that replaces its heavy, slower predecessor, which had been designed for use in a laboratory environment. The Department of Defense (DoD) first asked commercial vendors to develop a smaller version of the existing scanner. However, cost was prohibitive. That is when the Kansas City Plant stepped into the picture.

Kansas City Plant



Traditional scanners use red light from a laser source to stimulate and release the image stored on a phosphor storage plate in the form of emitted soft blue light. This light is then captured one pixel at a time with a series of photomultiplier tubes to reconstruct the final image. Dragt applied a novel patent developed by MSPT LLC, which utilized direct contact blue sensitized linear CCD arrays to capture entire rows of data at a time. As a result of this innovation, the scanning time has been reduced to 25 seconds – almost four times faster than traditional systems. Packaged in a small suitcase for field use, the system operates on battery power and at 1/6 the weight of traditional lab systems, it is also extremely portable.

So far, four units have been purchased by the Kansas City Plant's customer and additional purchases are likely in the future. The device has also attracted the attention of other DOE and DoD customers, and has the potential for use by any local police bomb squad or medical group.



SCANNER LITE: Alexander Dragt, senior engineer at the NNSA's Kansas City Plant's Kirtland Operations, takes the new scanner he helped to develop out of its carrying case. The scanner works four times faster, and is 1/6 the weight of traditional scanning systems. Packaged in a small suitcase, the new device is also extremely portable – good news for potential DOE and DoD end users.

Pantex Training Facility Is One-Of-A-Kind

Security forces at Pantex have a one-of-a-kind facility within NNSA's nuclear weapons complex that allows them to train in realistic combat scenarios that would otherwise be impossible to duplicate.

The new Elite Force Training Facility is a virtual environment that allows Pantex security officers to develop their firearms skills with multiple scenarios and multiple targets.

"This is the premier combat training facility within the complex," said Mike Lansing, deputy division manager for safeguards and security. "This facility allows BWXT Pantex to train our security police officers 24 hours a day, seven days a week in a safe environment and presents them with realistic combat scenarios impossible to duplicate on a live-fire range."

The facility offers two training components: an engagement skills trainer and a warrior skills trainer. The engagement skills trainer replicates firearms training events on an indoor multi-lane firearms training simulator for numerous firearms Pantex Security Forces may have to use.

The simulator uses both audio and visual presentations to simulate the physical, functional and operational characteristics of actual firearms. The system also records and stores individual training performances for replay and later evaluations.

The warrior skills trainer offers the same capabilities as the engagement skills trainer, but it is configured as an up-armored Humvee with a mounted crew-served weapon system.

Volunteers Help Russian Students

In addition to the important work of monitoring the conversion and blending of Russian highly enriched uranium (HEU) to low enriched uranium (LEU), NNSA's Highly Enriched Uranium Transparency Program monitors working in Novouralsk, Russia, have contributed a significant amount of volunteer time to an effort to help hearing impaired students in the Sverdlovsk region.

During the last six months, the monitors worked with the Pragma Corporation in Yekaterinburg to identify schools for the hearing impaired. In July, a small team from Vanderbilt University and a non-profit aid organization met with the administrators of three schools in Yekaterinburg and one school in Nizhniy Taghil. Then in September a team of eight audiologists traveled to Yekaterinburg. During their one-week visit, the team of audiologists met with about 380 children and fit 110 hearing aids for which the schools and the children expressed great appreciation. Using grant funds, the Vanderbilt team will support the children, providing batteries on a continuing basis.

The support by the HEU Transparency Program team for this activity was provided voluntarily and during off-hours. NNSA Administrator Linton F. Brooks said, "HEU transparency folks have a years-long record of humanitarian gestures like this. You should be proud of them. I certainly am."

The transparency program began in 1993 when the United States and the Russian Federation signed an agreement allowing the United States to purchase 500 metric tons (about 1.1 million pounds) of HEU removed from Russia's dismantled nuclear weapons and blended into LEU. The blending operation is conducted at Russian facilities and the LEU is shipped to the United States for use in the manufacturing of fuel for commercial nuclear power reactors. About one in ten lightbulbs in the United States is powered by material that was once Russian nuclear weapons.



LANL V Site Dedication: Participants at an October historic preservation ceremony in New Mexico pose in front of the V Site at Los Alamos National Laboratory where the Trinity "gadget," a plutonium-fueled implosion device, was assembled. David Crandall, NNSA assistant deputy administrator for research development and simulation, represented both NNSA and DOE at the event. He said V Site "for me, did represent well the humility and dedication of the people who worked in it, notably George Kistiakowsky and Norris Bradbury." The following day a public symposium was held with Manhattan Project participants, authors and local dignitaries. Cynthia Kelly of the Atomic Heritage Foundation and Nancy Bartlit of the Los Alamos Historical Society helped to coordinate all the events.

Craig Tucker Named New ADA For Office Of Secure Transportation

Craig Tucker, a recently retired Marine colonel with combat experience in Iraq, is the new assistant deputy administrator of NNSA's Office of Secure Transportation (OST).

The OST mission is to safely and securely deliver nuclear weapons, weapon components and strategic nuclear material throughout the United States. Headquartered in Albuquerque, N.M., OST operates from four primary locations: Albuquerque; Amarillo, Texas; Oak Ridge, Tenn.; and Fort Smith, Ark.

Col. Tucker's last Marine Corps assignment before joining NNSA was director of training at the Tactical Training and Exercise Control Group in 29 Palms, Calif. In that position he was responsible for developing training programs to prepare units for counter-insurgency operations in Iraq and Afghanistan.

During a 25-year Marine Corps career, his assignments included company commander at the Aleutian Island/Alaska Peninsula; commanding officer of Company I and the Weapons Company, 3d Battalion, 8th Marines in Western Africa where he participated in non-combatant evacuation and security operations; and, as commanding officer, Security Company, Presidential Retreat at Camp David, Md. He commanded the 2d Battalion, 7th Marines from May 1999 to May 2001.

From February 2004 to March 2005, he commanded Regimental Combat Team 7 which participated in Operation Iraqi Freedom II and was responsible for conducting security and stability, counter-insurgency, and combat operations along the Syrian border and in the cities of Husaybah, Haditha, Hit, Rawah and Ar Rutbah.

In April 2004 and again in October 2004, Col. Tucker moved the combat team to the vicinity of Fallujah in support of 1st Marine Division operations. He commanded the forces responsible for the attack in the eastern two-thirds of Fallujah during Operation al Fajr in November-December 2004.

He is a graduate of the U.S. Army Advanced Military Police School, Aviation Weapons and Tactics Instructor Course, U.S. Army Command and General Staff College, The School of Advanced Military Studies and the Naval War College. He holds a B.A. and three M.A.'s.

Nevada Intelligence Center Receives Award For Training Program

The Underground Nuclear Weapons Testing Orientation Program (UNWTOP) conducted at NNSA's Nevada Test Site (NTS) is a one-of-a-kind career development curriculum that is as unique and targeted as its name. It offers participants a comprehensive and hands-on overview of the testing and stockpile stewardship activities being conducted at NTS.

"This training allows some of our newly hired people to understand what we did in the early days of nuclear weapons testing," said Pat Bodin, an NNSA classification officer. "It's also a very good orientation to the Nevada Test Site and all its facilities and some of the course instructors had actual hands-on experience during the days of testing."

In fact, the coursework is so good that instructors Richard Cohn and Travis Pullen of the Nevada Intelligence Center (NIC) recently received a distinguished service award for the program.

"This course offers participants a rare opportunity, not only to network and develop relationships with people from the nuclear testing infrastructure, but with each other," said Pullen, NIC deputy director.

The training provides a thorough overview of the NTS, including its history and relevance to modern issues of concern for the intelligence community. It also allows students to receive briefings by subject matter experts and visit orientation areas such as former ground zeros, equipment yards and nuclear test artifacts.

Students receive two full days of training directly at the NTS, gathering at specific areas of interest. Experts cover such diverse topic areas as the Comprehensive Test Ban Treaty, the history of nuclear weapons tests, and the U.S. Stockpile Stewardship Program.

NNSA Converts Research Reactors At Two Universities

NNSA has successfully converted research reactors at the University of Florida in Gainesville, Fla., and Texas A&M University in College Station, Texas, from the use of highly enriched uranium (HEU) to low enriched uranium (LEU). In the last 12 months, NNSA has converted six United States and international research reactors.

As a part of its nonproliferation mission, NNSA converts research reactors in the United States and around the world from operating on HEU to LEU fuel. LEU is not suitable for use in a nuclear weapon and is less attractive to terrorists or criminals. The conversion is part of the Bush administration's efforts to minimize

the use of HEU in civil applications around the world.

"Decreasing the use of highly enriched uranium in the United States and around the world is a priority for this administration," said Energy Secretary Samuel W. Bodman. "Converting the domestic reactors at the University of Florida and Texas A&M University further demonstrates our commitment to limiting the spread of nuclear material."

HEU is primarily used in research reactors to produce isotopes for medical applications, and early reactor technology used HEU fuel because it was more difficult to achieve comparable power levels using LEU. However,

modern reactor designs can use newer high-density LEU fuels while maintaining comparable power levels, making conversion an attractive option for limiting the availability of HEU nuclear material.

"Reducing the use of highly enriched uranium around the world makes for good nonproliferation policy and international security," said NNSA Administrator Linton F. Brooks. "NNSA will continue working with our international partners and with domestic research institutions to convert reactors to low enriched uranium."

NNSA Announces \$15 Million In Grants To Minority Institutions

NNSA has awarded \$15,150,000 in grants to 11 historically black colleges and universities and Hispanic-serving institutions. The grants will help to support NNSA's national security and nonproliferation missions.

The goal of NNSA's grant program is to increase the number of minority students pursuing science and technology careers. The grants will help NNSA to establish a partnership with the next generation of creative and committed leaders who will assist NNSA in meeting its national security demands. The grants will also help to attract minority graduates for employment within NNSA.

"In order for America to remain competitive in the world, we need to continue providing the best training for our students in the science and technology fields," said NNSA Administrator Linton F. Brooks. "The support from these grants will allow minority institutions to train our future scientists, engineers and

leaders."

NNSA's Office of Diversity and Outreach facilitates the development and general oversight of the grant program. The office also assists with coordination between NNSA's program offices and the institutions on execution and management of the technical aspects of the program.

NNSA has awarded \$15,150,000 in awards to the following colleges and universities: **Allen University** (South Carolina), \$4,000,000, to promote and implement NNSA science research initiatives with high school and undergraduate students; **Central State University** (Ohio), \$2,000,000, for science, technology, engineering and mathematics enhancement and outreach; **Cheyney University of Pennsylvania** (Pennsylvania), \$500,000, for curriculum and infrastructure enhancement; **Claflin College** (South Carolina), \$2,000,000, for its Program for the Preparation of a Technologically Literate Science Workforce;

Florida Memorial University (Florida), \$1,000,000, for developing an undergraduate research and training program in radiochemistry; **Lincoln University** (Pennsylvania), \$500,000, for characterization of piezoelectric and other materials; **Maricopa County Community College District** (Arizona), \$1,000,000, for its Achieving a College Education program; **South Carolina State University** (South Carolina), \$1,000,000, for enhancement of its research, environmental management and science curriculum; **Voorhees College** (South Carolina), \$1,000,000, for its Lighting the Way program; **Wilberforce University** (Ohio), \$2,000,000, for advance simulation and computing programs; and **Universidad del Turabo** (Puerto Rico), \$150,000, for synthesis and characterization of low refractive index aerogel silica for the Cherenkov Project.