

Builders Place Final Beam In First Phase Of CMRR Project At Los Alamos

Workers have hoisted the final steel beam atop the skeleton of what will be the Radiological Laboratory Utility Office Building at NNSA's Los Alamos National Laboratory, marking a milestone for the first of three phases in the multi-year Chemistry and Metallurgy Research Replacement Project (CMRR).

At the "topping-out" ceremony, laboratory leaders, including Director Michael Anastasio and Deputy Director Jan Van Prooyen and representatives from local building trades, penned their signatures in ink on the capstone piece of the "Rad Lab" at Technical Area 55 before it was put in place.

Austin Commercial Contractors LP of Dallas received the "design-build" contract in November 2005, and the project broke ground on January 12, 2006.

The building will house several of the laboratory's mission-critical projects - analytical chemistry, materials characterization, and actinide research and development capabilities - set to be relocated from their

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NNSA Holds Next Generation Safeguards Workshop

International safeguards experts representing more than a dozen countries, the International Atomic Energy Agency (IAEA), U.S. government agencies and the DOE/NNSA national laboratories met on September 11-12, in Washington, D.C. for an NNSA-sponsored workshop on Next Generation Safeguards. The workshop focused on developing measures needed to sustain the international safeguards system as its mission evolves over the next 25 years.

According to Deputy Administrator for Defense Nuclear Nonproliferation Will Tobey, "This meeting was a starting point, one that signifies

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MOCK NEWS, REAL STRESS: Senior Energy Official Deborah Monette (left, next to the podium) listens to a question from a mock media reporter at the Diablo Bravo Exercise news conference near Silverdale, Wash. See pages 4 and 5 for a feature article about NNSA's emergency response assets and the recent Diablo Bravo nuclear weapon exercise.

Sandia's Work Demonstrated Anthrax Letters Contained Non-weaponized Form

They worked for almost seven years in secret. The work in Ray Goehner's materials characterization department at NNSA's Sandia National Laboratories in Albuquerque, N.M., was contributing important information to the FBI's investigation of letters containing bacillus anthracis, the spores which cause the disease anthrax. The spores were mailed in the fall of 2001 to several news media offices and to two U.S. Senators. Five people were killed.

Sandia's work demonstrated to the FBI that the form of bacillus anthracis contained in those letters was not a weaponized form, a form of the bacteria prepared to disperse more readily. The possibility of a weaponized form was of great concern to investigators, says Joseph Michael, the principle investigator for the project. This information was crucial in ruling out state-sponsored terrorism.

In fall of 2001, the FBI considered how to best investigate the anthrax letters. The agency convened two blue ribbon exploratory panels, and Sandia's name came up during both panels for its expertise in electron and ion microscopies and microanalysis over the range of length scales from millimeters down to

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current location in the five-decade-old Chemical and Metallurgy Research building at Technical Area 3.

This first phase of a three-phase project also calls for the construction of the Nuclear Laboratory Facility building to further the mission of NNSA, as well as the specialized engineering of each building's equipment, said Rick Holmes, CMRR project manager. Designers have planned a tunnel that will connect the two structures.

"The construction of both buildings is necessary to sustain the long-term plutonium research and development at the lab for the next 50 years," Holmes added.

Expected to be structurally completed by September 2009, the \$164 million Radiation Laboratory Utility Office Building will then go through another two years of equipment installation. Between 2009 and 2011, lab operations will begin in the new building's facilities, which will include a radiological laboratory, a training center, two simulation labs, and cleared and uncleared office space for some 350 lab personnel.

Leaders of the CMRR effort expect the project to be fully completed within the next 10 years with a total projected cost of approximately \$2 billion.

NNSA Holds Next Generation Safeguards Workshop

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a renewed and shared commitment to strengthen international safeguards. The department and the national laboratories bring tremendous scientific and technical expertise to this initiative, and we look forward to working with the IAEA and our foreign partners to ensure its success."

Demands on the IAEA have grown substantially since the 1980s, with significant increases in both the number of countries and facilities and the quantity of materials under safeguards. The IAEA has also carried out high-profile investigations into the nuclear programs of Iran, North Korea, and Syria. The Next Generation Safeguards Initiative is designed to revitalize and strengthen the international safeguards technology and human resource base in a way that leverages Department of Energy and other technical assets and international partnerships to meet those demands.

Through panel presentations and breakout discussions, participants at the workshop examined challenges to the safeguards systems, developed a common understanding of anticipated safeguards needs, and began to outline an international agenda for cooperation. The workshop featured keynote addresses by Secretary of Energy Samuel W. Bodman and Senator Richard Lugar.

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Y-12 Site Office

U.S. Donates \$50 Million For The IAEA International Fuel Bank

Secretary of Energy Samuel W. Bodman officially issued a letter to International Atomic Energy Agency (IAEA) Director General Mohamed ElBaradei donating nearly \$50 million for the purpose of establishing an International Nuclear Fuel Bank. The donation builds on NNSA's close cooperation with the IAEA to provide financial and in-kind contributions that aid U.S. efforts to prevent nuclear proliferation and combat nuclear terrorism.

"The United States fully endorses the establishment of an IAEA fuel bank as a critical step toward the safe and secure use of commercial nuclear power worldwide," Bodman said. "We urge others to join us in making similar contributions and to take

the steps needed to bring an IAEA fuel bank into being by the end of the year."

Once developed, the fuel bank will assure reliable access to nuclear fuel for clean energy production by countries willing to rely on the international market. This bank will provide an alternative to the pursuit of costly and proliferation-sensitive indigenous

nuclear fuel cycle facilities, while helping meet future energy needs.

"Supporting the International Nuclear Fuel Bank will help assure a safe and reliable supply of nuclear fuel, while also encouraging international cooperation and commitment to nonproliferation," said NNSA Administrator Thomas D'Agostino. "NNSA is committed to safeguarding sensitive nuclear

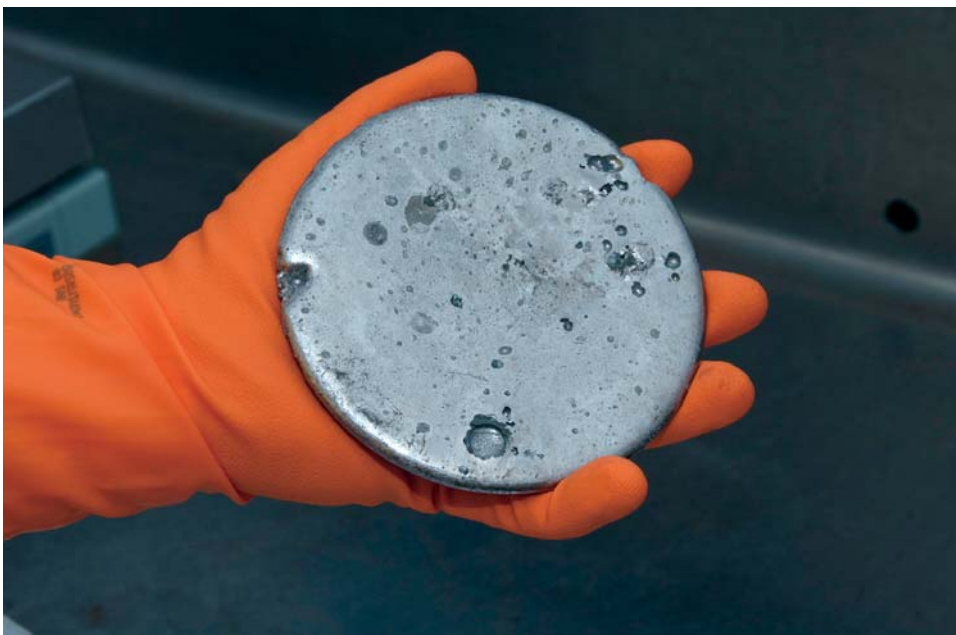
technology to reduce the threat of nuclear proliferation or nuclear terrorism around the globe."

The U.S. contribution matches an initial \$50 million pledge made by the Nuclear Threat Initiative in September 2006. The grant is contingent on others making similar donations totaling \$100 million and agreement by the IAEA on the framework for such a bank.

Last year, NNSA contributed \$18.7 million to the IAEA and member states in support of the IAEA mandate, including efforts to help strengthen nuclear security and safeguards. The United States contributes roughly 25 percent of the IAEA's regular budget annually.

This contribution for the fuel bank complements ongoing U.S. initiatives in the area of international nuclear fuel assurances and exemplifies the U.S. leadership in this area. In September 2005, Secretary Bodman set aside 17.4 metric tons of highly enriched uranium to be blended to low enriched uranium and held in reserve for states in good standing on nonproliferation that experience a fuel disruption.

"The United States fully endorses the establishment of an IAEA fuel bank as a critical step toward the safe and secure use of commercial nuclear power worldwide."
Secretary of Energy Samuel W. Bodman



PURIFIED METAL PRODUCTION: During the months of June and July, enriched uranium production at the Y-12 National Security Complex re-started the Oxide Conversion Facility and executed multiple production runs with repeatable, high-quality results. The newly generated green salt was subsequently converted to purified metal in the reduction operation. The picture at left is of a top quality purified metal button. Purified metal production is needed to support weapons production and to fulfill strategic reserve requirements. This is a significant achievement not only for Y-12 but for the entire nuclear weapons complex.

Diablo Bravo Exercise Shows Sophisticated Emergency Response

A vehicle parked along a roadway in Kitsap County, Wash., explodes, sending a projectile into the trailer section of one of NNSA's Safeguards Transporters as it and other convoy vehicles drive toward their destination to deliver a cargo of nuclear weapons.

That's the scenario that initiated an NNSA-coordinated emergency response exercise during late July and early August in Washington State. Diablo Bravo 2008 was categorized by the Department of Homeland Security as a Tier II exercise, which means it was focused on federal strategy and policy with significant simulation of events.

Diablo Bravo was designed to exercise NNSA's role as a coordinating agency, as outlined in the National Response Framework and the National Security Presidential Directive 28. Developed in partnership with the Department of Defense (DoD), Diablo Bravo's intent was to, for the first time, validate DoD support requirements during a nuclear weapon incident while the weapon is in Department of Energy/NNSA custody in a public environment.

The exercise involved numerous other first-time challenges for its participants. It was the first national-level exercise to test the response activities to a terrorist attack on nuclear weapons; the first real-time deployment of response assets; and the first exercise in which the weapons were in Department of Energy/NNSA custody under the National Response Framework.

Primary NNSA responders to Diablo Bravo's terrorist attack scenario included the Accident Response Group, the Radiological Assistance Program, and the Federal Radiological Monitoring and Assessment Center. They are among a sophisticated array of NNSA



SIMULATED VIEW: This still shot from an animation of the Exercise scenario shows the view from a side mirror of an Office of Security escort van just as a vehicle-borne explosive device detonates a Safeguards Transporter. The animation of the incident was created by National Laboratories.

response assets that have been developed and enhanced over time.

In an age of increasing terrorist threats, NNSA's emergency response requirements have taken on additional importance to the nation and the world. As the mission of NNSA's Office of Emergency Management says, it is "the nation's premier responder to any nuclear or radiological incident within the United States or abroad." That mission is accomplished by applying NNSA's unique technical expertise that resides within its national laboratories and its production plants.

Here is a brief description of each emergency response capability maintained by NNSA:

Aerial Measuring System (AMS) - AMS characterizes ground-deposited radiation from fixed wing and rotary wing aircraft with radiological measuring equipment, computer analysis of aerial measurements and equipment to locate lost radioactive sources, conduct aerial surveys, or map large areas of contamination.

Accident Response Group (ARG) - The ARG is comprised of scientists, technical specialists, crisis managers, public affairs specialists and equipment ready for short-notice deployment to

DEPSECDEF: Deputy Secretary of Defense, Command Center at the National Security Command Center, response manager Phyllis A. Kavelin, deputy assistant to the Secretary of Defense Programs; and

Showcases NNSA's Agency Response Assets



Exercise Diablo Bravo
Secure Transportation
along side a passing
created by Sandia

the scene of a U.S. nuclear weapon accident.

Joint Technical Operations Team (JTOT) - JTOT provides specialized technical capabilities in support of the Federal Bureau of Investigation and DoD to render safe a nuclear or radiological weapon or device before it does any damage.

Federal Radiological Monitoring and Assessment Center (FRMAC) - FRMAC is an interagency group that coordinates federal off-site radiological monitoring and assessment activities for nuclear accidents or incidents. FRMAC is responsible for providing a single source of quality-controlled monitoring and assessment data to the lead federal agency involved in the incident response.

National Atmospheric Release Advisory Center (NARAC) - NARAC is a computer-based emergency preparedness and response predictive capability. It

provides real-time computer predictions of the atmospheric transport of material from a radioactive release.

Nuclear/Radiological Advisory Team (NRAT) - NRAT provides on-scene scientific and technical advice



Secretary of Defense Gordon England (second from left) gets a tour of the Multi-Agency Kitsap County Fairgrounds near Bremerton, Wash., from Kitsap County emergency manager Willis Mann (left) during the Diablo Bravo exercise. Behind England are Steve Henry, Secretary of Defense; Robert L. Smolen, deputy administrator for NNSA's Office of Operations; and Joseph J. Krol, associate administrator for emergency operations.

for both domestic and international nuclear or radiological incidents. NRAT is composed of scientists and technicians who can serve an advisory role or conduct limited operations.

Radiological Assistance Program (RAP) - RAP provides advice and radiological assistance for incidents involving radioactive materials that pose a threat to the public health and safety or the

environment. RAP can provide field deployable teams of health professionals equipped to conduct radiological search, monitoring and assessment activities.

Radiation Emergency Assistance Center/Training Site (REAC/TS) - REAC/TS provides medical advice, specialized training and on-site assistance for the treatment of all types of radiation exposure accidents.

Search Response Team (SRT) - SRT maintains the manpower and

equipment to conduct aerial, vehicle or search operations by foot to locate a potential radiological source. SRT provides assets for complex search operations using both technical and operational expertise.

Triage - Triage provides 24/7 on-call

analysis support to first response teams. Its analysts are top PhD nuclear physicists, chemists and engineers from the NNSA weapons laboratories who specialize in interpretation of spectra from portable radioisotope identifiers. Typical response times are ten minutes to begin an analysis and thirty to sixty minutes for an answer back to the field.

Howerton Selected As A “Rising Star” In The U.S. Government Information Technology Community

Travis Howerton, information technology specialist for the NNSA’s Y-12 Site Office, has been selected as a “Rising Star” in the U.S. government’s information technology community.

Howerton was featured in the August 18 issue of *Federal Computer Week Magazine* and will participate in an awards ceremony in Washington, D.C. in October. He is recognized for designing, developing and implementing the Pegasus Information Management System, a unique information technology (IT) tool that manages all assessments, issues, correspondence, actions, and lessons learned associated with the management of the NNSA’s Y-12 National Security Complex. The Pegasus system has been selected as the NNSA corporate information system, which has resulted in increased integration between the NNSA sites and dramatically decreased reliance on paper to support President Bush’s e-government initiatives.

Ted Sherry, YSO manager, said, “We continue to be extremely proud of Travis’ contributions to the NNSA mission. His role in the development of Pegasus will enable NNSA to save millions of dollars in cost savings by eliminating redundant and obsolete systems and avoiding the cost of licensing fees associated with commercial systems. He is widely recognized as one of the most innovative employees at the Y-12 Site Office.”

As an information technology specialist in the YSO Safeguards and Security Division, Howerton is directly responsible for a \$125 million IT services contract at Y-12. He provides day-to-day oversight and evaluation of the contractor’s IT program. In addition, he manages the Y-12 Pegasus system that he developed and continues to play a critical role in supporting Pegasus roll-out to all NNSA sites and NNSA headquarters. He also manages the Y-12 Design Basis Threat security program and serves as the safeguards and security lead for security projects at Y-12.

Williams To Head Livermore Site Office

Alice C. Williams, NNSA’s associate administrator for infrastructure and environment, has been named the new Livermore Site Office manager, effective November 1, 2008. The site office provides federal oversight for Lawrence Livermore National Security, LLC, which manages NNSA’s Lawrence Livermore National Laboratory.

“Alice has served in the federal government for twenty years and has tackled challenging issues both in the field, and here at headquarters,” said NNSA Administrator Thomas D’Agostino. “Her involvement in major initiatives on environmental issues and the consolidation of nuclear weapons material have impressed me, and I know she will do an excellent job managing the Livermore Site Office.”

Williams received a Bachelor of Science degree in chemistry from Montana State University and a Master of Engineering degree in chemical engineering from the University of Idaho.

Williams replaces Camille Yuan-Soo Hoo who has served as the site office manager since December 2002. She will become a senior advisor leading a series of financial and contract management studies critical to interagency partnerships and initiatives in support of Complex Transformation, NNSA’s vision for a smaller, safer, more secure and less expensive nuclear weapons complex.

“Camille has overseen a remarkable change in the diversity of Livermore’s mission, as well as the historic 2007 change in the laboratory’s management,” said NNSA Deputy Administrator for Defense Programs Robert Smolen, referring to the selection of the new contractor after the previous one had been in place since 1952. “I appreciate her efforts as site office manager and look forward to her contributions as we move forward.”

Thad Konopnicki, deputy associate administrator for infrastructure and environment will become associate administrator, which consists of the Offices of Infrastructure and Facilities Management, Project Management and Systems Support, Environmental Projects and Operations, and Nuclear Materials Integration. Konopnicki has over eleven years of senior executive service experience with the government.

Konopnicki has a Bachelor of Science degree in mechanical engineering from the University of Virginia, a Master of Science in electrical engineering from Boston University, and a Master of Business Administration from the University of Dallas.

Major Construction Milestone Completed At Y-12

Officials at NNSA's Y-12 National Security Complex at Oak Ridge, Tenn., have announced the completion of the major construction milestone on the Highly Enriched Uranium Materials Facility (HEUMF) project, Y-12's ultra-secure uranium warehouse of the future.

The \$549 million facility will replace multiple aging facilities within a single state-of-the-art storage facility. The HEUMF will play a major role in helping NNSA accomplish its mission of protecting the nation's inventory of highly enriched uranium (HEU), a vital national security asset.

In addition to being a modern facility for receiving, shipping and providing long-term storage of HEU, the HEUMF will be an integral part of NNSA Administrator Tom D'Agostino's plan to move from a Cold War-era nuclear weapons complex to a 21st century national security enterprise. It will also be a key part of Y-12's long-range modernization plan.



KCP Completes W87 Reentry Vehicle Work On Time And Under Budget



When the Department of Defense needed to make modifications to the W87 reentry vehicles, NNSA's Kansas City Plant (KCP) was recommended for the job because of its reputation for high quality machining.

KCP began processing the first parts in January and continued to produce approximately eight units a month until the job was done.

The finished 45 units required careful handling because the epoxy heat shield (the black material on the outside) cannot be touched by bare skin. Special fixturing was required to hold the units, and orange neoprene covers were used to protect the finish during much of the work.

There had initially been a concern that that unexpected issues might require additional funding. Instead, the Kansas City Plant completed the work on schedule, and returned to the customer not only the contingency funding, but an additional amount as well, since the work was completed almost four percent under budget.

KANSAS CITY PLANT PROCESSING SUCCESS: Multiple reentry bodies create light streaks in the night sky. NNSA's Kansas City Plant completed modifications to the W87 Reentry Vehicle for the DoD on time and under budget.



MOTORCYCLE COMMUTING: NNSA's Nevada Site Office recently sponsored its first Ride to Work Day to help promote energy and environmental awareness. Among the participants were (left to right): Mike Hailey, Wackenhut Services, Inc; Rick Higgs, Lawrence Livermore National Laboratory; K.C. Thompson, Nevada Site Office; August Schellhase, Professional Analysis, Inc.; Linda Cohn, Nevada Site Office; Richard Cohn, DOE; and Richard Arnold, Desert Research Institute. Adding more motorcycles and scooters to everyone's daily commute makes urban parking easier and traffic flow better, according to Ride to Work, a non-profit advocacy organization.

Sandia's Work Demonstrated Anthrax Letters Contained Non-weaponized Form

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nanometers. The first spore material from the letters arrived at Sandia in February of 2002.

Sandia faced some uncertainty in working on this type of investigation. Researchers signed nondisclosure agreements and agreed to make themselves available to government agencies on short notice when called to give information.

Sandia material characterization analysts Joseph Michael, Paul Kotula and a team of roughly a dozen others examined more than 200 samples in those six and a half years. They received samples from the letter delivered to the *New York Post*, to former Sen. Tom Daschle (D-S.D.), and to Sen. Patrick Leahy (D-Vt.). The samples looked different, in part because of how the samples were prepared, which made examination initially difficult.

Using more sensitive TEM, Kotula and Michael's research indicated that the silica in the spore samples was not added artificially, but was incorporated as a natural part of the spore formation process.

"The spores we examined," Kotula says, "lacked that fuzzy outer coating that would indicate that they'd been weaponized."

Sandia's work was the first to actually link the spore material in the *New York Post*, the Daschle and the Leahy letters. The elemental signatures and the locations of these signatures, while not indicating intentional weaponization, did show that the spores were indistinguishable and therefore likely came from the same source. That conclusion was corroborated a few years later by the DNA studies.

WHITE HOUSE FELLOW: David Loaiza, a technical staff member at NNSA's Los Alamos National Laboratory, is one of 14 White House Fellows selected recently by the President's Commission on White House Fellowships to participate in America's most prestigious fellowship program for leadership development and public service. He assists in the development of U.S. non-proliferation policy at the national and international level and he is a technical team lead for U.S. delegations monitoring the denuclearization of North Korea. He also provides technical briefs and training to the International Atomic Energy Agency. David has 14 years of experience leading research programs in radiation detection and critical mass experiments. The White House Fellows Program, founded in 1964 by President Lyndon B. Johnson, offers exceptional men and women first-hand experience working at the highest levels of the federal government. Fellows participate in an education program consisting of roundtable discussions with leaders from the private and public sectors and study trips to examine U.S. policy in action. Following the fellowship year, the Fellows repay the privilege by contributing to the country as better national leaders and public servants.



He assists in the development of U.S. non-proliferation policy at the national and international level and he is a technical team lead for U.S. delegations monitoring the denuclearization of North Korea. He also provides technical briefs and training to the International Atomic Energy Agency. David has 14 years of experience leading research programs in radiation detection and critical mass experiments. The White House Fellows Program, founded in 1964 by President Lyndon B. Johnson, offers exceptional men and women first-hand experience working at the highest levels of the federal government. Fellows participate in an education program consisting of roundtable discussions with leaders from the private and public sectors and study trips to examine U.S. policy in action. Following the fellowship year, the Fellows repay the privilege by contributing to the country as better national leaders and public servants.