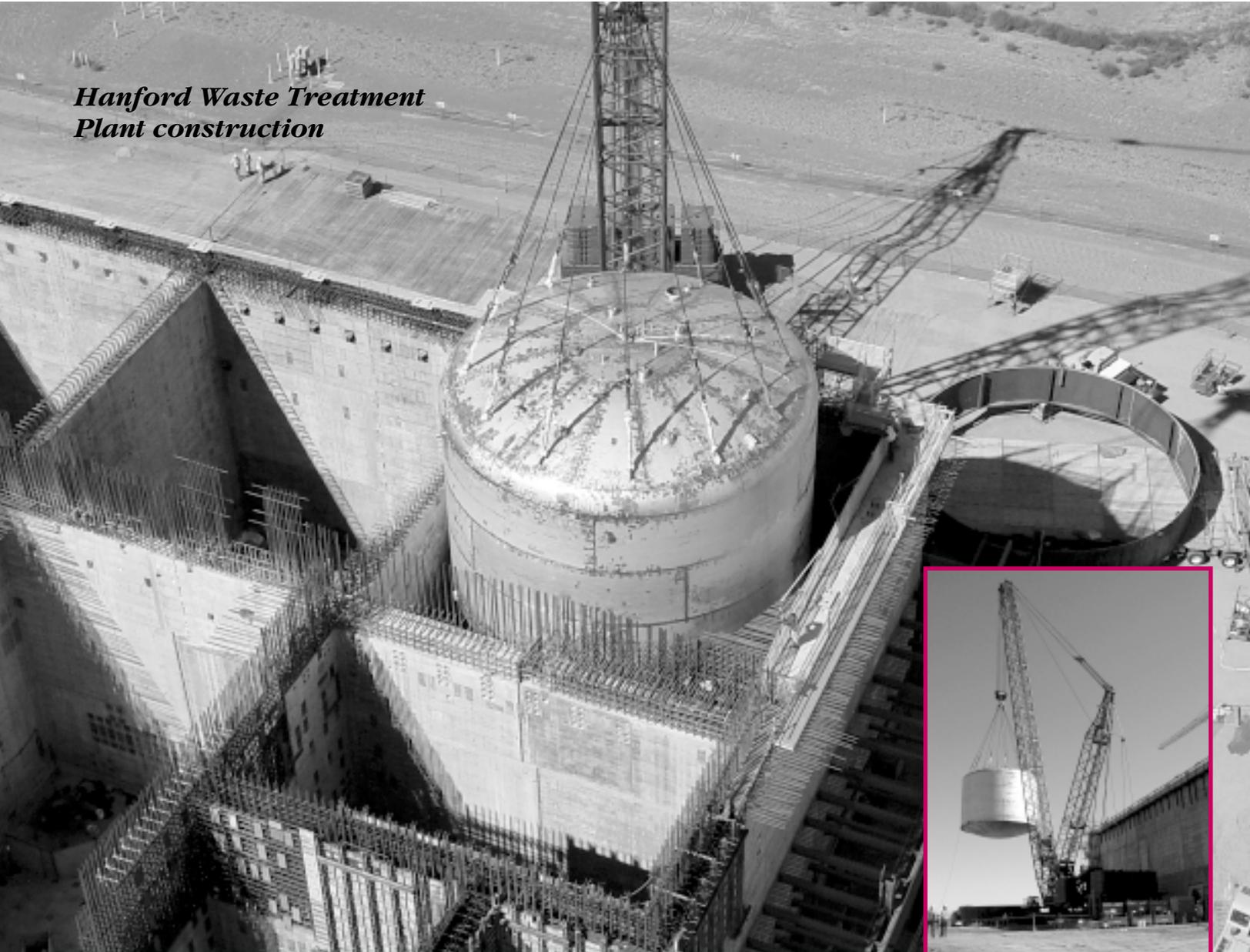


*Hanford Waste Treatment
Plant construction*



Secret mission recovers HEU from Uzbekistan

DOE sites recognized for project management

Argonne building named nuclear historic landmark

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.

Spencer Abraham
Secretary of Energy

Jeanne Lopatto
Director, Office of Public Affairs

Bonnie Winsett
Editor

SUBSCRIPTION price for 12 issues is \$22 (\$27.50 foreign). Send check, or provide VISA or Mastercard number and expiration date, to: Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Credit-card orders can be called in 8 a.m.-4 p.m. ET, 202-512-1800, or faxed to 202-512-2250. Cite "DOE This Month (EINS)."

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-0027-9
Vol. 27, No. 9

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

Inside

3

An agreement signed by Secretary of Energy Spencer Abraham (left) and French Atomic Energy Commission Chairman Alain Bugat (right) provides the Department of Energy access to France's PHENIX fast spectrum test reactor.



A nanoprobe developed by the Department of Energy's Oak Ridge National Laboratory uses a light scattering technique to detect, identify, and analyze substances.

7

9

Researchers at the Department of Energy's Lawrence Livermore National Laboratory have developed a "hybrid" insulated hydrogen fuel storage system for use in hydrogen-powered vehicles.



On our cover

A major milestone in the construction of the Waste Treatment Plant at the Department of Energy's (DOE) Hanford Site in Washington State was reached in August 2004 when four 275-ton waste receipt vessels were lifted into place. The Hanford Waste Treatment Plant is being designed and built for DOE by Bechtel National, Inc., and principal subcontractor Washington Group International. The plant contains three major facilities that will turn Hanford's 53 million gallons of liquid radioactive tank waste into a sturdy glass through the vitrification process.

The waste receipt vessels were installed in the Pretreatment Facility. Tank waste pumped through a buried pipeline to the facility will be temporarily stored in the 375,000-gallon vessels before being processed. Low-activity and high-level radioactive wastes will be separated in the Pretreatment Facility. The separated wastes will then be treated in the Low-Activity Waste and High-Level Waste Vitrification facilities.

The Waste Treatment Plant is being built over a 10-year period at a cost of \$5.7 billion. Work is about 38 percent complete. The plant is scheduled to be in full operation in 2011. ❖

Secret mission to recover HEU successful

Eleven kilograms of enriched uranium fuel, including highly enriched uranium (HEU) that could be used for nuclear weapons, were safely returned to Russia from Uzbekistan. The secret mission, completed Sept. 9 by the United States, Uzbekistan, and Russia, was conducted as part of the Global Threat Reduction Initiative.

“The recovery, return, and eventual elimination of this highly enriched uranium are important milestones in our campaign to reduce this dangerous material worldwide,” Secretary of Energy Spencer Abraham said. “It was only with the strong cooperation of the Uzbeks and Russians that we were able to successfully complete this important international security mission.”

The nuclear fuel assemblies originally were supplied to Uzbekistan for use in the Russian-designed 10 megawatt VVR-SM multipurpose research reactor, located near the Uzbekistan capital Tashkent. The HEU was airlifted under guard from an airport near Tashkent to a secured facility in Dmitrovgrad, Russia. There, the uranium will be down-blended to

low-enriched uranium.

International Atomic Energy Agency safeguards inspectors and U.S. Department of Energy (DOE) technical experts were present in Uzbekistan to monitor the process of loading the fuel into two specialized transportation containers provided by the Russian Federation. The Russian facility that received the material has worked closely with the United States to implement security upgrades under the U.S.-Russian Material, Protection, Control and Accounting Program. Along with the decision to return the uranium to Russia, the Uzbekistan government also has decided to convert the VVR-SM research reactor to use low-enriched uranium fuel.



Enriched uranium fuel recovered from Uzbekistan is being loaded into specialized Russian Federation transportation containers.

This is the fifth successful shipment of uranium being returned to Russia. In the past year, DOE has repatriated a total of 48 kilograms of HEU fuel to Russia from Romania, Bulgaria, and Libya. In August 2002, 48 kilograms of Russian-origin HEU were repatriated from a research reactor near Belgrade, Serbia. ❖

Secretary, CEA Chairman sign R&D agreement

On Aug. 24, 2004, in Paris, France, Secretary of Energy Spencer Abraham (left) and French Atomic Energy Commission (CEA) Chairman Alain Bugat (right) signed an agreement that will allow cooperation between the Department of Energy's (DOE) Office of Nuclear Energy, Science and Technology and the CEA. The agreement specifically provides DOE access to France's PHENIX fast spectrum test reactor.

“Nuclear energy technology has the potential to improve the quality of life for people around the world if we are successful in solving issues such as economics, waste and proliferation,” Secretary Abraham said. “This new implementing arrangement with the CEA is a positive step forward and will provide for updating,



strengthening, and expanding the prior understanding of nuclear fuel and fuel cycle-related research and development (R&D).”

The new agreement builds on a September 2000 meeting between DOE and CEA where an agreement was signed covering R&D cooperation

in such areas as the Advanced Fuel Cell Initiative, Generation IV Nuclear Energy Systems Initiative, and the Nuclear Hydrogen Initiative. Under the implementing arrangement, DOE and CEA will perform an experimental irradiation project in the PHENIX experimental fast reactor. Various types of fuel loaded with minor actinides—highly toxic, long-lived material contained in spent nuclear fuel—will be tested under constant conditions. The test data will be used in selecting the best-performing fuel for future use in high-level waste transmuting systems.

While in Paris, Secretary Abraham also met with International Energy Agency Executive Director Claude Mandil to discuss oil market issues. ❖

Aviation programs honored for excellence

The aviators, aircraft maintenance personnel, program managers, and other members of the Department of Energy (DOE) Aviation Program have enhanced and enabled critical DOE missions for over 50 years. Today, six sites operate 24 fixed and rotary-wing aircraft to support several DOE missions.

In 2001, the DOE Headquarters Office of Aviation Management in the Office of Management, Budget and Evaluation began an annual Aviation Awards Program to recognize and reward the best and brightest programs and individuals. Brig. Gen. Robert G. Jenkins, USAF (Ret), Director, Office of Aviation Management, presented trophies to the calendar year (CY) 2003 award winners on July 14, 2004, at the DOE Aviation Operations and Safety Workshop held at McChord AFB, Wash.

For the third consecutive year, the DOE Aviation Program Award was presented to the Savannah River Operations Office and Wackenhut Services Incorporated, Aviation Operations Division. During CY 2003, the Savannah River Site (SRS) team continued to play a critical role in support of the SRS Law Enforcement Program for protection of special nuclear material located in critical facilities at the site and in transit. The team expanded performance measures developed in 2001 to include programs to track and forecast aircraft flying hours, measure

support to other agencies, track individual aircraft and fleet maintenance downtime, and compare aircraft readiness for the security mission. The team members are David A. Boyll, Ira Coward, Steven T. Shelt, Ernest H. Tussey, and James S. Williams.

In 2003, the competition for the Aviation Program Award was more closely contested than ever before. An "Honorable Mention" award was presented to Western Area Power Administration (WAPA).

E. Bruce Hunt, Aviation Manager, WAPA, received the 2003 DOE Aviation Management Professional Award. Hunt was recognized for his aviation expertise, both as a pilot and an innovative leader. He produced a new Aviation Plan that incorporated guidance from DOE Headquarters and added new WAPA direction on crew proficiency, performance measures, and events-based training. Training for WAPA pilots was standardized, ensuring the safety and effectiveness of WAPA aircraft operations.

The Savannah River Site team and Hunt have been nominated for the



Brig. Gen. Robert G. Jenkins, USAF (Ret), Director, Office of Aviation Management (left), presents the Aviation Management Professional Award to E. Bruce Hunt, Aviation Manager, Western Area Power Administration.

General Services Administration (GSA) Federal Aviation Program and Professional Awards. The winners of the GSA awards will be announced on Sept. 28 at GSA Headquarters, Washington, D.C.

Additional information on DOE's aviation programs and the award winners is available at <http://www.ma.mbe.doe.gov/me24/index.html>. ❖



The Operations Security (OPSEC) Program at the Department of Energy's Savannah River Operations Office (DOE-SR) recently was selected as the first place winner of the 2004 National OPSEC Award in Multimedia Achievement, Print Media Category. Displaying the plaque are (l-r) Susan Sanders; Marcia Delmore; Ron Bartholomew, DOE-SR Director, Office of Safeguards and Emergency Services; and Tina Difranco. The award was presented in June 2004 in Baltimore, Md., at the National OPSEC Conference and Exhibition sponsored by the Interagency OPSEC Support Staff (IOSS). The IOSS is the focal point for OPSEC within the U.S. Government. The awards program provides non-monetary awards to government, supporting contractor organizations, and individuals who have excelled in the field of OPSEC. ❖

DOE teams win project management awards

On Aug. 13, 2004, Secretary of Energy Spencer Abraham recognized the winners of the Secretary of Energy's Fourth Annual Project Management Awards at a ceremony at Department of Energy Headquarters, Washington, D.C. The awards are presented for outstanding performance based on successful completion or near completion and overall management of a project or a program. "As these awards highlight, one of our great successes has been a strong focus on the importance of sound and professional project management which has required resourceful, innovative, and dedicated hard-working teams," Secretary Abraham said.

The awards and winners are:

- **Secretary's Excellence in Acquisition Award:** Stanford Positron Electron Asymmetric Ring 3 (SPEAR3) Upgrade Project Team, Stanford Linear Accelerator Center. The facility will be used in the study of solid-state physics, materials science, environmental science, structural biology, and chemistry. The project was started in June 1999 and completed in November 2003, three months ahead of schedule and within the \$58 million budget.
- **Secretary's Award of Achievement:** Tritium Facility Modernization and Consolidation Project Team, Savannah River Site. The objective of the project was to relocate, consolidate, and modernize

tritium gas processing functions from a 50-year-old first generation facility to a location within a newer, currently operating second-generation facility. The total project cost was \$141.8 million. The project was started in May 1998 and is 99 percent complete, with overall cost reductions to date of \$50 million.

- **Secretary's Acquisition Improvement Award:** Laboratory for Comparative and Functional Genomics Project Team, Oak Ridge Site Office/Oak Ridge National Laboratory. The project provides a modern gene function research facility and protection for the genetic mutant mouse lines created over the past 50 years. The \$14.4 million project was started in November 2000 and completed on schedule in September 2003 with a costs savings of \$380,000. Project teams receiving honorable mention include:
 - Emergency Operations Center



The SPEAR3 Upgrade Project Team displays the Excellence in Acquisition Award. L-r, are Secretary of Energy Spencer Abraham; Hanley Lee, Federal Project Director, DOE Stanford Site Office; Richard Boyce, Robert Hettel, and Tom Elioff, Stanford Linear Accelerator Center; and Deputy Secretary of Energy Kyle McSlarrow.

Replacement Project, Los Alamos National Laboratory;

- Microsystems and Engineering Sciences Applications/Microelectronics Development Laboratory Retooling Sub-project, Sandia National Laboratories;
- Plutonium Finishing Plant, Stabilization and Packaging Project, Hanford Site;
- Waste Pits Remedial Action Project, Fernald Site; and
- FB Line Plutonium Packaging and Stabilization, Savannah River Site. ❖

NEW ON THE Internet

R&D Web tool expanded

In collaboration with six other Federal agencies, the Department of Energy's (DOE) Office of Scientific and Technical Information (OSTI) is increasing availability of Federal research and development (R&D) information on the Web at <http://www.osti.gov/fedrnd/>. Four resources have been added to the Federal R&D Project Summaries Database.

New to the collection is information on Small Business Administration awards; unclassified research earmarked as "high potential" for domestic technology transfer from the Department of Defense; ongoing and recently completed research projects in agriculture, food and nutrition, and forestry from the Department of Agriculture; and current work the Environmental Protection Agency is doing in any

given topic area. The database still showcases records of ongoing and recently completed R&D projects from DOE, the National Institutes of Health, and the National Science Foundation.

DOE provides public access to this research tool through GPO Access in partnership with the Government Printing Office. ❖

DOE program monitors trends in worker health

The Office of Occupational Health (EH-53) in the Department of Energy's (DOE) Office of Environment, Safety and Health has given its Epidemiologic Surveillance Program a new name—the Illness and Injury Surveillance Program (I&ISP). Although the program has been in place since 1990, the new name defines program goals in more recognizable terms.

The Illness and Injury Surveillance Program is the only DOE program that monitors the health of current workers. Ongoing analysis of health data from 70,000 current workers at 14 participating sites is used to identify trends in illness and injury. The program also supports special investigations at sites, as needed, to address specific health concerns.

Information developed through the program contributes to more productive dialogue with DOE occupational

medicine physicians to assure that efforts to improve preventive occupational health programs are focused on core health and safety issues. Illness and injury data also can be used to evaluate the effectiveness of DOE safety and health policies. Reports are published annually and may improve the ability of workers to take a more informed role in protecting their own health. Worker privacy and confidentiality are assured by eliminating personal information from published reports and collected data.

Past annual reports focused on the health of workers at individual DOE sites. However, due to differences in how contractor human resources departments assigned job titles and the program's inability to combine different job categories, data could not be combined and examined or compared across multiple sites.

A set of job categories focusing on work responsibilities and workplace conditions common to all participating DOE sites has been established. As a result, health data now can be analyzed across multiple sites. Sites with similar primary missions will be grouped together as Production, Research and Development, or Decommissioning and Decontamination facilities. The new approach will permit integration of I&ISP into Integrated Safety Management to ensure that work plans take advantage of information about known risks and health trends.

The first roll-up report, which will assess the health of workers at eight sites over a six-year period, is scheduled for release by the end of December 2004. Copies of all past reports are available at <http://tis.eh.doe.gov/health/epi/surv/index.html>. ❖

Magwood speaks on need for nuclear energy

William D. Magwood IV, Director of the Department of Energy's (DOE) Office of Nuclear Energy, Science and Technology, made the case for building a new generation of nuclear reactors to meet America's increasing energy needs in an address on July 20, 2004, to students and officials of DOE's Argonne National Laboratory. Magwood, pictured, second from right, joined other panelists in a workshop held at Argonne's Advanced Photon Source that focused on the continued role of nuclear energy in America's future. The audience of about 130 people included graduate students and faculty from the nuclear engineering departments of the Big Ten colleges, as well as government officials and Argonne employees.

"We'll need nuclear power to reduce U.S. reliance on foreign oil and on price-volatile fuels such as natural gas," Magwood said. "Nuclear power will help us provide inexpensive electricity and produce large quantities of cost-effective hydrogen for transportation."

Since the birth of atomic energy in 1942, nuclear technology has evolved through three generations of reactors, from prototypes to advanced light-water reactors. Magwood envisions a fourth generation, which he expects will be available in the 2020's.

"Our highest priority is the Next Generation Nuclear Plant (NGNP), which would be able to produce the hydrogen equivalent of 200,000 gallons of gasoline each day without any carbon emissions," Magwood said. The NGNP would be developed through collaboration with international partners, such as France, Japan and Korea, and the U.S. private sector.



Expanding the country's nuclear infrastructure will require more workers to manage and operate new facilities. To this end, Magwood discussed DOE's continuing commitment to educating future nuclear technologists, pointing out that DOE invests over \$20 million each year in scholarships, fellowships, and university support. ❖

ORNL nanoprobe creates new possibilities

A device developed at the Department of Energy's (DOE) Oak Ridge National Laboratory (ORNL) could give a boost to a technology with proven environmental, forensics, and medical applications. The ORNL nanoprobe, which is based on a light scattering technique, can detect and analyze chemicals, explosives, drugs and more at a theoretical single-molecule level.

The probe is an optical fiber tapered to a tip measuring 100 nanometers with an extremely thin coating of nanoparticles of silver, which induces the surface-enhanced Raman scattering (SERS) effect. Raman scattering is a small reflection of light that shows vibration energies unique to a substance when it is illuminated by a laser beam. With the SERS nanoprobe, laser light creates rapid oscillations of electrons in the silver nanoparticles, which produce an enormous electromagnetic field that helps increase the Raman scattering signal for better detection and analysis. The ORNL nanoprobe works with any surface to induce the SERS effect.

"The significance of this work is that we are now able to perform direct analysis of samples—even dry samples—with no preparation of the surface," Tuan Vo-Dinh, ORNL researcher and leader of the nanoprobe research team, said. "Also, the small

scale of the nanoprobe demonstrates the potential for detection in nanoscale environments."

SERS analysis of samples on a surface usually requires modification or treatment of the sample. This may consist of physically removing the sample and diluting it in liquid containing silver nanoparticles. This practice is unnecessary with the ORNL nanoprobe.

Vo-Dinh and ORNL colleagues David Stokes and Zhenhuan Chi experimented with nanoprobes made of several materials of varying thickness. They settled on silver-island films because they are easier to reproduce than silver-coated particles and form only a thin coating, which helps maintain the nanoscale diameter of the tapered tip.

Development of the SERS nanoprobe could lead to increased



Oak Ridge National Laboratory researcher Tuan Vo-Dinh examines the nanoprobe.

interest in SERS as an ultra-sensitive detection tool, allowing direct analysis of samples for a wide variety of applications, Vo-Dinh says. These applications could range from environmental monitoring to intracellular sensing and medical diagnostics.

Funding for the research project was provided by the Office of Biological and Environmental Research in DOE's Office of Science and the Laboratory Directed Research and Development Program. ❖

INEEL to house supercomputer cluster

The Department of Energy's (DOE) Idaho National Engineering and Environmental Laboratory (INEEL) and Sun Microsystems Inc. have signed an agreement to develop a high-performance computer cluster at INEEL. The cluster includes more than 230 Sun Solaris Servers powered by AMD Opteron processors.

"Sun's grid computing cluster will provide our scientists with the ability to complete two trillion floating-point operations in one second," William Magwood, Director of DOE's Office of Nuclear Energy, Science and Technology, said. "These are the kind of computing resources they need to develop

the energy sources for the future."

Sun's Solaris-based grid computing cluster solution dramatically advances computing power for INEEL and will enable INEEL professionals to directly support the engineering resources needed on a very large scale for the design of Generation IV nuclear reactors. This capability is essential in the demanding collaboration environment required by the 11 international partners' contribution to Generation IV design efforts.

"This computer enhancement is part of our longer-term plan of increasing the Laboratory's computer capabilities to support the collaboration with our

Generation IV partners," Paul Kearns, INEEL Director, said. "We are combining this lease with \$543,000 of funding from Bechtel's Corporate Funded Research and Development program to develop a collaborative engineering and research model as a key part of the Gen IV research."

The cluster solution was financed through the General Services Administration schedule that allows government customers such as DOE and INEEL to finance Sun solutions with a convenient monthly payment plan that requires no negotiations. The total value of the INEEL solution is \$1.97 million over three years. ❖

Argonne Building 205 named nuclear historic landmark

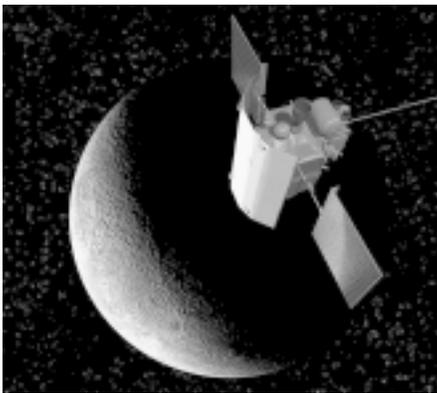


The American Nuclear Society (ANS) recently named Building 205 at the Department of Energy's Argonne National Laboratory a Nuclear Historic Landmark. The award recognizes sites and facilities that have significantly contributed to the development, implementation, and peaceful use of nuclear technology. The building is the eighth Argonne facility to receive the honor.

In the 1960's, Building 205's Laboratory J134 was the site for the development of the processes and equipment used in Experimental Breeder Reactor-II. The facility demonstrated the melt refining process developed as part of closed fuel cycling. In the 1980's, just down the hall in Room J118, the electrorefining process was invented for the Integral Fast Reactor.

Building 205 currently is home to Argonne's Chemical Engineering Division (CED). In the photograph, ANS President Jim Tulenko (right) and CED Director David Lewis unveil the nuclear historic landmark plaque. ❖

Mercury MESSENGER carries Livermore technology



A team of scientists and engineers from the Department of Energy's Lawrence Livermore National Laboratory (LLNL), in collaboration with the University of California at Berkeley and Johns Hopkins Applied Physics Laboratory, designed and built the high-resolution gamma ray detector that will enable the Mercury MESSENGER spacecraft (artist's depiction at left) to measure the elemental composition of Mercury's crust. The first trip to the planet in 30 years was successfully launched Aug. 3, 2004.

LLNL's role was critical in ensuring that the spacecraft's gamma-ray spectrometer could withstand the heat of Mercury. The LLNL team, which also worked with DOE's Lawrence Berkeley National Laboratory, built a rugged, encapsulated germanium gamma-ray detector and mated it with a miniature cryocooler. The cryocooler and a multi-layered thermal shield maintain the germanium detector at less than 90 degrees Kelvin (-297.67 degrees Fahrenheit). The detector is based on technology originally developed for Cryo 3, a mobile, handheld mechanically cooled germanium radiation detector with national security applications. ❖

'Stagecoach' saves money, time at Savannah River



Workers at the Department of Energy's Savannah River Site have developed a way to safely and economically store waste and radiological tools and equipment while working outdoors. F Canyon Project Team 2 member Dawn Manning reasoned that if an outdoor area were house-kept while work was in progress, hazardous conditions would be eliminated and contaminated materials prevented from getting outside radiological boundaries.

The result is the "Stagecoach," a folding box covered with tarp and designed to withstand outside weather conditions. Stagecoach provides a means to store radiological waste overnight or when work is not being performed and protects potentially contaminated tools and equipment from the elements. A sheet metal inside cover keeps the top from collapsing. The method saves costs by not requiring all waste to be sealed and disposed of when the waste bags are not full. Waste can be maintained inside the Stagecoach until full and ready for "official" disposition.

At left, Radcon Inspector Richie Enlow and Manning show the Stagecoach. ❖

Fifteen months of D&D work ends in a flash

Fifteen months of decontamination and decommissioning (D&D) work came to an end in 16 seconds on July 17, 2004, when Building 881 (at right) at the Department of Energy's Rocky Flats Environmental Technology Site was safely brought down using explosive charges to fracture the cement walls and floor of the 245,160 square foot basement. Building 881 was one of the four original manufacturing facilities at Rocky Flats. Completed in 1953, the facility was used to process and machine enriched uranium into finished weapons components.

Weeks before demolition, the building was filled with more than 35,000 cubic yards of soil and rubble to minimize voids. Since demolition, large earth movers have pushed in the south wall, left there by design to stabilize the structure. An additional 60,000 cubic yards of soil will be hauled in to return the area to its natural grade. The area will be reseeded when grading is completed. ❖



LLNL develops 'hybrid' hydrogen fuel storage system

Researchers at the Department of Energy's (DOE) Lawrence Livermore National Laboratory (LLNL) have developed a "hybrid" insulated hydrogen fuel storage system for use in hydrogen-powered vehicles. Funded by DOE and California's South Coast Air Quality Management District, the research focused on overcoming one of the major barriers to practical hydrogen-fueled vehicles: on-board storage. The research team developed a safe, compact hydrogen storage tank that combines the around-town energy efficiency of conventional compressed hydrogen gas with the long-distance driving range of cryogenic (low-temperature) compressed gaseous or liquid hydrogen. The tank can hold both types of hydrogen.

The system was installed on a pickup truck provided by Sunline Transit Agency, Riverside County, Calif., and successfully field tested at LLNL before being shipped to Riverside for six months of on-the-road testing by Sunline. The company will use the truck to shuttle bus drivers back and forth in the Palm Springs area. L-r, LLNL researchers Mark McCuller, Jim Fugina, Francisco Espinosa-Loza, and Tim Ross discuss the system. ❖



INEEL coats buried beryllium to protect aquifer

At right, workers at the Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL) are injecting a wax-like grout into the site's Subsurface Disposal Area to coat buried beryllium blocks and to stabilize and protect them from ground moisture. The moisture is causing the blocks to corrode and release carbon-14, a radioactive contaminant that is mobile and could threaten the Snake River Plain Aquifer. The injection project began in late July 2004 and is scheduled for completion by Sept. 30.

The beryllium blocks became radioactive after being used as reflectors in INEEL's deactivated and decommissioned Materials Test Reactor and Engineering Test Reactor and in the still-operating Advanced Test Reactor. These reactors have provided vital research information for developing safe nuclear power reactors. The blocks were used to reflect neutrons in the reactors and help control radiation intensity levels during tests of reactor fuels and materials. They weigh a total of about 11,000 pounds and were buried between 1970 and 1993. ❖



Interns train for nonproliferation graduate program

Nineteen first- and second-year graduate students with backgrounds in international affairs and a commitment to reduce proliferation threats spent their summer vacations this year training for yearlong assignments with the Nonproliferation Graduate Program (NGP). Sponsored by the Department of Energy's (DOE) National Nuclear Security Administration (NNSA) and administered by DOE's Pacific Northwest National Laboratory (PNNL), the program allows graduate students to learn about careers, providing NNSA with talented future professionals who

can assist in its national and international security work.

In June, the interns participated in orientation and training at PNNL in Richland, Wash. The session included technical briefings, visits to various facilities where work is performed in support of NNSA, and a tour of the Hanford Site's B Reactor. Scientists, engineers, and program managers shared information about nonproliferation, nuclear weapons, counterintelligence, international nuclear safety, radiation detection technologies, and policy and treaty activity.

"Regardless if one has a scientific or policy background, the orientation presenters did an excellent job of articulating the critical issues encompassing the NNSA," Reuben Sorensen, NGP intern in NNSA's Office of Research and Engineering, said. "From briefings on nuclear weapons physics to

touring one of the early Hanford reactors, by the time our orientation was complete, all of us had an enhanced understanding of the challenges facing the nonproliferation community."

Following the orientation, the students reported to Washington, D.C., to learn more about NNSA and its program offices. Sixteen interns then began their yearlong assignments within one of the program offices, stationed either in Washington, D.C., or Germantown, Md. Three students were selected for 14-month international assignments—one each in Moscow, Russia; Kiev, Ukraine; and Almaty, Kazakhstan. Prior to departing in mid-July, the students received Department of State training specific to their respective posts, where they will serve as in-country NNSA representatives.

"We all win in this program," Mary Jackson, NGP program manager for NNSA, said. "We recruit some of the best and brightest students who have amazing enthusiasm, and they receive invaluable training and career direction for their talents and energy."

For more information on the program and details on how to apply, visit the NGP website at <http://ngp.pnl.gov> or call Susan Senner, NGP Coordinator at PNNL, 509-372-6015. Applications for the 2005 intern class are being accepted through Oct. 31, 2004. ♦



The 2004 intern class: front row, l-r, William Wanderer, Jr., Nicholas Butler, Christina Andersson, Laura Lauver, Meredith Janik, Cristen Duncan, Sarah Banner, Beverly Dale, Meghan Goldman, Marek Vasilkov, and Douglas Dyer; standing, l-r, Bryan Roberts, Scott Shrum, Nicholas Haugen, Raymond Greenberg, Jr., Alan Taylor, Matthew Bouldin, Christopher Demos, and Reuben Sorensen.



Access Grid, a system developed at the Department of Energy's Argonne National Laboratory in 1999 to allow remote groups to interact using the Internet, streams visual and audio content digitally which users then project on their walls. The system was used this summer to foster discussions between Argonne researchers and 60 middle school girls 130 miles away to encourage the students to pursue scientific and technical careers. The Access Grid session was well received by the students. Individuals at any of more than 300 Access Grid worldwide "nodes"—rooms set up with cameras, microphones, and projectors—can interact with other willing users. Argonne provides software free to organizations that want it; users have to provide their own audio and visual equipment. ♦

Research DIGEST

Scientists at the Department of Energy's **Los Alamos National Laboratory** (LANL) recently demonstrated a novel method for chemically modifying and enhancing silica-based aerogels without sacrificing the aerogels' unique properties. Aerogels are low-density, transparent materials used in a wide range of applications, including thermal insulation, porous separation media, and inertial confinement fusion experiments. In research reported Aug. 25, 2004, at the 228th national meeting of the American Chemical Society, LANL scientist Kimberly DeFriend described a process for modifying silica aerogels with silicon and transition metal compounds using chemical vapor techniques to create a silicon multilayer or a mixed-metal oxide that enhance the current physical properties of aerogels for more demanding applications. With the addition of a silicon monolayer, an aerogel's strength can be increased four-fold. (Todd Hanson, 505-665-2085)



The Department of Energy's (DOE) **Joint Genome Institute** (JGI) has announced a heavy emphasis on microbes in the list of organisms that the Institute will DNA sequence over the coming year in its Community Sequencing Program (CSP). The CSP will allocate roughly 15 gigabases (billions of letter of genetic code) of sequencing, roughly 50 percent of JGI total capacity, for 23 projects selected from nearly 60 submitted earlier this year. Among the larger organisms is the moss *Physcomitrella patens*, which has a genome size of just over half a billion bases. Several animals selected to fill critical gaps in the tree of life also will be targeted, including the leech *Helobdella*, long used as a model system by biologists studying embryological development and functions of the nervous system. The JGI was established in 1997 as part of the Human Genome Project, combining the DNA sequencing resources from DOE's **Lawrence Berkeley, Lawrence Livermore and Los Alamos National Laboratories**. Funding for the Institute is predominantly from the Office of Biological and Environmental

Research in DOE's Office of Science. (David Gilbert, 925-296-5643)



High-resolution computational simulations and advanced visualizations are enabling researchers at the Department of Energy's **Oak Ridge National Laboratory** (ORNL) to identify and gain a better understanding of proteins. Until recently, protein complexes have been viewed as static entities with biological function understood in terms of direct interactions between components. Now, Pratul Agarwal and colleagues at ORNL are using the laboratory's Cheetah supercomputer and EVEReST 35 megapixel visualization facility to study protein function in far greater detail. "Based on computational simulations, we're seeing proteins as very efficient molecular machines that are dynamically active and where internal protein dynamics are closely associated with their structure and function," Agarwal said. This emerging view has broad implications for protein engineering and drug design. (Ron Walli, 865-576-0226)



In research that could lead to more accurate weather forecasts and climate models, scientists at the Department of Energy's **Brookhaven National Laboratory** (BNL) say a physical limit on the number of cloud droplets that grow big enough to form drizzle paradoxically makes drizzle form faster. That's because those few droplets that cross the drizzle "barrier" readily collect enough surrounding droplets to fall—instead of staying stuck in the clouds competing for a limited water supply and never getting quite big enough. BNL atmospheric physical chemist Robert McGraw presented the research Aug. 26, 2004, at the 228th national meeting of the American Chemical Society. "Drizzle is an important cloud process that plays a crucial role in regulating Earth's energy balance and water cycle, because drizzle affects how long clouds persist," says McGraw. "So understanding drizzle formation will help scientists predict both local weather and the effects of clouds on

global climate." (Karen McNulty Walsh, 631-344-8350)



A wireless nanodevice that functions like a fluorescent light—but potentially far more efficiently—has been developed in a joint project between the Department of Energy's **Los Alamos and Sandia National Laboratories**. The experimental success, reported in the June 10, 2004, issue of *Nature*, efficiently causes nanocrystals to emit light when placed on top of a nearby energy source, eliminating the need to put wires directly on the nanocrystals. The energy source is a so-called quantum well that emits energy at wavelengths most easily absorbable by the nanocrystals. The efficiency of the energy transfer from the quantum well to the nanocrystals was approximately 55 percent, although in theory nearly 100 percent transfer of the energy is possible and might be achieved with further tweaking. The work is another step in creating more efficient white-light-emitting diodes—semiconductor-based structures more efficient and harder than the common tungsten light bulb. (Neal Singer, 505-845-7078)



The Department of Energy's **Pacific Northwest National Laboratory** (PNNL) and Silicon Graphics have formed a research alliance aimed at enabling a new generation of fast and efficient storage technology for data-intensive computing, which would accelerate scientific research. PNNL will conduct research into "active storage," a groundbreaking effort to shift computation and transformation of data from client computers to storage devices. As the first phase of the alliance, SGI Professional Services delivered a single 380 terabyte file system to the William R. Wiley Environmental Molecular Sciences Laboratory located at PNNL. PNNL scientists will be able to take raw data sets stored on the file server and conduct computations to identify data signatures and patterns before the data is transferred to client systems. (Greg Koller, 509-372-4864) ❖

Energy Awareness Month materials focus on smart energy choices

Each year for Energy Awareness Month in October, the Department of Energy's Federal Energy Management Program (FEMP) in the Office of Energy Efficiency and Renewable Energy (EERE) provides materials and event ideas to help promote energy-saving practices at Federal facilities. Materials are developed around a central theme to promote energy awareness.

The 2004 theme "Smart Energy Choices" continues and reinforces the theme of Secretary of Energy Spencer Abraham's energy awareness campaign launched last summer. The message on the promotional materials is "support our economy, protect our environment, and increase energy independence."

To help spread the message, FEMP has produced outreach materials to serve as "Resourceful Reminders" for Federal agencies and others. These items include posters, 3D-animated bookmarks, business card carriers, and

monitor calendars. The materials are expected to be available by mid September. The materials can be used during the October observance of Energy Awareness Month and throughout the year to spread awareness about energy efficiency. Additional information about energy efficiency and energy saving tips also is available on the EERE website, <http://www.eere.energy.gov>.

Federal agency participation in distributing promotional materials and conducting energy awareness campaigns is vital to making employees and others aware of the importance of saving energy. Supplies of materials are limited this year, and agencies and organizations requiring bulk quantities are encouraged to reproduce the materials. A free CD containing high resolution graphic files is available from Annie Haskins, FEMP Communications and Outreach Manager, 202-586-4536 or annie.haskins@ee.doe.gov. ♦

DOE field tests new oil well pump

A new hydraulic pump currently is undergoing field tests at the Department of Energy's Rocky Mountain Oilfield Testing Center (RMOTC) in Casper, Wyo. The new pump could reduce the operating cost of high-volume offshore oil wells by 40 percent and prolong the life of mature oil fields.

The new pump is the largest of its kind ever tested. It is ideally suited for maturing oil fields where wells have a high "water cut," meaning they produce larger volumes of water relative to the oil produced—as much as 8,000 to 12,000 barrels a day—along with oil. Electric submersible pumps currently in use produce an oil-water emulsion that requires a costly separation process before the water can be properly disposed of and the oil sent to a refinery. The large-volume hydraulic pump now undergoing testing produces oil and water with little mixing and is much easier to service, which dramatically reduces operating and processing costs.

The cost-shared \$1.5 million, three-

part test being conducted by RMOTC for Oilwell Hydraulics of Odessa, Texas, is in its second phase and "going superbly," according to Bryant Mook, RMOTC project manager. Each test phase was scheduled to last 30 days, but the first phase went so well that it was wrapped after only a few days. The second phase also is proceeding smoothly.

The payoff for Oilwell Hydraulics in partnering with RMOTC comes from the Federal site's large-bore test well that can replicate offshore conditions onshore, experienced personnel including expert engineers and oilfield hands, and a cost-sharing arrangement in which RMOTC's contribution of infrastructure and personnel covers seven to 10 percent of the test's \$1.5 million cost. The payoff for RMOTC comes from helping to prove the value of a new technology that could add large volumes of domestic oil to recoverable reserves, adding to the nation's energy security by reducing dependence on imported oil. ♦

Data network may help avoid massive blackouts

A new integrated data network may help the aging electricity transmission system avoid another massive blackout like the one experienced over much of the eastern United States and Canada last August. The Eastern Interconnection Phasor Project (EIPP) went "live" this summer, providing the first real-time, system-wide data to utilities and transmission operators within the eastern power grid.

"The project is about gathering and sharing information to provide complete coverage of the power grid in the eastern U.S.," Matt Donnelly, EIPP project lead at the Department of Energy's (DOE) Pacific Northwest National Laboratory (PNNL), said. PNNL manages the project for DOE as part of the Consortium for Electric Reliability Technology Solutions (CERTS). CERTS members provide technical support.

To get the data, new measurement technologies employing satellite-based time clocks are being installed at key locations on the grid to measure power flows in real time. The precise time clocks along with sophisticated signal processing allow the meters to provide more information than can be derived from traditional instruments. Data concentrators then collect and integrate the precision data and disseminate it to participants, while software analysis tools make sense of the real-time monitoring.

DOE began working with major Eastern Interconnection utilities and independent system operators to develop a monitoring system in the fall of 2002 and began installing equipment in the fall of 2003. The project builds on PNNL's 10 years of experience developing a similar measurement and analysis system for DOE's Bonneville Power Administration and utilities in the western United States.

Control centers near St. Louis, Mo.; Columbus, Ohio; Chattanooga, Tenn.; New Orleans, La.; and Schenectady, N.Y., were linked through EIPP and started sharing information in August 2004. The EIPP project is expected to cover and connect most major eastern U.S. corridors by the end of 2005. Participating utilities have invested about one million dollars and DOE, about \$750,000 in the project. ♦

FaST program at Brookhaven proves to be win-win

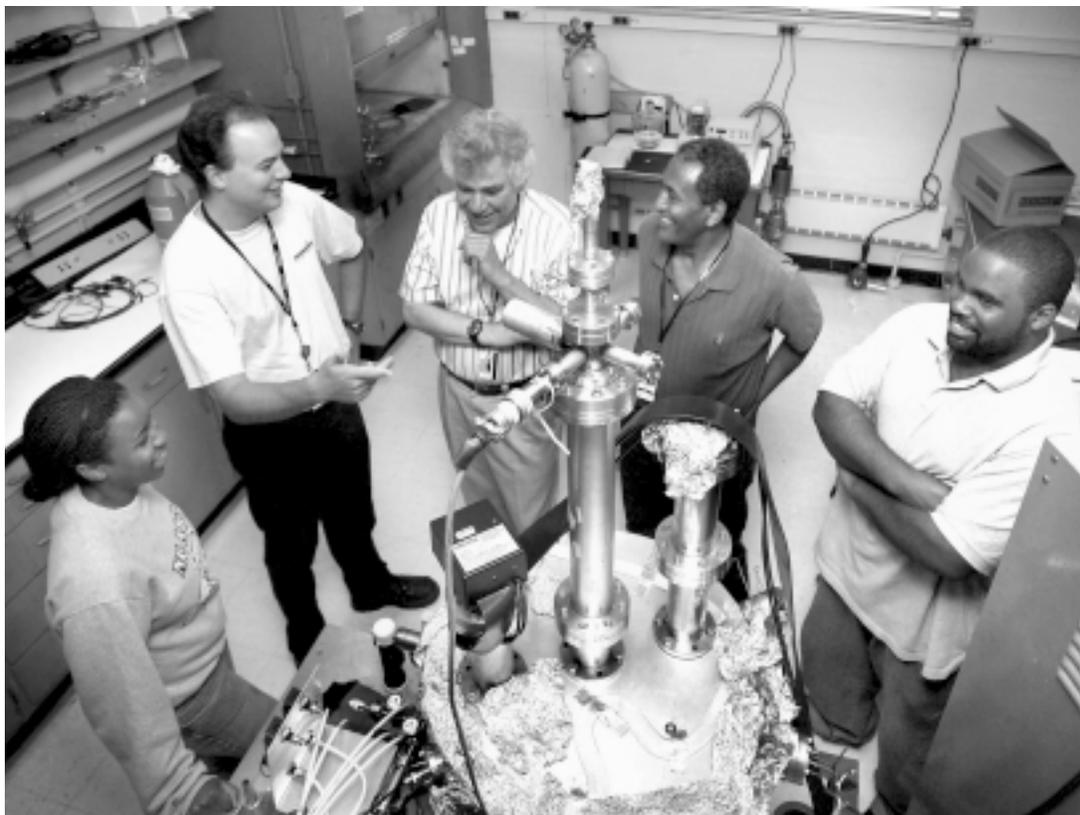
The participants in the 2004 Faculty and Student Teams (FaST) program at the Department of Energy's (DOE) Brookhaven National Laboratory (BNL) unanimously applauded its success at the program's concluding poster session and ceremony on Aug. 11-12. They declared the program, sponsored by DOE's Office of Science and the National Science Foundation (NSF) a win-win situation for all involved.

For 10 weeks in the summer, FaST unites a BNL scientist with two students and a faculty member from a university or college with limited research capabilities and funding. This year, BNL's Office of Educational Programs hosted five faculty-student teams.

The researchers also work with the faculty members to develop collaborative proposals to support joint research. The intent, according to Noel Blackburn, FaST program administrator at BNL, is "to expand the research capacity at the university and establish a durable collaboration between the university and Brookhaven Lab." Several proposals are being developed for submission to DOE, NSF, and other Federal agencies.

"Funding from other programs usually goes to major universities, but this DOE/NSF program helps people who really need it. That is so important. It's a great thing for the national laboratories to take part in this," said Myron Strongin, BNL-Physics, who hosted a team from North Carolina Agricultural and Technical State University. His team—faculty member Abebe Kebede and students Tanina Bradley and Christopher Jessamy—investigated the molecular electrical properties of gold-germanium thin films.

"These students need all the support they can get from the scientific



From left, student Tanina Bradley; Aaron Schuetz, DOE Office of Science; researcher Myron Strongin; faculty member Abebe Kebede; and student Christopher Jessamy discuss research conducted under the FaST program.

community," agreed Kebede. "They are the ones who will help lead the future of science in the U.S."

The other teams also had rewarding research experiences. Faculty member Reginald Blake and students Rafael Pena and Akini Bando of the City University of New York (CUNY) New York City College of Technology studied how mercury is deposited from a coal-fired power plant in Illinois, under the guidance of researcher Terence Sullivan, BNL-Environmental Sciences. Students Neel Khanna and Andre Grange and faculty member Mark Kobrak of CUNY Brooklyn College worked with James Wishart, BNL-Chemistry, studying anion-based ionic liquids and their properties. "This is a great way to establish relationships between BNL staff and school faculty in a way that meets both our needs," Wishart said.

Faculty member Jyh-Cheng Liu and students Matthew Weber and Thomas Hronopoulos from New Jersey City University worked with Carmen

Benkovitz, BNL-Environmental Sciences, to develop a software program to analyze environmental data. "It was an eye-opener to be in a real-world research situation," Weber said. Peter Siddons, BNL-National Synchrotron Light Source, and faculty member Elhag Shaban and students Clifford Williams and Shayla Wilkinson from Southern University in Louisiana explored the potential of new electron multiplier structures for synchrotron x-ray detector systems. "For me, this program was a lifesaver. Having the manpower gave the project a start," Siddons said.

Each faculty member said they would like to maintain the relationship with the laboratory and looked forward to bringing what they had learned back to their home institutions. The BNL researchers said they hoped to sustain the new collaborations under FaST or other funding being sought with newly written joint proposals. ❖

People IN ENERGY

William A. Bookless has been named Associate Director for Safety and Environmental Protection at the Department of Energy's Lawrence Livermore National Laboratory (LLNL). His responsibilities include the areas of environmental protection, occupational health, employee safety, and quality assurance. Bookless has held various leadership positions since joining LLNL in 1978 and most recently served as Deputy Associate Director of LLNL's Defense and Nuclear Technologies Directorate.



Charles (Chuck) D. Harrington, a Technical Staff Member at the Department of Energy's Los Alamos National Laboratory (LANL), recently received the laboratory's 2004 Women's Career Development Mentor Award. The award recognizes individuals who promote the career development of women at LANL and who exhibit exemplary informal or formal mentoring to women. Harrington mentored LANL scientist **Teryn Ebert**.

Thomas Lee Ferrell, a member of the distinguished research staff in the Life Sciences Division at the Department of Energy's Oak Ridge National Laboratory, has been elected a Fellow of the American Physical Society. Ferrell was selected for his invention of the photon scanning tunneling microscope.

Eric Loewen, an engineer at the Department of Energy's Idaho National Engineering and Environmental Laboratory, has been selected to serve as the American Nuclear Society's 2005 Glenn T. Seaborg Congressional Science and Engineering Fellow. The fellowship provides an opportunity to work in a Congressional office for a year, beginning in January 2005. Loewen will furnish advice on nuclear science and engineering matters to a Member of Congress and staff.

Susan Johnson Grant is the Department of Energy's new Chief Financial Officer and Director, Office of Management, Budget and Evaluation. President George W. Bush recess appointed Grant to the position on July 30, 2004. Grant was nominated for the position by President Bush on Oct. 15, 2003; her nomination

was resubmitted Sept. 10, 2004. Most recently, Grant served as Director for Corporate Resources for the Defense Finance and Accounting Service.

Chris Goodman of the Office of Site Services at the Department of Energy's (DOE) Savannah River Operations Office was recognized as a co-winner of the DOE Fleet Manager of the Year Award in the large fleet category at the FedFleet 2004 Conference held in New York, N.Y., July 20-22-2004. Goodman was cited for his exemplary performance in managing the Savannah River Site vehicle fleet and the significant accomplishments made under his management in meeting DOE Headquarters' goals for reducing vehicles and converting to alternative fuels.

Scientists **Novella Bridges**, **Darrell Fisher**, and **Anna Gutowska** of the Department of Energy's Pacific Northwest National Laboratory are the recipients of the 2004 Regional Industrial Innovation Award presented by the American Chemical Society. The research team was hon-

ored for its development of radiolabeled composites, known as RadioGel™, as therapeutic agents for high dose radiation treatment of solid cancers that cannot be removed surgically.

Vickie VanZandt is the new Senior Vice President for the Transmission Business Line at the Department of Energy's (DOE) Bonneville Power Administration (BPA). The first woman to head BPA's transmission operation, VanZandt will oversee all functions of the 15,000 circuit-mile high-voltage power line grid in the Pacific Northwest. Most recently, she served as Vice President of Transmission Operations and Planning at BPA. VanZandt also co-chaired the operations team that investigated the East Coast Blackout of Aug. 14, 2003. ❖



Jerald S. Paul, Principal Deputy Administrator of the Department of Energy's (DOE) National Nuclear Security Administration (NNSA), is congratulated by Jeff Allison, Manager, DOE Savannah River Operations Office (left), and Bruce Wilson, Deputy Manager, NNSA Savannah River Site Office (right), after taking his oath of office during a visit to the Savannah River Site on Aug. 6, 2004. Paul, who most recently served as a Member of the Florida House of Representatives, was nominated for the position by President George W. Bush on Feb. 3, 2004, and confirmed by the United States Senate on July 22, 2004. ❖

Milestones

YEARS OF SERVICE

September 2004

Headquarters

Chief Information Officer - Brenda C. Coblentz (30 years), Donna K. Crouse (30). **Economic Impact & Diversity** - Sterling Nichols, Jr. (35). **EIA** - Diane D. Perritt (40), Katherine E. Seiferlein (35), Mary L. Lilly (30), Jeffrey S. Jones (25), Elizabeth K. Scott (25). **Energy Efficiency & Renewable Energy** - James M. Ahlgrim (25), Raymond Fortuna (25), Othalene J. Lawrence (25), Thomas L. Rueckert (25), Charles A. Sorrell (25).

Environment, Safety & Health - Douglass S. Abramson (30), Leslie A. Bermudez (25), Felecia A. Briggs (25), Jane Powers (25).

Environmental Management - Robert C. Fleming (30), Patricia A. Brown (25). **FERC** - Mark H. Zendel (30), Donald A. Heydt (25), Patrick K. Murphy (25), Lauren H. O'Donnell (25), Kevin J. Pewterbaugh (25). **Fossil Energy** - Edward F. Kilroy (35), Terri L. Durdock (25), Tina L. Michalski (25).

General Counsel - Roderick R. Ismay (35), Martha S. Crosland (30), Michael T. Skinker (30), Paul W. Phillips (25). **Inspector General** - Robert W. Lewandowski (35), Robert C. Krieger (25). **Intelligence** - Caryl A. Butler-Gross (25). **Legacy Management** - Jagdish L. Malhotra (25). **Management, Budget & Evaluation** - Girtha M.S. Burks (35), William G. Kennedy (35), Agustin Nunez (35), Dewight D. Perkins, Jr. (35), Terrence D. Sheppard (35), Robert J. Woytko (35), John B. Carpenter (30), Scott H. Chayette (30), Mark R. Hively (30), Benjamin R. Chatterson (25), Craig F. Whitaker (25).

NNSA - Roberta M. Duran (30), Michael J. Mistretta (30), Sterling M. Franks III (25). **Nuclear Energy** - John P. Gutteridge (30), Carl R. Klee (25). **Policy & International** - Leonard L. Coburn (35). **Radioactive Waste** - Stephen H. Hanauer (25). **Science** - Erol Oktay (30), William T. Oosterhuis (30). **Security & Safety Performance Assurance** - John J. Cronin (30), Kathy E. Murphy (30).

Field

Bonneville Power - Martin R. Harvey (40), Allen L. Lockwood (35), Flurry D. Stone (35), Alan E. Crymes (30), Gary D. Grant, Jr. (30), June Hindman (30), Lyn R. Holmberg (30), Fusako Ikeda (30), Cherie S. Long (30), Gary D. Richardson (30), Elena Rivier (30), Richard D. Titera (30), Gregory V. Alexander (25), Cynthia Z. Beraud (25), Dennis W. Bowling (25), Paul A. Brodie (25), Dennis O. Coe (25), Douglas C. Couch (25), Calvin

P. Essex (25), Dyson P. Ferron (25), Dickson D. Fox (25), Scott W. Hoyle (25), Jacqueline L. Long (25), Lloyd C. Meyer (25), Nancy Parker (25), Barbara M. Rehman (25), Wallace A. Roghair (25), Judith L. Schoenberg (25), Brian L. Silverstein (25), Christa K. Tash (25), John H. Vinson (25), Erik D. Westman (25).

Carlsbad - Lyle B. Lilly (30). **Chicago** - Keith M. Adkins (25), Louis F. Sadler (25). **NETL** - Robert A. James (35), Joseph J. Scotchie (35), Paula B. Flenory (30), R.P. Killmeyer, Jr. (30), Diane M. Franklin (25), Ming-Shing Shen (25), Donald E. Wiczenski (25). **Nevada Site/NNSA** - Donald C. Boyce (25), William D. Shipley (25). **NNSA Service Center** - Charles A. Baird (35), Mark C. Baca (30), Robert D. Lowther (30), Gloria D. Pena-Chavez (30), Eileen Rountree-McLennan (30), Robert S. Brown (25).

Oak Ridge - John D. Pearson (30), Linda M. Eble (25). **Pantex Site/NNSA** - Jefferson E. Tedrow (25). **Richland** - Robert M. Carosino (30), Gail M. Splett (30). **Rocky Flats** - David F. George (25). **Savannah River** - Ronald L. Peterson (30), Dorothy R. Tyler (30). **Southeastern Power** - Carol P. Rice (25). **Southwestern Power** - Linda L. Wells (30). **Strategic Petroleum Reserve** - Arvel M. Callwood (25). **Western Area Power** - Brian C. Morris (30), Linda D. Smith (30), David L. Rutkowski (25). **Y-12 Site/NNSA** - William W. Wistrom (40).

RETIREMENTS

July 2004

Headquarters

Environment, Safety & Health - James C. Snell (30). **NNSA** - Harry G. Laycock (13). **Science** - Stephen G. Steadman (5).

Field

Albany Research Center - Max C. Lewis (38). **Southwestern Power** - Robert F. Purnell, Jr. (31). **Western Area Power** - Michael G. Baldwin (40), Ronald L. Callies (21). **Y-12 Site/NNSA** - Ronnie J. Catoe (35).

August 2004

Headquarters

Counterintelligence - David M. Renzelman (12). **Environmental Management** - Vicki L. Crampton (39). **FERC** - Robert F. Christin (29), Joseph Hamilton (34), Patricia S.P. Johnson (35), Michele L. Patchan (38), Olivia J. Wallace (24). **Inspector General** - Sally J. Leiser (28). **Management, Budget & Evaluation** -

Donnie L. Marsh (30), George M. Tengan (35). **NNSA** - Bruce K. Johnson (24), Theodore F. Luera, Jr. (18). **Security & Safety Performance Assurance** - Robert N. Hubbard (33).

Field

Chicago - June M. Wiinikka (29). **NNSA Service Center** - Francis H. Rowsome III (16), Angela P. Tommasino (22). **Oak Ridge** - Robert W. Poe (33). **Western Area Power** - Curtis W. Martin (8), Lonnie L. Zastrow (30). ♦

NEW Publications

The August 14, 2003, Blackout One Year Later: Actions Taken in the United States and Canada to Reduce Blackout Risk is a joint report to the U.S.-Canada Power System Outage Task Force prepared by electricity staff at the Department of Energy (DOE) and Natural Resources Canada. The report, which details actions taken and the progress made over the last year to reduce the risk of future blackouts, is available from a direct link on the DOE home page, <http://www.energy.gov>. The complete URL for the report is http://www.energy.gov/engine/doe/files/dynamic/1372004121416_Blackout-OneYearLater_highresolution.pdf.

Office of Inspector General (IG) reports: *Internal Controls Over Personal Computers at Los Alamos National Laboratory* (DOE/IG-0656); *The Department's Continuity Planning and Emergency Preparedness* (DOE/IG-0657); *Protective Force Response to a Security Incident at Sandia National Laboratory, California* (DOE/IG-0658); *The Stabilization of Nuclear Materials at Los Alamos National Laboratory* (DOE/IG-0659); *Management Controls Over the National Nuclear Security Administration's Enhanced Test Readiness Program* (OAS-M-04-05); *Management Controls Over Subcontract Administration at the National Security Laboratories* (OAS-M-04-06). The reports are available at <http://www.ig.doe.gov>. ♦

Argonne recycling wins state recognition

In 1993, the Department of Energy's (DOE) Argonne National Laboratory in Illinois disposed of almost 3,700 metric tons of sanitary waste. In 2003, because of recycling and reuse efforts, that amount was down to just 36 metric tons. In recognition of this and other effective pollution controls, Argonne was presented the 2004 state award for "Outstanding Government Leadership" in recycling. The award was sponsored by the Illinois Environmental Protection Agency, in conjunction with the Illinois Recycling Association.

Barbara Markwenas, Argonne's pollution prevention coordinator, said the award was well deserved. "We've dramatically decreased the amount of waste we have to get rid of," she said. "Since the initiatives began in 1996, we've saved about \$12 million. We don't have to pay as much to send trash to landfills; and by reusing materials, we buy less."

The strongest motivation for Argonne's recycling efforts was a 1996 Federal Government mandate for facilities to reduce regulated waste streams, including a 50 percent reduction in sanitary (non-hazardous) waste by 2005. Sanitary waste includes paper, toner cartridges, scrap metal, and even asphalt and concrete. "We've already surpassed that—we're at 77 percent," Markwenas said. State of Illinois regulations dictate 33 percent recycling or better.

September 2004

AROUND DOE

ORNL materials laboratory assists NASCAR teams

NASCAR teams seeking a racing edge are making pit stops at the High Temperature Materials Laboratory (HTML) at the Department of Energy's (DOE) Oak Ridge National Laboratory. Staff members have worked with nationally and regionally recognized racing teams on a wide range of test materials, mechanical designs, and engine life and failure. The HTML is a DOE-funded National User Facility free to institutions and individuals conducting non-proprietary research on transportation materials.

Arvid Pasto, HTML Director, said the facility helps solve problems in advanced energy conversion systems—such as race cars—to make them more efficient and reliable. Instruments available at the laboratory have extensive capabilities for characterizing the microstructure, microchemistry, and physical and mechanical properties of materials over a wide range of temperatures.

OSTI, Yahoo! Search make DOE science more visible

The Department of Energy's (DOE) Office of Scientific and Technical Information (OSTI) is partnering with Yahoo! Search Content Acquisition Program to make DOE's wealth of science information publicly available and searchable via Yahoo!®, a leading Internet destination. OSTI's mission is to advance science and sustain technological creativity by making research and development findings available and useful to DOE researchers and the public.

"Exposing our deep Web content to surface search engines is an exciting development," said Dr. Walter Warnick, OSTI Director. "We can only imagine what the future will bring, as citizens tap into Yahoo! to access the vast collection of energy science and technology information at OSTI."

Previous to the OSTI/Yahoo! Search partnership, documents inside the deep Web had not been easily accessible by the public through commercial search engines. Over 80,000 full-text scientific and technical reports produced by DOE since 1995, available at OSTI's Information Bridge (<http://www.osti.gov/bridge>), are now searchable and accessible via Yahoo! Search. Over two million of OSTI's bibliographic records of literature in chemistry, physics, materials, environmental science, geology, engineering, mathematics, climatology, oceanography, computer science, and related disciplines are also accessible. ❖

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

Official Business