



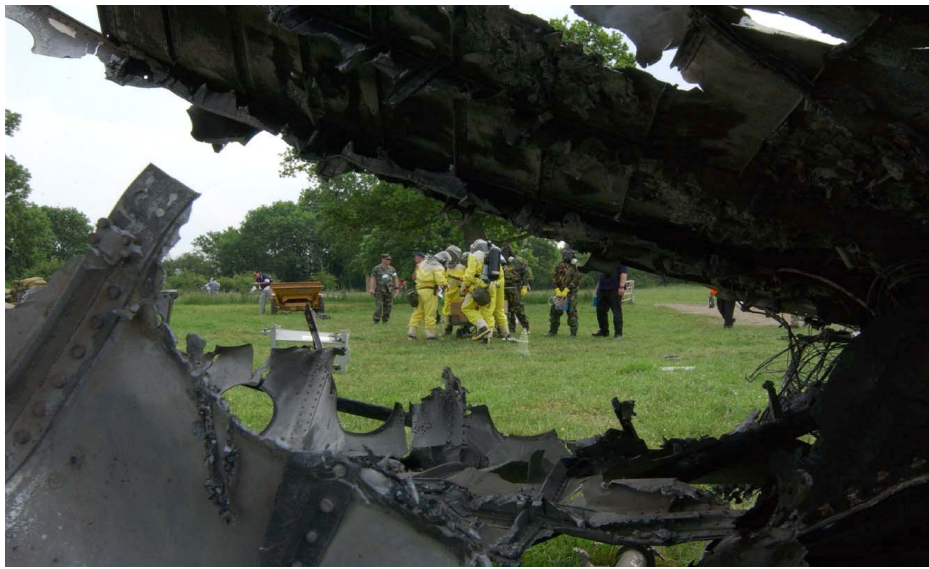
NNSA Announces Security Initiatives

NNSA Administrator Linton Brooks has announced a five-part initiative to reinforce current safeguards and security oversight and strengthen long-term security operations in the nuclear weapons complex.

Brooks directed NNSA managers to take the following immediate actions:

- ◆ Assign additional federal and contractor security experts to expedite NNSA's response to security management concerns that the agency has identified at the laboratories in recent months;
- ◆ Require NNSA site managers to increase the frequency of surveillance of security at the weapons laboratories; surveillance is a security management tool that measures performance of security operations; site managers are expected to provide biweekly reports directly to the administrator personally on the results of the enhanced surveillance; and
- ◆ Review recommendations from numerous past internal and external studies and investigations to ensure that all appropriate recommendations have been implemented.

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Civilian and military responders to a mock nuclear weapons accident in England are viewed through the mock wreckage of a U.S. Air Force C-17. Story about the international exercise on page 3. (Photo courtesy of the Defense Threat Reduction Agency)

Boardman Leads Sandia Site Office

Editor's note: This is the first in a series of brief profiles of managers who are overseeing the newly reorganized NNSA.

With a civil engineering degree from the University of New Mexico, Karen Boardman began her career after college as a designer at an architectural engineering firm. Two decades later, she is the manager of an NNSA office that is responsible for the federal oversight of Sandia National

Laboratories, one of the nation's premier national security research and development facilities.



Karen Boardman (left), manager, Sandia Site Office and deputy manager Patty Wagner

The reorganization of NNSA gave Site Offices frontline oversight and contract administration responsibilities for the labs and plants in the nuclear weapons complex. At the Sandia Site Office, Karen is also responsible for the safe and secure operation of facilities under the purview of the NNSA,

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Security Initiatives

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“There have been a wealth of studies of security in the weapons complex over the years, including outside commissions, internal review teams and investigative reports by the Department of Energy’s inspector general and the General Accounting Office, but it is clear that not all the good ideas have been implemented,” Brooks said.

The NNSA administrator also established two review groups to assess longer-range issues affecting security management and protection. Brooks has acted to form a commission to recommend improvements in physical security and materials control and accountability programs at the weapons laboratories; and establish a separate panel to develop recommendations for recruiting and retaining sufficient security experts to effectively

oversee safeguards and security in the NNSA complex in the long term.

Brooks, who consulted with the Secretary of Energy Spencer Abraham, said he organized the new groups to take a fresh look at safeguards and security operations in NNSA in light of the post 9/11 threat environment and to find a way to deal with a shortage of qualified, experienced security managers in NNSA.

Abraham and Brooks acted in response to a series of recent security incidents at the NNSA weapons laboratories. “While there has been no compromise of classified material or loss of special nuclear material, the nation cannot tolerate any degradation in our security posture and thus problems must not be allowed to persist,” Brooks said.

Two respected retired officers with extensive nuclear weapons experience have agreed to chair the commissions.

“I am taking immediate action to ensure myself personally that NNSA is taking vigorous actions to improve and maintain security.”

Although the initiative came in response to problems at the weapons laboratories, it will cover the entire NNSA weapons complex to ensure similar problems do not develop elsewhere.

Retired Admiral Richard Mies will lead a panel that examines physical security and nuclear materials control and accountability programs, focusing primarily on NNSA’s weapons laboratories. Brooks has asked Mies to explore, among other things, improved deployment and management of protective forces at the laboratories and the improved use of state-of-the-art security technology.

Retired Admiral Hank Chiles will chair a group charged with developing recommendations for recruiting and retaining NNSA managers who have the technical, engineering and physical sciences expertise needed for effective, long-term oversight of safeguards and security operations in the nuclear weapons complex.

Mies and Chiles both have served as commander-in-chief of the United States Strategic Command. Chiles also chaired a congressionally-authorized Commission on Maintaining United States Nuclear Weapons Expertise.

“I am pleased that these two well-regarded public servants are taking on these challenging assignments,” Brooks said. “Together they can help NNSA design the optimum safeguard and security systems for the 21st century and find the best managers to run them.”

Karen Boardman

(continued from page 1)

the support of NNSA programs to ensure their success, and the long-term viability of the site to support NNSA programs and projects.

Karen didn’t initially intend to be a long-term Department of Energy employee. She entered DOE as a construction project management specialist, thinking she would learn the federal system, then go back to the private sector to work as a contractor who understood how things work with the feds. But then she got involved in weapons work and became fascinated with the technologies and the people.

“I was hooked by the weapons program,” she said in an interview. “Overall, I’ve now spent 10 of my 19 years at DOE in weapon programs management or support.”

Karen became the manager of the new Sandia Site Office in December 2002 after serving the former Albuquerque Operations Office as the deputy manager for programs and technical support. Karen served in a variety of positions at Albuquerque including director of the Weapon Programs Division, the deputy assistant manager for safety and security and the director of the Technical Analysis and Support Division. She has also served on details as the acting deputy associate administrator for facilities and operations at NNSA Headquarters and as the acting deputy manager of the former Dayton Area Office.

A current challenge for Karen is completing negotiations for the new contract to operate Sandia Labs. The new agreement will incorporate the tenet of contractor assurance, which includes specific expectations for both contractor and federal employees.

Overall, Karen thinks the implementation of NNSA’s reorganization is going well.

“Reengineering NNSA has helped to clarify roles and responsibilities,” she said, “and it will result in better communications within the federal system as well as between federal staff and contractors.”

ARG Team Practices Emergency Response in England

“A nuclear accident has taken place near Norwich today,” reported the Norwich Evening News in mid-June. The English community, located two hours northeast of London, played host to “Dimming Sun,” an emergency response exercise that involved more than 2000 British and American military and civilian players for a week in June.

More than 90 members of the NNSA’s Accident Response Group (ARG) participated in the exercise. It featured a scenario involving the crash of a U.S. Air Force C-17 aircraft that carried multiple nuclear weapons under transport from Germany to New Mexico. Several of the weapons were severely damaged in a fire that resulted from the crash. Contamination spread to the nearby village of Tottington as a result of the fire.

Mark Baca of the NNSA Service Center, who served as the Senior Energy Official for the exercise, said, “Dimming Sun has been a valuable international exercise that has validated our international procedures and relationships in resolving a nuclear weapons accident.”

Located at three sites in Norfolk County during the exercise, the ARG members worked with their British and U.S. Air Force counterparts to assess the damage to American weapons in the mock accident, render the surviving units safe, and transport them and the

recovered debris back to the U.S. for disposition.

A cadre of British and American mock media reporters converged on the so-called “gold” site at the Norfolk police constabulary in Wymondham, which headquartered the response effort. Senior science advisers for the ARG and senior energy official Baca participated in mock news conferences and technical briefings for the media to answer questions about the damaged weapons and resulting contamination around the crash site.

The exercise also featured a Norfolk County Council-hosted conference on how to remediate the contaminated areas caused by the crash and how to overcome the damage to the economy and image of the county that would inevitably occur following such a tragic accident. Representatives of the county council’s departments of education, social services, communications and emergency planning led the conference. Among the other British government agencies represented in the exercise were the Nuclear

Weapons Establishment, the Royal Navy, the Royal Air Force, and local police and fire agencies. An assistant minister of defense also visited the exercise.

Roy Elfett, the county council’s emergency planning officer, told the



Senior Energy Official Mark Baca (right) is interviewed by “reporter” Jim Danneskiold (a Los Alamos National Laboratory public affairs staff member) during the Dimming Sun emergency response exercise in England.

Norwich Evening News, “There’s never been an exercise in Norfolk on this scale. The U.K. and U.S. governments wanted to examine the effectiveness of their response. Both adhere to the highest nuclear safety standards and will continue to do so. One anticipates that these things will never happen, but we need to test our plans.”



Senior Science Advisors Jerry Dow (left) of Lawrence Livermore National Laboratory and Dave Carlson (center) of Sandia National Laboratories participate in a technical briefing for mock media members with a representative of the Norfolk, England, police constabulary.



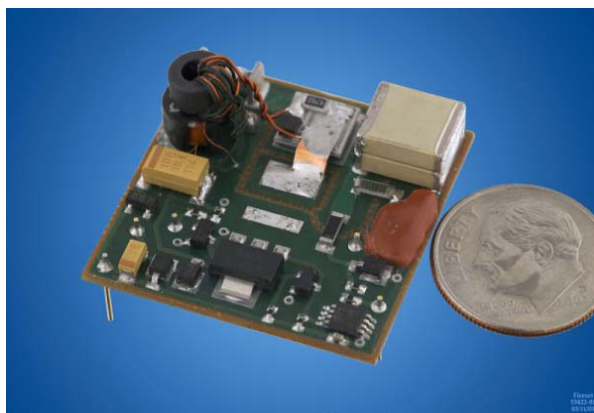
Kathy Shingleton (right) of Lawrence Livermore National Laboratory, the senior health and safety advisor for the Accident Response Group, is interviewed by a mock British reporter.

Mini-fireset Helps Protect Against Torpedoes

The name sounds like something off the pages of a Tom Clancy novel: Anti-Torpedo Torpedo (ATT). But the concept behind the new weapon is real enough - protect multi-billion-dollar U.S. Navy ships and their crews from enemy attack. The ATT will carry a warhead triggered by a miniature initiator that is being designed and developed at the National Nuclear Security Administration's Kansas City Plant.

Approximately eight feet long and six inches in diameter, the ATT will be installed on the deck of surface ships such as aircraft carriers. The ship will tow sensors that scan the surrounding waters for incoming torpedoes launched from enemy vessels. If one is detected, the ATT will be deployed to intercept the incoming torpedo.

Associates from diverse areas of the Kansas City Plant are working on the prototype of an optically powered miniature initiation system, or firing set, for the warhead. Weapons initiation team engineer Jay Desch, a



Not much larger than a dime, the miniature initiator is the triggering device for the Anti-Torpedo Torpedo warhead. The extremely small size of the device has challenged Kansas City Plant engineers who are developing the prototype of the optically powered initiation system for DoD and NNSA applications.

staff engineer in the special projects engineering department, said the Kansas City Plant has a long history

of developing mini-fireset technologies.

“We have been partnering with Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and Sandia National Laboratories for more than 10 years on these systems,” he said. “For an engineer, it’s very exciting work. It enhances our abilities and provides solutions for the customer. It’s a win-win situation for everybody.”

The ATT project involves, in one way or another, the resources of numerous Kansas City Plant departments including engineering, manufacturing, simulation, and industrial hygiene. The ultimate customer for the ATT project is the Naval Surface Warfare Center, Indian Head Division in Maryland. But the hope is to make the project a showcase for the Kansas City Plant’s capabilities in the areas of design, prototyping, and manufacturability.



Administrator Linton Brooks (far right) meets with members of the Eight Northern Indian Pueblos Council Board of Governors in Santa Fe, NM. Brooks announced the award of a \$200,000 grant to the northern New Mexico’s Indian pueblos Community Reuse Organization for economic development planning. Pueblo officials present for the meeting are (left to right): Governor Gerald Nailor, Pueblo of Picuris; James Viarrial, brother of Governor Jacob Viarrial, Pueblo of Pojoaque; Governor Denny Guiterrez, Pueblo of Santa Clara; Governor Vincenti J. Lujan, Pueblo of Taos; Governor Tom Talache, Pueblo of Nambe; Lt. Governor Earl Salazar, Pueblo of San Juan; Governor John Gonzales, Pueblo of San Ildefonso.

HEU Program Completes Vital Russian Monitoring System

A team of U.S. and Russian technical experts has completed the installation and calibration of a blend down monitoring system at the Electro Chemical Plant located in the closed Russian city of Zelenogorsk. The installation of the system at the plant is the result of a seven-year effort by the Highly Enriched Uranium (HEU) Transparency Implementation Program (TIP), and constitutes a significant milestone for meeting the nonproliferation objectives of the 1993 HEU Purchase Agreement with the Russian Federation. This system monitors the blending down of HEU extracted from Russian nuclear weapons into low enriched uranium (LEU) that

of 2013 under the agreement.

The facility is an integral element in the Russian Federation's nuclear weapons and uranium processing

to conduct a monitoring visit and inspect the newly installed system. The team verified that the system was operating within its normal



Slava Montajnikom (Glory to the Installers). US & Russian Installation Team

Within the National Nuclear Security Administration, the HEU-TIP is responsible for monitoring the processing of the HEU at four Russian plants.

is shipped to the United States for use as fuel in commercial nuclear reactors.

Through the end of March 2003, about 176 metric tons of HEU have been blended into LEU and shipped to the United States. This represents about 35 percent of the HEU scheduled to be blended by the end

program. The plant modified its blendpoint process piping in order to accommodate the blend down system that continuously monitors the blending of the weapons-grade HEU into LEU. The U.S. designed and built system is non-invasive and independently measures the enrichments and flow rates of the HEU uranium hexafluoride gas, and traces the HEU through the blending "tee" and into the LEU product. This is the second system installed at a Russian plant. Together, the two systems are responsible for about 75 percent of the HEU being blended annually under the agreement.

In April 2003, a U.S. team led by Assistant Deputy Administrator James Turner and HEU-TIP Deputy Director Janie Benton traveled to Zelenogorsk

parameters. In addition, the team retrieved and returned to the United States the first monitoring data.

The blend down system's data supplements the data-gathering mission of the HEU-TIP to assure that Russia is meeting the nonproliferation objectives of the Agreement and is processing weapons-usable HEU into LEU. In pursuit of meeting these objectives, the U.S. expects to install a third system at the Siberian Chemical Enterprise in Seversk in FY 2004. With the installation of a third system, blending down of all HEU subject to the agreement will be monitored.

Six Sigma - The Quest for Perfection

The NNSA's Kansas City Site Office is creating a culture of self-improvement by implementing a tool kit of methods, collectively known as Six Sigma, to improve growth and productivity while maintaining and enhancing quality.

If the term Six Sigma sounds Greek to you, it's for good reason. Sigma is actually a letter of the Greek alphabet used to represent the likelihood that something will deviate from the norm. Most often used by statisticians, the definition of Six Sigma is 3.4 defects per 1 million opportunities, or 99.9997 percent perfect.

However, the NNSA's Kansas City Plant is finding out that Six Sigma is much more than statistics or defects per million. It's a proven methodology for improving best-business practices, applicable not only to manufacturing but to all aspects of business. As a strategy, Six Sigma is a way for the NNSA to achieve efficiency breakthroughs and cost savings to the American taxpayer.

Former KCSO Manager Beth Sellers adopted the Six Sigma program from the Kansas City Plant's

M&O contractor Honeywell in order to ensure continuous improvement. Sellers said, "I saw how our contractor was using Six Sigma to



drive continuous improvement and wanted the same of NNSA." Honeywell has achieved \$40 million in cost savings for the NNSA since January 2000.

"It is very important that NNSA participate in the Six Sigma process," Sellers said. "The first reason to participate is the overall benefit to the government. The streamlining of any process will benefit the site through increased productivity and attract more work to the plant. Second, the variety of tools available through Six Sigma can be applied to any work situation. I am very excited about the possibilities for administrative process streamlining."

BWXT Y-12 Receives Awards

Kibbee D. Streetman of BWXT Y-12's Technical Computing organization is the 2003 recipient of the Department of Energy's Charlene Douglass Memorial Award for his "outstanding contributions in the national interest in the field of information systems and cyber security."

Streetman has worked on projects to enhance information security not only for DOE, but also for the Department of Defense, the National Institute of Standards and Technology, the Internal Revenue Service, and the Federal Bureau of Investigation.

BWXT Y-12 has received the Small Business Administration's 2003 Award of Distinction for exceeding all socioeconomic goals in each category during in fiscal year 2002.

President and General Manager Dennis Ruddy said the award is very gratifying because "less than two percent of the SBA's large contractors are recipients of the award." The award recognizes federal contractors that have exceptional small business subcontracting programs.

Y-12 in turn honored four local businesses for their outstanding performance in providing products and services as part of Y-12's socioeconomic and diversity procurement program. Businesses honored were C.S. Engineering, Navarro Research, Haselwood Enterprises and VWR Scientific.

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Los Alamos' Bowles Wins Top Russian Prize

A Los Alamos neutrino physicist has received the top scientific prize awarded by the Russian Academy of Sciences' Institute for Nuclear Research.

Tom Bowles from Los Alamos' Physics Division is only the second non-Russian to receive such an award from any Academy of Sciences institute.

Bowles, the co-principal investigator of the Russian-American gallium solar neutrino experiment, accepted the M. A. Markov Prize at the Institute in Moscow in May. The prize is named for the institute's founder, Moisey A. Markov, and is awarded each year for substantial contribution to fundamental physics

and for development of major research directions of the institute's scientific program.

The experiment is commonly known as SAGE, or the Soviet-American Gallium Experiment. It has been the only experiment to directly detect low-energy neutrinos from proton-proton fusion in the sun. These neutrinos, which are made in the primary reaction that provides the sun's energy, are the major component of the solar neutrino flux. Buried deep beneath the Caucasus Mountains at the Baksan Neutrino Observatory in southern Russia, SAGE counts solar neutrino reactions inside a tank containing 50-metric tons of gallium.

Sharing the prize with Bowles this year are Vladimir Gavrin and Vadim Kuzmin, both from the institute. Gavrin has served as the Russian co-principal investigator since SAGE began in the 1970s. Kuzmin in the 1960s was the first person to suggest that gallium could be used as a means of measuring the solar neutrinos from proton-proton fusion reactions.

Bowles is only the second non-Russian to receive an Academy of Sciences institute award. The first went to Ray Davis of the University of Pennsylvania, who won the Nobel Prize in Physics last year for his research on solar neutrinos.

Infrastructure Update Tritium Facility at Savannah River 50% Complete

The new Tritium Extraction Facility (TEF) at the Savannah River Site is more than 50 percent complete and scheduled to begin normal operations in 2007. Dr. Everet Beckner, NNSA deputy administrator, recently congratulated more than 200 Savannah River Site craftsmen and other personnel for fabricating and installing the internals of the first two gloveboxes of the TEF.

The work was accomplished three months ahead of schedule and 15 percent under budget. The two gloveboxes were originally budgeted at \$ 1.4 million.

Gloveboxes are large glass-enclosed and sealed cases that allow operators to manipulate controls and equipment from outside, thereby

avoiding potential contact with radioactive or hazardous material. In



A Savannah River Site welder shows Dr. Beckner how he sets up his work.

this case, the gloveboxes are used in processes for purifying tritium, a radioactive form of hydrogen necessary for nuclear weapons to operate as designed.

“These craftsmen are off to a tremendous start,” Dr. Beckner said. “In addition, work on the remaining seven gloveboxes is going well. I am pleased with all of the construction progress that I have seen. I look forward to continued success from this project, which it is a vital part of our nation's defense”.

TEF is part of NNSA's Commercial Light Water Reactor Program for manufacturing tritium. There has been no new source of tritium in the U.S. since 1988. This fall, Tritium Producing Burnable Absorber Rods will be loaded into a Tennessee Valley Authority nuclear power plant. After the normal 18 month fuel cycle is complete the rods will be transported to SRS, where the tritium will be extracted.

Pantex Team Wins Security Competition

The BWXT Pantex Security Competition Team won first place at the Security Police Officer Training Competition (SPOTC) held in June at the DOE Nonproliferation and National Security Institute's [NNSI]

force at Pantex."

Members of this year's team are: Team Captains Gene Ferris and Clay Stephens, Team Leader Joe Hardin, Joe Martinez, Steven Zuniga, Jeremy McCoid, Chris Jenkins and David Aud. In the individual competition,

McCoid, Martinez and Hardin placed in the top 10 of all competitors. This year marked the 31st anniversary of the training competition. SPOTC gave 22 teams from DOE sites, state, county, and municipal law enforcement agencies, U.S.

Patrol team was named Security Police Officer of the Year. The HQ DOE team finished in third place overall in what was only their second SPOTC competition.

"This year's Challenge was particularly important," said Arthur Flynn, Director of the NNSI. "As a nation, we are engaged in a war on terrorism. Energy Secretary Abraham has made a commitment to the President that DOE resources will support this fight. Realize that every Department employee and contractor is a part of that. Those efforts at work contribute directly to victory in the nation's fight against terrorism. This should be a huge source of pride for all of you- as it is for me."

DOE established SPOTC in 1972 to foster excellence and professionalism among its physical security forces at DOE facilities. The competition tests physical conditioning, deadly force related decision-making under stress, employment of tactics, and knowledge of DOE security policies. SPOTC is open only to DOE employees, contractors, and affiliated officers who are members of bona fide armed security forces.

SPOTC 2004 will be held at the Savannah River Site in South Carolina.



The Pantex team that won the security police officer competition.

Central Training Academy on Kirtland Air Force Base in Albuquerque, NM. Pantex now has won the Secretary's Trophy for the sixth time in 10 years.

The annual competition, in its 31st year, pits the best security teams in the nation against each other in individual and team firearms competition and tactical exercises. Pantex won the event three years in a row from 1998-2000 and six of the last 10 years.

"It is an honor to bring the first-place trophy back to Pantex," said Protective Force Chief Larry Spaulding. "The six individuals on this team trained very hard and truly deserved to win. They are excellent representatives of the entire security

military units, and a team of constables from the United Kingdom's Atomic Energy Authority Commission a chance to pit their skills and training against those of their counterparts. A roster of 138 security police officers competed all week in New Mexico's high desert weather, firing more than 51,000 rounds of ammunition. This year's SPOTC emphasized the integrated and practical use of the "battle rifle" instead of only firing handguns, as was the case in previous competitions.

The Secretary's Trophy is awarded annually to the site with the best overall representation in SPOTC. This year's award went to the Pantex team. Scott White of the Hanford

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