DOE This Month

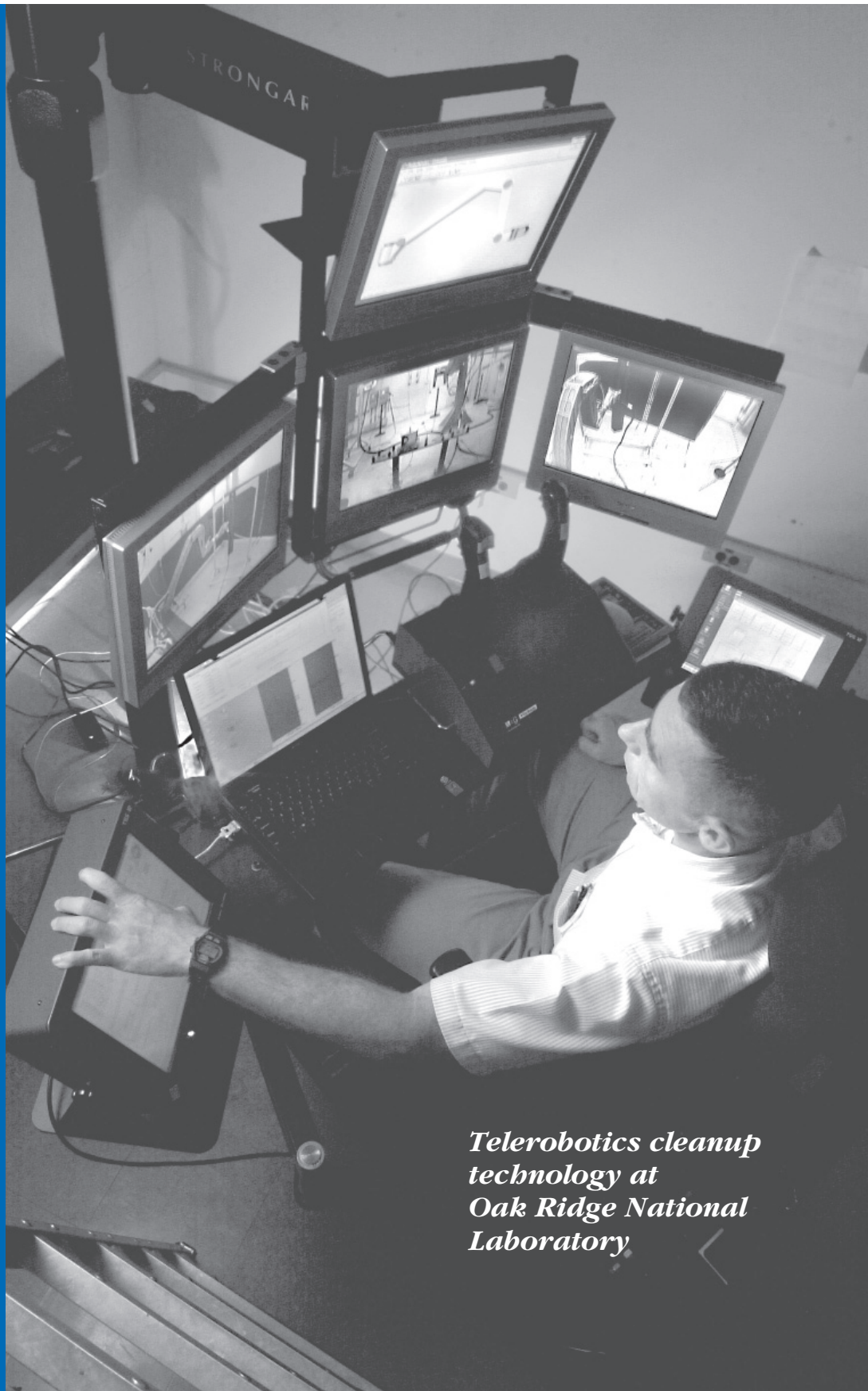
U.S. DEPARTMENT OF ENERGY

JANUARY 2003

NNSA implements new organization structure

Sandia management contract to be extended

Task force to study Department science programs



Telerobotics cleanup technology at Oak Ridge National Laboratory

DOE This Month

U.S. Department of Energy

Published monthly in Washington, D.C., by the Department of Energy, Office of Public Affairs, for the information of Department employees and affiliates and available to others by paid subscription.

The Secretary of Energy has determined that this periodical is necessary in the transaction of public business as required by law. Use of funds for printing has been approved by the director of the Office of Management and Budget. The content is reprintable without permission and pictures are available for media reproduction upon request.

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Circulation Office: 202-586-2050

News Office:
DOE This Month
Office of Public Affairs - PA-40
U.S. Department of Energy
Washington, DC 20585

Internet Mail Address:
doe.thismonth@hq.doe.gov

HQ cc:mail:
THISMONTH,DOE

Deadline for submissions: 15th of every month for the following month.

DOE PA-0026-1
Vol. 26, No. 1

DOE This Month is printed on paper containing at least 50 percent recycled materials.

Inside

On our cover

Researchers at the Department of Energy's (DOE) Oak Ridge National Laboratory are developing robotics technology that can aid in the cleanup of hazardous waste sites. The telerobotic manipulation system enables cleanup efforts to be conducted remotely from a distant location, performing chores that would have to otherwise be done on site by humans. The system was developed under the Department's Robotics Crosscutting Program in the Office of Environmental Management.

The compact remote control console, which is the front end of the system, provides the operator the ability to manipulate the telerobot that performs the actual cleanup work. The console includes four monitors for remote task viewing, two touch screen graphical user interface computers, a telerobotic control computer, and hand controllers to command the robot manipulator to complete cleanup tasks.

Testing of the equipment comes during a time when there is an increasing need for remote systems and robotics for cleanup of DOE facilities. ❖

Management changes made at Los Alamos Lab

The University of California (UC) announced several management changes at the Department of Energy's Los Alamos National Laboratory (LANL) on Jan. 2. These include the resignations of Director John D. Browne and Principal Deputy Director Joseph Salgado, who stepped down from their positions effective Jan. 6.

Retired Vice Admiral George P. "Pete" Nanos, currently Principal Deputy Associate Director for LANL's Threat Reduction Directorate, has been appointed interim director. Nanos is the former commander of the Naval Sea Systems Command (NAVSEA) and of the Navy's strategic nuclear program. Nanos will serve as interim director for a period of several months while the University conducts a nationwide search for a new permanent director.

During the interim, the following oversight changes involving administrative and business operations will be implemented:

- These operations will report to Anne Broom, Vice President of Financial Management at the UC Office of the President;
- The Laboratory Auditor will report to Patrick Reed, UC Auditor; and
- UC President Richard C. Atkinson will appoint an oversight board to guide the interim LANL director on general laboratory management issues.

Atkinson said that the University continues to have confidence in the high quality of the weapons program and the scientific and technical work of Los Alamos. "By taking these steps, we are recognizing that the business and administrative practices of the laboratory need to be addressed so that they will rise to a similar level of quality," he added.

Secretary of Energy Spencer Abraham welcomed the management changes implemented by the University, which operates LANL for the Department of Energy and its National Nuclear Security Administration (NNSA). Secretary Abraham has monitored closely the situation at Los Alamos and personally delivered the message to UC President Atkinson in early December 2002 that the Government holds the University accountable for its management of LANL. The Secretary has assigned Deputy Secretary Kyle McSlarrow and Acting NNSA Administrator Linton Brooks to evaluate the University's operation of LANL. They will report their results by April 30, 2003.

"For 60 years, the scientists and engineers of Los Alamos have played a vital role in ensuring the security of the United States," Secretary Abraham said. "It is crucial that we restore public confidence in the management of the laboratory so that they can continue to play that role. The nation needs the same confidence in the business management and security at Los Alamos as it has in the laboratory's weapons design and basic science."

John Browne will stay on at LANL as a senior researcher. Commenting on his resignation as laboratory director, Secretary Abraham said, "John Browne showed his integrity and commitment to Los Alamos by recognizing the need for fresh leadership at this crucial time. He deserves the gratitude of the nation for his many contributions both as a scientist and as Laboratory Director." ❖

Task force to examine DOE science programs

Secretary of Energy Spencer Abraham has established the Task Force on the Future of Science Programs at the Department of Energy to operate as a subcommittee of the Secretary of Energy Advisory Board (SEAB). The high-level task force will examine science and technology programs across the Department and consider future priorities for scientific research. A final report will be presented to SEAB this summer.

SEAB is the highest external advisory board in the Department. The Board was chartered in 1990 to provide the Secretary of Energy with timely, balanced, independent advice on the Department's laboratory operations, science, energy and national security policy issues, and other topics as directed by the Secretary.

Secretary Abraham named Dr. Charles M. Vest, President, Massachusetts Institute of Technology (MIT), to chair the new task force. Dr. Vest also is a member of the university's Mechanical Engineering faculty. He serves on the President's Committee of Advisors on Science and Technology and is Vice Chair of the Council on Competitiveness.

"I am grateful that Chuck Vest has agreed to chair this important task force," Secretary Abraham said. "I want to ensure that the Department of Energy remains on the frontier of research as we address our evolving missions in the future."

Other task force members include: Dr. John Baldeschwieler, Johnson Professor and Professor Emeritus, Department of Chemistry, California Institute of Technology; Alfred Berkeley III, Vice Chairman, NASDAQ; Dr. Robert Birgeneau, President, University of Toronto; Dr. James Duderstadt, President Emeritus, University of Michigan; Dr. MRC Greenwood, Chancellor, University of California, Santa Cruz; Dr. Ray Irani, Chairman, Occidental Petroleum; Dr. Steve Koonin, Provost, California Institute of Technology; Dr. Leon Lederman, Director Emeritus, Illinois Math and Science Academy; William Martin, Chairman, Washington Policy and Analysis Inc.; M. Peter McPherson, President, Michigan State University, and SEAB Chairman; Steve Papermaster, Chairman, Powershift Ventures; and Deborah Wince-Smith, President, Council on Competitiveness. ❖

Secretary announces land transfer, Sandia contract extension during New Mexico visit

Secretary of Energy Spencer Abraham, accompanied by Senator Pete Domenici, visited the State of New Mexico Dec. 12-13, 2002. The visit included stops in Santa Fe and Albuquerque.

At a Dec. 12 ceremony at Santa Fe Indian School, Secretary Abraham announced that the Department of Energy (DOE) has entered into agreement with the Pueblo Indians of San Ildefonso and the County of Los Alamos to transfer over 2,200 acres of Federal land. Other participants in the ceremony included Senator Domenici; Governor John Gonzales, Pueblo of San Ildefonso; and Geoff Rodgers, County of Los Alamos.

More than 2,100 acres are being transferred to the Pueblo of San Ildefonso for use in traditional tribal and cultural practices. In addition, DOE is transferring over 100 acres to the County of Los Alamos, including the site of the Manhattan Monument, several parcels by the airport, and more than 75 acres at White Rock. The Department expects to transfer an additional 720 acres to the County and the Pueblo over the next year.

On Dec. 13, Secretary Abraham visited the Department's Sandia National Laboratories. During the visit, he toured the facilities and addressed laboratory employees and management.

Sid Gutierrez, Director of Monitoring Systems, Sandia National Laboratories (left), briefs Secretary Abraham on Ares, a system for monitoring air.

Secretary Abraham announced his intent to extend Lockheed Martin Corporation's contract to manage and operate Sandia for DOE for five years noncompetitively, contingent on successful negotiation of contract terms. Lockheed Martin holds the contract through the Sandia Corporation, a wholly owned subsidiary. The current contract expires in September 2003. The contract extension is valued at more than $8 billion over the next five years.

"Sandia has performed among the best in class, if not the best, in managing its national security laboratories during a very challenging period for nuclear weapons laboratories," Secretary Abraham said. "The employees and management of Sandia have done a superb job, and I commend them for it. Good work, experience, and dedication should be recognized and rewarded." ❖

NNSA implements reorganization

On Dec. 20, 2002, the Department of Energy's National Nuclear Security Administration (NNSA) implemented a new organization structure that eliminates a layer of management. The reorganization follows the principles of President Bush's Management Agenda, which strives to improve government through performance and results. "The new, more responsive organization will improve Federal management of our nuclear weapons complex," NNSA Acting Administrator Linton Brooks said.

While the entire agency structure is changing, the NNSA field organization will see the most dramatic change. The site offices that oversee NNSA contractor operations previously reported to Headquarters through three Operations Offices in Oakland, Calif.; Las Vegas, Nev.; and Albuquerque, N.M. The site offices now report directly to the NNSA Administrator through the Principal Deputy Administrator. The Operations Office system will be eliminated.

An NNSA Service Center, providing procurement, human resources, and other support services to the site offices, will be established using the expertise of the former Operations Offices. The Service Center will be located in Albuquerque. Consolidation of personnel is scheduled to be completed by the end of Fiscal Year (FY) 2004, after which the Oakland office will close. The Nevada office will be reduced in size and concentrate on managing the Nevada Test Site.

NNSA's Federal workforce at Headquarters and in the field will be trimmed by 20 percent by the end of FY 2004, with Headquarters taking a 30 percent cut. The reduction will be accomplished through managed attrition. Security forces and the Navy Nuclear Propulsion program will not be affected by the staff reductions.

"We have worked hard this year to make sure our reorganization is done right. We will manage the reductions in a way that is fair to our outstanding people, while ensuring that the NNSA of the future will have a world-class business environment that eliminates duplication and micromanagement and provides more effective Federal oversight," Acting Administrator Brooks said. ❖

Economies changing in 'closed' Russia cities

The Russian Transition Initiatives (RTI) program managed by the Department of Energy's (DOE) National Nuclear Security Administration (NNSA) is finding new careers for former Russian nuclear weapons scientists and workers. The Nuclear Cities Initiative (NCI) and Initiatives for Proliferation Prevention (IPP) programs, which have been consolidated under RTI, have helped over 5,000 weapons workers find non-military employment, thus safeguarding vulnerable Russian nuclear expertise, facilities, and know-how. There are several success stories in the three closed nuclear cities of Sarov, Snezhinsk, and Zheleznogorsk, which are the major focus of NNSA's scientist engagement work in Russia.

U.S. Ambassador to the Russian Federation Alexander Vershbow (second from left) and U.S. Embassy Minister-Counselor for Environment, Science, and Technology Deborah Linde (far right) join VNIIEF Director Radiy Ilkaev (far left) at the Sarov Telemedicine Center dedication.

On April 23, 2002, the Telemedicine Center was dedicated in Sarov. The center was established through the joint effort of the NCI program, the Department's Savannah River Site, and the Medical College of Georgia. Equipment supplied through the NCI program allows Sarov doctors to consult in real time with medical specialists from Nizhny Novgorod and Moscow. Since opening, the Center has performed 15 to 20 remote consultations a month, with an emphasis on pediatric care.

Ground was broken for the Snezhinsk Pipe Coating Facility on Nov. 18, 2002. The facility will produce anti-corrosion coating and insulated steel pipes for district heating networks, water supply, and oil and gas pipeline applications. Snezhinsk Energy Saving Technologies Company, the future owner and operator of the facility, will employ 200 personnel. DOE's Brookhaven National Laboratory is coordinating development of this project for the NCI program.

The NCI program and the Department's Lawrence Livermore National Laboratory helped establish the Snezhinsk Pharmaceutical Company to package and market Western pharmaceuticals in Russia. Water systems and utilities have been installed or upgraded; and tablet fabrication rooms, a high technology air filtration and water purification system, and a laboratory are nearing completion. Packaging equipment is operational, and the company has filed for operating licenses and permits.

The IPP program and DOE's Sandia National Laboratories have assisted SPEKTR-Conversia, an RTI-established engineering service company in Snezhinsk, in finding U.S. partners. SPEKTR is now working with the U.S. firm Numotech to produce automated wheelchair cushions to prevent painful pressure sores (*DOE This Month*, July 2002), and with Stolar Horizons Company for robotic equipment to detect and disarm landmines. Together, Numotech and Stolar Horizons have received $30 million in private-sector investment to commercialize technologies developed under IPP projects.

Working with the city administration of Zheleznogorsk and the Department's Pacific Northwest National Laboratory, the NCI program has assisted in the installation of a new boiler and kiln at a 50-year-old sawmill. The new equipment allows the sawmill to act as an integrated forest products plant that will enable full utilization of trees and provide a wide range of lumber and fiber products and services. The renovation has expanded the sawmill's workforce and improved the city's revenues through increased international and domestic sales. ❖

Former Senator Robert J. Dole (at the podium) was the guest speaker at the Department of Energy's (DOE) Quarterly Diversity Event, Dec. 19, 2002, at Headquarters' Forrestal Building in Washington, D.C. Joining him on stage are Theresa Alvillar-Speake, Director, Office of Economic Impact and Diversity, and Secretary of Energy Spencer Abraham. The ceremony, which was simulcast to employees in Germantown, Md., commemorated both National Disability Employment Awareness Month and National American Indian Heritage Month.

Senator Dole spoke about his personal experiences as a disabled veteran and the challenges facing people with disabilities and the American Indian community. Secretary Abraham discussed the importance of a diverse workforce and reflected on the contributions of Native American and disabled employees to the Department's missions. The Secretary's remarks are available at **http://www.energy.gov/HQDocs/speeches/2002/decss/QuarterlyDiversityEvent.html**. ❖

Savannah River F Area: an update

The F Area at the Department of Energy's (DOE) Savannah River Site is undergoing active planning and piloting of deactivation activities. A Deactivation Project Plan was completed in November 2002.

F Area's first two "pilot" deactivation teams have been formed and are functioning. The concept is to use cross-functional, self-supporting teams capable of doing all aspects of a job, from planning the tasks, through execution of the work, to closure of the work packages. Members are assigned based on demonstration of team qualities such as safety, teamwork, self-supporting, and efficiency.

The F Canyon production mission ended in March 2002 with the last Plutonium and Uranium Extraction (PUREX) campaign (*DOE This Month*, May 2002). The initial version of the deactivation plan covers F Canyon and FB Line (PUREX only) systems and spaces.

FB Line still has a production mission to characterize and stabilize plutonium materials. The Packaging and Stabilization Project will provide Savannah River Site the capability to stabilize DOE legacy materials to long-term storage standards. The standards require the plutonium material to be packaged in two stainless steel welded containers that can meet pressure and drop tests.

The project will be completed in two phases. Phase I will provide outer can welder systems and Phase II will provide two new high fire furnaces. The outer can welder systems include a welder unit, leak detector, and a digital radiography unit, all being developed by the Savannah River Technology Center. The project is on schedule, and installation of the Phase I systems is underway. Cold runs and training will soon follow complete checkout of the systems, and hot runs are expected to begin no later than April 30, 2003.

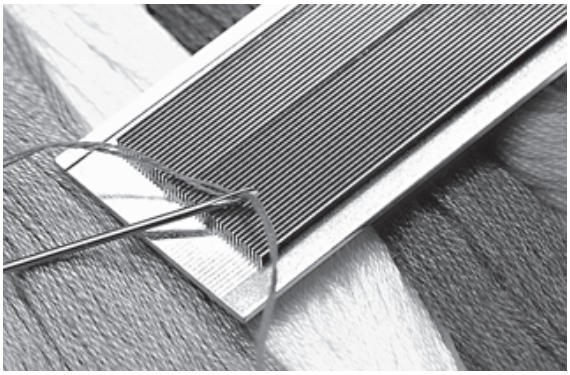
Work will start with plutonium metal, then move to oxides. The material is mainly higher purity plutonium from DOE sites, including plutonium buttons made at Savannah River since 1992 and materials received as part of the Rocky Flats de-inventory. About 1,000 containers will be packaged, stabilized, and eventually placed in long-term storage at Savannah River. FB Line operations are expected to be completed by December 2005. The F Area deactivation plan will be revised to cover the remaining portion of FB Line. ❖

PNNL a partner in new microproducts institute

The Department of Energy's Pacific Northwest National Laboratory (PNNL) and Oregon State University (OSU) have agreed to form the Microproducts Breakthrough Institute. The research and educational center will develop and help market advances in the emerging and highly promising field of microtechnology.

"This joint venture links two premier leaders in microsystems technology," said Landis Kannberg, technical network leader for energy with PNNL and co-director of the new institute. "PNNL and OSU bring unique capabilities and experienced teams that will advance the science of microtechnology, as well as provide educational opportunities through the university and promote regional economic development by commercializing new products."

The two institutions have been working together in this and other fields since 1998, already teaming up on more than $7 million in microsystems research and development. The new institute will combine OSU's nationally recognized expertise in microchemical and thermal systems with PNNL's core programs in microtechnology. Within five years, the new institute could include a facility with 50 to 60 staff members and an annual research budget of $20 million.



Microchannels about the thickness of a thread are key to the extreme efficiencies of microtechnology products.

"This is a tremendously exciting field of science and engineering and it quite literally will change how people live their lives," said Kevin Drost, OSU professor of mechanical engineering and co-director of the institute. "But we're also going to reach out to private industry, bridge the gap between the academic laboratory and the marketplace, and have a concrete impact on the economy of the Pacific Northwest."

Projects either underway or for future consideration include portable personal cooling systems, lapel-pin-sized biosensors to detect chemical and biological warfare agents, pen-sized chemical reactors for environmental applications, and small systems to produce hydrogen for fuel cells in automobiles. PNNL and OSU may seek industry partners in some of the research. Scientific breakthroughs will be patented and licensed to private companies for commercial development. ❖

Chemical management workshop generates new projects for 2003

The Chemical Safety Topical Committee (CSTC) held its Fifth Annual Joint Energy Federal Contractors Group (EFCOG)/Department of Energy (DOE) Chemical Management Workshop, Nov. 5-7, 2002, at Department Headquarters in Washington, D.C. This year's theme, "Chemical Hazards Assessment and Control: Examining and Enhancing Safety and Preparedness," emphasized the prevention of chemical-related incidents at DOE.

More than 150 participants attended the workshop, either in person or by telecast from sites across the DOE complex. Beverly A. Cook, Assistant Secretary for Environment, Safety and Health (EH), and Roby Enge, Director, Environment, Safety, Health and Quality, Pacific Northwest National Laboratory and EFCOG Director, welcomed the participants. Dr. John E. Mansfield, Member, Defense Nuclear Facilities Safety Board, spoke about the importance of line management support for proactive chemical management, sharing lessons learned and successes, and integrating chemical with nuclear hazards analysis so each can enhance the other.

Over the three days of presentations and training, 21 speakers and panelists from DOE and the private sector offered insight into managing toxic chemicals in industrial and research settings. With the speakers presenting methodologies and tools for managing chemical hazards, program accomplishments, best practices, and lessons learned, workshop participants received a better understanding of chemical hazards control and risk management and the development and use of risk profiles and vulnerability assessment tools.

Beverly Cook, Assistant Secretary for Environment, Safety and Health welcomes workshop participants.

It was reported at the workshop that two projects are nearing completion. Publication of the CSTC's "DOE Guide on Integration of Multiple Hazard Analysis Requirements and Activities" is anticipated in a few months, and publication of Volume 3 of the DOE Handbook on Chemical Management is expected in late 2003.

During open workshop discussion, six CSTC projects were identified for work in 2003. Participation in any of these projects is encouraged, requiring only that the volunteer have a role in some aspect of the management and oversight of chemical safety programs at a DOE facility or laboratory. The projects are:

- Root Cause Identification and Analysis for DOE Chemical Incidents;
- Minimization of Chemical Exposures During D&D and Closure Operations;
- Methods for Addressing the Hazards of Shock Sensitive, Time Sensitive, and Reactive Chemicals;
- Chemical Safety Analysis (Phase 2 of CSTC 2002 project, "Current DOE Chemical Hazard Characterization Practices");
- Integrated Hazards Analysis Handbook (a 2002 project nearing publication); and
- Chemical User Safety and Health Requirements Roadmap (a 2002 project nearing completion).

More information about the Department's chemical management initiative is available at **http://tis.eh.doe.gov/web/chem_safety/**. For CD's of the presentations and videotapes of the workshop, contact Bill McArthur, EH-52, at bill.mcarthur@eh.doe.gov. To participate on any of the above projects, contact Gail Kleiner at gail.kleiner@eh.doe.gov. ❖

NEW ON THE *Internet*

Science.gov web site

Fourteen scientific and technical information organizations from 10 major science agencies have collaborated to bring the substantial resources of the Federal science and technology enterprise together in one place for the public at **http://www.science.gov**. Users can find over 1,000 Government information resources about science, including technical reports, journal citations, databases, Federal web sites, and fact sheets. The information is free and no registration is required. The participating agencies in science.gov are the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, and the Interior; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation. ❖

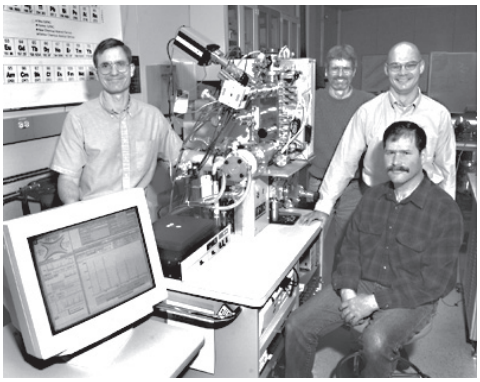
DOE, Tennessee sign land conservation agreement

On Dec. 20, 2002, the Department of Energy (DOE) and the State of Tennessee signed an agreement in principle to set aside approximately 3,000 acres on the northwest portion of the Department's Oak Ridge Reservation for conservation purposes. The conservation easement is intended as a partial settlement of natural resource damages resulting from past U.S. Government research and nuclear weapons production activities in Oak Ridge.

The agreement was developed through a joint effort by DOE, the State of Tennessee, the U.S. Fish and Wildlife Service, and the Tennessee Valley Authority. DOE will retain ownership of the land and will provide Tennessee with funding to manage the property.

At the signing ceremony are (seated, l-r) Jim Turi, Acting Manager, Oak Ridge Operations Office; Jessie Roberson, Assistant Secretary for Environmental Management; and Tennessee Governor Don Sundquist. Looking on are (l-r) Justin Wilson, Deputy to the Governor for Policy, and Congressman Zach Wamp. ❖

INEEL device detects lethal nerve agent on concrete



A new instrument developed by researchers at the Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL) can detect the nerve agent VX on concrete surfaces and measure the rate of its decay. The instrument's ability to identify organic chemicals on surfaces such as soil or concrete is unparalleled, says INEEL chemist Gary Groenewold.

IT-SIMS bombards a contaminated sample with an atomic projectile, lifting or "sputtering" off molecules that adhere to the surface. The device sorts the sputtered molecules by mass and counts them. The instrument then displays the substance's spectra—a chemical "fingerprint"—revealing its identity. With the IT-SIMS are (l-r) INEEL researchers Groenewold, Tony Appelhans, Gary Gresham, and John Olson.

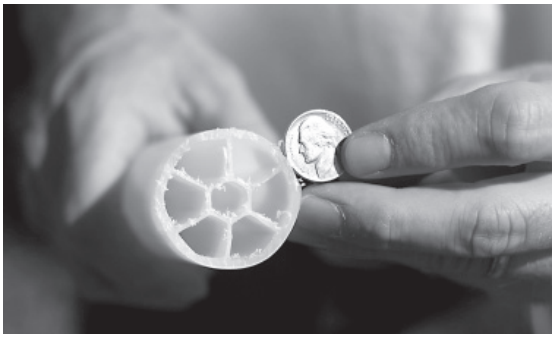
Research into VX detection has led the team to a surprising discovery. The nerve agent disintegrates rapidly on concrete—degrading to one percent of its original concentration after 15 hours and near disappearance after 50 hours. The research is featured in the Nov. 15, 2002, issue of *Environmental Science and Technology*. ❖

Livermore Lab brightens holidays for needy families

"Brighter Holidays" is an employee volunteer effort of the Department of Energy's Lawrence Livermore National Laboratory (LLNL). The program has grown steadily from helping two California families in 1989, to 102 families in 2001, to a record 112 families (531 parents and children) in nine counties in 2002. This great success is due to the dedication of the program's originator Betty Klino, now an LLNL retiree; her partners Annette Springer and Joanna Stadler; and the generosity of employees at LLNL and the National Nuclear Security Administration's Livermore Site Office.

Working with community organizations, Klino identifies, interviews, and selects needy families, which then are matched with LLNL sponsoring organizations. Last year, volunteers collected and delivered presents to the families on Dec. 12. Three "spotlight families" came to LLNL to meet their sponsors and receive their gifts. At left, Klino and Santa Claus watch children from a Modesto family open their gifts at the holiday celebration. ❖

Multilevel wells enhance Fernald's aquifer cleanup



Groundwater scientists at the Department of Energy's (DOE) Fernald Environmental Management Project are using multilevel monitoring wells to assist in tracking the cleanup and restoration of a 170-acre uranium contamination plume in the Great Miami Aquifer, which underlies the Fernald site.

Multilevel wells allow scientists to monitor up to six different depth intervals per well and spot sample the bottoms of the wells. Fernald's multilevel monitoring wells, seen in a cross-section at right, are made of continuous polyethylene multichamber tubing that is customized in the field based on the thickness and subsurface position of the uranium plume at each well site.

Before multilevel wells were developed, Fernald scientists used repetitive direct push sampling and multiple standard monitoring wells to monitor the portions of the plume that are thicker than 15 feet. To provide the six depth intervals obtained from one multilevel well would require six standard monitoring wells. ❖

Golden Field Office conducts family-friendly business

Colorado Parent magazine recently surveyed more than 4,500 companies and rated the Department of Energy's Golden Field Office as the "Best Company for a Working Family in Colorado" in the small business category. This is the second year in a row the magazine has recognized the office.

The entire staff of 56 takes advantage of a variety of flexible work arrangements offered at Golden. Employees can work a compressed or gliding schedule. Telecommuting also is popular. Such programs resulted in a zero percent personnel turnover rate in Fiscal Year 2002. "If we can be flexible when employees need to tend to situations outside of work, productivity is higher and it helps reduce turnover, which is costly and damages morale," says Golden Manager John Kersten.

Golden Attorney-Advisor Derek Passarelli finds the gliding schedule particularly helpful with the daycare and athletics schedules of his two daughters. At right, Passarelli finishes a day's work at the office as his daughter Ariel writes a book report for school. ❖

Program is a win-win for seniors and Savannah River

The Senior Community Employment Program operated by the USDA Forest Service-Savannah River (USFS-SR) is a classical win-win situation for participants and the Department of Energy's Savannah River Site (DOE-SR). "Besides providing a wide variety of needed services at no cost to DOE-SR, enrollees in the program are both gainfully employed and receive needed job training," said USFS-SR Manager Dave Wilson.

Six senior enrollees currently provide services such as landscape and facility maintenance, heavy equipment operation, water delivery, furniture moving, supply pick-ups, and transfers of vehicles for repair. Senior Jonnie Owens (right) helps Savannah River's Natural Resources Science, Math, and Engineering Education Program with such tasks as preparing and copying lesson plans, word processing, filing, mail control, and answering phones.

The USFS-SR manages the natural resources at DOE's Savannah River Site. Nationally, thousands of seniors assist Forest Service units in "caring for the land and serving the people." ❖

Research DIGEST

Scientific American magazine has named its first "Scientific American 50" list of annual contributions to science and technology that provide a vision for a better future. The Department of Energy's **National Renewable Energy Laboratory** (NREL) along with Spectrolab Inc. were recognized as company leaders in the "Energy" category for their work in increasing the efficiency of photovoltaic cells. **John Clarke** and **Alexander Pines** of the Materials Sciences Division at the Department's **Lawrence Berkeley National Laboratory** (LBNL) were jointly selected as research leaders in the "General Technology" category for their innovations in magnetic resonance imaging with weak magnet fields. The complete list of 50 science and technology contributions is available in the December 2002 issue and at **http://www.sciam.com**. (George Douglas, NREL, 303-275-4096; Paul Preuss, LBNL, 510-486-6249)

Researchers at the Department of Energy's **Brookhaven National Laboratory** (BNL) and at Bell Laboratories, Lucent Technologies' research and development arm, have built tiny liquid crystal devices on the tips of optical fibers to correct signal distortions in high-speed optical communications. Optical communications form the backbone of the Internet and telephone networks and are envisioned to carry multimedia data in the future. The new device, which uses liquid crystals instead of the currently used lithium niobate, could make optical communications more affordable in the future. "Our device has many advantages," says Ron Pindak, BNL physicist and a co-author of the research. "Its speed is fast enough for these corrections, it is also reset free, and it has a potential to be low in cost." The research is described in the Dec. 23, 2002, issue of *Applied Physics Letters*. (Mona Rowe, 631-344-5056)

A system designed and built at the Department of Energy's **Idaho National Engineering and Environmental Laboratory** (INEEL) gives researchers a look into cracks in common structural materials and how they grow. The technique, known as microtopography, promises to increase scientists' basic understanding of how common structural components break under the strain of accident overloads. From surface cracks, microtopography reconstructs the entire fracture process in three dimensions, creating a virtual version of the structure so internal measurements can be made at any stage of the fracture process. INEEL research engineer and microtopograpy developer Randy Lloyd predicts the technology will improve building design and analysis and bolster structure safety. The methodology and its application will appear in the February 2003 issue of *Engineering Fracture Mechanics*. (Deborah Hill, 208-526-4723). ❖

DOE technology begins measuring returned foreign spent fuel

Over the next 13 years, approximately 13,000 assemblies of Material Test Reactor spent nuclear fuel from 29 countries will be shipped to the Department of Energy's (DOE) Savannah River Site as part of a DOE program to take back U.S.-origin foreign research reactor spent fuel. At Savannah River, the remaining uranium-235 content of the spent nuclear fuel must be measured to provide assurance that no weapons-grade uranium has been diverted. This measurement is very difficult because of the high radiation level and the lack of spent fuel measurement standards.

Under the Policy Integration and Technical Support Program in DOE's Office of Security (SO-13), the Department's Los Alamos National Laboratory (LANL) developed an advanced instrument for this task—the Research Reactor Fuel Counter (RRFC-II). The RRFC-II was fabricated and tested at LANL and installed underwater in Savannah River's "L" Basin in May 2002

According to LANL principal investigators Mark Abhold and Anthony Belian, the RRFC-II assays the uranium-235 content by first measuring the neutrons spontaneously emitted by the fuel and then examining the fuel with a neutron source and measuring the neutrons induced in the uranium. The 10-minute measurement is done entirely underwater in the spent fuel pool, eliminating the need for costly and hazardous handling operations of spent fuel out of water.

Savannah River personnel conducted the first measurement campaign on foreign fuel in November 2002 on assemblies from the Kyoto University Reactor in Japan. The largest measurement difference for a fully loaded assembly was three percent. The excellent results reflect on the positive collaboration among DOE SO-13, Savannah River L-Area personnel, and the instrument developers at LANL. The instrument is now in routine use by Savannah River. ❖

The Research Reactor Spent Fuel Counter underwater in the Savannah River L Basin.

Argonne opens advanced vehicle testing facility

North America's only independent testing facility for engines, fuel cells, electric drives, and energy storage is open for business at the Department of Energy's (DOE) Argonne National Laboratory. The Advanced Powertrain Research Facility was formally dedicated Nov. 15, 2002, at ceremonies attended by members of Congress and officials from DOE, Argonne, and automobile manufacturers.

State-of-the-art performance and emissions measurement equipment at the facility is designed to enhance the development of advance technology powertrain components for cars and trucks, support model development, and validate advanced vehicle technology. Similar instrumentation is in use at research facilities operated by vehicle manufacturers, but the Advanced Powertrain Research Facility combines the best available emissions instrumentation with a wide range of fuels, including gasoline, hydrogen, natural gas, and diesel.

"This unique combination of analytical, development, and testing experience provides the Department of Energy with the latest techniques to evaluate new vehicle technologies in both emulated and real-vehicle environments," said Bob Larsen, Director of Argonne's Center for Transportation Research. "Argonne's long history in modeling, developing, and testing advanced engines, hybrid-electric vehicle powertrains and control systems, traction batteries, fuel cells, and vehicles is a large part of making Argonne an important laboratory for vehicle technology development and validation."

Instruments in the Advanced Powertrain Research Facility include:

- a four-wheel-drive dynamometer system for two- and four-wheel-drive vehicles up to 14,000 pounds;
- a sophisticated emissions measurement system for gas- and diesel-powered vehicles;
- a data acquisition system for testing fuel cell, hybrid-electric, and electric vehicles;
- a safety system for testing ventilation of hydrogen, hazardous gas, heat, and smoke; and
- a state-of-the-art air handling system that cleans and conditions test air and provides ventilation and cooling. ❖

Bob Larsen, Director of Argonne National Laboratory's Center for Transportation Research, shows Congresswoman Judy Biggert the four-wheel-drive dynamometer system, the newest tool in Argonne's Advanced Powertrain Research Facility.

COMING Events

February

26-27 Energy Facility Contractors Group (EFCOG) Annual Executive Council Meeting, Arlington, Va. EFCOG is a self-directed group of senior managers from 38 Department of Energy (DOE) contractors and national laboratories that integrate, manage, and operate DOE facilities. The group is sustained by working level personnel from member contractors and supported and funded by DOE. The meeting will focus on reviewing accomplishments from 2002 and establishing priorities for 2003 and beyond. For more information, contact Barbara Pierre, 760-745-1733, or visit **http://www.efcog.org**.

March

25-26 DOE Software Quality Forum 2003, Arlington, Va.; a triennial conference sponsored by the Software Quality Assurance Subcommittee of the Quality Managers within the Department of Energy's (DOE) nuclear weapons complex. The event is cohosted by DOE's Office of the Chief Information Officer and the Office of Advanced Simulation and Computing, Office of Defense Programs, National Nuclear Security Administration. Attendees will gain knowledge and share experiences in software trends and technologies with industry, government, and academia leaders. To register or for more information, contact Brenda Coblentz, 301-903-4632 or brenda.coblentz@hq.doe.gov, or visit **http://sqf.energy.gov**.

May

12-15 4th Annual National Small Business Conference, Albuquerque, N. Mex. Sponsored by the Office of Small and Disadvantaged Business Utilization (OSDBU) in the Department of Energy's (DOE) Office of Economic Impact and Diversity. The goal of the conference is to reach out to small businesses and to assist them in contracting with DOE. For more information, visit **http://www.smallbusiness-outreach.doe.gov**. ❖

Sam Krist serves 50 years at KC Plant

When Sam Krist first reported for work on Oct. 27, 1952, at the Department of Energy's Kansas City Plant, Harry Truman was in the White House; and, in another week, voters would choose Dwight D. Eisenhower over Adlai Stevenson as the 34th President of the United States. Although a lot has changed in the last 50 years, you will still find Krist putting in a full day's work at the National Nuclear Security Administration (NNSA) facility.

Beth Sellers, Director, Kansas City Site Operations, congratulates Sam Krist for his 50 years of service.

NNSA Office of Kansas City Operations Director Beth Sellers and others recently honored Krist as the Kansas City Plant's first employee to reach the 50-year service milestone. "The NNSA is very excited to have the opportunity to present Sam Krist with a letter of commendation for 50 years of dedicated service to our nation's security," Sellers said. "The letter from NNSA Acting Administrator Linton Brooks, along with the Administrator's coin, were greatly appreciated and very appropriate to mark this amazing accomplishment."

Krist has worked in a dozen departments and for—by his count—22 or 23 different supervisors. For the last 27 years, he has been a machinist in the Plastics Machining and Syntactic Department.

"Sam is very steady," says manufacturing team manager Troy Berens, Krist's current supervisor. "His attendance is perfect—zero points." But what impresses Berens most about his longtime worker is Krist's willingness and ability to keep up with myriad changes in the workplace, technological and otherwise.

Did he ever think he'd still be here after 50 years? Krist answers, "Not at all! In my mind, I thought maybe three years."

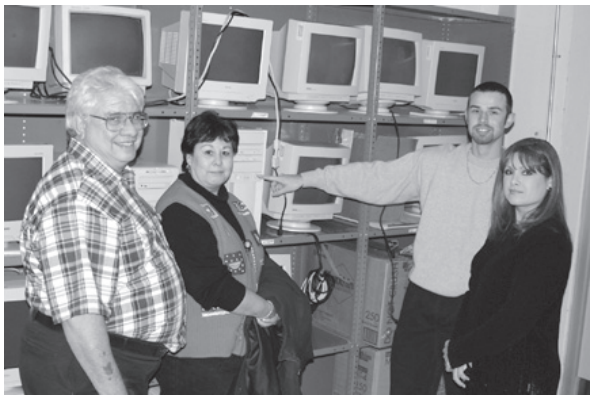
Krist is in no hurry to call it quits just yet. "I don't mind the work," he says. "I find that if I'm off for any length of time, I get stir crazy. I get bored! I might as well stay here and draw the good money." ❖

Southwestern Power donates computers to Native American high school

Over 40 central processing units, 10 monitors, and other assorted computer equipment were donated last month by the Department of Energy's (DOE) Southwestern Power Administration to Sequoyah High School in Tahlequah, Okla. The school is funded by the Bureau of Indian Affairs and administered through the Cherokee Nation. Students at Sequoyah originate from 42 different tribes and 14 different states.

Sequoyah Principal Gina Stanley says the school will install the computers in its dormitories to allow residential students to make up credits for graduation during after-school hours. "A lot of the kids that come to us have academic challenges ahead of them," Stanley explains. "We need to gain as much ground as possible, and research has shown that computers can help."

The computer donation program was the result of a plan proposed by Southwestern's Native American Programs group to assist local tribes in operating more effectively and becoming more computer literate. The plan fully supports DOE's American Indian Policy, which reaffirms the Department's commitment to technical assistance, business and economic self-determination development opportunities, education, and training programs for American Indians.



Left-right, Colin Kelley and Marti Ayers of Southwestern's Native American Programs group discuss the donated equipment with Sequoyah High IT Technician Nicholas Hammons and Principal Gina Stanley.

Marti Ayers, Native American Programs Manager at Southwestern, says that the donation program benefits both sides. "It encourages the diversity and the culture of Native Americans and serves to open doors in communicating with tribal governments." ❖

Hanford waste Tank SY-101 back in service after 20 years

The double-shell waste Tank SY-101 at the Department of Energy's (DOE) Hanford Site in Richland, Wash., once known as the "burping" tank because of serious safety problems involving flammable gas, is receiving radioactive waste for the first time in 20 years. SY-101 is one of three double-shell tanks in the SY Tank Farm, two of which are the only tanks that can receive waste removed from the numerous older single-shell tanks in Hanford's 200 West Area.

SY-102 is receiving the waste from saltwell pumping of single-shell tanks, but will need additional space in order to continue receiving this waste. This is where SY-101 comes in—more than 150,000 gallons already have been pumped from SY-102 to SY-101.

"Tank SY-101 will serve as an important staging point for millions of gallons of waste that we need to retrieve and transfer across the Hanford Site to the vitrification plant," said Craig Groendyke, Tank Farm Engineering Division, Office of River Protection. "Putting this tank back in service gives us another critical resource we can use to move toward the goal of cleaning up and closing Hanford tanks."

In order to prepare SY-101 to receive a waste transfer, the waste that was in the tank was pumped into another tank via an overground transfer line, and the remaining sludge was diluted. An Operational Readiness Review was then completed, first by the contractor, then by DOE, to ensure that the necessary procedures were followed and that all equipment was certified to safely move waste into the tank. ❖

Education NOTES

The Minority Educational Institutions Technology Partnerships Program at the **Y-12 National Security Complex**, a facility of the Department of Energy's National Nuclear Security Administration, has developed a technology Matrix—a Web-based tool for matching the business and technical capabilities of educational institutions with the technology needs of Y-12. With the tool, Y-12 staff can quickly and easily view each university's capability information covering seven technology areas—manufacturing, testing inspection and validation, materials science and engineering, engineering design and analysis, process control and automation, computational science and modeling, and nuclear safety.

❖

More than 2,000 students from 40 high schools in South Texas participated in the recent Department of Energy (DOE) Solar Car Rally and Competition held at the University of Texas–Pan American during Hispanic Science and Technology Week. The Department's **Office of Economic Impact and Diversity** and **Office of Management, Budget and Evaluation** sponsored and coordinated the competition. Judges for the event were employees of the Office of Science, Office of Energy Efficiency and Renewable Energy, Office of the Chief Information Officer, and DOE's Sandia National Laboratories. The students' solar cars incorporated innovative features, including reflectors to increase the solar flux on photovoltaic panels, designs to reduce car weight, and optimized solar panel tilt angle to maximize solar energy capture.

❖

About 45 female students from four local high schools learned firsthand about careers in science and related fields from women employees at the Department of Energy's **Brookhaven National Laboratory**. The career day in November 2002, coordinated by Brookhaven Women in Science, featured panel presentations by women in various scientific and technical fields, including physics, chemistry, engineering, environmental sciences, and science writing. The students also were treated to a tour of the Brookhaven site.

❖

Undergraduate and graduate students from all disciplines enhanced their educational experience at the Department of Energy's **Argonne National Laboratory** by participating in the laboratory's inaugural Young Scientist Day in late October 2002. Graduate students working at the laboratory coordinated the event to facilitate an academic and social environment. "We certainly encouraged the graduate students to develop this program," said Harold Myron, Director of Argonne's Division of Educational Programs. "Giving students an opportunity to interact and share research with their peers will strengthen their learning experience at Argonne." Twelve graduate students gave oral presentations targeted at mid- to low-level undergraduate students, ranging in topics from grid computing to analytical chemistry's role in archaeology. ❖

People IN ENERGY

Dr. Lura Powell, former Director of the Department of Energy's (DOE) Pacific Northwest National Laboratory (PNNL), recently received the Department's Distinguished Associate Award. Last July, Powell announced her resignation effective Dec. 31, 2002. She served as PNNL Director since April 2000. The award was given in recognition of sustained outstanding performance during her tenure as PNNL Director and for "laying the groundwork for innovative strategies for 21st century contracts between DOE and its major multiprogram laboratories."

Secretary of Energy Spencer Abraham has appointed **Joseph P. McMonigle** to be the new Chief of Staff at the Department of Energy. Most recently, McMonigle served as Deputy Chief of Staff and Counselor to the Secretary. Prior to joining the Bush Administration, he was Administrative Assistant and General Counsel to then-Senator Abraham during his service as a U.S. Senator from Michigan. McMonigle has worked with Secretary Abraham for eight years, serving as press secretary in his 1994 campaign and campaign manager in 2000.

Gerald G. Boyd is the new Manager of the Department of Energy's (DOE) Oak Ridge Operations Office, effective January 2003. Boyd will report to the Office of Science and will be responsible for a workforce of about 12,000 Federal and contractor employees. Most recently, Boyd served as Assistant Manager for Environmental Management in Oak Ridge. Previously, he was Deputy Assistant Secretary and Associate Deputy Assistant Secretary for Science and Technology in the Office of Environmental Management at DOE Headquarters.

Randa Hudome has been appointed to the position of Associate Deputy Secretary of Energy by Secretary of Energy Spencer Abraham. Since January 2001, Hudome has served as Secretary Abraham's Senior Policy Advisor for International Affairs. As Associate Deputy Secretary, Hudome will continue her work on international affairs for the Secretary as well as Deputy Secretary Kyle McSlarrow.

National Nuclear Security Administration (NNSA) Acting Administrator Linton Brooks has named **Mary Ann Fresco** as NNSA's Diversity and Outreach Manager. Most recently, Fresco was Deputy Assistant Administrator for the Small Business Administration's Office of Equal Employment Opportunity and Civil Rights Compliance.

Engineer **Bob Simmons** of the Department of Energy's Princeton Plasma Physics Laboratory (PPPL) is the recipient of the first Engineering and Technology Management Leadership Award of the American Society of Mechanical Engineers. The annual honor has been permanently designated as the Robert T. Simmons Leadership Award. Simmons joined the PPPL staff in 1989 and currently is the Systems Engineering Support Manager for the National Compact Stellarator Experiment.

Robert Rosner has been appointed Associate Laboratory Director for the Physical, Biological and Computing Sciences Directorate at the Department of Energy's Argonne National Laboratory. Rosner will continue to serve as Chief Scientist for Argonne and Distinguished Service Professor in the University of Chicago's Department of Astronomy and Astrophysics, the Department of Physics, and the Enrico Fermi Institute.

Reinhold Mann has been named Associate Laboratory Director of the Fundamental Science Directorate at the Department of Energy's Pacific Northwest National Laboratory (PNNL). In this position, Mann also will serve as PNNL's chief research officer. Most recently, Mann was Deputy Director for Science and Technology at the laboratory

Michael Pacheco is the new Director of the National Bioenergy Center at the Department of Energy's National Renewable Energy Laboratory (NREL). He is the center's first full-time director. Pacheco comes to NREL from Louisiana-Pacific Corp., where he was Manager of Oriented Strand Board Technology and Product Quality and a Corporate Engineering Fellow. Previously, he was Vice President of Process Development at Energy BioSystems Corp.

Lynn Boatner, a corporate fellow at the Department of Energy's Oak Ridge National Laboratory, is the recipient of the Frank H. Spedding Award for his research on the fundamental properties and applications of rare earth phosphates and other rare earth materials. The award was presented during the Rare Earth Research Conference, held at the University of California at Davis.

Beverly Ramsey has been named Leader of the Risk Reduction and Environmental Stewardship Division at the Department of Energy's Los Alamos National Laboratory. The division ensures that present and former laboratory operations do not pose an unacceptable risk to the public, workers, and the environment. Ramsey has been acting leader of the division since 2001. She has 34 years experience in the management of hazardous and radioactive materials and in the decommissioning and remediation of sites.

Otis "Pete" Peterson of the Chemistry Division at the Department of Energy's Los Alamos National Laboratory has been elected a Fellow of the Optical Society of America. Peterson was cited for his discovery in the 1970's of the continuous wave dye laser and his contributions to the development of wavelength-tunable solid-state lasers. ❖

On Dec. 6, 2002, Secretary of Energy Spencer Abraham hosted a ceremony for the unveiling of the official portrait of former Secretary Bill Richardson. The portrait will be mounted alongside the portraits of the other former Secretaries in the corridor outside the Secretary of Energy's office.

Milestones

YEARS OF SERVICE

January 2003

Headquarters

EIA - James P. Holihan (30 years), Frederick L. Freme (25), Erik A. Kreil (25). **Energy Efficiency & Renewable Energy** - Roland E. George (40), Richard C. Budzich (30), Rosemary V. Griffing (30), Shelia J. Launey (30), Richard H. Smith (30). **Envir. Management** - Carl W. Guidice (40), Texas C. Chee (30). **Envir., Safety & Health** - Richard L. Black (25), Kathleen I. Taimi (25). **FERC** - James H. Evans (35), John K. Sammon (30), Gwendolyn W. Cobb (25), Harrison K. Pierce (25).

Independent Oversight & Performance Assurance - Charles A. Campbell (25). **Inspector General** - David Sedillo (25). **Management, Budget & Evaluation** - Carol A. Matthews (35), Paulette Jones (30), Deyve C. Martinez (30). **NNSA** - James J. Mangeno (40), Alv. D. Youngberg (35), Michael F. O'Connell (30), Nancy E. Odierno (30). **Science** - Marsha A. Marsden (25), Michelle R. Turpin (25).

Field

Albuquerque/NNSA - Rosemary T. Deyoung (25), Daniel G. Krivitzky (25), Martha L. Youngblood (25). **Bonneville Power** - Roger L. McElhaney (40), John W. Pitts (35), John I. Berkey (30), Patricia D. Dorton (30), Carolyn I. Hogan (30), Mark W. Maher (30), Mark A. Reynolds (30), Leanne G. Cesario (25), Rita M. Coppernoll (25), Brant K. Crabbe (25), William W. Kinsey (25), Ronald D. McIntyre (25), Thomas A. Munson (25), Debra A. Stout (25).

Idaho - Carla Dunn (25), Donald N. Rasch (25), Robert A. Starck (25). **NETL** - Henry W. Pennline (30). **Nevada/NNSA** - Kay A. Henry (35), Catherine P. Morris (30), Randolph Rollins (30). **Oak Ridge** - Robert J. Brown III (30). **Oakland** - Richard H. Nolan (35). **Oakland/NNSA** - Gary J. Lavagnino (30), Carol J. Morreira (30), Gary N. Callihan (25).

Savannah River - Elizabeth A. Sherrill (25). **Savannah River/NNSA** - W. Bruce Wilson (30). **Schenectady Naval Reactors** - Barbara L. Gass (25). **Southwestern Power** - Jeffrey C. Morman (25). **Western Area Power** - Roberta A. Sweeney (35), James D. Fitzgerald (30), Arthur L. Forrester (25), Douglas J. Hart (25), Ronald W. Steinbach (25), John F. Sutter (25).

RETIREMENTS

November 2002

Field

Bonneville Power - Mark S. Davis (27). **Richland** - Gerald M. Bell (24), Terry D. Cress (11). **Western Area Power** - Thu-hong T. Tran (17), Daniel J. Trujillo (14).

December 2002

Headquarters

Security - Brenda J. Harmeson (33).

Field

Richland - Bob D. Petty (11). ❖

NEW Publications

U.S. Secretary of Energy Spencer Abraham, Canadian Natural Resources Minister Herb Dhaliwal, and Mexican Energy Secretary Ernesto Martens have released the second and third reports of the North American Energy Working Group. ***North American Energy Efficiency Standards and Labeling***, available at **http://www.eren.doe.gov/buildings/appliance_standards/pdfs/naewg_report.pdf**, describes why standards and labeling programs are effective instruments in meeting energy-efficiency goals, explains each country's processes and institutional contexts for these programs, and identifies where the programs are alike and different. ***North America—Regulation of International Electricity Trade***, available at **http://www.fossil.energy.gov/electricitytrade**, presents an overview of regulations governing the construction and operation of power lines and the authorization of electricity exports and imports in the three countries.

Office of Inspector General (IG) reports: ***Calutron Isotope Production Capabilities*** (DOE/IG-0574); ***Resolution of Significant Finding Investigation Recommendations*** (DOE/IG-0575); ***Inspection of Nuclear Safety at the Ashtabula Environmental Management Project*** (DOE/IG-0576); ***Semiannual Report to Congress for the Period of April 1, 2002 through September 30, 2002*** (DOE/IG-0026). The reports are available from the U.S. Department of Energy, IG Reports Request Line, 202-586-2744, or at **http://www.ig.doe.gov/**. ❖

January 2003

AROUND DOE

Last glovebox gone from Rocky Flats' Building 771

The last of 240 gloveboxes in Building 771 at the Department of Energy's Rocky Flats Environmental Technology Site was safely removed and packaged for off-site shipment and disposal in December 2002. This is a major milestone in speeding up decontamination and decommissioning work in the building and "keeps us on track for the final cleanup and closure of the Site in 2006," said project manager Tom Dieter.

Building 771 was called the "most dangerous building in America" in 1994 because of the volume of plutonium and nitric acid solutions contained within. Building operations included numerous plutonium recovery and purification processes. All the plutonium operations were performed within the enclosed stainless steel gloveboxes to protect workers from radiation exposure. Years of conducting operations contaminated the interior of the gloveboxes and posed a significant challenge for workers to safely dismantle, remove, and package them for disposal.

In addition to removing the gloveboxes, workers also have drained and disposed of more than 15,000 liters of contaminated liquids from 60,000 feet of process piping and have decontaminated, size-reduced and disposed of 237 of 251 tanks from Building 771.

Sandia program shares Gordon Bell Award

Researchers at the Department of Energy's Sandia National Laboratories are the co-recipients of the prestigious Gordon Bell Award for developing Salinas, a supercomputer program that simulates the response of a structure under various loads and also predicts the natural frequencies of a structure under varying stress. The award was announced at the recent SC2002 high performance computing and networking conference. Other recipients included three Japanese contestants and the University of Illinois of Urbana-Champaign.

The Gordon Bell Award rewards practical use of parallel processors by giving a prize for the best performance improvement in an application. Sandia researcher Mike McGlaun characterizes the contest as "the Super Bowl of supercomputing." This is the third time Sandia has won the award.

Americas address nuclear issues at regional forum

The Department of Energy's Office of Nuclear Energy, Science and Technology (NE), with the help of the American Nuclear Society and Florida International University, held its second Americas Nuclear Energy Symposium in Miami, Fla., Oct. 16-18, 2002. William Magwood, Director, NE, and Flavio Decat de Moura, President of Electronuclear in Brazil, co-chaired the conference. Officials from the United States, Canada, and six Latin American countries provided national nuclear perspectives to more than 170 conference attendees.

The Brazilian delegation announced its country's intention to complete a third nuclear unit at Angra, which could mean new business for U.S. industry. Richard Stratford, Department of State, provided U.S. views on regional cooperation in areas such as spent fuel disposal. Nils Diaz, Commissioner, U.S. Nuclear Regulatory Commission, spoke about how critical nuclear power is to energy independence and, thus, national security and how the hemisphere should view the threat of terrorist attacks on nuclear plants.

Participants found the discussions, which covered issues such as nuclear safety, spent fuel management, and the use of medical isotopes, to be very valuable. A third conference may be held in 2004. ❖

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Department of Energy (PA-40)
Washington, DC 20585

Official Business