



Administrator Visits Nonpro Sites, Promotes President's Nuclear Security Agenda Abroad

This month, NNSA Administrator Thomas D'Agostino traveled to three international locations to see the agency's nonproliferation activities and support President Obama's historic nuclear security agenda.

On the first leg of the trip, the Administrator held a news conference in Tbilisi highlighting strong U.S.-Georgia cooperation on nuclear security issues. He also toured several nuclear security projects funded through NNSA's Second Line of Defense (SLD) Program, including the Red Bridge Border Crossing with Azerbaijan – the earliest SLD-deployment in Georgia.

From Tbilisi, the Administrator traveled to Moscow for meetings with the U.S. Ambassador to the Russian Federation, staff at the DOE Moscow office and Russian officials. He toured Luch, a Russian nuclear institute in Podolsk, where NNSA teams have worked with their Russian counterparts and the Research Institute of Atomic Reactors in Dmitrovgrad for more than a decade to downblend more than 12 metric tons – enough for approximately 480 nuclear weapons – of excess Russian highly enriched uranium (HEU).

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PROMOTING NONPROLIFERATION: NNSA Administrator Thomas D'Agostino visited a Russian Ministry of Defense site in Moscow during his recent international tour.

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NNSA Provides Support at World Cup

In support of the U.S. Embassy in Pretoria, South Africa, NNSA is providing nuclear and radiological emergency response support at the World Cup. NNSA is providing nuclear/radiological detection equipment, personnel to assist on the ground in the event of nuclear/radiological matters and other support throughout the tournament.

"NNSA's work with South Africa is part of our broader effort to build and enhance the global capacity to prevent and respond to nuclear and radiological emergencies," said NNSA Associate Administrator for Emergency Operations Joseph Krol. "NNSA's cooperation with South Africa will help ensure the nuclear security of major events like the World Cup."

In April, NNSA completed

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Administrator Visits Nonpro Sites, Promotes President's Nuclear Security Agenda Abroad *(continued from page 1)*

The Administrator also visited Prague, where the President delivered his historic nuclear security speech in April 2009 and signed the New START treaty earlier this year. The Administrator participated in a media roundtable at the U.S. Embassy, where he highlighted the role NNSA plays in implementing the President's Prague agenda, including his commitment to lead a global effort to secure nuclear material around the world within four years. The Administrator also toured a nuclear research facility in Prague that NNSA is working with the Czech Republic to convert from using HEU to low enriched uranium (LEU). NNSA also has made security upgrades at the facility.

NNSA Provides Support at World Cup

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cooperative nuclear emergency response training with the South African Nuclear Energy Corporation (NECSA) in preparation for the games. The week-long effort included training in radiological assistance for emergency response, large event venue searches, geographic information systems and medical responses to nuclear and radiological events.

As part of its emergency operations mission, NNSA provides support for major public events by training officials in nuclear incident search and response.

With more than 60 years of expertise in handling, securing and detecting nuclear material, NNSA is uniquely equipped to share expertise and collaborate with foreign counterparts on these global security issues. To date, NNSA has worked with emergency response organizations in more than 75 countries and nine international organizations to address potential radiological emergencies and nuclear incidents. This international cooperation involves technical exchanges, mutual training events, jointly conducted exercises and emergency management assistance.

Administrator's Corner



Each summer, I have the opportunity to congratulate the outgoing and welcome the incoming classes of interns, future leaders and fellows. Interacting with the next generation of nuclear security professionals is one of the highlights of my job. I am always encouraged when I meet with them because they see the world in new ways and bring fresh ideas to the challenges we face in the NNSA.

Whether we are talking about the Future Leaders Program, the Nonproliferation Graduate Fellowship Program, the Computational Science and Stewardship Science Graduate Fellowships, or the class of college interns who join us every year at this time, we are fortunate to have young people who want to serve their country by joining our ranks.

I believe that the long-term opportunities to promote our nation's nuclear security are greater today than at any point since the end of the Cold War. That means even more opportunities for the young, talented students of today who will form the intellectual and human core of tomorrow's nuclear security enterprise.

Take, for example, the Nuclear Posture Review released this past April. In addition to defining the role of nuclear weapons for our future national security, it explicitly mentions the importance of recruiting and retaining the "human capital" needed in the NNSA for the nuclear security mission.

In order for the NNSA to continue making major contributions to the national security of the United States, we must have the best and brightest minds working together as one team. The addition of the graduates from these internship and fellowship programs to our current highly-skilled and experienced workforce is critical to ensuring that the NNSA has the required expertise to carry out our mission for years to come.

Bringing them in the door is not enough. We need to fully engage them in the work we do. This means thinking a bit differently and looking for new opportunities for them to see us in action. We do not want these individuals spending their entire summer behind a computer or stuck in their offices each day. I suggest you take them with you to Congressional hearings and to meetings with other Departments, and if possible, arrange for them to take tours of NNSA's facilities.

Please do your best to make this a productive experience for these individuals and you will be helping to ensure the future success of our nuclear security enterprise.

Tom D'Agostino

NNSA Plays Key Role in New START Treaty Negotiations

Presidents Obama and Medvedev signed an historic strategic arms reduction treaty in Prague on April 8, 2010. The Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, also known as the New START Treaty, was developed with significant assistance from NNSA's Office of Nonproliferation and International Security (NIS).

The U.S. Delegation in Geneva, Switzerland was headed by Assistant Secretary of State for Verification, Compliance and Implementation and former NNSA Deputy Administrator, Rose Gottemoeller. NIS played a critical role, representing the Department throughout the New START negotiations. Kurt Siemon, director of the Office of Nuclear Verification, served as the senior NNSA representative to the negotiations, and also as a special counselor to

the U.S. Negotiator. Siemon and NIS staff participated in key aspects of U.S. policy development and were responsible for negotiation activities from the onset. The four-person team representing NNSA on the U.S. delegation throughout the 10-month negotiation drew upon NIS headquarters and national laboratory experts to ensure that NNSA's expertise supported U.S. negotiating objectives.

"NIS played a vital role on the U.S. delegation for the New START negotiations. We could not have completed the Treaty without the policy and technical expertise that the NIS staff and its national laboratory partners brought to the table," said Rose Gottemoeller, assistant secretary of State for Verification and Control.

NIS had lead responsibility for negotiating three of the seven major components of the Treaty –

definitions, notifications and telemetry.

NIS headquarters staff supported the Geneva-based team and the U.S. Interagency by providing NNSA and Office of Defense Programs feedback, to develop and coordinate positions, providing guidance to the delegation, advocating NNSA positions within the U.S. Interagency, and preparing for the Treaty's eventual signature and ratification.

NIS, working with the Office of Defense Programs and other NNSA elements, will continue to support the larger U.S. Interagency effort to shepherd the New START Treaty through Senate advice and consent to ultimate ratification and entry into force. This significant effort will include preparing principals for testimony, briefing Congressional members and staff, and responding to detailed Congressional questions.



SHARED COMMITMENT: Russia marks the end of plutonium production with the closing of the ADE-2 Reactor in Zheleznogorsk.

"President Obama and President Medvedev have set our two nations on a course to curb global nuclear dangers by reducing the use of weapons-grade nuclear materials and securing vulnerable material around the world. Our partnership in shutting down the Zheleznogorsk reactor is a tangible demonstration of our shared commitment to preventing the proliferation of weapons of mass destruction and keeping dangerous nuclear materials out of the hands of terrorists."

Thomas D'Agostino
NNSA Administrator

Recruiting The Next Generation of NNSA

One of NNSA's top priorities is recruiting and training the next generation of nuclear security experts to ensure that the agency has dedicated professionals who can continue its critical stockpile stewardship, nonproliferation and emergency response missions.

To recruit those future NNSA professionals, the agency offers several developmental programs aimed at recruiting young talent to work in different capacities to support NNSA missions. This month, the agency held graduation ceremonies and welcomed new classes of rising stars for its Future Leaders Program (FLP) and its Nonproliferation Graduate Fellowship Program (NGFP). NNSA also brought on more than 60 college interns who will work this summer across the nuclear security enterprise honing their skills and augmenting their academic coursework.

FLP is an entry-level development program that predominantly recruits talented individuals with bachelor's or master's degrees in engineering, science and business. Future Leaders spend two years – including one 60-day rotation – advancing their management skills within NNSA.

NGFP, which is now in its 15th year, is a full-time, one-year fellowship that provides participants with



FUTURE LEADERS PROGRAM GRADUATES: After two years in the Future Leaders Program, most participants continue to apply their problem-solving skills and creativity within the federal government. This year's graduating class included scientists, engineers, business professionals, and others who will become the next generation of nuclear security professionals.

specialized training and practical experience working in NNSA programs designed to detect, prevent and reverse the proliferation of weapons of mass destruction and mitigate the risks from



NGFP GRADUATES: The Nonproliferation Graduate Fellowship Program provides participants with specialized training and practical experience on projects and initiatives that contribute to a safer world. This year's graduating class was honored at a ceremony and reception at DOE headquarters.

nuclear operations.

The NNSA's summer intern program allows students to gain hands-on experience in their field of study while also providing developmental training designed to prepare them for post-graduate employment opportunities.

"This program has provided excellent learning opportunities - experiences that you can't gain anywhere else. And along the way, you've also risen to the challenges: and that is a hallmark of leadership. Take those experiences and strengthen our nation's leadership. Build on what you've learned and broaden the nonproliferation community.

You've accomplished so much, and we know it's only a glimpse of what's to come. We wish you success and satisfaction as you go on to serve in the role of nonproliferation leadership. And for that, you have our sincere appreciation, and the thanks of our nation."

**Gordon Dudder, Director of Defense Nuclear Nonproliferation programs,
Pacific Northwest National Laboratory**



NNSA INTERNS: NNSA welcomed its Summer 2010 interns in a ceremony at DOE headquarters in Washington. The students spend 60 days working in areas of the agency related to their academic pursuits.

Stockpile Science Graduate Fellowship Program Welcomes Five

The following students were named Stockpile Science Graduate fellows this month:

Evan Davis, plasma physics and fusion Ph.D. candidate at the Massachusetts Institute of Technology.

Michael Hay, plasma physics Ph.D. candidate at Princeton University.

Stephanie Lyons, nuclear astrophysics Ph.D. candidate at the University of Notre Dame.

Elizabeth Miller, materials science and engineering Ph.D. candidate at Northwestern University.

Thomas Saller, nuclear engineering Ph.D. candidate at the University of Michigan, Ann Arbor.

The Science of Nuclear Security

NNSA Commissions New Tool at Chornobyl

Twenty-four years after the worst nuclear accident in history, NNSA is lending its nuclear expertise to help ensure that Ukraine can continue to meet its safeguards obligations.

On April 26, 1986 – during a failed test at the number 4 reactor at the Chernobyl (now commonly "Chornobyl") Nuclear Power Plant – the reactor exploded, scattering nuclear material all over the site, surrounding communities, and far beyond. Following the explosion, the Soviet Union rushed to construct a temporary sarcophagus to mitigate the effects of the explosion and protect the environment.

Today, the United States, the European Union, Ukraine and other partner countries are constructing the New Safe Confinement, a more stable and permanent structure to replace the sarcophagus. Excavation on the Chornobyl site for the construction of the New Safe Confinement will likely unearth significant amounts of irradiated nuclear fuel and fuel fragments composed of uranium and plutonium that were ejected from the reactor. This material presents a complex challenge for the International Atomic Energy Agency's (IAEA) nuclear safeguards system because the nuclear material in the soil must be measured and confirmed in accordance with Ukraine's safeguards obligations.

In 2009, authorities at Chornobyl contacted NNSA's International Nuclear Safeguards Engagement Program (INSEP) for assistance in overcoming this safeguards challenge. INSEP, with its technical experts at Los Alamos National Laboratory, modified an existing nuclear material measurement instrument, making it capable of measuring and accounting for dispersed nuclear material found in the dirt at Chornobyl. The new tool,

the Chornobyl Drum Assay System (CDAS), will help the Ukrainian government fulfill the requirements of its nuclear safeguards agreement while improving the ongoing effort to

engage partner countries in improving the development and application of international safeguards through all stages of nuclear development. Such efforts are a key component of



STRENGTHENING SAFEGUARDS: International Nuclear Safeguards Engagement Program-developed Chornobyl Drum Assay System during acceptance tests at the Chornobyl Nuclear Power Plant.

clean up the surrounding areas. Over the next few years, the Chornobyl Nuclear Power Plant will use the CDAS to analyze the soil for fissile material content and add these measurements to its nuclear materials inventory declaration to the IAEA.

The CDAS assistance at Chornobyl is only one example of the support INSEP provides to IAEA Member States to strengthen states' systems of nuclear material accounting and control. INSEP draws on the unique expertise of the DOE and NNSA national laboratories to

NNSA's Next Generation Safeguards Initiative, a robust, multi-year program to develop the policies, concepts, technologies, expertise, and international infrastructure necessary to strengthen and sustain the international safeguards system. Through regional bilateral engagements, INSEP provides training, equipment and expertise needed by international partners to resolve unique safeguards challenges like those at Chornobyl.

LDRD Showcases WMD Research Work

From researching a new approach for killing anthrax spores using very mild chemicals to understanding the molecular forensic science of nuclear materials, the 2010 NNSA Laboratory Directed Research and Development (LDRD) Symposium, held June 9, at the University of California Washington Center, focused on "Reducing the Global Danger of Weapons of Mass Destruction."

The all-day event explored LDRD investments that NNSA national laboratories and sites are making to protect the U.S. from weapons of mass destruction. The symposium included presentations from Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Sandia National Laboratories, the Nevada Test Site, and the NNSA production sites.

"The LDRD program is critical to keeping NNSA and its national laboratories and sites on the frontlines of science and technology and to recruiting and retaining the next generation of nuclear security professionals," said NNSA Administrator Thomas D'Agostino. "This year's LDRD symposium once again brought together NNSA's researchers to discuss the important issues that impact our national security missions."

The LDRD program promotes highly innovative and exploratory research directed toward current national security mission needs and anticipating future ones. The program funds projects that pursue technological solutions to the most urgent challenges facing our nation, or that promote science and engineering foundations that will lead to new research and development.

The LDRD program constitutes one of the principal means to encourage innovative science and foster new research directions. Based on ideas that come from current research challenges or bold original concepts that anticipate the nation's future needs, LDRD projects make it possible for the NNSA top scientists and engineers to pursue leading-edge R&D that keeps NNSA's sites at the forefront of science and technology in its mission areas.



NATIONWIDE CHALLENGE: NNSA Administrator Thomas D'Agostino represented the Department of Energy as the Capital Area Food Bank kicked off the second annual Feds Feed Families food drive.

NNSA Recycles Excess Y-12 Titanium

Material to be Used in Protective Body Armor

The U.S. Army plans to develop a new generation of lightweight protective body armor for combat soldiers using excess titanium provided by the NNSA's Y-12 National Security Complex.

The material, which was originally intended for use at the Oak Ridge, Tenn., facility, has been provided to the U.S. Army Research, Development and Engineering Command (ARDEC) at Picatinny Arsenal, N.J. The high strength, lightweight material is also being considered by ARDEC for use in breech assemblies on field artillery to improve maintenance and reliability.

"This is another example of NNSA's commitment to transforming a Cold War-era nuclear weapons complex into a 21st century nuclear security enterprise while reusing unwanted material and saving taxpayers money," said Randal S. Scott, deputy associate administrator for Infrastructure and Environment. "As an added benefit, this excess titanium will protect our soldiers."

The titanium, valued at about \$10,000, was processed and transferred to ARDEC at a cost of \$2,500. The transfer saved Y-12 \$12,000 in waste characterization and disposal costs. This cooperative effort between NNSA, Y-12 and ARDEC resulted in a net benefit to the government of \$19,500. Based on the success of this effort, Y-12 is considering this business model to dispose of additional excess materials.

Pantex, Sandia and Y-12 Hold FIRP Events

NNSA's Facilities and Infrastructure Recapitalization Program (FIRP) recently celebrated three significant accomplishments at the Pantex Plant, Sandia National Laboratories and Y-12 National Security Complex.

FIRP is aimed at reducing a large maintenance backlog, improving the state of site utilities, and eliminating excess facilities across the nation's nuclear weapons enterprise.

A ribbon-cutting ceremony was held last month to celebrate a new gas main and distribution system at Pantex. The new system replaces a

government-owned system that included pipelines and appurtenances that were installed in the 1940s – well exceeding the design life of 25 years. The project was completed ahead of schedule at a cost of \$9.7 million.

Also in May, Sandia unveiled a new \$60 million Heating Systems Modernization (HSM) project and began demolishing a 60-year-old 18,000-square-foot steam plant. Deferred maintenance costs and equipment corrosion issues that made the system inefficient led to a decision to replace the aging

centralized heating system with local boilers placed in buildings or groups of buildings at Sandia.

On June 15, Y-12 held an event to mark the replacement of a 1950s coal-fired plant. The Steam Plant Life Extension Project, which concluded at less than its \$61.5 million budget, took the place of a plant that was experiencing boiler failures and mechanical problems during the coldest temperatures of the 2009/2010 winter season. The new plant is expected to save \$27 million in deferred maintenance costs.

Jeff Davis Uses Experience in New Air Force Position

Jeff Davis says he plans to educate U.S. Air Force Air University students and faculty about the role of nuclear weapons in national security and about the many NNSA nuclear security responsibilities in his new position at the U.S. Air Force Counterproliferation Center (CPC).

Davis, who first joined NNSA's Office of Defense Programs in October 2001, while on active duty with the U.S. Army, will be the DOE/NNSA representative and subject matter expert on the U.S. nuclear enterprise at the CPC. The CPC is one of six centers in the Air Force's Air University, which is responsible for all professional military education in the U.S. Air Force. He plans to be at the CPC until June 2011 and will return to NNSA.

"The Stockpile Stewardship Program is the NNSA program I know the most about," Davis said, but I am knowledgeable of other NNSA nuclear security programs and have the ability to reach back to other NNSA program offices as needed."

He will be a co-instructor for a class at the Air War College covering the nuclear enterprise, threats, and arms control. Davis will also be an instructor for a class on the nuclear enterprise in the Air Force Air Command and Staff College.

After retiring from the Army in 2004, Davis rejoined the Office of Defense Programs in 2005. He entered the federal workforce as a nuclear engineer in the DOE Office of the Representative to the Defense Nuclear Facilities Safety Board in July 2007, and once again rejoined the Office of Defense Programs in October 2007, where he worked in the office of the Deputy Administrator as a program analyst before being selected as the first DOE representative to the Air War College.

Davis has a bachelor's degree and two master's degrees.



Y-12 HISTORY: Ray Smith, Y-12 National Security Complex historian, shows visiting ROSATOM official, Evgeny Sofyin, a "moon box" designed decades ago by Y-12 to transport lunar material back to Earth after U.S. moon missions.

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