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Brooks Nominated to Head NNSA

President Bush has nominated Linton Brooks to be Under Secretary for Nuclear Security and NNSA Administrator. Brooks was previously confirmed



by the Senate as Deputy Administrator for Defense Nuclear Nonproliferation. President Bush designated him as Acting Administrator for NNSA when Gen. John Gordon resigned in late July to take a position in the White House.

If confirmed by the Senate, Brooks will formally take control of the \$8 billion agency.

Brooks has led a long and distinguished career, starting with his

30 year service in the U.S. Navy, where he retired as a captain. He also served as Vice President and Director for Policy, Strategy and Forces Division of the Center for Naval Analyses.

During the first Bush Administration, he served as Assistant Director for Strategic and Nuclear Affairs at the United States Arms Control and Disarmament Agency, and in the State Department as head of the United States Delegation on Nuclear and Space Talks and Chief Strategic Arms Reductions (START) Negotiator. In this latter capacity, he was responsible

for final preparation of the START I Treaty, which was signed by Presidents Bush and Gorbachev in Moscow on July 31, 1991. In December 1992, he performed a similar function during the final preparation of the January 3, 1993, START II Treaty.

He holds a bachelor's degree from Duke University and earned a master's from the University of Maryland. He is also a Distinguished Graduate of the U.S. Navy War College.

Update from Jim Hirahara, NNSA Service Center Director

Our team is working on infrastructure for the center. We are recruiting 22 deputy associate directors and department managers, and will have the selections made by mid-February. We are developing a strategic implementation plan and a transition plan to address consolidating to one location. We are working operational issues, like communication among the four locations, formalizing site office requests for support and rectifying inconsistencies in business practices across the locations.

Our first challenge is to ensure the personnel and human resource support activities are in place to transition to one centralized location. We are emphasizing employee communications. We must provide accurate and timely information to employees so that they can make informed decisions on their personal and professional lives.

I want to thank all the service center employees for their support and dedication in making the service center a success.

NNSA Implements Reorganization

Senior NNSA managers are meeting to work out the details of NNSA's new organizational structure announced in December. The reorganization eliminates a layer of management and sets the agency on a new course.

A new service center, which will ultimately be located in Albuquerque, will be created out of the former operations offices. The service center will provide procurement, human resources and other support services to the site offices and to NNSA headquarters. Currently the service center is operating in a virtual state from four locations – Albuquerque, Las Vegas, Livermore, and Washington, D.C.

Site offices in Albuquerque, NM, Los Alamos, NM, Amarillo, TX, Kansas City, MO, Aiken, SC, and Oak Ridge, TN, will see some personnel increases as they take over primary federal oversight NNSA sites and plants.

Along with the organizational changes, there have been some significant field leadership changes as well. Managers at the site offices are:

- Livermore – Camille Yuan Soo Hoo, director, and Mike Hooper, deputy director
- Los Alamos – Ralph Erickson, director, and Dennis Martinez, deputy director
- Nevada – Kathy Carlson, director, and Maureen Hunemuller, deputy manager
- Sandia – Karen Boardman, director, and Patty Wagner, deputy director
- Kansas City – Beth Sellers, director, and Steve Taylor, deputy director

DARHT Second Axis Achieves Final Technical Milestones

The nation's premier flash x-ray facility has passed a major technical hurdle. The second axis of the Dual Axis Radiographic Hydrotest (DARHT) facility at NNSA's Los Alamos National Laboratory recently generated and transported an electron beam that met all the major technical criteria for close-out approval of the project. About 18 more months of commissioning will be required to achieve full x-ray hydrotest capability.

When operational in Fall 2004, DARHT will provide time-resolved, three-dimensional radiographs of non-nuclear mock-ups of nuclear weapons primaries at the moment of implosion. DARHT produces x-rays with a pair of electron beam accelerators set at right angles to one another.

"This was a heroic success that shows a very strong collaboration with our partners at Lawrence Livermore and Lawrence Berkeley national laboratories," said Rollin Whitman, DARHT project manager. Whitman also expressed gratitude to Bob Hamby and Dennis Miotla of NNSA for their efforts in working out commissioning issues.

DARHT's first axis began producing single, two-dimensional images in the fall of 2000, and produced high-quality radiographs of four major hydrodynamic experiments in summer 2001. The second axis is designed to capture four images in succession over two microseconds, providing one three-dimensional radiograph and three other two-dimensional time-sequenced x-rays that will be used to validate the computer codes needed for continued certification of stockpile weapons without underground testing.

- Pantex – Dan Glenn, director, and Don White, deputy director
- Savannah River – Ed Wilmot, director, and Bruce Wilson, deputy director
- Y-12 Site – Bill Brumley, director, and Ted Sherry, deputy director

At the service center, former Oakland Operations Office Deputy Manager Jim Hirahara is the director and former Nevada Operations Office Deputy Manager Ken Powers is the deputy. Mike Zamorski, former Sandia Site Office manager, is now a special assistant to Hirahara. Two former Albuquerque Operations Office managers, Larry Kirkman and Frank

Baca, are now associate directors in the service center for federal service and business services, respectively. A former Livermore Site Office deputy, Ray Corey, now heads the technical services division for the service center.

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NNSA Laboratories Win Awards

NNSA labs continue receiving awards for cutting edge research and development on important programs.

Livermore Physicists Winners of Prestigious Award

Two Lawrence Livermore Lab physicists are winners of the prestigious E.O. Lawrence Award for their outstanding contributions in the field of atomic energy. Bruce Goodwin, a physicist and associate director in the Defense and Nuclear Technologies Directorate, was named for his work in the national security category, and Ben Santer, a physicist in the Program for Climate Model Diagnosis and Intercomparison, was honored for his work in the environmental science and technology category.

American Physical Society Makes Two Awards At Sandia

The American Physical Society (APS) has awarded Sandia National Laboratories Director C. Paul Robinson the George E. Pake Prize for his outstanding leadership and research accomplishments. In addition, APS awarded retired Sandia scientist James R. Asay its Shock Compression Science Award. Asay retired from Sandia October 1 and is now a research professor and associate director at the Institute for Shock Physics at Washington State University in Pullman, Washington. He still serves as a consultant to Sandia.

New NNSA Supercomputers at Sandia, Livermore Will Service Stewardship

Three new NNSA supercomputers are scheduled for delivery to Sandia National Laboratories/New Mexico and Lawrence Livermore National Laboratory in California during 2004 and 2005.

All three will serve the NNSA's Advanced Simulation and Computing Program (ASCI) for the science-based Stockpile Stewardship program to assess and certify the safety, security, and reliability of the nation's nuclear deterrent.

Sandia recently signed a contract worth approximately \$90 million to develop and deliver a massively parallel processing supercomputer named "Red Storm." With a theoretical peak performance of 40 trillion operations per second, Red Storm will be the latest in a sequence of world-leading supercomputers following NNSA's strategy to provide computing resources necessary to ensure the continued health of the nuclear stockpile. It will be ready in 2004.

The next two systems will result from a \$290 million contract with International Business Machines Corporation (IBM) and Lawrence



Sandia National Laboratories Director C. Paul Robinson (left), U.S. Senator Pete Domenici (R-NM), Acting Administrator Linton Brooks, and Kim Rottsoolk, CEO of Cray Inc. announce the Red Storm supercomputer contract in Albuquerque.

Livermore National Laboratory to build what will become the fastest supercomputers in the world. They will be named "Purple" and "BlueGene/L. They will be operational in 2005.

ASCI Purple will have a peak performance of 100 trillion calculations per second, equivalent to 25,000 high-end personal computers. Once on-line, Purple will be the primary supercomputer for the ASCI program and a production resource to stockpile stewardship.

BlueGene/L, using low-cost, low-power processors and a radically different architecture, will have a peak performance of 360 trillion calculations per second. As a computational sciences research and evaluation computer, BlueGene/L will significantly enhance ASCI simulations in specific areas.

Ukraine Dedicates New Nuclear Plant Simulator

When NNSA officials Jim Turner and John Yoder visited Ukraine in mid-November to participate in the dedication of a nuclear power plant simulator, they were blessed with more than good weather. Turner and Yoder joined several other U.S. representatives and dozens of Ukrainians in the official blessing of a new simulator for Zaporizhzya Unit 1. Orthodox clergymen traditionally perform the blessing over completed construction projects in Ukraine.

Turner, assistant deputy administrator for international nuclear safety and cooperation in NA-23, and Yoder, simulator and training project manager in EH-53, have lead responsibility for developing and implementing nuclear operator training programs at Soviet-designed reactors in Ukraine and other countries. An important part of these programs has been the installation or upgrading of existing control room simulators at 12 nuclear power plant sites in Ukraine, Russia, Slovakia, and Bulgaria. Additional support has been provided to help establish infrastructures that can maintain and further develop effective training programs and simulators without U.S. assistance.



NNSA official Dr. James Turner (NA-23) participated in the official commissioning ceremony for the Zaporizhzya Unit 1 control room simulator on November 13, 2002. Orthodox clergymen performed a traditional Ukrainian blessing over the new equipment and those involved in the project.

Two types of nuclear simulators – full-scope and analytical – are used as training tools for reactor operators. Full-scope simulators are actual as-built physical replicas of control room panels that help reactor operators develop the skills necessary to mitigate consequences of off-normal events at their power plants. Analytical simulators use computer screens with graphic displays that imitate plant systems to aid in operator training.

The new Zaporizhzya simulator is the seventh full-scope simulator to be completed at a Ukrainian nuclear power plant, and the second at Zaporizhzya. Turner, who joined Plant Manager Vladimir Pyshny in cutting a ribbon to officially commission the simulator, said “Commissioning of this simulator is the result of a successful team effort between Ukraine and the United States.”

U.S. Department of Energy efforts to reduce risks at Soviet-designed reactors began in 1992. Training was one of the first areas to receive support, which included identifying the need for simulators to help improve reactor safety. Through joint U.S. and host-country programs, new pilot training programs also have been developed and implemented for key plant positions, and support has been provided to independent companies in Russia and Ukraine to provide them with the capability to develop and maintain the plant simulators.



NNSA Acting Administrator Linton Brooks has named Mary Ann Fresco as NNSA’s new diversity and outreach manager. Fresco was most recently the deputy assistant manager for the Small Business Administration’s Office of Equal Employment Opportunity and Civil Rights Compliance. “Mary Ann has been instrumental in integrating diversity in the strategic, bottom-line daily business decisions. We are pleased to have her in our organization,” Brooks said.

NNSA's MS³ Program May Aid Department of Defense



John Hicks (left), Kansas City Plant Office of Business Partnerships manager, visits with Air Force Lt. Gen. Michael Zettler about MS³ program during the annual Logistics Officer Association Conference

Part of the U.S. military's conventional weapons stockpile is becoming outdated and needs to be upgraded or replaced. Defense budgets are tight, which means new munitions are harder to come by. In many cases, old weapons have to be maintained.

NNSA's Kansas City Plant already has a partnership with the U.S. Air Force to manufacture and distribute needed weapons parts around the

world. Now it is looking to expand upon its "Kansas City Plant Air Force Base Spares" program by partnering with the Army and Navy. With budget cuts and possible base alignment and closures, they too are looking to economically extend the life cycle of legacy conventional munitions.

The Kansas City Plant's Office of Business Partnerships has been calling the branches of the armed services to tell them about their collaborative partnership solution.

The proposed partnership known as Munitions Systems Sustainment Solutions, or MS³, is an NNSA initiative to sustain legacy conventional munitions for the Department of Defense. Under MS³, multiple NNSA sites would step in to provide a service

being vacated by several private-sector companies.

"Many companies are leaving the legacy munitions segment," said John Hicks, manager of the Kansas City Plant's Office of Business Partnerships. "It's not cost-effective for them and the numbers aren't there."

"We are not trying to compete with the original equipment manufacturers, but rather support the areas they are vacating," Hicks continued. "More importantly, we want to maintain our capabilities as a national security asset in support of the nuclear weapons complex."

Hicks and others believe MS³ can pay off and be a win-win solution for the NNSA and the DoD.

"We're proposing bringing in the munitions as complementary work, because this is an extension of what we already do," Hicks said. "This is not a new system for the Kansas City Plant. We have the facilities, infrastructure, and resources."

NNSA Sponsors International Conference

Acting NNSA Administrator Linton Brooks (center) attends a working group during the recent conference on International Approaches to Nuclear and Radiological Security in London. The meeting was sponsored by NNSA's Office of Defense Nuclear Nonproliferation and the Ministry of the Russian Federation for Atomic Energy (MINATOM). More than 200 security and policy experts from 26 countries gathered to discuss the means and methods to develop an international response to the threat posed by unsecured nuclear and radiological materials.



NNSA Works to PROTECT Public Facilities

Preparedness for a chemical or biological terrorist attack has been an area of active research at NNSA and DOE labs since well before the terrorist attacks on September 11, 2001.

PROTECT focuses on safeguarding enclosed public facilities such as subway stations and airport terminals. Due to the Tokyo precedent and the desire of the Washington Metropolitan Area Transit Authority

In the event of a sensor alarm, sensor readings will be analyzed by Argonne-developed software, the Chem/Bio Emergency Management Information System (CB-EMIS), which is designed to map the concentration and direction of a plume.



Scientists conduct tests to characterize airflow in a Washington, D.C. subway station.

PROTECT (Program for Response Options and Technology Enhancements for Chemical/Biological Terrorism), an NNSA-sponsored collaboration between Sandia National Laboratories, Argonne National Laboratory, the Federal Transit Administration, and participating transit authorities, began in 1998, three years after the deadly sarin attack in the Tokyo subway in which twelve died and more than 5,000 individuals sought treatment.

to address this issue, PROTECT initially focused on a possible chemical agent release in a subway.

Theatrical smoke and tracer gases were used to track air flow through facilities, such as the Washington Metro subway system and an airport terminal. An integrated, prototype chemical early-warning system was installed in a Metro station.

Video images supplement the readings to confirm whether an attack is taking place. The information, along with recommended response options, is sent first to the Operations Control Center for initial evaluation of the alarm. The control center also receives information with recommendations of “safe zones” and advice to shelter in place or evacuate. If an incident is declared, CB-EMIS provides the same information to the Incident Commander on the scene so emergency personnel will know what they may encounter, and if they should suit up in protective gear before entering.

In addition, NNSA is working with the Federal Aviation Administration and airport authorities to apply the PROTECT concept to the defense of airports against chemical and biological attack. Appropriate air flow control (using HVAC air handlers) coupled with well-chosen personnel evacuation routes were shown to significantly reduce expected casualties. Tools and experience gained from the subway testbed are being used to design detection systems that enable these life-saving responses.

NNSA Facilities and Infrastructure Recapitalization Program Update: Nevada Demolitions on Schedule

For more than 50 years, activities at the Nevada Test Site (NTS) mandated the construction, use, and eventually the relinquishing of vacated facilities required to support atmospheric and underground nuclear weapons testing programs. Through a plan developed by Bechtel Nevada, the NTS managing and operating contractor, 52 excess facilities have been demolished, transferred to other government agencies, or sold to private vendors.

The underground test moratorium of 1992 and the resulting downsizing of the NTS work force further increased the number of unneeded facilities. NNSA's Nevada Operations Office (NNSA/NV), in response to a Department of Energy headquarters initiative, declared 257 NTS facilities as excess and directed Bechtel Nevada to develop a plan to dispose of the excess buildings.

During Fiscal Year (FY) 2000, Bechtel Nevada disposed of 18 facilities totaling 38,097 square feet. In FY 2001, 50 excess facilities covering a gross area of 65,528 square feet were removed.



The Facilities and Infrastructure Recapitalization Program is on schedule and under budget thanks to innovative demolition techniques, such as the demolition processor (pictured above). This equipment allows for quicker demolition with a greater margin of safety.

The plan for FY 2002 called for the disposal of 60 facilities with a gross area of 147,000 square feet. But NNSA/NV received Facilities and Infrastructure Recapitalization Program funding from Headquarters that accelerated the effort and resulted in the demolition of 79 buildings.

The project is on schedule and well under budget thanks to innovative demolition techniques, such as leasing

a demolition processor, a piece of equipment that allows for quicker demolition with a greater margin of safety.

The benefits derived from this project include reduced surveillance and maintenance costs for excess facilities, and elimination of environment, safety, and health hazards (such as hantavirus, friable asbestos, lead paint, and numerous other hazards) posed by long-vacant, deteriorated facilities.

Livermore, Pantex Achieve Significant Mileposts

Lawrence Livermore Develops Advanced Explosive Detonation Model

Despite obstacles such as extreme temperature and pressure conditions that occur during high explosive detonation, researchers at the

Lawrence Livermore National Laboratory have developed an advanced supercomputer model for explaining high explosive detonation.

The computing milestone was achieved using hydrodynamic

computer codes, that simulate the fluid-like flow of solids at the center of an explosion. The Advanced Simulation and Computing Program (ASCI) White IBM computer was

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Tyler Przybylek Named as Acting Chief Operating Officer

NNSA Acting Administrator Linton Brooks named NNSA General Counsel Tyler Przybylek the organization's acting chief operating officer. In his new position, Przybylek will coordinate the work of the NNSA headquarters and field components and oversee day-to-day continuity of operations.

Przybylek was named general counsel in 2001. He will continue to serve in that position while he is acting COO. Prior to that, he was the chief counsel for NNSA's Albuquerque Operations Office. Przybylek has twice served as the acting deputy manager of NNSA's Albuquerque Operations Office and as the acting area manager for the

Los Alamos Area Office. Prior to 1994 he served as chief counsel for the Oak Ridge Operations Office.

"I am extremely grateful to Tyler for his willingness to undertake this difficult and demanding new responsibility. His hard work and dedication are an integral part of NNSA's mission and work," Brooks said.

Przybylek's first assignment with the Department of Energy was as senior counsel for the Strategic Petroleum Reserve Project Management Office in New Orleans. Before that assignment, Przybylek worked with the Federal Energy Administration, the General Accounting Office and the National Aeronautics and Space

Administration.

Przybylek received his bachelor's degree, summa cum laude, in classical languages and philosophy from Boston College, pursued graduate studies in near Eastern languages at Fordham University and the Johns Hopkins University and received his Juris Doctor degree with honors from the National Law Center of George Washington University.

Przybylek was recently awarded a Presidential Rank Award by Secretary Spencer Abraham. The Presidential Rank Award is the highest federal civilian service award.

Mileposts (continued from page 7)

used to model the phenomena occurring during detonation at the micron, or fraction of an inch, level. The project began in January of 1999. Currently, little is understood about the physics and chemistry underlying high explosives. However, this information is essential to the nation's science-based Stockpile Stewardship Program in order to simulate the aging and operations of nuclear weapons using high-performance computers.

Pantex Plant Pit Repackaging Program a Success

Pantex reached a milestone this summer by repackaging the 5,000th

plutonium pit into a Sealed Insert Container.

Plutonium pits are nuclear components that are removed from weapons and stored at the plant. The repackaging operation inserts the pits into sealed containers more suitable for safe, long-term storage. Each pit is secured in an airtight sealed vessel, which is then placed in a steel storage container. This sealed insert system, in operation since 1999, allows for operations at a substantially reduced cost and with greater safety than was available with other containers.

This process has been constantly improved to increase efficiencies and

to reduce personnel radiation exposure. BWXT Pantex has averaged over 200 pits repackaged per month since February 2001 and has reduced personnel radiation exposure by 40 percent during that time.

More than 30 employees work on pit repackaging daily, and more than 120 people have contributed to the program's overall success since repackaging began.

**Got an article for the
NNSA newsletter?
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