



POLAND HEU RECOVERY: View of a TK-515 container being loaded into a truck at the Maria research reactor at the Institute of Atomic Energy in Otwock-Swierk, Poland. The two-day operation was the largest removal of Soviet-origin "fresh" (unirradiated) HEU since the inception of NNSA's Global Threat Reduction Initiative two years ago. Five canisters were airlifted under guard from an airport near Warsaw to a secure facility in Dimitrovgrad, Russia.

U.S. And Russia Sign Liability Protocol

Secretary of Energy Samuel W. Bodman praised the signing of a liability agreement between the United States and the Russian Federation that clears a legal hurdle for an important nonproliferation program administered by NNSA.

Under Secretary of State Robert Joseph and Russian Deputy Foreign Minister Sergei Kislyak signed the agreement in Washington, on behalf of their two governments. The United States and Russia successfully completed negotiations of the protocol in 2005, and the Russian government recently completed its formal process approving it for signature.

"This agreement demonstrates that both countries continue to be committed to this important nonproliferation program, which

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Y-12 Completes Major Relocation Of Highly Enriched Uranium

The Y-12 National Security Complex has completed the relocation of a significant quantity of highly enriched uranium (HEU) at the Oak Ridge, Tenn. facility, thus reducing the number of areas in the Y-12 protected area that require the highest levels of protection.

Relocation of this material marks another major improvement in security at Y-12 and builds upon other significant improvements put into action over the past few years. This is part of efforts at Y-12 to implement the U.S. Department of Energy Design Basis Threat (DBT). This action will significantly enhance security and lead to improved efficiency and productivity of operations.

Y-12 is a key facility in the U.S. nuclear weapons complex and is

responsible for ensuring the safety and reliability of the nation's nuclear weapons stockpile.

The HEU relocated and consolidated at Y-12 formerly was stored in Building 9204-4 (also known as Beta-4), a large production facility built during the World War II Manhattan Project. Because of the relocation to other locations within the Y-12 protected area, the Beta-4 facility now requires a much lower level of protection.

Ted Sherry, manager of the Y-12 Site Office, said, "By moving out of the Beta-4 facility, we have been able to redeploy our protective force personnel and thus reduce the amount of overtime in performing the security mission at Y-12. Productivity in Beta-4 will be

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enhanced by the downgrading of this facility to reduce requirements for material control and accountability.”

“The cost savings that will be achieved through this relocation are huge,” said Sherry. “We have saved about \$17 million alone by not having to make interim security upgrades in the Beta-4 facility. Over the long term, we will avoid spending approximately \$137 million in security costs between 2006 and 2018, when operations are scheduled to begin at the Uranium Processing Facility.”

Relocation of HEU from Beta-4 is a part of efforts underway at Y-12 to relocate Quality Evaluation (QE) operations. QE is a key Y-12 mission associated with the assessment of the integrity, design compatibility and safety of the nuclear weapons stockpile. The relocation is intended to accelerate disassembly operations, consolidate materials and operations, eliminate the need to transport materials, and improve safety while meeting all security requirements.

The HEU relocation is a major milestone in Y-12’s DBT implementation plan and represents a significant cooperative effort by the Y-12 Site Office, BWXT Y-12 and Wackenhut Services, Inc. The material relocation consisted of several activities, including combining or repackaging numerous legacy items to facilitate transfer to the receiving facility. The work included the transfer of more than 600 items in 240 containers, including materials in storage areas and materials used in facility process operations. Work on the relocation began in 2005.

U.S. And Russia Sign Liability Protocol

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will dispose of enough weapons-grade plutonium for more than 16,000 nuclear weapons,” Secretary Bodman said. “It’s an important part of the Bush administration’s effort to keep nuclear material out of the hands of terrorists.”

The plutonium disposition program aims to eliminate a total of 68 metric tons (about 150,000 pounds) of surplus weapons-grade plutonium in the United States and in Russia, and stems from a 2000 nonproliferation agreement between the two countries. Both countries will dispose of their plutonium by converting it to mixed oxide (MOX) fuel for use in nuclear reactors. Once the MOX fuel is irradiated, the plutonium has been converted into a form that cannot be used for nuclear weapons.

“Signing this protocol with our Russian partners formally resolves the issue of what liability framework would apply for cooperation between the two countries to eliminate this dangerous material from Russian and U.S. stocks,” said NNSA Administrator Linton F. Brooks. “We continue to work with the Russian Federation on the next steps in implementing the plutonium disposition agreement.”

NNSA is nearing completion of site preparation activities for construction of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site in Aiken, S.C. The agency is awaiting completion of the appropriations act for fiscal year 2007 before proceeding with construction.

Livermore Scientist Elected VP Of Physical Society

Cherry Murray, deputy director for science and technology at Lawrence Livermore National Laboratory, has been elected vice president of the American Physical Society (APS) for 2007.

Following her year as vice president, Murray will become president-elect, the president and finally immediate past president of the society. Throughout the four years she will be a member of the council and executive board and will chair both bodies when she serves as president.

APS has long been considered one of the most noteworthy scientific societies in the nation. Founded in 1899, its mission is to advance and diffuse the knowledge of physics. It has 40,000 members and publishes *Physics Today* and *Physical Review*.



RETIREE RETIRES

MAINFRAME: For 46 years, Charlie Adams was the IBM mainframe’s “main man” at the Kansas City Plant. In the 1960s, Adams turned on the Kansas City Plant’s first IBM mainframe computer, the IBM System 360, and many, many iterations later, on July 31, 2006, he turned off the mainframe for good. Adams, who retired in August, said, “I feel I have completed my job.”

LANL Satellite To Launch In December

A Los Alamos National Laboratory satellite smaller than an armchair is undergoing a final phase of testing before its December launch at the Cape Canaveral Air Station in Florida.

The Cibola Flight Experiment, the fourth experimental satellite project undertaken by NNSA's nonproliferation office, will bear eight new technologies for space flight validation, including a new power supply, inflatable antennas, deployable booms, a new type of launch-vehicle separation system, and a high-density pack of AA lithium-ion batteries.

Los Alamos is responsible for all mission aspects, including procurement of the satellite bus, the payload, which has been under development at Los Alamos

for the past six years, and the satellite-tracking facility at the laboratory.

"These pathfinder efforts are science and technology demonstration platforms that pave the way for inserting new technologies into future NNSA, Department of Defense, and NASA space missions," said Diane

will process data and store refined answers rather than raw data for transmission to the ground, which is a far more efficient plan than sending massive raw data files that take time and power to transmit.

"What's really exciting," said Roussel-Dupre, "is that after Cibola validates the hardware for space flight, we can change the

processing after the satellite is in orbit. The future systems will evolve to meet changing requirements, rather than our having to send up an entirely new satellite

for each changing mission."

The satellite will be launched on the STP-1 mission by the U.S. Department of Defense Space Test Program in December 2006 on the U.S. Air Force's Evolved Expendable Launch Vehicle.



CIBOLA FLIGHT EXPERIMENT: A mirror on the Cibola satellite captures Daniel Seitz's reflection as he works in a clean room at LANL Technical Area 3. Cibola is scheduled to launch in December.

Roussel-Dupre of the International, Space and Response Division's Space Data Systems group, the project leader.

The heart of the mission lies in the onboard supercomputer that will process the data in space. Cibola's powerful supercomputer

AU REVOIR ASCI WHITE: The supercomputer at Lawrence Livermore National Laboratory that was three times named the world's fastest computer by industry standard Top500, was shut down in ceremonies at Livermore in July. Installed in 2000, ASCI White enabled numerous milestones in NNSA's Stockpile Stewardship Program. The confidence inspired by White transformed what had been the Accelerated Strategic Computing Initiative (ASCI) into NNSA's Advanced Simulation and Computer (ASC) Program, a cornerstone of the Stockpile Stewardship Program. Pictured from left are: Michel McCoy, LLNL ASC Program leader; Kim Cupps; Mark Seager; and Dona Crawford, LLNL associate director for computation.



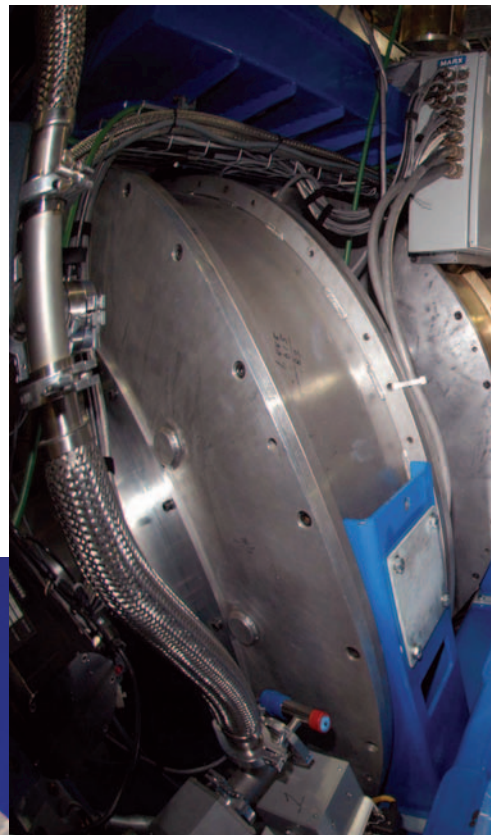
Sandia Takes A Strategic



Tom Hunter, Sandia National Laboratories president and director.

“It’s important that we view Sandia as an organization that has a strategic intent,” Sandia National Laboratories President and Director Tom Hunter said in a recent interview about the laboratory’s new strategic plan. “Sandia knows what it wants to be and it knows the role it wants to play in the nation, which is around national security. And that strategic intent should be mindful of the reality of the world we are in today. Our new strategic plan tries to capture that: What is it

It will be a world — again, in our view — where the security of the nation is still an important concern of the American people. And by that I mean the broadest sense of security, all the way from energy to nuclear deterrence and that whole spectrum of things. It will also be a world that expects a lot more from the federal government and how it provides that security. All those institutions associated with the nation’s security will be expected to do a lot more,



contribute a lot more, and to do it in a much more effective fashion.

In five years a lot of what is expressed is our hope. My strongest personal hope is that Sandia will be viewed as unique in the way it presents a new

that we, in our best judgment, intend for the laboratory to be and in what kind of world are we going to operate?

Sandia public affairs staff members Bill Murphy and John German interviewed Hunter and Executive VP John Stichman about the future of the labs. The following is a portion of the interview:

Question: *Based on the direction set out in the plan, what do you think Sandia will look like five years, ten years from now? Will we still recognize the institution that we know today? Or will it be utterly different?*



B61-11: Kevin Eklund examines the nose cone of a B61-11 weapon.

perspective on science, the application of science and technology to the nation’s most pressing problems.

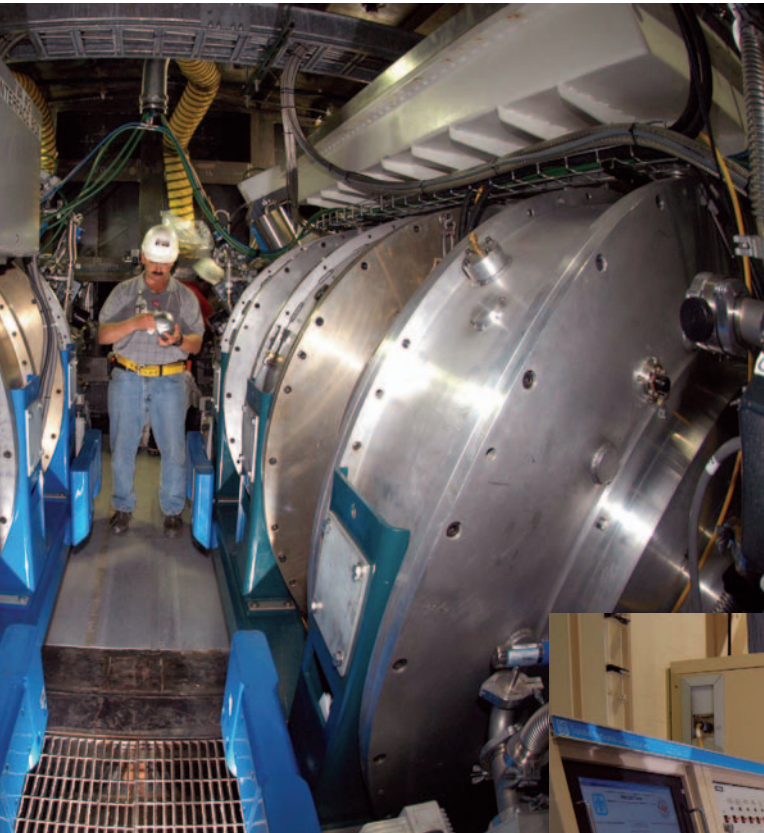
Question: *In five years, will Sandia be organized along the lines of what we see today? Will it even be a place — a physical place?*

TOM HUNTER: Let me try to answer that in the context of what, in our view, the world will look like — which by the way, we do not and cannot know. One can only make a judgment about that and see where it goes.

Look At Its Future

TOM HUNTER: Sure, it will be. Regardless of the evolution of network-centric societies there will need to be places like Sandia and Sandia will be a place where people are together. It will also be dispersed where we have strong affiliations with others. But there will be a

a greater engagement with strategic partners — universities, federal agencies, perhaps with some industry or consortium? Yes, we'll have a broader engagement. The general look and feel, I hope, is of a place of excellence, a special place, a place that is in many ways unique.



WEAPONS CERTIFICATION: In a tunnel 962 feet below the surface of the Nevada Test Site, Gene Ormond, a member of the Nevada Projects Team, prepares the cathode cover of the Sandia-designed, high-intensity flash X-ray system for weapons certification.

Question: *How about ten years from now?*

JOHN STICHMAN: I expect that for some time to come, nuclear weapons will still be a very key element of how peace and freedom are assured, and Sandia will surely be exercising a very, very key stewardship role in assuring that we maintain that.

And then the other part is to be sure that we have maximized our contribution to the broader set of national security needs, based on our capability to deliver innovative, science-based system

centricity of our locations and the functions that happen there and the core capabilities that reside there.

We will have much higher connectedness to other places that have a strong affinity to our missions. So we will exist as a place, a strong place, because we have this enormous investment in unique facilities.



WEAPONS TESTING: Patricia Bonham examines Sandia's Command Disable System Tester, which is now in use at the Pantex Plant for weapons testing. Sandia engineers designed and built the tester.

engineering solutions.

TOM HUNTER: There are a few words that I would give to you that we would like to be known for: agility,

efficiency, reliability, creativity, inventiveness, and responsiveness. Those kinds of words express how we want to be characterized and known — in a way far beyond where we are today.

Will we be a place of science and technology? Yes. Will we be a place where we have a broad dimension of workforce that handles not only science and technology but ways to put that all together into management systems and things that really work? Yes. Will we have

And I think we should characterize our future as one in which we're aided by our relationship with NNSA. We have a shared intent with NNSA to try to achieve our vision for the future.

Los Alamos National Lab D Building Remembered

On what was once the site of NNSA's Los Alamos National Laboratory's first plutonium processing facility – the D Building — there now stands a hotel in Los Alamos, N.M.

Six laboratory retirees recently gathered to pool their memories for the Center for Disease Control and Prevention's Los Alamos Historical Document Retrieval Assessment project. They discussed D Building and what they remembered about the operation, demolition and cleanup of the building that once stood where the Los Alamos Inn is today.

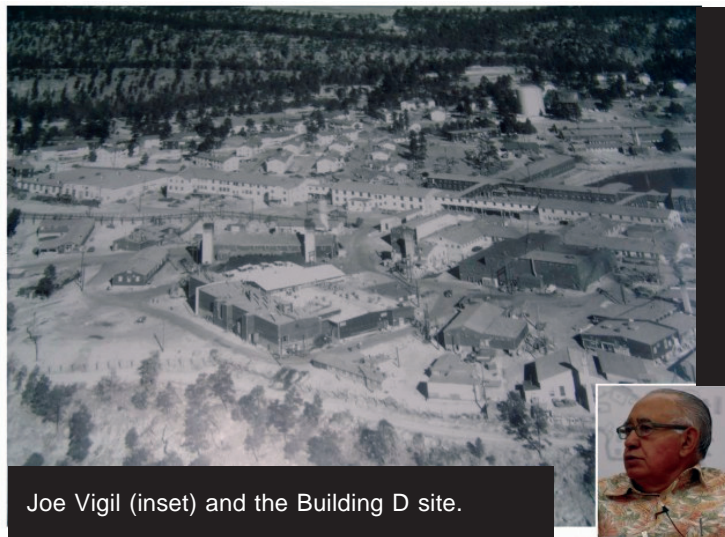
Built in 1943 to last only one year, but demolished in 1954, D Building is where machining, casting and forging, and refining of some of the world's first plutonium pits took place, including the pits that were used at Trinity and in Fatman.

Clarence Courtright came to Los Alamos in 1955 as an explosives safety engineer and retired in 1991. "Our standards back then were to clean up a site to the point where you're willing to let your grandkids play there," he said. "That was the attitude we had."

The retirees were granted "Q" clearances for

a day because of the potential of classified discussion. Retirees who participated included Clarence Courtright, Don Gibbons, Carl Buckland, Joe Vigil, Ray Garde, and Charles "Blackie" Blackwell.

The seven-year old historical document retrieval



Joe Vigil (inset) and the Building D site.

project is collecting data to reconstruct a dose assessment. Similar projects have taken place at Hanford, Savannah River, and Rocky Flats.



RRW AT DARHT: The Dual Axis Hydrodynamic Test (DARHT) facility at Los Alamos National Laboratory has conducted its first Reliable Replacement Warhead (RRW) experiment. The fully integrated high-explosives test produced a high quality radiograph and additional data according to project leaders. "These data are an important confirmation of designer judgment as applied to RRW," said Joe Martz, the LANL RRW project director. "Our early analysis confirms the robust performance and innovative surety features in the design." NNSA is conducting a feasibility study of RRW, which is intended to ensure that the nation can maintain a safe and reliable nuclear defense in the future without nuclear testing.

NNSA News is published monthly by the Office of Congressional, Intergovernmental and Public Affairs, C. Anson Franklin, Director. **Editors:** Al Stotts, Julianne Smith, Bryan Wilkes. **Design:** Barbara L. Courtney. **Contributors include:** Nancy Ambrosiano, Los Alamos Lab; Laura Bailey, Pantex Plant; John German, Sandia Labs; Stacy Maloof, Pacific Northwest Lab; Randy Montoya, Sandia Labs; Bill Murphy, Sandia Labs; Kevin Roark, Los Alamos Lab; Nicole Wickenhauser, Kansas City Plant; Steve Wyatt, Y-12 Site Office; Gordon Yano, Lawrence Livermore Lab

NNSA Program Helps Train International Nuclear Security Managers

The role of a security manager at a nuclear facility comes with the daunting challenge of developing effective, efficient and integrated security programs that not only keep the facility and the nuclear material safe, but also meet the necessary international protection standards. A program undertaken by NNSA is helping to provide security managers around the world with the skills and knowledge they need to develop, implement and maintain an effective protection strategy.

“We are essentially providing security managers with an entire suite of information and tools they can take home and implement,” said David Huizenga, NNSA’s assistant deputy administrator for International Material Protection and Cooperation (IMPC). “We’re already seeing the benefits of this program.”

Since the program was started in 2004, more than 125 security managers from 23 IMPC facilities around the world have participated. Currently Russia and Kazakhstan are involved, representing guard forces responsible for protecting tons of nuclear material stored in over 75 different facilities. Pacific Northwest National Laboratory developed and implemented the training program for the managers.

The program is conducted in partnership with the United Kingdom (UK) Civil Nuclear Constabulary (CNC) and the UK Department of Trade and Industry’s Office of Civil Nuclear Security. Three courses are held annually for security managers – also known as guard force commanders — at the CNC Training Centre outside of Whitehaven, England. It was presented last fall in Kazakhstan in partnership with the Republic of Kazakhstan Atomic Energy Committee. Another course is scheduled for October in Kazakhstan.

NNSA’s Kansas City Plant Puts The “Spotlight On Science” For Students

The NNSA’s Kansas City Plant served as a big classroom recently for the 13 students and two teachers selected from a long list of applicants to participate in the new “Spotlight on Science” program.

Created for local high school students and teachers, the program provides the unique opportunity to see how math and science are applied in one of the nation’s most advanced and valuable manufacturing facilities.

In the virtual reality room, participants tore apart assemblies with their own virtual hands in order to see the parts’ inner workings. In the analytical laboratory, science came alive as participants met with scientists and checked out high tech equipment in action.

During the creative thinking session, participants took a new look at the role of creativity in math and science. A liquid



HIGH TECH IN ACTION: Senior engineer Bob Owens explains how the virtual world on the screen can help improve performance in the real world at work. A student uses the controls to drive a truck through the computer simulated Kansas City Plant.

nitrogen session warmed up the audience with great visual demonstrations of the power of chemistry in action. Small group discussions with young engineers gave students the chance to ask questions and learn about the field. And both students and teachers started the school year a step ahead after learning Solid Modeling and Computer Aided Design in daily workshop sessions.

The Kansas City Plant received excellent feedback on the program and will provide a new group of students and teachers with the unique program in the summer of 2007.

NNSA People, Facilities Receive Variety Of Awards

BWXT Y-12's Hall Receives Special Project Award From Nuclear Materials Management Group

Connie Hall, BWXT Y-12's Nuclear Materials Control and Accountability (NMC&A) Program manager, was recently awarded the Special Service Award by the Institute of Nuclear Materials Management (INMM). Hall, who has more than 30 years of experience in NMC&A, was also named as a new senior member of the INMM.

"This award signifies that the recipient has continually accomplished positive results at an extreme high standard in the nuclear material management field," said Cathy Key, INMM president.

In addition to NMC&A program manager, Hall has served as the K-25 NMC&A department manager and Y-12 Materials Recycle and Recovery Program manager.

Pantex Mark Trail Award

BWXT Pantex has been honored with a Mark Trail Award from the National Oceanic & Atmospheric Administration (NOAA) for its support of the Weather Radio program.

The Pantex Department of Emergency Management spearheaded the conversion of the Pantex 10-mile radius "Emergency Planning Zone" (EPZ) warning system. The indoor alert receivers were replaced with Specific Area Message Encoder Weather Radios. Pantex obtained the assignment of a specific NOAA Weather Radio code for the plant's 10-mile EPZ. This is the first such code assigned for a facility-specified warning area.

Local jurisdictions have received State of Texas funding to purchase radios to distribute to residences and businesses within the Pantex

10-mile EPZ. These radios were pre-programmed with the Pantex 10-mile EPZ Federal Information Processing Standards code.

Diversity Awards

The Emerald Honors are the premier awards for African Americans, Hispanics, Asian Americans, and Native Americans working in the research sciences. Here are the 2006 NNSA complex recipients of the awards:

Community Service, Rube Williams Jr., Ph.D., technical staff member, Los Alamos National Laboratory; Educational Leadership, Robert Shepard, Ph.D., executive director, S.E.A., Lawrence Livermore National Laboratory; Most Promising Scientist, Justin Baba, Ph.D., research and development staff, Oak Ridge National Laboratory; Professional Achievement-Government, John Abrefah, Ph.D., staff engineer, Pacific Northwest National Laboratory operated by Battelle Memorial Institute.

The Science Spectrum Trailblazers are outstanding Hispanic, Asian American, Native American, and African American professionals in the science arena whose leadership and innovative thinking on the job and in the community extend throughout and beyond their industry. Listed are the 2006 NNSA complex recipients of the Trailblazers award: Neena Iman, Ph.D., research and development scientist, Center for Engineering Science Advanced Research, Oak Ridge National Laboratory; Hope Ishii, Ph.D., postdoctoral research staff member, Lawrence Livermore National Laboratory; Wayne J. Martin, Ph.D., environmental scientist technical group member, Pacific Northwest National Laboratory operated by Battelle Memorial Institute; Samuel P. McKenzie, radiation control/

environmental safety and health officer, Oak Ridge National Laboratory; Phani K. Nukala, Ph.D., senior research scientist, Oak Ridge National Laboratory; Dean Williams, research computer scientist, Lawrence Livermore National Laboratory.

LANL Hurricane Response Award

The Environmental Protection Agency has recognized members of the Los Alamos National Laboratory Integrated Reachback Center for their monitoring and characterization of chemical and radiological hazards during hurricanes Katrina and Rita by presenting them with an EPA 2005-2006 Award for Excellence.

The Los Alamos Integrated Reachback Center was one of only a few non-EPA agencies to be honored with EPA's Award for Excellence Medal. "The reachback capability, the level of technical capability, and the speed at which the information was provided was critical in conducting EPA's rapid needs assessment," said EPA ASPECT program manager Mark Thomas. "It was an honor to have the LANL reachback capability to support the EPA ASPECT team.

The Los Alamos Integrated Reachback Center was activated 48 hours prior to Hurricane Katrina making landfall, providing analysis and simulations of storm surge and impacts to critical infrastructure.

The ASPECT aircraft remained in Texas for two weeks after Hurricane Rita helping with recovery efforts. It was then re-deployed to New Orleans where it remained for four more weeks.