May 2010

National Nuclear Security Administration Monthly News

CELEBRATING A DECADE OF SUCESS: Secretary of Energy Steven Chu discusses NNSA's history at the all-agency, 10-year anniversary celebration. Read more about this event and NNSA's accomplishments on pages 4 and 5.

NNSA Celebrates Tenth Anniversary

The National Nuclear Security Administration celebrated its 10-year anniversary with a series of events in late April aimed at highlighting a decade of success across the nuclear security enterprise. The centerpiece of the program was an agency-wide ceremony a the Department of Energy's Forrestal Building featuring remarks by Secretary of Energy Dr. Steven Chu, Deputy Secretary of Energy Daniel Poneman, Congressman Mac Thornberry, NNSA Administrator Thomas P. D'Agostino, Under Secretary of State Ellen Tauscher and former administrators John Gordon and Ambassador Linton Brooks.

Watch the 10-year anniversary ceremony on NNSA's YouTube channel: www.youtube.com/NNSANews

"NNSA is an indispensable part of President Obama's nuclear security agenda, a leading driver of science and discovery in America, and a critical part of this Department's vision for the future," said Secretary Chu.

The theme of the celebration, selected by NNSA employees across the enterprise, was Honoring Our Past, Securing Our Future,

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U.S. Articulates Commitment to Disarmament at NPT RevCon

On May 5, NNSA Administrator Thomas P. D'Agostino briefed more than 250 reporters and international nongovernmental organizations on how the U.S. is meeting its Article VI requirements under the Treaty on the Nonproliferation of Nuclear Weapons (NPT). Administrator D'Agostino spoke alongside Ellen Tauscher, undersecretary of State for Arms Control and International Security, Dr. Michael Nacht, assistant secretary of Defense for Global Strategic Affairs and Ambassador Susan Burk, the President's Special Representative for Nonproliferation.

D'Agostino's presentation included the historic release of current and past U.S. stockpile numbers. The U.S. also disclosed the number of operationally deployed strategic nuclear warheads, 1,968. In his briefing, D'Agostino outlined

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Administrator's Corner

Last month marked a major milestone for NNSA and the Department of Energy. On April 28, I was honored to join Secretary Chu, Deputy Secretary Poneman, Under Secretary of State Ellen Tauscher, Congressman Mac Thornberry, and former administrators Brooks and Gordon for a ceremony marking NNSA's tenth anniversary.

It was a terrific event, which you can watch on the new and improved NNSA website.

The fact that we were honored to have so many special guests join us on such an important day is a reflection of the important work you all do each and every day. You play a critical role in enhancing America's national security, reducing nuclear dangers, and advancing scientific discovery.

I am proud of our track record over the last decade. Together, we have made great strides in transforming a Cold War nuclear weapons complex into a 21st century nuclear security enterprise.

We have successfully maintained the safety, security and effectiveness of the stockpile without nuclear testing. We've built the world's fastest supercomputers and the most advanced modeling and simulations capabilities in the world.

We are working in more than 100 countries to secure vulnerable nuclear material, prevent nuclear smuggling, and strengthen the nonproliferation regime. We are providing the U.S. Navy with safe and reliable nuclear propulsion systems. And we've developed world-class nuclear counterterrorism and emergency response capabilities.

I would like to take this opportunity to thank all of you for your hard work – for your interactions with the White House, the Congress, the Departments of Defense, State, and Homeland Security, the Defense Nuclear Facilities Safety Board, for your work on the Nuclear Posture Review, the Nuclear Summit, and all of your outreach efforts. All of your efforts have been exceptional and I thank you for your dedication and commitment to excellence.

As we reflect on our first decade and begin work on our second, I simply want to say: "Thank you very much!"

Tom D'Agostino

U.S. Articulates Commitment to Disarmament at NPT RevCon

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how the NNSA is leading the United States' efforts toward achieving the President's goal of a world without nuclear weapons. From FY 1994 to FY 2009, NNSA has dismantled more than 8,000 weapons and permanently removed enough weapons grade highly enriched uranium (HEU) and plutonium for more than 27,000 warheads. NNSA has, with its Russian partners, downblended 382 MT of HEU, enough for more than 15,000 nuclear weapons as part of its Megatons to Megawatts program. With NNSA, Russia shut down its last plutonium producing reactor in April, 2010. NNSA continues to work with its Russian counterparts to develop a technically and financially credible program for plutonium disposition in Russia.

The Administrator also stressed how NNSA is transforming what was a Cold War era nuclear weapons complex into a 21st century nuclear security enterprise. This transformation includes the construction of a new Uranium Processing Facility, the Chemistry and Metallurgy Research Replacement Project and other needed reinvestments in our nation's nuclear security infrastructure. These facilities, and continued investment in the next generation of nuclear security experts, are essential to accomplishing the President's nuclear security agenda and achieving his goal of a world free of nuclear weapons.

NNSA Celebrates Tenth Anniversary

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a tribute to the agency's contributions to the security of the American people and our allies.

Prior to the all-agency ceremony, Administrator D'Agostino also hosted a smaller group of stakeholders and former employees who helped shape NNSA in its early days.

"This is an exciting opportunity to celebrate 10 years of accomplishments with the hard-working, talented people who make our mission possible," D'Agostino said. "As we look back on a decade of success, we also look forward to years of continued progress and the implementation of an unprecedented nuclear security agenda that touches every facet of our agency."

Sandia Director Dr. Tom Hunter Steps Down

On May 13, Sandia National Laboratories announced that, after five years of service as labs director, Dr. Thomas O. Hunter was stepping down. The labs also named Dr. J. Hommert as his successor, effective July 9, 2010.

Following the laboratories' announcement, NNSA thanked Hunter for his 43 years of dedicated service at Sandia and congratulated Hommert on his selection as the next director of this world-class scientific institution.

Dr. Thomas O. Hunter

Dr. J. Hommert

"I want to express my deepest appreciation for Tom Hunter's service to the Department of Energy, the National Nuclear Security Administration and Sandia National Laboratories," said D'Agostino. "As the director of one of the three crown jewels of the scientific infrastructure that supports our national security, Tom was a tremendous partner to me and a true servant of his country. While I will miss his

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First Participant in America's Veterans to Tennessee Engineers Program Receives Degree

As the America's Veterans to Tennessee Engineer's Program celebrated its second anniversary, the first veteran in the program has graduated from the University of Tennessee (UT).

Pete Ditmer, who served twice in Iraq with the U.S. Army, received a degree in mechanical engineering from UT in May.

The America's Veterans to Tennessee Engineers Program was established as a response to the employment needs of military veterans and the technical workforce needs of the East Tennessee region. The NNSA Y-12 Site Office and B&W Y-12 have played a lead role in encouraging and developing this program in coordination with other leading corporations and businesses in the area.

A WIN-WIN SOLUTION: Steve Ditmer (left), an Iraq War Army veteran, is the first graduate of America's Veterans to Tennessee Engineer's Program. Ditmer received a degree in mechanical engineering from the University of Tennessee in May.

Since its inception in 2008, 39 veterans have been selected to participate in the program. Veterans are provided part-time employment and a full-time job upon completion of an engineering degree. They are also assisted by community volunteers who provide family support and academic mentors to help with their education.

"The program provides income and valuable experience to further set veterans apart from their peers," said Ditmer. Following graduation, Ditmer began his career as an engineer at the Redstone Arsenal in Huntsville, Ala. Kevin Smith, Y-12 Site Office deputy manager, said "veterans just need a bit of additional support to pursue engineering degrees and then when they graduate they have a guaranteed engineering job waiting for them with a consortium member. Our Oak Ridge and Knoxville companies and communities have made a major long-term commitment to our veterans through this program."

National Nuclear Security Administration Commemorates Ten Years

NNSA ANNIVERSARY EVENTS: NNSA Administrator Thomas D'Agostino greats colleagues and visitors during the 10-year anniversary celebration.

HONORING OUR PAST, SECURING OUR FUTURE: Administrator D'Agostino, Under Secretary of State Ellen Tauscher, former administrators John Gordon and Ambassador Linton Brooks take part in the NNSA 10-year anniversary celebration.

CELEBRATING TEN YEARS: NNSA stakeholders and former employees gather to hear from NNSA Administrator D'Agostino at a reception before the all-agency event.

NNSA's anniversary events brought together friends and colleagues from across the enterprise for a day of celebration and shared memories as NNSA honored its past and looked toward a vibrant future.

–– Together, we have made great strides in transforming a Cold War nuclear weapons complex into a 21st Century Nuclear Security Enterprise.

–– Together we have successfully maintained the safety, security and effectiveness of the stockpile without nuclear testing.

–– Together we have built the world's fastest supercomputers and the most advanced modeling and simulations capabilities in the world.

–– Together we are working in more than 100 countries to secure vulnerable nuclear material, prevent nuclear smuggling, and strengthen the nonproliferation regime.

–– Together we have provided the U.S. Navy with safe and reliable nuclear propulsion.

OPENING CEREMONIES: The Color Guard presents the colors to begin the NNSA 10-year anniversary celebration.

–– Together we have provided the Nation with world-class nuclear counterterrorism and emergency response capabilities.

–– Together we have safely transported nuclear materials between our sites, traveling 100 million miles without a single accident.

–– And, together, we have implemented cutting-edge management reforms that are improving the way we do business. It's a record we can all be proud of, and I hope you are.

NNSA Administrator, Thomas D'Agostino

New NNSA Website Highlights Multimedia Content, Enterprise-wide Stories

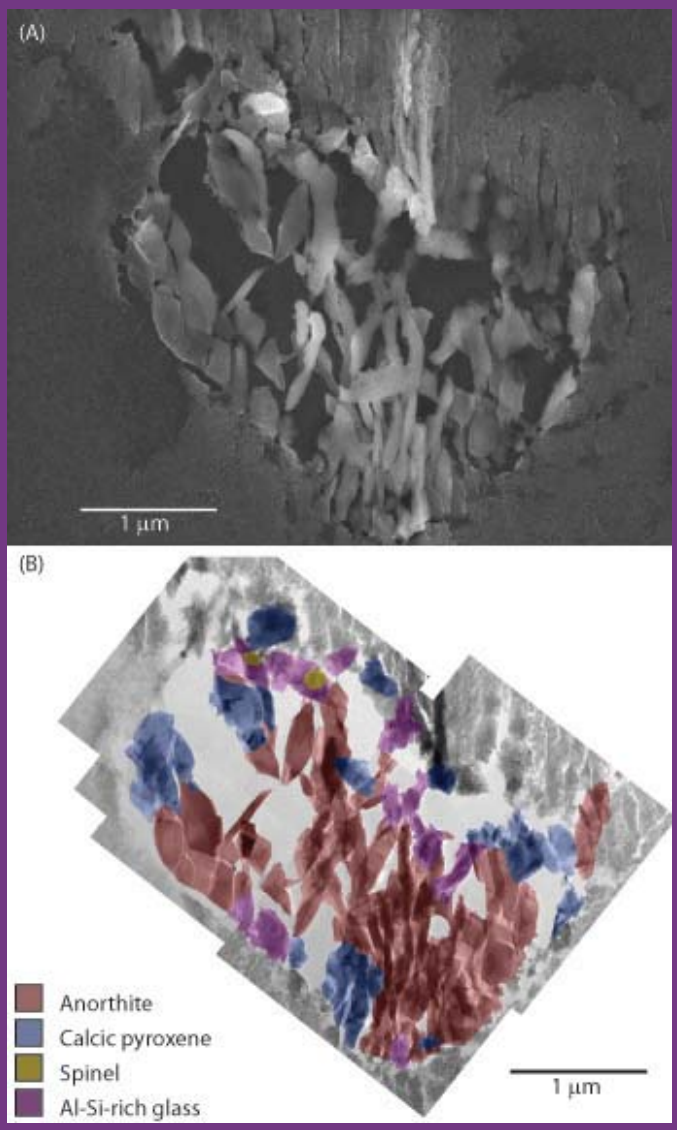
As part of NNSA's 10-year anniversary celebration, the agency unveiled a new, relaunched website that highlights the agency's core messages and key accomplishments in a cleaner, more modern format. The new website features an historical timeline, interactive nuclear security enterprise map, multimedia galleries, and a human resources section where prospective employees can find out more about working at NNSA.

The goal of the new website is to attract a diverse audience of visitors and educate them about the importance of NNSA's core missions. The new site also provides the ability to promote content not just from a headquarters perspective, but to highlight successes across the nuclear security enterprise. If you've got an idea for a feature story or page on the new site, please e-mail jennifer.wagner@nnsa.doe.gov. To view the new website, visit www.nnsa.energy.gov.

The Science of Nuclear Security

NNSA Hones Nuclear Forensic Capabilities

Since September 11, 2001 – when use of radiation portal monitors surged – the science of nuclear material analysis drastically improved. "There has been roughly an interdiction every two or three years. What we don't know is how much material is out there. It's similar to drug trafficking. We only know how much we interdict," said Ian Hutcheon, deputy director of the Glenn T. Seaborg Institute at Lawrence Livermore National Laboratory.



MEASURING NUCLEAR MATERIALS: Scientists can analyze materials, to obtain a unique ID, using the world's most sensitive mass spectrometers.

Hutcheon presides over an eclectic group of physicists, chemists, nuclear engineers and others, 30 in all, who conduct experiments on the world's most sensitive mass spectrometers to divine incredibly small but telling differences in the chemical and isotopic compositions of uranium, plutonium and exotic materials from comets and asteroids. They're averaging a science paper a year over the past decade.

Tiny differences – radioisotope and stable isotope abundance ratios, trace element impurities, molecular makeup, material age and grain size and shape – help researchers pinpoint a nuclear sample's place of origin.

The data, Hutcheon says, provides a "record (of) different signatures – plutonium and uranium isotopes and also oxygen, strontium and lead. If we combine these three factors with trace elements, we're likely to get a unique ID."

The relative abundance of trace elements such as tungsten can vary widely from uranium sample to uranium sample, depending on where it came from and how it was processed. Uranium ore from Australia and ore concentrate (so-called yellowcake) from Kazakhstan will have very different signatures.

Those signatures change as the material changes, from ore to yellowcake and purified uranium for energy to plutonium for nuclear explosives. Hutcheon's team can measure it all and compare what they find to a database that maps the location.

Hutcheon notes that these, and other observations that help countries comply with the Nuclear Nonproliferation Treaty and police the black market, are made possible by huge improvements in mass spectrometry, from ITMS (ion trap) in the early 1970s to RIMS (retarding ion) in the 1990s. With each advance, instruments could measure smaller and smaller concentrations of nuclear materials.

"I've been a geochemist for roughly 30 years," Hutcheon says, "and if you look at improvement in detection limits, it's spectacular. When I was a graduate student it was a nanogram. Now it's femto, improved by a factor of 1,000."

NNSA Supports National Level Exercises

This month, senior leaders from NNSA participated in a series of national exercises with federal, state and local partners to test emergency response assets and capabilities. NNSA supported the National Level Exercise 2010, led by the Department of Homeland Security, to exercise response to the detonation of an improvised nuclear device in a U.S. city; and participated in Eagle Horizon 2010, an annual exercise that requires federal departments and agencies to demonstrate their capability to perform mission essential functions in the event of a major emergency.

NNSA EMERGENCY RESPONDERS: Associate Deputy Administrator Joseph Krol joined Los Angeles Mayor Antonio Villaraigosa and FBI Assistant Director in Charge of the FBI's Los Angeles Field Office Steven Martinez for a press conference during the Marble Challenge Exercise in Los Angeles.

In Los Angeles, NNSA's Associate Administrator for the Office of Emergency Operations Joseph Krol led a group of NNSA emergency responders in the FBI-led Marble Challenge Exercise, where NNSA search teams and other response assets worked with law enforcement personnel to resolve a notional terrorist situation involving an improvised nuclear device at a sports complex.

"Partnering with our federal, state and local responders to exercise our collective capabilities is an important part of the National Nuclear Security Administration's national security mission," said NNSA Associate Administrator Joseph Krol. "With more than sixty years of expertise in handling, securing and detecting nuclear material, NNSA is uniquely equipped to share expertise and emergency response assets to ensure we can prevent and respond to nuclear and radiological incidents."

Pantex Plant Armed Forces Day Observance

In May, NNSA's Pantex Plant paid tribute to past and present members of the United States Armed Forces at the site's annual Armed Forces Day Observance.

Col. Efren Garcia, executive director for Nuclear Safety & Operations, served as the keynote speaker. His message defined the meaning of service to country as both members of the Armed Forces and employees of NNSA.

Garcia commended Pantex Plant employees for their patriotism and the dedication the employees show to the plant's mission.

Geoffrey Beausoleil, Pantex Site Office deputy manager, spoke about the level of commitment each member of the armed forces makes to his or her country.

"Each soldier writes a blank check to this country that is payable in an amount up to their life," said Beausoleil. This thought was especially poignant as the Panhandle was honoring a fallen soldier

PAYING TRIBUTE: Col. Efren Garcia, NNSA Executive Director for Nuclear Safety & Operations (left), stands next to the Pantex Wall of Heroes. Garcia was the keynote speaker at the plant's annual Armed Forces Day Observance.

On August 31, 1949, Secretary of Defense Louis Johnson announced the creation of an Armed Forces Day to replace separate Army, Navy and Air Force days. The single day celebration stemmed from the unification of the Armed Forces under a single Department of Defense.

While Armed Forces Day is celebrated on the third Saturday of May, Pantex employees observe the event during the entire work week at the plant.

Enterprise Reengineering and Management Transformation Moves Forward

While NNSA undertakes enterprise-wide reengineering and management transformation, the nuclear security agency continues to exercise strong, independent oversight of nuclear security operations executed by its M&O contractors.

At the same time, the NNSA is streamlining its processes and advancing the relationship with its partners toward a mutually supporting partnership for mission success. To this end, NNSA is improving performance-based contracting terms and conditions to better foster innovation and efficiencies while allowing the NNSA to oversee operations using a graded approach consistent with associated risks and contractors' demonstrated performance.

In February, the Administrator requested that the Sandia Site Office (SSO) and the Sandia National Laboratories streamline NNSA requirements in order to maximize best business practices under a strong oversight model. In April, SSO and Sandia completed the first phase of their joint review of operating requirements for the laboratories and concluded that there were a significant number of overly-burdensome or redundant requirements that could be consolidated under the adoption of other standards that encourage best business practices.

This proposal is currently being reviewed by NNSA headquarters managers to ensure that it is consistent with applicable laws and regulations and to ensure that unique or high-risk activities continue to have requirements that adequately define NNSA's performance expectations. Upon completion of headquarters review, specific recommendations will be made to the Administrator for his final decision.

Sandia Director Dr. Tom Hunter Steps Down (continued from page 3)

counsel, Tom is leaving Sandia in good hands and well positioned to build on its 60 years of service to our country."

Throughout his career, Hunter has been a prominent figure in the nation's nuclear weapons program and the national security policy arena. He began his career with Sandia in 1967 and held a number of leadership roles before becoming the lab's director in 2005. Under his leadership, Sandia began to leverage its scientific, technological and engineering capabilities to support work on a broad range of national challenges in addition to its core nuclear security mission.

D'Agostino also welcomed Hommert as the new director of Sandia National Laboratories.

"Paul Hommert is an excellent choice for Sandia," said D'Agostino. "He brings deep knowledge of the nuclear weapons program, as well as broad experience and insight on a range of national security issues. We look forward to working with Paul in his new role."

Hommert's career spans multiple institutions. He worked at Los Alamos National Laboratory from 2003 to 2006, where he led the Applied Physics Division (known within the nuclear security community as "X" division). Dr. Hommert also worked for three years as the director of research and applied science at the United Kingdom's Atomic Weapons Establishment, which provides and maintains that nation's nuclear deterrent.

Hommert started working for Sandia in 1976 and currently leads the lab's nuclear weapons programs. In this role, Dr. Hommert manages more than 3,000 staff members and is responsible for the oversight of engineering support and design for the U.S. nuclear weapons stockpile. Dr. Hommert also served as vice-president of Sandia's California laboratory and led Sandia's homeland security and defense strategies.

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