May 2009

NNSA Monthly News

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NNSA Removes HEU From Kazakhstan, Australia

NNSA removed 73.7 kilograms (162.5 pounds) of Russian-origin highly enriched uranium (HEU) "spent" nuclear fuel from Kazakhstan. The material was removed and returned to Russia by rail for storage at a secure nuclear facility in a series of four shipments between December 2008 and May 2009. NNSA also removed 14.5 kilograms (32 lbs) of highly enriched uranium (HEU) in "spent" nuclear fuel from Australia, for secure storage at the Savannah River Site.

"These shipments of highly enriched uranium from Kazakhstan and Australia continue the outstanding cooperation between NNSA and foreign partners to ensure our national and global security," said NNSA Administrator Thomas D'Agostino. "The President has announced his intention to expand global threat reduction efforts aimed at preventing

(continued on page 2)

Y-12 Completes Work to Remove Nuclear Materials

NNSA's Y-12 National Security Complex has completed the removal of special nuclear materials from a World War II-era nuclear weapons production facility.

The approximately 400,000 square foot Beta 4 Building now is no longer designated as a nuclear facility, thus resulting in significant cost savings for operations at the Oak Ridge, Tenn. facility. It is a major step toward the eventual cleanup, decontamination and decommissioning of the facility.

"Elimination of the nuclear facility designation to Beta 4 means millions of dollars annually in savings by reducing the need for special security and facility surveillance and maintenance activities," said Ted Sherry, manager of NNSA's Y-12 Site Office. "This action brings Y-12's plan to create a smaller, more efficient site closer to fruition."

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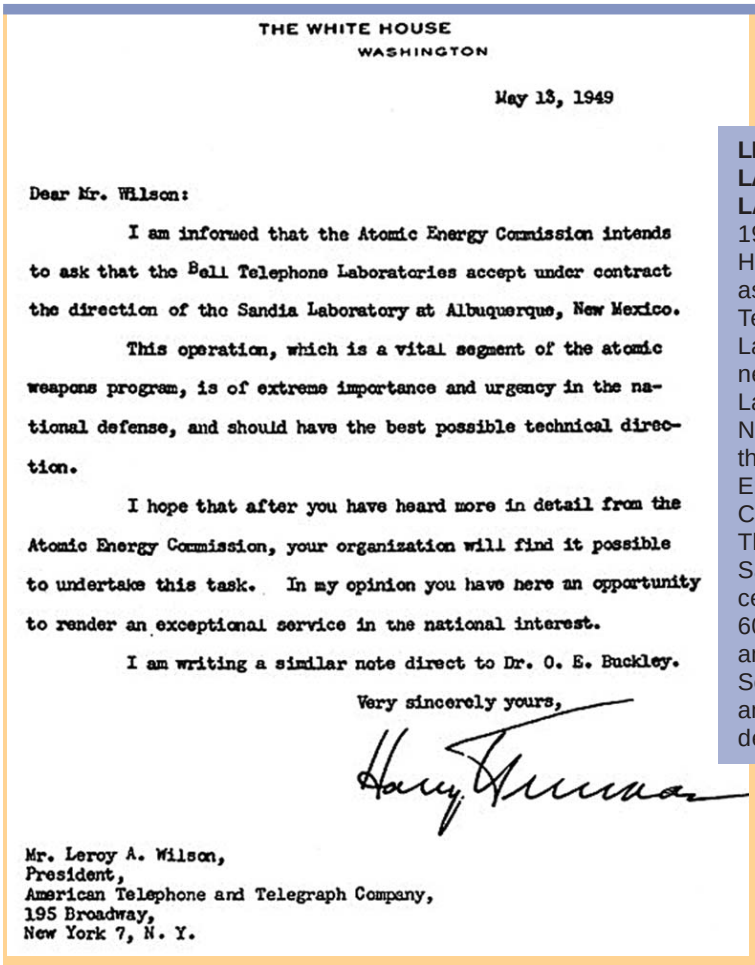

THE WHITE HOUSE
WASHINGTON

May 13, 1949

Dear Mr. Wilson:

I am informed that the Atomic Energy Commission intends to ask that the Bell Telephone Laboratories accept under contract the direction of the Sandia Laboratory at Albuquerque, New Mexico.

This operation, which is a vital segment of the atomic weapons program, is of extreme importance and urgency in the national defense, and should have the best possible technical direction.

I hope that after you have heard more in detail from the Atomic Energy Commission, your organization will find it possible to undertake this task. In my opinion you have here an opportunity to render an exceptional service in the national interest.

I am writing a similar note direct to Dr. O. E. Buckley.

Very sincerely yours,

Harry Truman

Mr. Leroy A. Wilson,
President,
American Telephone and Telegraph Company,
195 Broadway,
New York 7, N. Y.

LETTER THAT LAUNCHED A LAB: In May 1949, President Harry Truman asked Bell Telephone Labs to run the new Sandia Laboratory in New Mexico for the Atomic Energy Commission. This year Sandia is celebrating its 60th anniversary. See pages 4 and 5 for details.

Y-12 Completes Work to Remove Nuclear Materials

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Originally built in 1945 to house the calutrons that enriched uranium for the Manhattan Project, Beta 4 has continually played a central role in nuclear component production through the Cold War. Efforts to remove the material and to reduce the facility's nuclear categorization began in 2004.

The collaborative work of B&W Y-12, the NNSA contractor that operates the Y-12 National Security Complex, and NNSA's Y-12 Site Office to remove hazardous materials from the facility resulted in Beta 4's safety basis documents being lifted. That means the building is no longer an operational nuclear facility.

Shedding the nuclear facility status means a savings of $1 million annually in just surveillance and maintenance expenditures (the costs associated with keeping the building intact and secure) alone.

"By officially cancelling the safety basis for Beta 4, we have eliminated numerous budget burdens that help us optimize our operating costs," said Darrel Kohlhorst, B&W Y-12 president and general manager. "But most important, we are one step closer to eradicating a big item on our facility disposition list."

Removal of more than 3,000 items weighing more than 234 metric tons and shipping the material off-site resulted in decertification of the nuclear facility. During the project, which began in 2005, the radiological material and 350 drums of legacy material were safely shipped off-site for permanent disposal, successfully completing a major NNSA milestone and preparing the way for additional environmental management initiatives.

"In a time of constrained budgets, this huge effort sets a precedent for money saved and gives us a blueprint for similar risk elimination in other World War II-era facilities at Y-12," said Kohlhorst.

BLUE RIVER "RESCUE": More than 80 Kansas City Plant (KCP) employees and family members helped "rescue" Kansas City's Blue River. The annual Blue River Rescue event successfully cleaned up approximately 100 tons of trash along its banks. Each year NNSA joins hundreds of business and residential volunteers to help pick up trash and plant trees during the largest one-day stream cleanup in Missouri. The effort calls on volunteers to be environmental stewards of a 22-mile stretch of land that surrounds the waterway which flows near KCP.

73+ Kilograms of HEU Removed From Kazakhstan

(continued from page 1)

the spread of nuclear weapons and reducing the threat posed by unsecured or excess nuclear materials. This effort is a cornerstone of our nuclear security agenda."

These shipments the first U.S.- and Russian-origin HEU spent fuel removal projects to be completed since President Obama outlined his nuclear security agenda in speech in Prague last month.

With the successful completion of these shipments, a total of approximately 838 kilograms (1,844 lbs) of Russian-origin HEU spent and fresh fuel has been returned has been returned from Bulgaria, the Czech Republic, Germany, Kazakhstan, Latvia, Libya, Poland, Romania, Serbia, Uzbekistan, and Vietnam. The U.S.-origin fuel removal program has returned over 1,215 kilograms (2679 lbs) of HEU fuel from 27 countries, including the cleanout of Argentina, Australia, Brazil, Chile, Colombia, Denmark, Germany, Greece, Italy, Philippines, Portugal, Romania, Slovenia, South Korea, Spain, Sweden and Thailand.

NNSA also returned 12 U.S.-origin plutonium-239 sealed sources from Australia to Los Alamos National Laboratory, where they will be processed for final disposal. NNSA has now removed more than 450 U.S.-origin sealed sources from 13 sites in several different countries.

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Gina Bonanno Inducted Into Women's Hall of Fame

Alameda County's Women's Hall of Fame highlighted the career of Gina Bonanno, of NNSA's Lawrence Livermore National Laboratory, by inducting her into the Women's Hall of Fame as the top nominee in the science category.

HALL OF FAME INDUCTEE: Lawrence Livermore National Laboratory's Gina Bonanno in the control room of the National Ignition Facility.

Bonanno has been a trailblazer at the National Ignition Facility (NIF) for the past nine years. As one of only a handful of women senior managers at NIF, she has a variety of responsibilities in the areas of strategic and workforce planning, financial management and institutional reporting.

She is a NIF program manager, and since 2005 has headed NIF's National Ignition Campaign, the $1.6 billion program that sets the stage for the first set of fusion experiments on NIF beginning in 2010.

"I'm really very honored to be inducted along with so many accomplished women this year, and proud to represent the laboratory," said Bonanno. "The lab has provided the opportunity for me to work on exciting and challenging projects, and I'm constantly inspired by the dedicated and extraordinarily talented people I get to work with every day."

Her prior responsibilities at NIF included serving as commissioning operations manager and associate project manager for NIF assembly, installation and refurbishment.

YEARS IN THE MAKING: Albuquerque Mayor Martin Chavez, left center, Sandia National Laboratories President and labs Director Tom Hunter (right of Chavez), and other dignitaries join museum director Jim Walther (in tan suit right of center) and museum foundation president Chuck Loeber (beside Jim) to officially open the new National Museum of Nuclear Science & History.

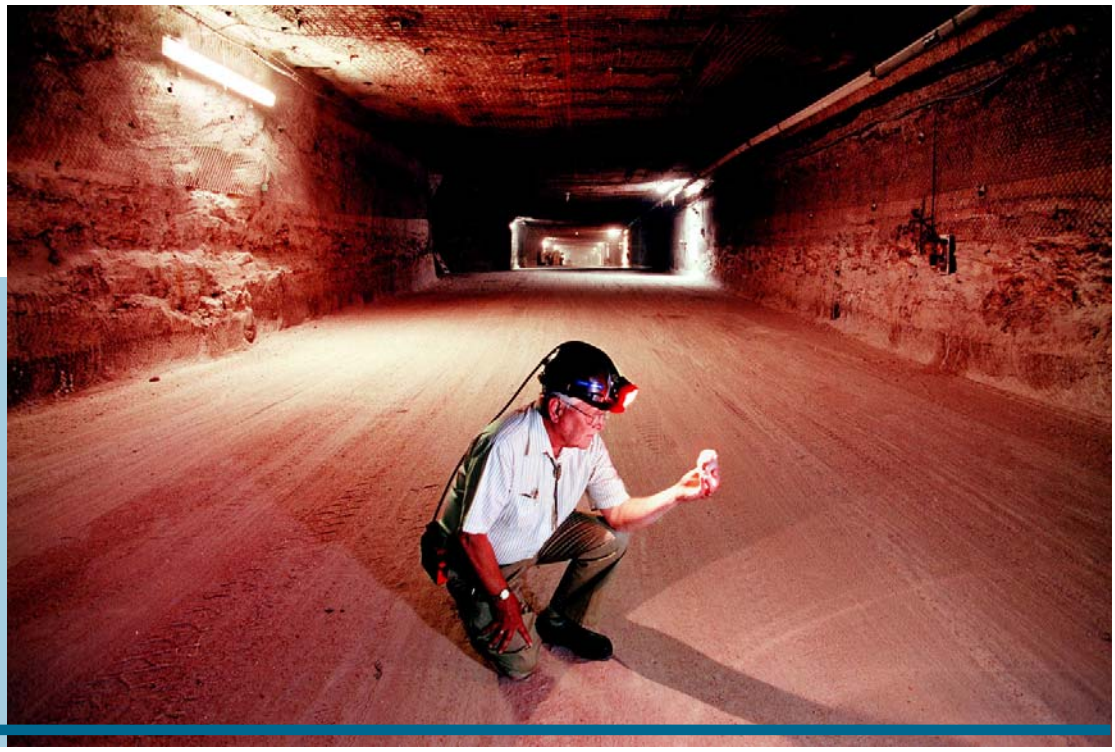
Sandia National Laboratories: 60

Established in 1949 as an independent laboratory separate from Los Alamos National Laboratory, Sandia National Laboratories was created at a time of great urgency in national defense. This year, as Sandia celebrates its 60th anniversary, the lab is still playing a vital role in preserving national security by helping to ensure the safety, security and reliability of the nuclear weapons stockpile and by reducing the vulnerability of the nation to the proliferation, threat or use of weapons of mass destruction and other nuclear incidents.

The labs' mission throughout its history has continued to expand into other areas of vital national security, such as ensuring a stable supply of energy and resources, securing against high-consequence terrorist threats and national incidents, and protecting the U.S. military at home and abroad.

Sandia rolled out the red carpet at events from California to New Mexico to Washington, D.C., to celebrate its 60 years.

"Sandia has a proud and rich history of serving the nation. The the events we lined up were designed to celebrate that history as well as to promote a sense of our culture and tradition that will inspire our newer employees," said David Keese, Sandia's chief of staff to President and Laboratories Director Tom Hunter. Keese also served as chairman of the labs' 60th anniversary committee.

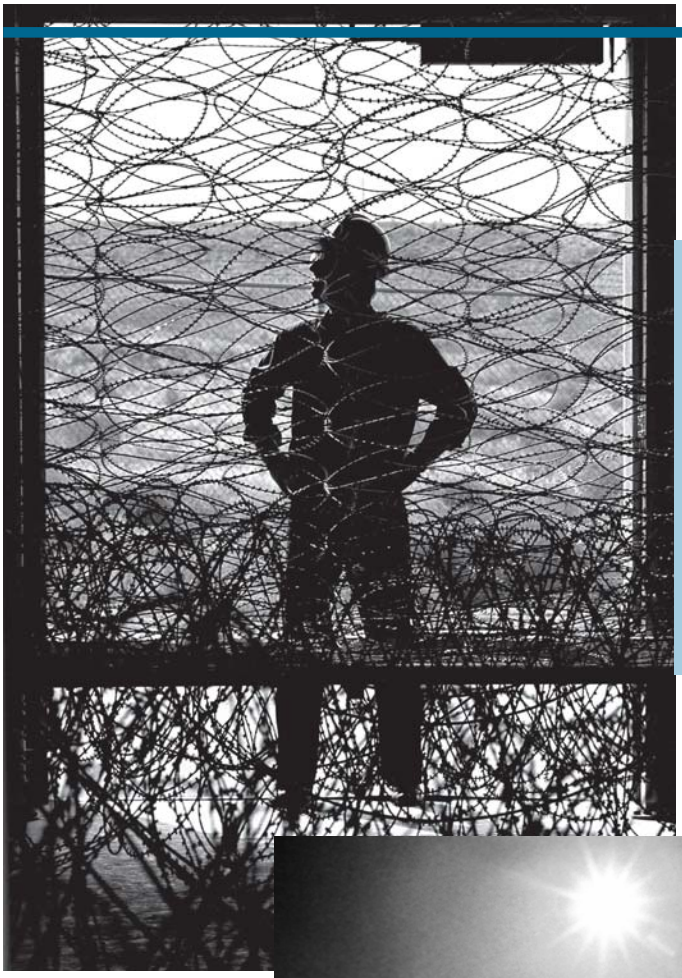


MAYOR OF WIPP: Sandian Wendell Weart examines a salt sample inside the Waste Isolation Pilot Plant (WIPP) near Carlsbad, N.M. Weart, who retired from Sandia in 2000, was the chief WIPP scientist and saw the program through to its opening in March of 1999.

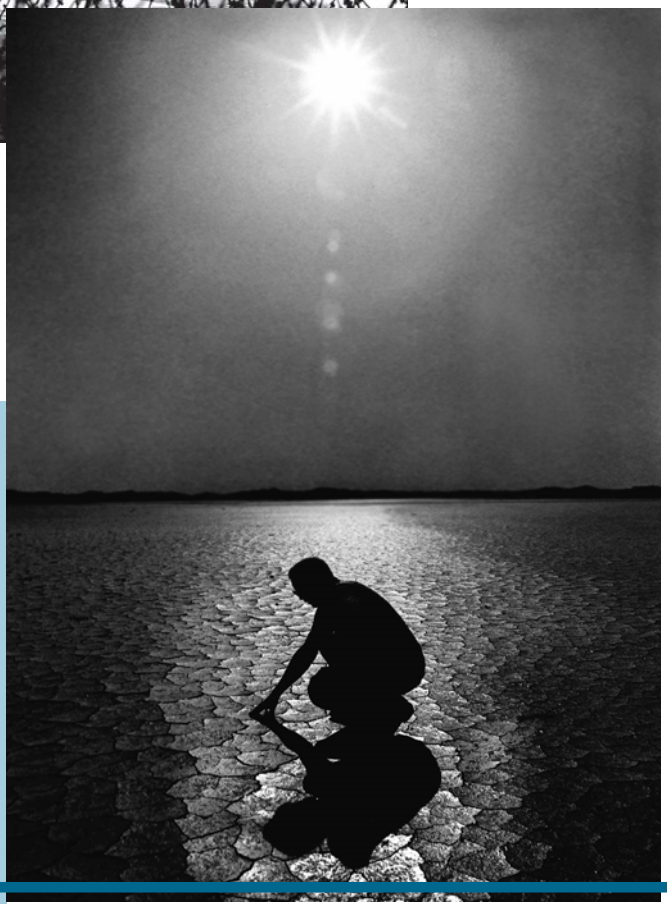
Among the events that occurred and are planned this year are:

- An address by Tom Hunter to the Greater Albuquerque Chamber of Commerce highlighting Sandia's evolving mission and contributions to national security as well as the labs' significant economic impact and community support in the Albuquerque area.
- Family Day, which was the first such event since one held for Sandia's 50th anniversary.
- A colloquium that is being planned for September in Washington D.C., at the U.S. Capitol Visitor Center. The colloquium theme, "All Things Nuclear," will focus on the role the nuclear weapons laboratories have played in world history over the past 60 years, including their future roles in national security, nuclear stockpile stewardship, nonproliferation, treaty verification, the control of nuclear materials, and technology transfer.
- Sandia's California laboratory in Livermore will conduct outreach events into the community that will include seminars and displays featuring both past accomplishments and new directions in key program areas.

Years as National Security Asset



WEAPONS STORAGE RESEARCH: A Sandia researcher evaluates a bunker facility test bed for nuclear weapons storage.



TONOPAH TEST RANGE: A Sandian feels the hard clay of a dry lake bed at the Nevada range that was for most of its life a Department of Energy non-nuclear testing site administered by Sandia.

Truman Letter Created Sandia

The establishment of Sandia as a laboratory separate from Los Alamos National Laboratory began with a letter sent 60 years ago by President Harry Truman to Leroy A. Wilson, president of AT&T. President Truman sent a similar letter to Oliver E. Buckley, president of Bell Labs.

Both Wilson and Buckley responded with letters four days later, saying they would give the President's request prompt consideration. Discussions between AT&T and the Atomic Energy Commission (AEC) began shortly thereafter, and on July 1, Wilson agreed that AT&T would undertake the operation of Sandia.

The AEC executed the contract on October 4, 1949, and George Landry, acting on behalf of Western Electric, an AT&T subsidiary, signed the contract at the first Sandia board of directors meeting on October 6. Landry was elected Sandia's first president and AT&T took over active management of Sandia from the University of California on November 1, 1949.

Sandia began during the Manhatten Project as an engineering division of Los Alamos National Laboratory. In 1949, Sandia employed 1,742 people, a far cry from the 8,300 employees working at the lab today. The Berlin Air Lift had come to an end just 30 days before, and the United States and Soviet Union were just beginning to dig in their heels for a Cold War that was to last for the next 40 years.

The Science of Nuclear Security

National Atmospheric Release Advisory Center is 30

When the call came in 1979 that an accident had occurred at the Three Mile Island nuclear power plant near Harrisburg, Penn., employees at Lawrence Livermore National Laboratory's National Atmospheric Release Advisory Center (NARAC) leapt into action, working around the clock for two weeks to predict levels and areas of radioactive contamination.

Three decades later, NARAC is still providing critical assistance, and much more. Last month, NARAC observed its 30th anniversary.

"NARAC is a key component of NNSA's emergency response teams, and, along with other NNSA assets, provides the nation with critical expertise to help resolve radiological emergencies," said Joseph Krol, NNSA associate administrator for emergency operations.

The center provides critical information on the potential impacts of hazardous airborne releases as part of an integrated national preparedness and response strategy.

NARAC prepares for toxic industrial chemical spills, fires, biological and chemical agent releases, radiological dispersal devices, improvised nuclear device scenarios, NASA spacecraft launches, and nuclear power plant accidents. NARAC predictions provide information on affected areas and populations, estimated casualties, and health effect and protective action guideline levels to assist decision makers and responders.

NARAC is the NNSA modeling center for radiological/nuclear incident response. Since 2004, NARAC also has been the primary provider of capabilities for the Department of Homeland Security-led Interagency Modeling and Atmospheric Assessment Center, which responds to all hazards and coordinates federal plume modeling for major events.

"Over the years since its inception, NARAC has developed a suite of modeling tools and databases that has cut response time from hours to minutes," said Gayle Sugiyama, NARAC director.

The concept for the center originated in 1973 as a Department of Energy feasibility study on how an integrated atmospheric modeling system could provide reliable and timely dose-assessment advisories to emergency managers at DOE nuclear facilities and U.S. nuclear power plants in the event of accidental emissions to the atmosphere.

Over the years, the center has tracked nuclear debris from atmospheric weapons tests, calculated possible nuclear contamination from the re-entry of the Soviet satellite Cosmos 954, and helped guide DOE and state teams in determining impacts from radiological material released from the Three Mile Island Nuclear Generating Station. In 1986, following a partial core meltdown at the Chernobyl nuclear power plant, NARAC spent the next 16 days estimating the activity released, modeling the transport and deposition of the material involved, and calculating the dose to people in Europe and around the globe.

ATMOSPHERIC MODELING: Maureen Alai, Ron Baskett and Matthew Simpson of the National Atmospheric Release Advisory Center monitor gases emitted from Kilauea, the youngest and most southeastern volcano on the Big Island of Hawaii.

Clean Steam Coming to NNSA's Y-12

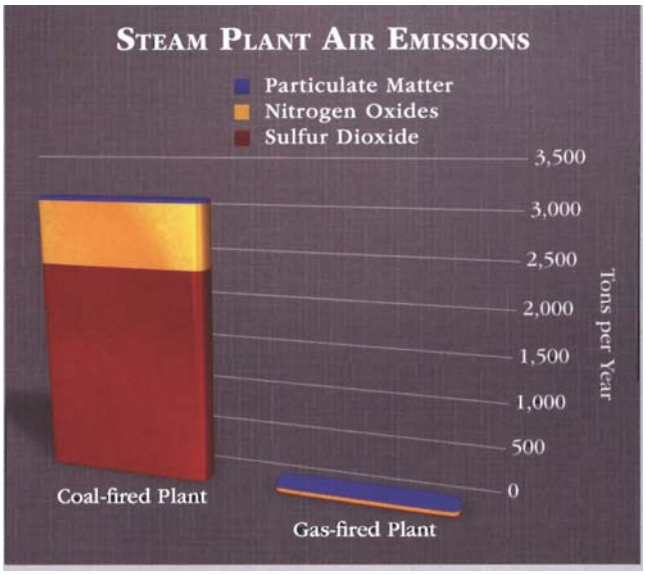
Construction is now well underway on a new natural gas-fired steam plant at the Y-12 National Security Complex. The new facility replaces an obsolete and inefficient coal-fired facility that has provided process steam for Y-12 for over 50 years. The project is funded by NNSA's Facilities and Infrastructure Recapitalization Program (FIRP).

The new plant will result in several environmental improvements. By burning clean natural gas, sulfur dioxide emissions will be reduced by 99.5 percent, nitrogen oxides by 94 percent and particulate matter by 72 percent. The new package boilers are much more efficient, thus reducing fuel requirements. The boilers will have a minimum efficiency of 82 percent, which is a 10 to 15 percent increase in efficiency as compared to the existing plant. The new plant will require less water, fewer chemicals, and any wastewater will be discharged directly into the sanitary sewer without additional treatment.

The switch to natural gas means Y-12 will no longer need to maintain its coal yard. Once the new facility is in operation the coal yard will be capped to protect groundwater and storm water quality.

"There are many positive benefits to switching to a natural gas fired facility at Y-12," said Daniel Hoag, senior project director for the NNSA's Y-12 Site Office. "This removes a major source of air pollutants associated with coal fired steam generation and provides us with a more efficient and cost effective operation."

The project was a result of a partnership between the Acquisition Executive Associate Administrator Thad Konopnicki, the Y-12 FIRP team and the headquarters FIRP team with value engineering support from Sandia National Laboratories, said Dino Herrera, NNSA's FIRP program manager. This is another in a series of critical deferred maintenance projects that contribute to improving the environment and safety throughout the enterprise.



The first puff of steam from the gas-fired plant is expected in December 2009. Completion of the steam plant will eliminate approximately $27 million of deferred maintenance costs associated with the existing steam plant.

NTS Roof Project Completed Early and Under Budget

A construction project at NNSA's Nevada Test Site has been completed more than two years ahead of schedule and at only 20 percent of the original cost estimate. NNSA officials have made it a priority to promote project management best practices throughout the nuclear security enterprise. During a ceremony honoring the accomplishment, NNSA Principal Assistant Deputy Administrator for Military Application Brig. General Garrett Harencak applauded the project managers at the Device Assembly Facility (DAF) for saving U.S. taxpayers $7.8 million.

"The individuals involved with the management of this important project demonstrated creative thinking to solve a problem for a critical NNSA asset, the Device Assembly Facility," Harencak said in remarks delivered via teleconference. "To fix the issue as quickly as they did while saving taxpayers nearly 80 percent of the original price tag is a major accomplishment, and is the latest example of the excellent project management skills employed across the nuclear security enterprise."

The DAF is a collection of more than 30 individual steel-reinforced concrete buildings connected by a rectangular common corridor. The entire complex is covered by compacted earth and spans an area of 100,000 square feet. The operational buildings in the DAF include five assembly cells, four high bays, and three assembly bays. Five staging bunkers provide space for staging nuclear components and high explosives. One of the safety features of the DAF is its compacted earth overlay (cut-and-cover construction) roof system. Besides weather protection, the DAF roof provides for the filtration of escaping gases should there be an accident involving high-explosives.

Three NNSA Sites Get DOE Environmental Award

Three sites in NNSA's nuclear security enterprise have been recognized by the Department of Energy for exemplary environmental sustainability practices. NNSA's Los Alamos National Laboratory, Sandia National Laboratories, and Y-12 National Security Complex were honored with the agency's EStar award and cited by the department as examples of successful new energy projects designed to facilitate a more "green" agency.

TACK CLOTH: A new cloth removes contamination to a non-detectable level with a single wipe.

"These awards acknowledge each site's leadership in environmental sustainability practices and NNSA's commitment to promoting best practices throughout the nuclear security enterprise," said NNSA Administrator Thomas D'Agostino. "I commend their efforts and they certainly deserve this important award."

The three NNSA facilities were awarded five of the eight EStar awards presented this year, out of more than 150 projects that were nominated.

Y-12 received three of those awards, including one for a project that moved beyond the use of alternative fuels to include other fleet management techniques such as mass transit and options for bikers and pedestrians to reduce the impact of employee commuting and site travel.

Y-12 was also recognized for initiating pollution prevention programs that included elimination of freon for chip cleaning, development of a tackless residue cleaning cloth, and reuse of surplus materials. Additionally, Y-12 identified several historical railroad items that, instead of being discarded, could be donated to the Southern Appalachia Railway System for future generations to enjoy.

Los Alamos National Laboratory received the award for a project that developed an annual environmental action plan to identify and correct local environmental issues. This resulted in over 450 individual improvement actions involving compliance performance, reduced liquid discharge, energy and fuel conservation, and excess materials disposition.

Sandia National Laboratories was recognized for a program that successfully institutionalized pollution prevention techniques such as materials characterization, reuse and recycling. These techniques significantly minimized the quantity of solid waste land-filled and hazardous/radioactive materials generated.

Linda Wilbanks Receives University Award

Dr. Linda Wilbanks, NNSA's chief information officer, has received the Dean's Recognition Award from Towson University, the second largest university in Maryland. Wilbanks earned a degree in mathematics education from then Towson State College, and went on to earn an M.E.S. in computer science from Loyola College in Maryland, and a Ph.D. in computer science from the University of Maryland.

An engineer and scientist, she has been a software engineer and later technical director for the Software Assurance Technology Center in the Office of System Safety and Mission Assurance at the National Aeronautics and Space Administration's Goddard Space Flight Center. She also served as acting chief information officer for NASA at Goddard.

Currently, Wilbanks supports NNSA's mission through the strategic management of cyber security and information technology (IT) programs. She coordinates with the Department of Energy on cyber security and IT to ensure compliance with departmental policies, and represents NNSA externally, including at all congressional inquiries. Wilbanks also serves as the landlord to the weapons complex management and operating contractors in information technology, and is responsible for coordination and management of all IT and cyber security at the eight NNSA sites across the country.