



NNSA 2012 BUDGET: During an NNSA leadership discussion of the President's 2012 budget request for NNSA with stakeholders, D'Agostino said the FY 2012 budget request provides the resources necessary to invest in the future, implement the President's nuclear security agenda, and improve the way the NNSA does business. From left to right: Deputy Administrator for Defense Nuclear Nonproliferation Anne Harrington, Principal Deputy Administrator Neile L. Miller, NNSA Administrator Thomas D'Agostino, and Deputy Administrator for Defense Programs Don Cook.

President's 2012 Budget Request Invests in Future of NNSA

This February, President Obama presented an FY 2012 Budget Request that includes critical investments in the nuclear security enterprise. The proposed budget provides \$11.78 billion to invest in a modern, 21st century national security enterprise, implement the President's nuclear security agenda, and improve the way the NNSA does business and manages its resources. It represents an increase of 5.1 percent from the \$11.2 billion requested for FY 2011.

Since the roll out of the FY 2012 Budget Request, Administrator D'Agostino and the NNSA leadership team have been highlighting the Obama Administration's commitment to nuclear security while visiting NNSA employees across the enterprise and engaging stakeholders at events like the third annual Nuclear Deterrence Summit, the 2011 Stewardship Science Academic Alliances Symposium and the 2011 Energy Communities Alliance Annual Conference.

"The President's FY 2012 budget request reflects his commitment to investing in a modern enterprise that can support the full range of nuclear security missions and highlights the vital role NNSA plays in

(continued on page 2)

NNSA Helps Keep Super Bowl Safe

As more than 111 million people watched the Super Bowl this year, many may not have known that NNSA emergency response personnel were busy monitoring the event to help prevent nuclear terrorism.

A team of nearly two dozen NNSA emergency responders were in Dallas, Texas, to help detect radioactive isotopes that could potentially be used to cause harm at the game.

Read more about the NNSA's security role at the Super Bowl on page 6 in the Science of Nuclear Security feature.

In This Issue

NNSA Pushes Revision of International Nuclear Security Standards Across the Finish Line.....3

NNSA's Cutting Edge Science and Research on Display at Annual AAAS Meeting.....4

U.S., China Partner to Improve Nuclear Security.....6

Administrator's Corner



For the second consecutive year, President Obama has made a profound statement about the work each of you do to keep our country safe, protect our allies and enhance global security. Despite the challenging economic times facing our country, the President requested \$11.8 billion for NNSA, up from \$11.2 billion in the 2011 budget request.

As I see it, this budget request can be broken down into three key themes. First, we are investing in the future. This budget request reflects a continuation of the commitment President Obama made last November to invest more than \$85 billion over the next decade to assure the safety, security and effectiveness of our nuclear stockpile and to modernize the nuclear security infrastructure and revitalize the science and technology base that supports our full range of nuclear security missions.

Those investments are critical to our stockpile stewardship program, but they also support the full range of NNSA's nuclear security missions. That brings me to the second key theme in this budget request. It provides the resources to implement the President's nuclear security agenda. In addition to seeking \$7.6 billion for our weapons activities account, this budget request includes \$2.5 billion in FY 2012 and more than \$14.2 billion over the next five years for our nuclear nonproliferation programs and more than \$1.1 billion for the NNSA's Naval Reactors program.

These are all critical elements of the President's nuclear security agenda defined in the National Security Strategy and in the Nuclear Posture Review.

Finally, this budget request highlights our commitment to improving the way we do business and manage our resources. We simply cannot expect Congress to trust us with increased resources if we cannot demonstrate our ability to be effective stewards of the taxpayer's money. The changes we have been making in recent years are designed to address those concerns. I am confident that we have the right strategy and the right team in place to get the job done.

Tom D'Agostino

President's 2012 Budget Request Invests in Future of NNSA

(continued from page 1)

implementing his nuclear security agenda," said Administrator D'Agostino. "Over the past year, we have seen the development of a broad, bipartisan consensus on the role we play in enhancing our nation's security and the resources we need to get the job done. I appreciate the President's strong leadership on nuclear security and I look forward to working with Congress to get this budget passed."

The budget request provides \$11.78 billion for NNSA, including \$7.6 billion for the Weapons Activities appropriation, \$2.5 billion for NNSA's nuclear nonproliferation program, and \$1.1 billion for NNSA's Naval Reactors Program.



ADMINISTRATOR D'AGOSTINO VISITS Y-12: NNSA Administrator D'Agostino (left) and Y-12 Site Manager Ted Sherry greet Steve Little, B&W Y-12's vice president of Facilities, Infrastructure and Services, at a Y-12 National Security Complex All Hands meeting. The Administrator discussed NNSA's intentions for a transformed nuclear security enterprise and Y-12's role in those plans.

Njema Frazier Named to TheGrio's 100 History Makers List

Dr. Njema Frazier, a physicist in the National Nuclear Security Administration's Defense Programs, was recently recognized as one of "TheGrio's 100: History Makers In The Making."

Nominated by a team of experts, affiliates and contributors from across the country along with members of TheGrio.com and NBC News editorial teams, TheGrio's 100 spotlights the next generation of African-American history makers and industry leaders from 10 fields, including business, education, sports, science and the environment, media, service and activism, politics, health, pop culture and the arts.

Frazier was recognized for her contribution to "modernizing the way the United States will defend itself in the 21st century" and for helping to develop future scientists.

"I am incredibly proud of Dr. Frazier, both for being named to this highly prestigious list of history makers in the making, and for being a shining example of the outstanding scientists, researchers and engineers working day and night to keep the American people safe," said Don Cook, NNSA's deputy administrator for Defense Programs. Frazier has been with NNSA for nine years. Prior to joining the NNSA, Frazier spent four years as a professional staff member for the U.S. House of Representatives Committee on Science.



IN RECOGNITION: Dr. Njema Frazier from NNSA named for "TheGrio's 100: History Makers In The Making."

NNSA Pushes Revision of International Nuclear Security Standards Across the Finish Line

In his historic speech in Prague in April 2009, President Obama called nuclear terrorism "the most immediate and extreme threat to global security" and outlined a comprehensive agenda to counter that threat. A year later, the President convened the first-ever Nuclear Security Summit, where 47 heads of state and government committed to execute a detailed nuclear security Work Plan. The National Nuclear Security Administration (NNSA) plays a crucial role in helping the United States and its international partners carry out the mandates established in Prague and Washington.

For the past six years, NNSA's

Office of Nonproliferation and International Security (NIS) has led U.S. Government and international efforts to strengthen the international guidelines for the security of nuclear material. Specifically, NIS spearheaded the effort to revise the International Atomic Energy Agency (IAEA) Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities" (IAEA Information Circular/225). The IAEA recently published this fifth revision of INFCIRC/225, achieving an important milestone from the Nuclear Security Summit

Work Plan.

"I am pleased that NNSA, with the cooperation and hard work of its international partners, has successfully strengthened the foundation of the international physical protection regime," said NNSA's Deputy Administrator for Defense Nuclear Nonproliferation Anne Harrington. "By completing this revision of INFCIRC/225, we have made important progress in advancing the President's nuclear security agenda. NNSA already is working to implement these recommendations

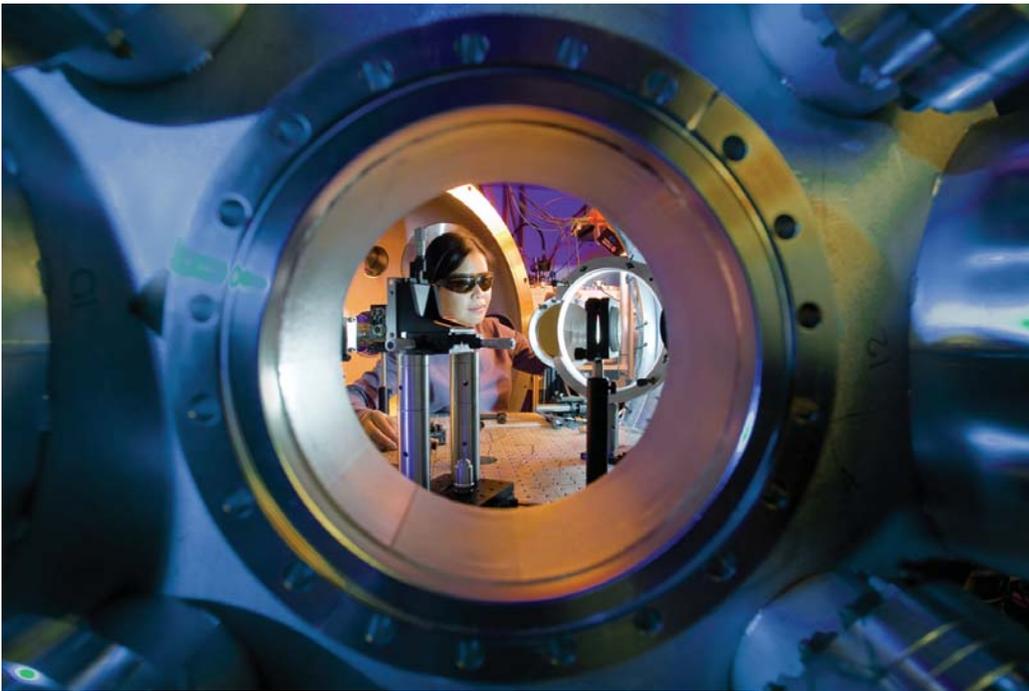
(continued on page 8)

NNSA's Cutting Edge Science and Research on Display at Annual AAAS Meeting

The American Association for the Advancement of Science (AAAS) - the world's largest general scientific society recently held its annual meeting in

country safe, protect our allies, and implement the President's global nuclear security agenda."

The meeting - "Science without Borders" - integrated the practice of science, both in research and teaching that utilizes multidisciplinary approaches.



RESEARCH PRESENTED: Hui Chen, a physicist at the NNSA's Lawrence Livermore National Laboratory, presented "Generation of Positrons with Intense Laser Light" at AAAS in Washington, D.C.

Several individuals from across NNSA's sites presented various topics at the meeting.

Benn Tannenbaum from Sandia organized a discussion on Helium-3 in radiation detection equipment that featured Joe Glaser from the NNSA's Office for Counterterrorism. Glaser discussed new technologies that will replace the existing consumers of He-3. Glaser also discussed new technologies for neutron scattering and affected scientific communities.

Patricia Baisden from LLNL provided a talk

recounting the many discoveries and scientific career of Marie Curie. Hui Chen from LLNL presented research on high-flux jets of positrons

with temperatures of trillions of degrees that have recently been produced in experiments at high-intensity laser facilities at LLNL and the Laboratory for Laser Energetics.

Alan J. Hurd, from LANL, served as a coauthor of a report on energy critical elements which was presented at a press conference during the annual meeting. An energy critical element is one for which the sustainable energy future depends on its availability and market stability.

The following topics were presented or led by NNSA's national laboratories.

Topics by LLNL included:

- Through the Looking Glass: Recent Adventures in Antimatter
- Portraits of the California Energy System in 2050: Cutting Emissions by 80 Percent
- Celebrating Marie Curie's 100th Anniversary of Her Nobel Prize in Chemistry

Washington, D.C. Each year, AAAS brings together the best and brightest scientists, researchers and engineers from a variety of disciplines.

"NNSA is committed to investing in the future, which includes pushing the frontiers of science and discovery across our enterprise," said Don Cook, NNSA's Deputy Administrator for Defense Programs. "The work presented at the annual meeting reflects NNSA's commitment to leveraging the best science and research in the world in order to keep our

- Marie Curie, the Premier Chemist, Co-Discoverer of Radiation and Radioactivity
- Generation of Positrons with Intense Laser Light

Topics by LANL included:

- Energy Critical Elements

Topics by Sandia included:

- Crisis Averted? How a Critical Shortage in Helium-3 Was Good and Bad for Science (Sandia organized the panel discussion)
- Multi-Institutional Collaborations for Materials Research and Learning



NEW SCIENCE: Joe Glaser from the NNSA's Office for Counterterrorism spoke about why a shortage of He-3 led to new science at the annual AAAS meeting. Glaser discussed new technologies that have matured and become commercial products since supplies of He-3 became scarce. One area for high demand of He-3 is in emergency response, with assets like the radiation detection-equipped helicopter pictured above.



EXPLORING SCIENCE: Lawrence Livermore National Laboratory's booth at AAAS invited participants to explore the lab's exciting new science on display at the annual conference.

Four Scientists From Nuclear Security Enterprise Elected as AAAS Fellows

Three individuals and one retiree from NNSA's national laboratories were chosen as newly elected AAAS fellows. They were selected by their peers for scientific or social efforts to advance science or its applications. They include:

Kennedy Reed, a physicist at Lawrence Livermore National Laboratory, recognized for important studies in atomic theory, and for many successful efforts to increase minority participation in the physical sciences in the United States and Africa.

John A. Becker, Lawrence Livermore National Laboratory retiree, was recognized for his work in physics.

William S. Rees, Jr., principal associate director for global security at Los Alamos National Laboratories, was selected for scientific and educational contributions to the field of materials chemistry, and for sustained policy contributions leading to enhancements in national security basic research.

Duane Dimos, director of the Engineering Sciences Center at Sandia National Laboratories, became a AAAS Fellow for his contributions to the materials science and engineering community.

The Science of Nuclear Security

NNSA Helps Keep Super Bowl Safe

NNSA emergency response personnel were busy at the Super Bowl this year with a team that monitored the city and outlining perimeters of the stadium parking lots. The team also scanned vehicles that were making deliveries to the stadium.



EMERGENCY RESPONSE MONITORING: NNSA Emergency Response teams assisted with security at the Super Bowl using state-of-the-art radiation detection equipment, including detectors contained in backpacks worn by NNSA professionals.

The team picked up 14 hits that were all determined to be harmless. One instance was from a delivery truck entering the stadium carrying a package that had been properly labeled and contained and was in route to a different location. Overall, 1,583 vehicles were screened entering the facility prior to the game and the NNSA team drove 1,213 miles performing mobile sweeps. During last year's Super Bowl, NNSA sensors picked up 10 hits but all turned out to be the result of attendees who had previously received nuclear medicine treatments.

Deb Wilber, director of NNSA's Office of Emergency Response, said the NNSA team worked closely with various agencies before and during the game. She said planning for next year's Super Bowl in Indiana has already begun.

"By working together with other agencies, we were able to increase our responsiveness and awareness during the Super Bowl," said Wilber. "Because of our expertise in emergency response, NNSA is well equipped to help enhance radiological/nuclear security at major events like the Super Bowl."

NNSA uses state-of-the-art detection systems to help detect radioactive material. The systems are mounted on vehicles or placed in backpacks to help detect any radiation threat. After a target has been located, the team analyzes the material using a reachback capability called TRIAGE to determine the source identity and quantity.

Some of the equipment used by the field team includes the Radioisotope Identifier, a low resolution spectrometer for screening radioactive materials; a backpack radiation detector used for low profile, high efficiency radiation detection for a large area search; and high resolution gamma-ray spectroscopy.

NNSA CIO Joins Collaborative IT Organization

NNSA's Chief Information Officer Robert Osborn has officially accepted an invitation to become a Subject Matter Expert member of the Knowledge Management Laboratory (KML) Center.

While at the Department of Defense's Transportation Command (USTRANSCOM), Osborn developed the idea for a collaborative mechanism whereby organizations involved in Information Technology (IT) – including commercial, government, and academic entities – may collaborate with each other and to undertake research projects that

produce timely and relevant advances to IT concepts, design principles, and implementation solutions. Osborn helped establish, market and implement the idea to create KML in 2009.

Today, the goal of the KML Center Consortium is to explore and advance technology in areas such as service-oriented architecture, business process management, net-centric deployment, information-centric representation, collaborative software agents, natural language processing, semantic data mapping and cleansing, and autonomic computing.

After arriving at NNSA to become CIO in January, Osborn immediately began to leverage his expertise, experience and knowledge of DoD IT operations to help NNSA invest in the future of the nuclear security enterprise and improve the way the agency does business. His membership at KML is a continuation of that initiative and will benefit both the NNSA and the Consortium through shared best practices and a collaborative effort developing innovative solutions to common IT challenges.

U.S., China Partner to Improve Nuclear Security

During last month's state visit to Washington by Chinese President Hu Jintao, NNSA signed two agreements that will pave the way for increased cooperation on nuclear security between the U.S. and China.

The first agreement – a Memorandum of Understanding (MOU) signed by U.S. Secretary of Energy Steven Chu and China Atomic Energy Authority (CAEA) Chairman Chen Qiufa – will allow the NNSA and the CAEA to establish a nuclear security center of excellence in China. The Center will serve as a forum for exchanging technical information, sharing best practices, developing training courses, and promoting technical collaborations that will enhance nuclear security in China

and throughout Asia. The agreement fulfills a pledge President Hu made at the Nuclear Security Summit in Washington in April 2010.

"This agreement reflects the commitment of the two governments to strengthen their cooperation in nuclear non-proliferation, nuclear security, and in combating nuclear terrorism and represents a major step forward in implementing the global nuclear security outlined by our two Presidents at the Nuclear Security Summit last April," said Secretary Chu. "We look forward to working with our partners in China to build this Center of Excellence, which will allow us to work together to improve nuclear security in China and throughout the region."

The second agreement was signed by Deputy Secretary of Energy Daniel Poneman and Vice Minister Sun Yibiao of the General Administration of China Customs.

This memorandum of understanding will support the establishment of a radiation detection training center in Qinhuangdao, China. The agreement supports NNSA's ongoing cooperative efforts in China to combat nuclear and radiological smuggling.

These two agreements reflect the shared commitment of both the United States and China to enhance global nuclear security, and illustrate the critical role that NNSA's plays in implementing President Obama's nuclear security agenda.

Sandia Rededicates Facility as Pete V. Domenici National Security Innovation Center

In recognition of Sen. Pete Domenici's decades of advocacy and support for the role the national laboratories play in national security, Sandia recently rededicated the Weapon Integration Facility building as the Pete V. Domenici National Security Innovation Center.

During a ceremony at Sandia, NNSA Deputy Administrator Don Cook praised Sen. Domenici for working to ensure that NNSA has the resources to invest for the future and build the modern nuclear security enterprise required to accomplish today's nuclear security missions.

"In the same week we released a budget that provides the resources to invest in NNSA's future and implement the president's agenda, we have the opportunity to honor one of the true champions of investing in the people, the science and engineering capabilities, and the facilities that underpin our nuclear security," said Dr. Cook. "We are all grateful for support we at NNSA received from Sen. Pete Domenici and for his lasting commitment to modernizing the nation's nuclear security enterprise."

With the long-serving, now retired US Sen. Pete Domenici and members of his family looking on, Sandia President and Laboratories Director Paul Hommert said, "The Pete V. Domenici National Security Innovation Center stands witness to your belief that Sandia, along with the other national laboratories, provides science and engineering in support of the nation."

The ceremony took place in front of the facility at the southeast corner of Sandia's Microsystems and Engineering Sciences Applications (MESA) Complex. The center, which is part of the MESA Complex, houses approximately 350 Sandia staff, mostly working on weapon subsystem engineering, modeling and simulation, and engineering sciences.



DECADES OF ADVOCACY: Sandia rededicated the Weapon Integration Facility building as the Pete V. Domenici National Security Innovation Center in recognition of the Senator's long-time support of the NNSA's national security laboratories.

Y-12 Transfers \$8M of Equipment to DoD for Reapplication

NNSA and Y-12 recently helped preserve an \$8 million taxpayer investment by avoiding destruction and disposal of unneeded equipment as scrap and solid waste by arranging to transfer the equipment to the Department of Defense (DoD).

Originally purchased in the 1980s, the equipment was a small "clean room" designed to allow workers to perform maintenance in controlled environments. Before it was placed into service, the equipment was deemed surplus, and was awaiting disposition. Instead of destroying and disposing of the equipment, NNSA and Y-12 arranged to transfer it to DoD's Rock Island Arsenal facility for use in support of research, development and production activities.

"As we work to transform a Cold War-era nuclear weapons complex into a 21st century nuclear security enterprise, we are committed to finding creative ways to be good stewards of the taxpayer's money," said NNSA Administrator Thomas P. D'Agostino. "In this case, we worked hard to find an alternate uses for excess equipment, helping eliminate the need for the Defense Department to procure \$8 million-worth of special equipment and cutting unnecessary storage expenses at our site."

In seeking reuse of the equipment, NNSA worked with the DOE Savannah River Site (SRS), the Department of Homeland Security (DHS) as well as DoD to determine potential reuse options. While the equipment failed to meet the technical specifications of SRS and DHS technical needs, DoD identified a need for which this equipment was suitable to support its needs. To support transfer to Rock Island, DoD arranged for trucking services while NNSA provided loading support at Y-12.

New Mexico Labs Experience Cold Snap

In early-February, New Mexico experienced a cold snap causing Los Alamos National Laboratory (LANL) and Sandia National Laboratories to limit energy consumption and shut down some facilities to help relieve pressure on the New Mexico's energy systems.

During the cold snap, LANL activated its Emergency Operations Center and worked with various agencies in opening shelters for families who were impacted due to the state's natural gas shortage.

At the request of New Mexico Representative Ben Ray Lujan (D-N.M.), LANL provided advice to New Mexico Gas. The lab also shut down its larger buildings, including its computer facilities and LANSCE during the crisis. Reducing LANL's power consumption allowed the lab to divert 14 megawatts to the power grid. In addition, LANL saved approximately 9,196 MMBtu of natural gas by switching to fuel oil.

Gas was shut off to Kirtland AFB and to Sandia facilities on Feb. 3 impacting many of the facilities and employees were sent home on staggered schedules. During and following the crisis, LANL and Sandia researchers lent their expertise to answer inquiries from media and state and local government about the state's natural gas shortages and outages in New Mexico.

NNSA Pushes Revision of International Nuclear Security Standards (continued from page 3)

worldwide to reduce the threat of nuclear terrorism."

First published in 1975, INFCIRC/225 is the cornerstone of the international physical protection regime. Its recommendations serve as the international standard incorporated into many states' domestic laws and bilateral agreements as a requisite for peaceful nuclear cooperation. The recommendations in INFCIRC/225 also provide implementing guidance for international legally-binding instruments such as the Convention on the Physical Protection of Nuclear Material and UN Security Council Resolution 1540.

The new revision includes guidance for the rapid recovery of missing nuclear material and the mitigation of sabotage. It also introduces the concept of a physical protection "regime" and strengthens performance testing to include force-on-force exercises. Finally, it introduces a graded approach to physical protection that takes into account the threat, the relative attractiveness of the material, and the potential consequences associated with theft or sabotage.

NNSA will continue to be an international leader in efforts to improve the security of nuclear material around the world and keep it out of the hands of terrorists and would-be proliferators.

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EDITORS: William Gibbons, Andrew Hallock, Damien LaVera, Tracy Loughhead, Robert Middaugh, Michael Padilla, Al Stotts. **ASSISTANT EDITOR AND DESIGN:** Barbara L. Courtney **CONTRIBUTORS:** Bob Hirschfeld, LLNL; Melissa Krupa, NNSA; Lynda Seaver, LLNL; Deb Wilber, NNSA Emergency Response