May 2011

National Nuclear Security Administration Monthly News

DOE AND NNSA RESPOND: A team member works on Aerial Measurement System flight data collection following the situation at Fukushima Daiichi nuclear power station. See pages 4 and 5 for more on DOE and NNSA's roles in response to the crisis in Japan.

NNSA Releases Strategic Plan, Goals for the Next Decade

On May 18, NNSA released its new 2011 Strategic Plan, which details how NNSA will invest in the future, build the nuclear security enterprise required to implement President Obama's nuclear security agenda, enhance global security, and continue to improve the way the enterprise does business.

As we move to "OneNNSA," the Strategic Plan will serve as an outline of NNSA's goals for the next decade and a guide for planning, programming and budgeting processes.

The release of the plan came a week after the Department of Energy (DOE) announced the release of its own 2011 Strategic Plan. As part of the rollout, Administrator Thomas D'Agostino held a conference call with

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NNSA's Five Key Goals

1. **Reduce nuclear dangers;**
2. **Manage the nuclear weapons stockpile and advance naval nuclear propulsion;**
3. **Modernize the NNSA infrastructure;**
4. **Strengthen the science, technology, and engineering base; and,**
5. **Drive an integrated and effective enterprise.**

D'Agostino Addresses Small Biz Conference

In May, NNSA Administrator Thomas D'Agostino was the keynote speaker on behalf of the Obama Administration at the DOE's Annual Small Business Conference and Expo in Kansas City, Mo. Following the opening remarks by local, state, congressional and federal officials, D'Agostino hosted a detailed breakout session with 15 small business owners on ways the Department of Energy and small businesses could increase their mutually beneficial business relationships.

With over 1,600 attendees, the annual event featured plenary sessions, educational workshops, an Exhibit Hall with over 200 exhibitors/sponsors, as well as

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Administrator's Corner

In May we released the first new NNSA Strategic Plan since I became Administrator. A lot has changed since the 2006 plan was issued. Now, for the first time since the end of the Cold War, we have a broad national consensus on the role nuclear weapons play in our defense and what is required to modernize our deterrent and the enterprise that supports it.

As we work to build "OneNNSA," a single integrated enterprise that is organized to successfully complete the NNSA mission, the 2011 Strategic Plan will serve as an outline of NNSA's goals for the next decade and a guide for its planning, programming and budgeting processes. It is our roadmap for investing in our future, implementing the President's nuclear security agenda, and improving the way we do business.

This plan follows on the heels of the President's 2009 speech on nuclear security in Prague, the releases of the Nuclear Posture Review and the new government-wide National Security Strategy in 2010, and – of course – the Department of Energy's strategic plan.

We are building on the Nation's renewed commitment to nuclear security. To enhance global and national security, the NNSA is strengthening its ability to ensure that we have the people, tools and information required to address the broader set of national security needs, including renewal of our facilities. We will execute our mission with the high level of safety, security, ethical, fiscal, and environmental responsibility the Nation expects.

As I see it, our strategy can be broken down into five clear and simple goals. Together, we will:

1. Reduce nuclear dangers;
2. Manage the nuclear weapons stockpile and advance naval nuclear propulsion;
3. Modernize the NNSA infrastructure;
4. Strengthen the science, technology, and engineering base; and,
5. Drive an integrated and effective enterprise.

This is our vision for transforming NNSA from a nuclear weapons complex to a 21st century Nuclear Security Enterprise to address the nuclear and national security challenges of this century. Each and every one of you is an essential ingredient in achieving this vision. As we move forward, I am blessed to represent the outstanding national security professionals of the NNSA, a team anchored in technical excellence and unwavering commitment. Thank you for everything you do.

Tom D'Agostino

D'Agostino Addresses Small Biz Conference

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business matchmaking sessions. Attendees represented all levels of federal, state, and local government agencies, the small business community, large/prime contractors, minority educational institutions, and many more individual entrepreneurs.

In his remarks titled "Investing in the Future Means Investing in Small Businesses," D'Agostino noted that small businesses create about two of every three new jobs in America each year, and that more than half of working Americans own or work for a small business. For NNSA, Administrator D'Agostino said "small business is good business" because small business contracting helps reduce overhead costs and "helps us be more efficient in the use of taxpayer dollars."

The largest civilian contracting agency within the Federal government, the Department of Energy has more than doubled its total small business achievement over the last decade – from $3.8 billion in FY 2000 to $7.7 billion in 2010. The NNSA's federal offices alone obligated $396 million in small business contracts in 2010, while seven Management & Operating partners obligated almost $2 billion on small business contacts in the same year. This occurred across the NNSA enterprise in places like Kansas City, home to NNSA's Kansas City Plant.

NNSA Releases Strategic Plan, Goals for the Next Decade

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reporters from across the country highlighting the importance of NNSA's mission and the critical role NNSA's workforce plays in executing it.

The Strategic Plan outlines the Administrator's vision for how we will build "OneNNSA," and how the nuclear security enterprise will implement the mission areas highlighted in the DOE Strategic Plan, including stockpile stewardship, nuclear nonproliferation, counterterrorism and emergency response, and powering the nuclear Navy.

The Plan highlights Administrator D'Agostino's five key goals for NNSA and includes select initiatives to make those goals a reality. It can be read online at http://nnsa.energy.gov/strategicplan.

2010 SAFETY PROFESSIONALS OF THE YEAR: Gary Griess of the Nevada Site Office (far left) and Bryan Rhodes of B&W Pantex (far right) were recently honored by NNSA's Administrator Thomas D'Agostino and Principal Deputy Administrator Neile Miller as recipients of the federal and contractor Safety Professionals of the Year Award for 2010.

NNSA Second Z Plutonium Experiment Tests Materials for NNSA

Researchers from Sandia and Los Alamos national laboratories recently completed the second experiment in the past six months at Sandia's Z Machine to explore the properties of plutonium materials under extreme pressures and temperatures. The information, from routine experiments such as this, is used to keep the U.S. nuclear stockpile safe, secure and effective.

"The second successful experiment exploring the properties of plutonium materials at the Z Machine helps implement President Obama's nuclear security agenda while maintaining the safety, security and effectiveness of the nuclear weapon stockpile without underground nuclear testing," said Don Cook, NNSA deputy administrator for Defense Programs.

SECOND SUCCESSFUL EXPERIMENT: Workmen at Sandia's Z machine test for any energy irregularities at the huge machine's core prior to setting up for another experiment.

The Z Machine – the Earth's most powerful and efficient laboratory radiation source – is capable of performing 200 "shots," or experiments, every year. Experiments with plutonium require more care and are done relatively infrequently.

The experiment is a continuation of studies performed at Sandia prior to the major refurbishment of the Z Machine in 2007, which increased its output of electrical energy from 18 mega amperes to 26 mega amperes. This enables Z researchers to gather data from materials subjected to conditions that more closely resemble those found in nuclear weapons, the cores of planets and stars.

"By applying lessons learned from the first plutonium experiment on the refurbished Z facility last November, our staff significantly improved the operational efficiency for this second experiment and safely provided high-quality, mission-critical data, said Keith Matzen, director of Sandia's Pulsed Power Program. "Once again I am very proud of the Z team."

NNSA and DOE Teams Play Critical Role in Response to Japan Crisis

Over the past two months, NNSA and DOE teams have been on the ground in Japan following the situation at Fukushima Daiichi nuclear power station.

Using data recorded from its Aerial Measuring System (AMS) and ground detectors along with Consequence Management Response Teams (CMRT), NNSA and DOE have been working to support the State Department to advise American citizens on protective action and evacuation guidelines; support the Department of Defense to safely conduct humanitarian assistance and disaster relief operations, and to provide advice on the departure and return of military dependents; and support the Government of Japan through the State Department in developing guidelines for population relocation and impacts on agricultural lands.

All of that support took a lot of work from a large and dedicated team.

On March 11, the Nuclear Incident Team stood up at DOE headquarters and began continuous 24/7 operations; the National Atmospheric Release Advisory Center stood up to provide atmospheric modeling projection; and the Consequence Management Home Team (CMHT) stood up to support data collection and analysis efforts.

On March 14, NNSA and DOE deployed more than 30 individuals and 17,200 lbs of equipment to Yokota Air Base, including a CMRT and AMS personnel and equipment.

AMS has conducted up to three aerial detection missions per day using NNSA and DOE deployed equipment on U.S. Air Force aircraft. AMS missions have been conducted over U.S. installations and in the area near the Fukushima Daiichi plants. CMRT ground monitoring personnel have conducted daily monitoring at the U.S. Embassy, U.S. military installations, and in support of "ground truth" measurements for AMS.

The Radiation Emergency Assistance Center and Training Site and Triage capability have also been providing support to the response operations.

The Savannah River Site and Lawrence Livermore National Laboratory have provided expert analysis of air and soil samples collected by both U.S. and Japanese teams.

SCIENTIFIC EQUIPMENT AIDES JAPAN: More than 17,000 lbs of equipment was loaded onto an Air Force C-17 in Las Vegas, Nev. The equipment and highly trained nuclear emergency response personnel were sent to Japan as part of the Department of Energy and National Nuclear Security Administration's effort to assist Japanese personnel with nuclear issues.

With everyone working together from across the globe, the accomplishments have been impressive. As of May 17, NNSA and DOE efforts have included:

- A deployment footprint of up to 45 people concurrently in Japan.
- 85 Aerial Measuring System missions totaling 507 flight hours flown on fixed wing (C-12) and rotary wing (UH-1) aircraft from the 459th squadron of the 374th Wing at Yokota AB.
- Twice daily situation reports released by the Nuclear Incident Team since March 12.
- More than 280,000 data points collected from DOE, DoD, and Japanese teams. Since March 12, DOE released daily data updates to the U.S. interagency community and the Japanese response officials.
- 779 samples, including 89 soil samples requested by the Japanese government, processed by DOE laboratories. 98 requests for assistance received by REAC/TS.

"Our ability to respond to this crisis is the latest example of the vital and diverse role we play in implementing the President's nuclear security agenda."

NNSA Administrator Thomas D'Agostino

HIGH TECH SUPPORT: A high-resolution plotter/printer, capable of generating data maps for Department of Energy and National Nuclear Security Administration personnel, is readied for loading. The state-of-the-art equipment was used to support the DOE and NNSA efforts to assist Japan.

The Science of Nuclear Security

NNSA Successfully Begins New Campaign of Verification Experiments at NNSS

The first of a new kind of experiment aimed at improving arms control and nonproliferation treaty verification was recently conducted by NNSA at the Nevada National Security Site (NNSS).

The new experiments, called Source Physics Experiments (SPE), will provide ground truth data to enhance the nation's ability to detect and discriminate "low-yield" nuclear explosions amid the clutter of conventional explosions and small earthquake signals.

Source Physics Experiments are an example of the expanded role NNSS is playing in the nation's nuclear security strategy. In August 2010, NNSA announced a new name for the site, which better reflects the diverse and unique capabilities that exist at NNSS. This SPE was the first of its kind since the expansion of the NNSS mission.

"By conducting this experiment the United States can validate and improve seismic models and the use of new generation technology to further monitor countries' compliance with the Comprehensive Nuclear Test Ban Treaty," said Anne Harrington, NNSA deputy administrator for Defense Nuclear Nonproliferation. "The experiment marks an important step in strengthening the relationship of the NNSS and NNSA's Defense Nuclear Nonproliferation programs while implementing President Obama's nuclear security agenda."

The experiment was conducted by the NNSS management and operations contractor National Security Technologies in partnership with Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratories and the Department of Defense's, Defense Threat Reduction Agency. The experiment was conducted 180 feet beneath the surface of Area 15 at NNSS using 220 pounds of chemical high explosives.

"Integrating the requirements and needs of the laboratories and other federal agencies has been a hallmark of the NNSS," said Steve Mellington, manager of the NNSA's Nevada Site Office. "With the conduct of the Source Physics Experiment, the NNSS demonstrates its role to meet the future national security requirements of our agency and our country, and our commitment to investing in the future."

This collaborative effort by the NNSA and its national laboratories and the Department of Defense allowed each entity to bring its expertise and resources to the experiment and ultimately share in the data obtained. This saves the government the expense of conducting separate experiments for each group of scientists who need the data to validate models.

NNSA Receives Defense Logistics Agency Customer of the Year Award

The National Nuclear Security Administration (NNSA) has received the Defense Logistics Agency (DLA) Customer of the Year Award for providing secure storage and full inventory accountability of a hazardous product owned by DLA Energy.

The award cites that NNSA "eagerly endeavored to serve the nation's security interests and protect the environment by providing secure storage and full inventory accountability of a hazardous product owned by DLA Energy."

As a partner, DOE's NNSA supports DLA Energy in the proper storage and safeguarding of deuterium oxide, more commonly known as heavy water.

In addition, the award cites that NNSA's contribution to providing superior administrative assistance, exceptional guidance and continued specialized surveillance and storage pending the final agency-to-agency transfer was partnership at its truest level. NNSA's extraordinary efforts demonstrated its commitment to DLA's vision of utilizing other agency resources that save taxpayer dollars.

DLA's inventory of heavy water product is of domestic origin and as such is significant to national security interests. DLA Energy utilized the heavy water as a

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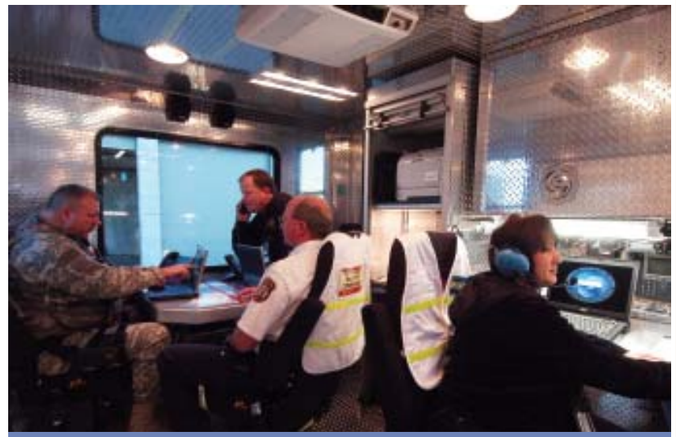
Pantex is Prepared With Satellite-enabled Incident Command Vehicle

Communications during a real event is crucial, at times resulting in lives saved and property protected. Pantex's new Incident Command Vehicle (ICV) features a satellite-based communications network designed to go where the action is.

Unique to the National Nuclear Security Administration complex, the ICV was built from the ground up to enable incident commanders to travel where necessary during real events or exercises and communicate via satellite using data, voice or video teleconferencing – unclassified or classified – in an enclosed work environment.

Though the Emergency Communications Network is a DOE capability provided to all DOE sites, Pantex chose this style and arrangement because it gives incident commanders more tools to do their jobs. The ICV seats two in the cab, can house eight at desks in the working section and features heating and air conditioning, electricity, radios, computers, telephones, video conferencing, maps and other equipment.



MOBILE COMMUNICATIONS: The Pantex Plant's Incident Command Vehicle enables flexibility to incident commanders and responders to conduct operations and communicate from wherever they need to be during an emergency.

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NNSA Streamlines Functional Responsibilities

As part of the new 2011 NNSA Strategic Plan, the agency is working to drive toward OneNNSA – a fully integrated enterprise that operates efficiently, is organized to succeed, performs work seamlessly, and speaks with one voice. Consistent with that vision, Principal Deputy Administrator Neile Miller traveled to Albuquerque in May to brief the NNSA workforce on the new functional reporting structure that will be implemented at the Service Center.

As the next step in efforts to drive toward an integrated nuclear security enterprise, reporting responsibilities have been streamlined for the mission support elements working in Albuquerque. Previously, NNSA had teams of human resources, general counsel, public affairs, procurement, financial management, and information technology professionals working in parallel at headquarters and at the Service Center, but reporting through different management chains. As we move forward based on the recent realignment in Albuquerque, NNSA will have OneHR, OneGC, OneCIO, OneFinancial Management, and OneProcurement, with each of those functional areas reporting to their headquarters functional leads. This will enable those areas to be functionally aligned in a way that generates enterprise-wide solutions to enterprise-wide requirements, while allowing greater access to a wider range of strategic business services to support our mission. Employees will continue to perform the same critical mission support functions, but with a more streamlined and efficient reporting structure that helps move toward the creation of a single integrated enterprise.

Working together, the workforce can make NNSA a model for efficiency and integration.

NNSA Places 56 Participants Throughout Enterprise as Part of Military Academic Collaborations Program

NNSA's Office of Defense Programs has placed 56 participants this spring throughout the country as part of its Military Academic Collaborations (MAC) program.

The 56 cadets and midshipmen will participate at Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Sandia National Laboratories, Nevada National Security Site and Pantex. Participants are from The Citadel, United States Military Academy at West Point, the Naval Academy, the Air Force Academy, the Coast Guard Academy and Reserve Officer Training Corps (ROTC) candidates. Participants will work closely with senior researchers or teams and have the benefit of a dedicated mentor.

"We are excited about the overwhelming amount of interest in NNSA's Military Academic Collaborations program," said Brig. Gen. Sandra Finan, principal assistant deputy administrator for Military Application at NNSA. "Recruiting and retaining the next generation of nuclear security professionals and building a strong core of science and technology are cornerstones of our effort to invest in the future of a modern nuclear security enterprise. Initiatives like the MAC programs are an excellent opportunity for military academy cadets, midshipmen, ROTC students, and faculty to be part of the enterprise that helps keep the American people safe by maintaining our nuclear stockpile and implementing the President's nuclear security agenda."

The program is a collaboration between NNSA's laboratories, production sites and the U.S. Military Academies and ROTC programs at universities throughout the country.

The goal of the program is to place military academy cadets/midshipmen and officers in tours of duty within science, technology, engineering, national security and relevant fields at any of the NNSA sites.

Participants from the Department of Defense will expand their understanding of the NNSA national security enterprise and DoD programs while working closely with nationally recognized staff and researchers on national security programs.

NNSA Receives Defense Logistics Agency Customer of the Year Award

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feedstock for deuterium, which is used in laser weapons.

When the laser programs were discontinued, NNSA worked with DLA Energy to take ownership of the excess heavy water and deuterium in DLA's inventory.

The transfer of the hazardous products required high-level and specialized coordination. The NNSA partnership aided in the timely resolution to DLA's imminent requirement to seek suitable secure storage or safe disposition of these products.

Pantex is Prepared with Satellite-enabled Incident Command Vehicle

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"We wanted to be able to provide the most reliable means to communicate between the Incident Command Team and anyone they need communications with," said Scott Nelson, Emergency Services Dispatch Center section manager. "If a real event occurs at Pantex and this vehicle is used, you can be assured the incident commanders inside it are getting the best resources available."

Pantex Emergency Management Department, Fire Department, Information Technology, Cyber Security, Safeguards and Security, and the Projects Division at the Pantex Plant were all involved in the project.

"I'm always excited when we can bring a tool online that will save lives," said Nelson. "I have been working in the emergency world for 24 years in either law enforcement, fire departments or emergency medical services. Bringing this type of communications system to the field for responders to use is a huge leap forward for our site."

The ICV's satellite communications system was installed by the Remote Sensing Laboratory at Nellis Air Force Base, and the same satellite capability is available at Pantex's Emergency Operations Center and at the Alternate Emergency Operations Center.