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NNSA Monthly News

National Nuclear Security Administration Washington, DC 20585

SMOLEN SWEARING IN: Energy Secretary Samuel W. Bodman administers the oath of office to retired Major General Robert L. Smolen to be head of NNSA's Defense Programs. He was nominated by the President in July and confirmed by the Senate in November. Also pictured is Smolen's wife Adriane.

Robert L. Smolen Sworn In As Head Of NNSA's Defense Programs

Retired Major General Robert L. Smolen is the new NNSA deputy administrator for Defense Programs. He oversees the nuclear weapons program for NNSA and will be responsible for ensuring that nuclear warheads in the U.S. nuclear weapons stockpile continue to remain safe, secure and reliable without underground nuclear testing.

"The experience that Bob brings to this job will advance our efforts to achieve a smaller, safer and more secure nuclear weapons stockpile consistent with national security needs," Energy Secretary Samuel W. Bodman said at the swearing-in ceremony. "NNSA has a vital national security mission and I have full confidence that Bob will be an important member of our team."

Previously, Smolen served as commander for the Air Force District of Washington until his retirement from the United States Air Force last August.

"I am eager to be a part of the future of NNSA's Defense Programs, and moving towards a more efficient complex. I am honored to be

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Transformation Proposal 'Urgent' D'Agostino Says

Saying that the nation's aging Cold War-era nuclear weapons complex is too big and too costly, NNSA Administrator Thomas D'Agostino announced a proposal to create a nuclear weapons infrastructure that is smaller, safer, more secure, and more cost effective.

"I feel a sense of urgency," D'Agostino said. "We must act now to adapt for the future security needs of the country, and stop pouring money into an old, Cold War-era nuclear weapons complex that is too big, too expensive, and doesn't offer updated and safer ways of maintaining our nuclear stockpile or that is responsive to other national security needs."

Transformation is needed to prevent an escalation in costs for both securing and maintaining the complex.

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In This Issue

NNSA Vision Of Future Nuclear Weapons Complex

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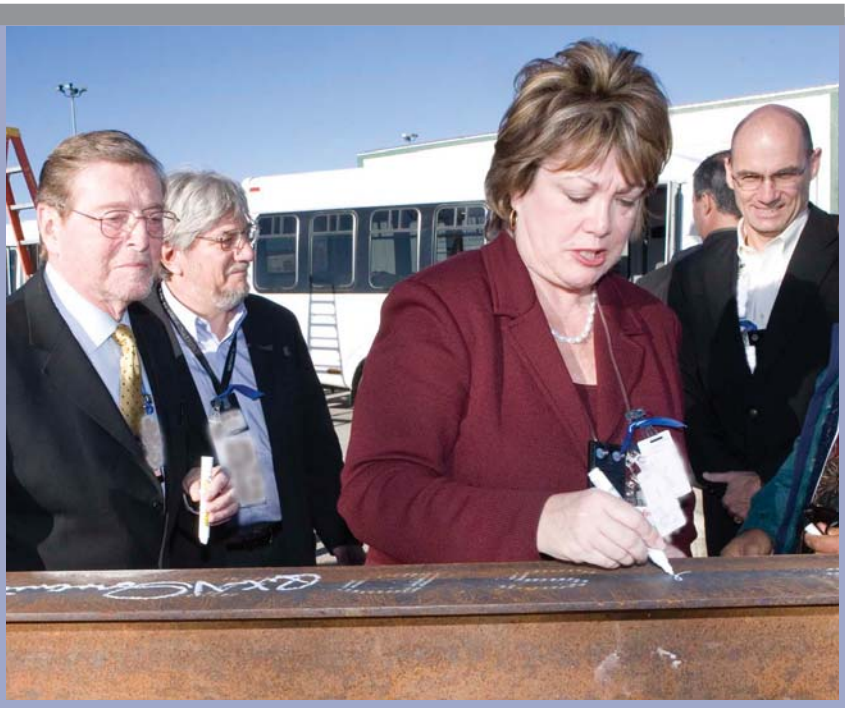
Nuclear materials are stored at too many sites, making security costs extremely high. The current complex also relies on hazardous, toxic and exotic materials that are causing increasing concerns for NNSA's workers and the environment. Finally, there are many redundancies in missions, capabilities and facilities that are no longer necessary or affordable.

Over the next decade, the proposed transformation would likely result in a 30 percent reduction in the square footage of the nuclear weapons infrastructure. In general, an overall reduction in the workforce directly supporting the weapons program of 20-30 percent may also take place over a decade, mostly through retirements, with many others moving into growing and critical national security programs such as nuclear nonproliferation, nuclear incident response and forensics, and intelligence analysis.

THE TRANSFORMATION PLAN WOULD:

- Consolidate special nuclear materials at five sites by the end of 2012, with reduced square footage within those sites by 2017;
- Close or transfer from weapons activities about 600 buildings or structures, many by 2010;
- Cease NNSA operations of two major testing sites supporting our laboratories by 2015;
- Reduce the square footage of buildings and structures supporting weapons missions by as much as one-third, going from greater than 35 million to less than 26 million square feet;
- Employ 20-30% fewer workers directly supporting weapons missions consistent with a smaller, more efficient complex;
- Dismantle weapons at a significantly faster pace.



CONGRESSIONAL DELEGATION VISITS LANL: U.S. Representative Ellen Tauscher signs a steel beam during a recent ceremony at NNSA's Los Alamos National Laboratory (LANL) Chemistry and Metallurgy Research Facility Replacement project construction site. Also attending the ceremony were (clockwise from left) U.S. Senator Pete Domenici, LANL Director Michael Anastasio, and NNSA Administrator Tom D'Agostino. The dignitaries toured other facilities and received briefings on a number of LANL programs.

Robert L. Smolen Sworn In As Head Of NNSA's Defense Programs

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entrusted with such an important job, assisting the Department of Energy's mission of ensuring the safety, security, and reliability of the U.S. nuclear weapons stockpile," said Smolen.

Smolen received a Bachelor of Arts from Allegheny College in Meadville, Pa. He earned a Master of Public Administration from the University of Oklahoma and a Master of Political Science from Auburn University in Alabama. Smolen has three adult children and he lives in Northern Virginia with his wife Adriane.

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Sandia Engineer Receives Coveted Technical Excellence Award From American Indian Group

"Often, there was no food the last week of the month," said Stan Atcitty, a Sandia National Laboratories (SNL) engineer. "Yet somehow my mother, Betty Mae, always found some. There was more than forty percent unemployment, more than 30,000 homes without power, water, sewers, or roads."

Despite the challenges of his childhood on the Navajo reservation in Shiprock, N.M., Stan persevered. He was recently honored with the Technical Excellence Award by the American Indian Science and Engineering Society (AISES) for his research and development of power conversion systems and energy storage, in particular for advancing the understanding of the system-level performance of electrochemical capacitors. Stan is an internationally recognized expert in his field.

"Working at Sandia allows me to perform different areas of research and development with world-class equipment and people who make it even more rewarding," he said.

At SNL, Stan oversees simulations of energy storage technology integration. His professional accomplishments include an R&D 100 Award for the development of the Emitter Turn-Off Thyristor (ETO) and two patents. He graduated from the Sandia Weapon Intern Program in 2002.

"I came from humble beginnings," Stan said. "I was raised in a less than 500-square-foot substandard house."
Betty Mae, a single mother, raised Stan and his two older siblings. Their house had no insulation, so it was hot in the summer and cold in the winter. He remembers looking up at the ceiling and seeing the two-by-four crossbeams. His mother wove rugs, a skill she learned from her mother. She sold them to support her family. Stan always enjoyed taking things apart and reassembling them to see how they worked. He loved math and science. When Stan was in high school, a counselor changed his class schedule to include more challenging subjects in math, chemistry, and physics.

After graduating from high school, Stan worked as a laborer. "On a project where I had to dig a trench for a foundation with a shovel," says Stan, "I asked myself, 'Do I want to do this for the rest of my life?'

The answer was a resounding no. He decided to continue his education. "My mother did not understand the entire education process," he said. "But she knew it was good and supported me all the way."

Stan's college education began at San Juan Community College in Farmington, N.M., and continued at New Mexico State University. During an electronics class, he realized that he understood the concepts. As his self-confidence grew, he attained a greater level of achievement.

Through his community involvement, Stan is helping to chart a path for upcoming Native American scientists and engineers. He has a heart for the Native American students.

"I love to see them succeed, especially the ones who grow up in difficult financial situations," he says. "My mother may not have understood much about the education process," says Stan. "But she was right. It was good. My family's dream of the path for a better life has come true - I am living it today."

Stan Atcitty with his family.

NNSA's Service Center

By The Numbers

Fact
$12B+
ALL FIELD DOLLARS THAT FLOW THROUGH THE SC's OFFICE OF FIELD FINANCIAL MANAGEMENT.

Fact
52,000
NUMBER OF SECURITY CLEARANCES THE SC's OFFICE OF FEDERAL SERVICES PROCESSES FOR FIELD PERSONNEL, BOTH FEDERAL AND CONTRACTOR EMPLOYEES.

Fact
2,000+
PERSONNEL ACTIONS BY THE SC's OFFICE OF HUMAN CAPITAL MANAGEMENT SERVICES, OF WHICH APPROXIMATELY 150 WERE STAFF HIRINGS ALONG WITH HUNDREDS OF AWARDS AND RETIREMENTS.

Fact
$6.3B
FY 2007 PROCUREMENTS AND FINANCIAL ASSISTANCE INSTRUMENTS ADMINISTERED BY THE SC's OFFICE OF BUSINESS SERVICES

There is a television commercial for a wireless telephone company that depicts a cadre of support personnel of all kinds standing behind its customer to make sure that cellular phone connections are successful. Transfer that image to NNSA and it would be a commercial for the NNSA Service Center (SC) located at Albuquerque, N.M. Granted, Service Center employees don't follow anyone en masse with helicopters hovering overhead, but they are mobilized to respond to the business needs of the NNSA complex.

NNSA's Service Center weekly management team meeting.

Service Center Director Karen Boardman said the Service Center is a key enabler of NNSA programs and its mission. Whether it's involvement in defense programs, nuclear nonproliferation, emergency response or the complex-wide infrastructure revitalization efforts, the Service Center assists NNSA through personnel hiring, contracting, money management, security clearances, a variety of technical services such as certification of shipping containers to support the stockpile schedule, Freedom of Information Act requests and legal services like patent applications on behalf of the government.

> ***"As we begin to transform our entire complex to meet the national security needs of the future we will rely heavily on the Service Center..."***
>
> **Thomas D'Agostino**
> **NNSA Administrator**

"The creation of a Service Center to provide business and technical support to the NNSA sites and headquarters was a central element of the NNSA reorganization that we implemented in December of 2002," said NNSA Administrator Thomas D'Agostino. "We now have five years of experience behind us and I'm happy to say that the Service Center has made significant progress as a quality service provider. As we begin to transform our entire complex to meet the national security needs of the future we will rely heavily on the Service Center to enable progress to a smaller, safer, more efficient and effective complex."

The Service Center was formed through a consolidation of administrative, business and technical expertise from NNSA offices in California, Nevada, New Mexico and Washington, D.C. Although its wide-ranging services include legal, equal opportunity and public affairs assistance to Site Offices and NNSA headquarters, most are provided by five major business lines:

Can You Hear Us Now?

OFFICE OF TECHNICAL SERVICES (OTS)

OTS supplies technical services including safety, packaging and transportation, environmental and energy management, and program and project support to NNSA such as the dismantlement and transparency initiatives in the Office of Defense Nuclear Nonproliferation.

"OTS is unique in the number of NNSA customers it supports," said Associate Director Ray Corey. "We provide technical expertise to all the Site Offices and five offices at headquarters - Defense Programs, Defense Nuclear Nonproliferation, Infrastructure and Environment, Chief Defense Nuclear Safety and the Office of the Senior Environmental, Safety and Health Adviser."

A major function of OTS is ES&H support, including nuclear facility start-up and re-start reviews throughout the complex. It also supports the nuclear weapons program by certifying packages for weapon program components and fissile materials shipments. OTS also has Department of Energy Environmental Management-funded employees who support Los Alamos National Laboratory cleanup and the office of the Associate Administrator for Infrastructure and Environment in executing environmental cleanup missions across the NNSA complex.

OFFICE OF BUSINESS SERVICES (OBS)

In fiscal year 2007, OBS administered a total of $6.3 billion in procurements and financial assistance instruments; $883 million in total contract obligations (with $236 million of the total to small businesses); and more than 1,700 total procurement actions on behalf of the NNSA complex.

Associate Director Don Garcia said upcoming major procurement actions and initiatives under OBS will total nearly $900 million for NNSA activities such as highly enriched uranium down-blending, a National Environmental Policy Act follow-on contract, and design, integration, construction, communications, and engineering services for the Second Line of Defense program.

"Our responsibilities extend beyond procurement," Garcia said. "We provide support in the management of personal property located at all NNSA facilities and we provide expertise to Site Offices and headquarters in the management of contractor human resources systems. Real estate oversight and management is also a function under OBS with real estate holdings located throughout the United States and consisting of numerous office buildings, laboratory facilities and land."

OFFICE OF FIELD FINANCIAL MANAGEMENT (OFFM)

OFFM is responsible for the oversight and assessment of NNSA's contractor financial management activities. It is NNSA's allotment holder for nearly $12 billion, which includes funding for maintenance and operations contractors and federal customers, OFFM is responsible for the financial and allotment related services for about forty percent of Department of Energy's entire budget.

"In addition to what may be considered the usual role of financial management, we also perform two unique functions for NNSA," said Director Dennis Martinez. "One is the federal officer responsibility, which includes performing reviews related to allegations of waste, fraud and abuse. The other is the cost benefit analysis of proposed new regulations to assess the impacts of new requirements on NNSA contractors."

OFFICE OF FEDERAL SERVICES (OFS)

OFS provides a variety of core security services to a wide range of sites and employees within NNSA. "Most far reaching of all our responsibilities is the processing of personnel security clearances for more than 52,000 federal and contractor employees at NNSA site offices, national laboratories and production plants," said OFS Associate Director Debby Miller. "In addition, OFS manages the NNSA Foreign Ownership Control and Influence Program, facility clearance processes, and provides support to the Departments's administrative review process."

OFFICE OF HUMAN CAPITAL MANAGEMENT SERVICES (OHCMS)

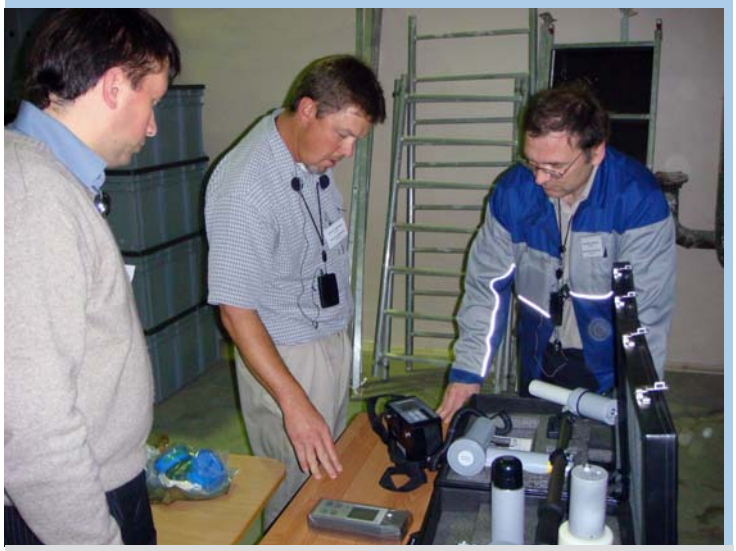
NNSA's human capital management operational functions and programs were realigned in 2006 and named the Office of Human Capital Management Services, which is currently managed by Arlene Sambrano. The realignment combined NNSA headquarters staffing, classification, and recruitment services with the human resources staff at the Service Center, although Germantown-based staff members continue to work there.

"The big challenge for our office," Sambrano said, "is continuing to market our organization structure to our customers and diverting their operational human resource issues through our office. We believe this structure has postured us for the future of NNSA and allows for better service to our customers."

NNSA Exercises With Russian Responders

NNSA's emergency responders teamed up with their counterparts from the Russian Atomic Energy Agency (ROSATOM) for the first-ever joint radiological emergency response field training in St. Petersburg, Russia. The goal of the exercise was to share best practices between the two organizations so that an effective operation will be ready should the need arise for an international response to nuclear and radiological incidents or terrorist events.

"This successful and productive event is another sign of increased cooperation between the United States and Russia," said NNSA's Associate Administrator for Emergency Operations Joseph Krol. "Preparing for an emergency situation is critical to our efforts and we can both learn from each other's experiences in order to better protect the people and the environment in the event of a nuclear or radiological incident. We will continue working closely with our Russian partners in the important area of radiological emergency response."



U.S. AND RUSSIAN EMERGENCY RESPONDERS: A U.S. responder is briefed on Russian Federation radiation detection instruments.

Under the Bratislava Agreement on Nuclear Security signed by Presidents Bush and Putin in 2005, both governments agreed to cooperate on various nuclear security efforts, including securing nuclear material and coordinating on emergency response efforts. The recent training is the latest in a series of bilateral meetings, mutual equipment demonstrations, and joint exercises between the emergency responders.

HOLIDAY GIVING: Last year Sandia National Laboratories New Mexico (SNL/NM) employees and retirees donated over $17,308 to purchase shoes for more than 500 local school children. The Shoes for Kids program, an SNL/NM corporate sponsored project adopted in 1995, has provided shoes for over 11,000 children to date.

Access Delay System Installed At NNSA's Y-12 Facility

In partnership with Sandia National Laboratories in New Mexico, B&W Y-12 in Tennessee has designed and fabricated an Access Delay System (ADS), which was recently installed in an operational Y-12 facility as part of its upgraded defense technology.

If armed adversaries attack the site and gain entry into the facility, the ADS will prevent them from getting rapid access to critical assets, thus giving the site's protective force officers additional time to respond. Y-12 completed installation of components during August 2007 and is currently performing facility operational reviews and readiness activities. The unit is scheduled to become operational in early 2008.

NNSA's BlueGene/L Sets Performance Mark

NNSA's BlueGene/L (BGL) supercomputer retained its number one ranking on the latest Top500 list of the world's fastest supercomputers.

Housed at NNSA's Lawrence Livermore National Laboratory (LLNL), BGL was clocked at 478.2 trillion floating operations per second (teraFLOPS) on LINPACK, the industry standard of measure for high-performance computing. Built by IBM, BGL is a workhorse machine used to make possible science simulation of unprecedented detail for NNSA's Advanced Simulation and Computing program, which leverages the computing expertise and resources of the Sandia, Los Alamos and Lawrence Livermore national laboratories.

Computer simulations are a cornerstone of NNSA's stockpile stewardship program to ensure the safety, security and reliability of the nation's nuclear deterrent without nuclear testing.

Recently expanded to accommodate growing demand for high-performance systems able to run the most complex nuclear weapons science calculations, BGL now has a peak speed of 596 teraFLOPS.

"Expanding the BGL system allows us to explore a new class of applications important to our mission and is an important step toward the predictive, fully integrated 3D weapons calculations vital to NNSA's stockpile stewardship mission," said Michel McCoy, head of the Advanced Simulation and Computing program at LLNL.

LLNL Researchers Win Gordon Bell Prize For Computing Advances

A team of scientists from NNSA's Lawrence Livermore National Laboratory (LLNL) and IBM won the prestigious Gordon Bell Prize for the third year running with a breakthrough physics calculation run on the recently expanded BlueGene/L supercomputer. The award is named for one of the founders of supercomputing and widely regarded as the Oscars of supercomputing. It recognizes innovators who advance high-performance computing.

By performing extremely large-scale molecular dynamics simulations using an innovative computational technique, the LLNL team was able to study, for the first time, how a Kelvin-Helmholtz instability develops from atomic-scale fluctuations into micronscale vortices. The Kelvin-Helmholtz instability arises at the interface of fluids in shear flow and results in the formation of waves and vortices.

The insights gained through simulation of this phenomenon are of interest to NNSA's stockpile stewardship program. Understanding how matter transitions from a continuous medium at macroscopic length scales to a discrete atomistic medium at the nanoscale has important implications for research efforts such as National Ignition Facility laser fusion experiments and developing applications for nanotube technology.

U.S. And Russia Sign Plan For Russian Plutonium Disposition

Secretary of Energy Samuel W. Bodman and Russian Federal Atomic Energy Agency Director Sergey Kiriyenko have signed a joint statement outlining a plan to dispose of 34 metric tons of surplus plutonium from Russia's weapons program.

Under the new plan, the United States will cooperate with Russia to convert Russian weapons-grade plutonium into mixed oxide fuel (MOX) and irradiate the MOX fuel in the BN-600 fast reactor, currently operating at the Beloyarsk nuclear power plant, and in the BN-800 fast reactor, currently under construction at the same site. The United States and Russia also intend to continue cooperation on the development of an advanced gas-cooled, high-temperature reactor, which may create additional possibilities for disposition of Russia's plutonium.

"This joint statement between the United States and Russia reflects measurable progress towards disposing of a significant amount of weapons-grade plutonium in Russia," Secretary Bodman said. "Along with the U.S. program to dispose of plutonium as mixed oxide fuel in light water reactors, the Russian program will ensure that enough plutonium for thousands of weapons is converted into a form which cannot be used to construct a weapon and will instead be used to provide fuel to produce clean electricity."

State Department Funds New Training Facility

Construction of a new facility in Richland, Wash., funded by the U.S. Department of State will benefit NNSA's Second Line of Defense training.

The State Department has allocated $2.25 million through the Nonproliferation and Disarmament Fund (NDF) to build a new facility at Department of Energy's Volpentest Hazardous Materials Management and Emergency Response (HAMMER) Training and Education Center in Richland. The building will be used by the Pacific Northwest National Laboratory (PNNL) to conduct international training courses for NNSA and the State Department.

"The security of the United States does not start at our border. It starts overseas," said Paul Van Son, senior advisor for the NDF, which is funding the construction. "This is very critical training."

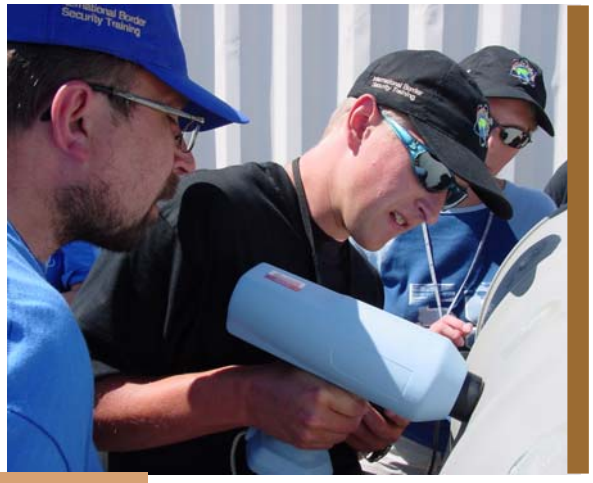
The 6,500-square-foot building will consist primarily of classroom space. Currently, PNNL uses about 3,500 square feet of classroom space in HAMMER's administration building.

"The new building will allow PNNL to greatly expand its support to the Second Line of Defense program and the State Department," said Gordon Dudder, PNNL's director of Defense Nuclear Nonproliferation programs. "The training brings together PNNL's expertise in nonproliferation and radiological science with HAMMER's equipment and props to provide the most realistic training possible."

The training teaches border enforcement officers how to detect, identify and interdict weapons of mass destruction. Curriculum includes classroom instruction and hands-on field exercises using real nuclear materials. The goal is to equip officers with first-hand knowledge of controlled materials, dual-use equipment and methods of concealment.

Since 1997, PNNL has trained more than 1,200 international officers from more than 44 countries. PNNL held its first border protection class in September 1997 for Hungarian and Slovak customs and border guards.

When it isn't being used for international training, the facility will be used to train officers from the Department of Homeland Security's Customs and Border Protection PNNL also has trained more than 2,800 U.S. border officers at HAMMER since 2002.



CZECH THIS: Border enforcement officers from the Czech Republic learned how to use new technologies to detect materials or components of weapons of mass destruction being shipped across borders during training at the HAMMER site.

STAR MENTOR: Jennifer Martinez of Los Alamos National Laboratory receives a Menoring Award from Terry Wallace, principal associate director for Science, Technology and Engineering at LANL. The lab's Women's Diversity Working Group presents the awards yearly.

Pantex Earns Clean Texas Award

The Environmental Management System at NNSA's Pantex Plant has received gold-level membership in the Texas Commission on Environmental Quality's Clean Texas program. This certifies the Pantex Plant as a leader in environmental and energy management.

"B&W Pantex has been working diligently to develop a program that provides continued environmental improvements that protect our employees and the community," said Dan Swaim, B&W Pantex general manager and president. "It is important to note that this achievement was due in large part to our employees who incorporate and use these improvements daily."

Gold-level recognition is given to Texas companies that have a robust environmental management system and show continuous improvement in their management of environmental impacts caused by work activities.