

## Radioactive Sources Recovered From Louisiana And North Carolina

The NNSA Office of Global Threat Reduction's Offsite Source Recovery Program (OSRP) at Los Alamos National Laboratory (LANL) has made significant advances in recovering radioactive sources this year, both internationally and domestically. The project has recovered 18,238 sources for a total of 713,125 curies since it began in 1999 with retrievals from more than 700 sites including all 50 States, Washington, D.C., Puerto Rico and a number of foreign countries. NNSA removes excess, unwanted, abandoned, or orphan radioactive sealed sources that pose a potential risk to health, safety and national security, because they can be used to make dirty bombs.

Since September 11, 2001, the  
*(continued on page 2)*



**HISTORICAL ACHIEVEMENT:** Material protection upgrades at a Russian nuclear facility increase security by delaying access to stored nuclear materials. Stored plutonium is secured under one ton concrete blocks requiring a two-person crane to move. See pages 4 and 5 for more about NNSA's achievements in the largest U.S.-Russian cooperative threat reduction effort in history.

## New Oak Ridge Facility Expands Security Training Capabilities

Security police officers protecting vital national security and research facilities at the Department of Energy's Oak Ridge Complex now have two new training facilities to further enhance their capabilities. The Tactical Training Facility, located at the Oak Ridge Central Training facility, is the first of its kind in the Department of Energy complex. The structure can be configured to simulate buildings at the Y-12 National Security Complex and other Oak Ridge facilities, thus creating highly realistic training scenarios. The security police officers are employed by Wackenhut Services, Inc. - Oak Ridge Team, which provides security service for Y-12, the Oak Ridge National Laboratory, and other government facilities in Oak Ridge.

"The American people can be very comfortable that we are focused on providing the best possible security force we can have," said NNSA Associate Administrator for Defense Nuclear Security Brad Peterson, who participated in a recent dedication ceremony. "That includes making

*(continued on page 2)*

### In This Issue

California Governor Arnold Schwarzenegger Visits The National Ignition Facility.....3

NNSA Completes Bratislava Nuclear Security Initiatives.....4

NNSA Security Professional Of The Year Award.....6

## New Oak Ridge Training Facility Expands Security Training Capabilities *(continued from page 1)*

sure our people are well-trained and well-equipped, and that our facilities are designed and upgraded for the 21st century."

The Live Fire Shoot House replaces an existing facility that was built in 1986 and enhances training realism in a live fire environment. Both pistols and rifles can be employed since the structure is constructed of ballistic steel, which will contain live rounds of ammunition. The room sizes and ability to move interior walls provide the flexibility to create a variety of training scenarios. Security police officers can be confronted with new



**ENHANCED SECURITY TRAINING:** Wackenhut Services Inc. - Oak Ridge Team special operations cadre sergeants participate in a tactical security exercise in the new Tactical Training Facility located in Y-12 Oak Ridge.

target areas causing them to make instantaneous decisions involving shoot, don't shoot situations. This new facility also has a roof, allowing training to be conducted in all weather conditions. The previous Live Fire Shoot House was constructed from tires filled with sand and was limited in the variety of target environments that could be created. Both of the new facilities will allow security forces to continue moving tactical training to the elite force levels envisioned by senior officials. "Y-12 is one of the most protected facilities in the world and we have great confidence in our ability to perform the security mission," said Peterson.

## Radioactive Sources Recovered

*(continued from page 1)*

mission has expanded from environmental concerns to address broader public safety and national security requirements. As a result, the removal program moved from the Department of Energy's Office of Environmental Management to NNSA in 2003.

In addition to transuranic sources, the expanded removal mission now includes recovery of beta/gamma emitting sources, which are of concern to both the U.S. government and the International Atomic Energy Agency.

Most recently, in early November, a retrieval from a site in Louisiana produced 231 individual sources with a total measurement of 54.24 curies. The sources were americium-241, americium-241 mixed with beryllium, and curium-244. The pickup was handled by four Los Alamos National Laboratory staff members and an employee of the company involved, which is not named due to security sensitivities.

In late October, 251 former sources were packaged and shipped from two sites in North Carolina, returning 16.89 curies of americium-241 and americium-241/beryllium to NNSA control. The sources had been used in soil-density gauges, a common industrial application for these small radioactive source materials, as were the Louisiana items. Five laboratory staffers and two company employees accomplished the measurement, packing and shipment, once again restoring these materials to government control.

# Governor Arnold Schwarzenegger Visits The National Ignition Facility

California Governor Arnold Schwarzenegger recently toured the National Ignition Facility, at the Lawrence Livermore National Laboratory, and held a press conference to discuss the nearly completed laser and applications, particularly the Laser Inertial Confinement Fusion-Fission Energy project, commonly known as LIFE. The governor said LIFE could help the state's future energy needs while simultaneously decreasing dependence on fossil fuels. Schwarzenegger said fusion energy would not only assist the state in meeting future energy demands, but also would help reduce greenhouse gas emissions that negatively impact climate. "This laser technology has the potential to revolutionize our energy future," said Schwarzenegger. If successful, this new endeavor could generate

thousands of megawatts of carbon-free nuclear power but without the drawbacks of conventional nuclear

plants. This type of innovation is why we are a world leader in science, technology and clean energy, and I could not be prouder that this work is happening right here in California." LIFE would lead to sustainable, carbon-free energy that is safe and drastically shrinks the nation's and world's inventories of nuclear waste. The governor conducted a news conference after his tour and met again with a crowd of photographers and reporters to answer additional questions.

**LASER TECHNOLOGY:** (from left) Edward Moses, principal associate director of the National Ignition Facility (NIF), Governor Arnold Schwarzenegger and Lawrence Livermore National Laboratory Director George Miller walk near the NIF target chamber.



**NUCLEAR SCIENCE REPOSITORY:** New construction for the relocated National Museum of Nuclear Science and History (formerly the National Atomic Museum), chartered by Congress and located in Albuquerque, N.M., is scheduled for completion in March 2009. The 30,000 square foot facility will incorporate 13 permanent indoor exhibit areas, two classrooms, a theater, library and conference room, a gallery for temporary exhibits, and the museum's store. The site provides nine acres of outdoor space for exhibits of military aircraft, missiles, vehicles, and the sail of the USS James K. Polk nuclear submarine. Touring the site are (left to right) NNSA Service Center Director Karen Boardman, Service Center Deputy Chief Counsel Rick Vergas; former Albuquerque Operations Office (ALO) Deputy Manager Jim Culpepper; and National Atomic Museum President, construction project manager, and former ALO employee Chuck Loeber.

# NNSA Completes Bratislava Nuclear Security Initiatives

In December, NNSA staff will be celebrating more than just the holiday season. This year, December will also mark the conclusion of Russian nuclear security upgrade work under the Bratislava Nuclear Security Initiative. Signed by Presidents Bush and Putin during a February 2005 summit,

Bratislava is the largest U.S.-Russian cooperative threat reduction effort in history. As of December 31, all nuclear security upgrades included in the Bratislava Nuclear Security Initiative will have been completed. This enormous cooperative effort, which accelerated upgrades by as many as two years, has secured one of the largest stockpiles of nuclear weapons and materials.

While this achievement is significant, the two nations agreed to expand the scope of work and efforts will continue through the end of 2012.

The Bratislava Initiative also focuses on four other key areas: emergency response, best practices, nuclear security culture, and research reactors. The U.S. and Russia have also made major progress in these areas. The Emergency Response Training Center in St. Petersburg, Russia, is fully established. The training center will enable advanced practical "hands-on" training for nuclear emergency responders and other rescue team experts to localize nuclear or radiological emergencies. Further cooperation is planned in order to capitalize on the joint collaboration and to continue enhancing preparedness of both sides for responding to a radiological accident.

NNSA and the Russian Federal Agency for Atomic Energy (have held several workshops to exchange best practices in nuclear security. In early December, NNSA, the Russian Federal Agency for Atomic Energy, and the United Kingdom Ministry of Defense held the first trilateral workshop to

discuss material control programs, vulnerability analysis tools, personnel reliability programs, and new technologies for nuclear



**MATERIAL PROTECTION:**

NNSA makes physical security upgrades to Russian nuclear sites under the Bratislava Initiative signed by Presidents Bush and Putin in 2005. Before upgrades (top); after upgrades (bottom).

security. At the meeting, the U.S. and Russia noted the benefit of involving other countries and agreed

The working group has established a Security Culture Coordinator project at select Russian sites, as well as a list of terms to be incorporated into the glossary on Nuclear Material Accounting, Control, and Physical Protection. The working group is also working on a draft Russian



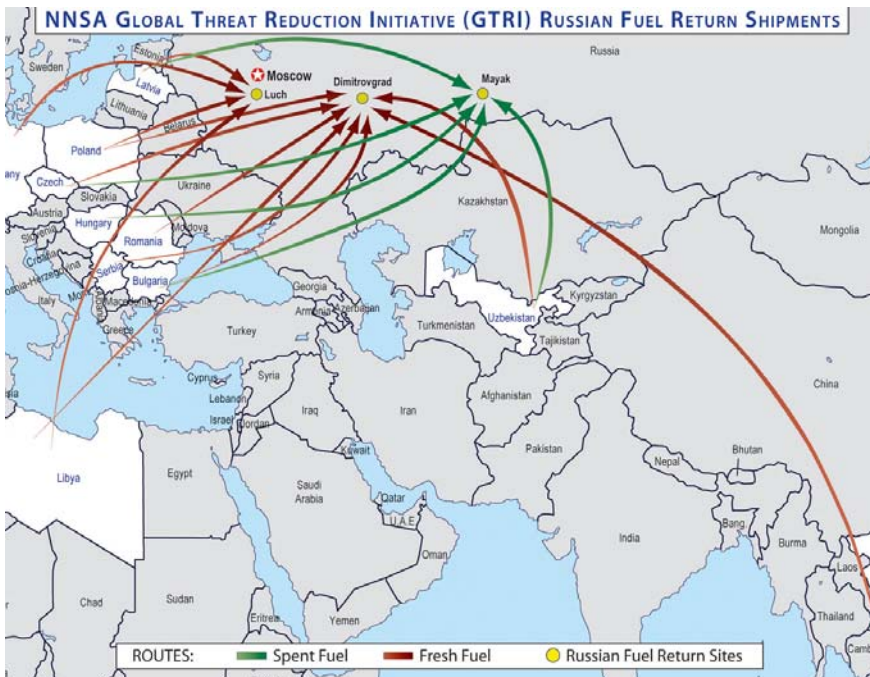
**MATERIAL CONTROL AND ACCOUNTING:** Material storage area secured using double-walled steel cages (left); barcoding technologies (inset) are used to track individual items.



to continue holding additional multilateral exchanges on nuclear security best practices. To cooperate in enhancing nuclear security culture, NNSA and the Russian Federal Agency for Atomic Energy established a Joint Working Group on Nuclear Security Culture.

regulation on nuclear security culture. Under the accelerated Bratislava fuel return schedule, the U.S. and Russia have successfully completed 15 Russian-origin fuel return shipments (see map) and have also removed all Russian-origin highly enriched uranium (HEU) from two countries. In addition, under the Global Threat Reduction Initiative's U.S.-origin fuel removal program, all eligible U.S.-origin HEU fuel has been removed from 16 countries. Despite these great accomplishments, a significant amount of work remains to be done by both the U.S. and Russia over the next few years.

Preparations for additional conversions and shipments are underway. As the impressive scope of Bratislava work concludes at the end of the year, the U.S. and Russia remain committed to actively pursuing the objectives designated by Presidents Bush and Putin. These efforts are critical to counteracting nuclear terrorism and proliferation, and future U.S.-Russian nuclear security cooperation will enable the two countries to continue to address the growing threat of nuclear terrorism around the world.



**HEU SECURED:** Russian-origin highly enriched uranium (HEU) fuel shipments accelerate under the Bratislava Agreement, which committed the United States and Russia to convert additional research reactors and repatriate HEU fuel.

# NNSA Security Professional Of The Year Award

The NNSA has named David A. Young from the Y-12 Site Office (YSO) and Theresa Lovato from NNSA's Sandia National Laboratories recipients of the first annual Security Professional of the Year Award. This annual award recognizes one federal and one contractor employee whose contributions to the security programs within the NNSA complex exemplify the excellence and commitment for which NNSA is known. "Our security professionals dedicate themselves to protecting some of the country's most vital strategic assets and, in so doing, help advance broader U.S. national security goals," said NNSA Administrator Thomas D'Agostino. "They work tirelessly to protect NNSA personnel, facilities, nuclear weapons, special nuclear material and information from a full spectrum of threats. Within this exceptional group, I am pleased to recognize David Young and Theresa Lovato as security professionals that stand out above the rest."

As a group leader within the YSO safeguards and security organization, David Young was responsible for oversight of the Security Program Management and Material Control and Accountability (MC&A) at NNSA's Y-12 National Security Complex. He also supported the Office of International Material Protection and Cooperation on multiple occasions. His efforts have not only led to important improvements in the MC&A program at Y-12, but have also helped pave the way for complex-wide and international advances in nuclear security. Theresa Lovato serves as the deputy director of the Safeguards and Security Center at Sandia. In this capacity, she led an overhaul of Sandia's security program which

resulted in dramatic improvements in operational efficiency and effectiveness. Additionally,

***"Our security professionals dedicate themselves to protecting some of the country's most vital strategic assets and, in so doing, help advance broader U.S. national security goals."***  
NNSA Administrator Thomas D'Agostino

Theresa's leadership was crucial during Sandia's de-inventory of Category I and II material from the New Mexico site over the past two years. Her efforts were extraordinary and contributed significantly to Sandia National Laboratories being able to remove all special nuclear material quantities on schedule.

## Pantex Implements Mentor-Protégé Program And FIRP

B&W Pantex recently conducted a celebration to commemorate the implementation of the mentor-protégé program at NNSA's Pantex Plant. The program is designed to help develop small businesses work with Pantex and other sites within the nuclear weapons complex. As part of the program, these businesses are included in the Department of Energy's database for work at other sites. The program provides B&W Pantex a mechanism for entering into integrated working agreements and for providing non-financial assistance to participating small businesses.

The two local companies selected, Tri-State Contracting Group, LP and PIKA, will be working with B&W Pantex to complete projects on site. Some Facilities and Infrastructure Recapitalization Program projects are also included in the program. Dino Herrera, director for NNSA's Office of Infrastructure and Facilities Management, attended the celebration and welcomed the companies. To kick off the program, Tri-State Contracting completed a roofing project. Jerry Reynosa, president and owner of Tri-State Contracting Group saw it as providing a tremendous opportunity to learn from B&W Pantex and said the mentor-protégé program will help develop project management skills.

The companies participating in the program may also receive training to learn how to prepare a request for proposal or develop project plans. By helping build skills with local small businesses this program can benefit the local economy.

## MOX Reaches Out To Local Community In South Carolina

Under contract to design and construct the \$4.8 billion MOX Fuel Fabrication Facility, Shaw AREVA MOX Services' community outreach efforts are making big impacts in the communities surrounding the Savannah River Site. MOX Services has



**INVESTING IN THE FUTURE:** MOX Services 2008 interns tour the MOX construction site. MOX Services plans to expand the internship program in 2009.

invested in numerous educational initiatives including establishing scholarship programs or grants at local universities, colleges, middle schools and high schools with an emphasis on science, math and engineering.

Working with NNSA, MOX Services established seven scholarships in the College of Science, Mathematics and Engineering Technology at South Carolina State University and is working with the university's College of Business and Applied Sciences to develop a similar program. MOX Services has also provided partial scholarships or grants to the University of South Carolina Aiken, Aiken Technical College and Augusta State University to support science and math programs.

MOX Services is recruiting its future workforce by developing partnerships for internships and developing specific curricula at educational institutions of all levels, beginning in middle school and reaching to masters' levels. The MOX Gateway was created to attract and retain talented resources for the MOX Project by targeting competent individuals with relevant technical and business skills.

The MOX Gateway also targets middle schools. A "career lunch and learn" program, sponsored by MOX Services in 2008 was developed by the Paul Knox Middle School in North Augusta, S.C., where 100 students participated in the program.

## U.S. Starts Radiation Detection In Dominican Republic

NNSA participated in the commissioning of megaports radiation detection equipment at the port of Caucedo in the Dominican Republic. This specialized equipment, installed by NNSA in cooperation with the U.S. Embassy in Santo Domingo, Dominican Customs (the Dirección General de Aduanas) and DP World, detects the presence of dangerous nuclear and other radioactive materials and will help to secure cargo containers passing through the port.

"I am pleased to count the Dominican Republic as another partner in the worldwide effort to prevent nuclear proliferation and terrorism," said NNSA Deputy Administrator William Tobey. "The start of radiation detection at the port of Caucedo is another milestone in NNSA's efforts to enhance the global ability to deter, detect and interdict illicit shipments of special nuclear and other radioactive materials."

NNSA installed and tested the radiation detection equipment and the associated communications system, as well as provided training activities on operations and maintenance with Dominican Customs and DP World. Dominican Customs is now successfully operating the radiation detection equipment. It is anticipated that this equipment will be able to scan virtually all containers passing through the Port of Caucedo, a large trans-shipment hub for the region. NNSA will continue to work with the Dominican Republic over the next several years to provide continued training and sustainability support.

Around the world, NNSA's megaports initiative is currently operational in 19 ports and work is underway at over 20 additional ports in Asia, Latin America and the Caribbean, Europe, the Middle East, and Africa.

# Sandia Labs, SES Win Popular Mechanics Breakthrough Innovator Award

Sandia National Laboratories engineer Chuck Andraga and Stirling Energy Systems (SES) chief operating officer Bruce Osborn were both honored with a *Popular Mechanics* magazine Breakthrough Innovator Award during a ceremony at the Hearst Tower in New York City. The award is sponsored by Bristol-Myers and celebrates innovations poised to change the world and the personalities behind them.

The award recognizes a solar-to-grid system conversion efficiency record that the SES Serial #3 solar dish Stirling system beat in January 2008, at Sandia's National Solar Thermal Test facility. The existing 1984 record of 29.4 percent was topped by the new 31.25 percent net efficiency record.

The conversion efficiency is calculated by measuring the net energy delivered to the grid and dividing it by the solar energy hitting the dish mirrors. Auxiliary loads, such as water pumps, computers and tracking motors, are also accounted for in the net power measurement.

"We are honored to be tapped for this award by *Popular Mechanics*," said Andraga. "Gaining two whole points of conversion efficiency in this type of system is phenomenal and the recognition by the magazine is notable."

Osborn said, "SES is working to commercialize the record-performing system and has signed power purchase agreements with two Southern California utilities (Southern California Edison and San Diego Gas & Electric) for up to 1,750 megawatts of power, representing the world's two largest solar power contracts. Collectively these contracts require up to 70,000 solar dish engine units."



**NNSA WALK/RUN EVENT:** To promote President Bush's Healthier US Initiative, and as part of the President's fitness challenge, NNSA employees participated in the third annual "Running with the Best" walk/run event, which included a three mile course on the National Mall, the Lincoln Memorial and back to Forrestal grounds in Washington, D.C.

**NNSA News is published monthly by the Office of Congressional, Intergovernmental and Public Affairs**

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