DOE This Month

U.S. DEPARTMENT OF ENERGY

MAY 2002

G-8 senior energy leaders meet in Detroit

Virginia team wins National Science Bowl®

House approves Yucca Mountain site

DOE This Month

U.S. Department of Energy

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On our cover

Senior energy leaders of the eight major industrialized nations and the European Union met in Detroit, Mich., May 2-3, to discuss energy policy and issues of common interest. The second ever Group of Eight (G-8) Energy Ministerial Meeting was one of several being held by G-8 ministers in advance of the G-8 2002 Summit for heads of state in Canada this summer. The meeting was co-chaired by Canadian Minister of Natural Resources Herb Dhaliwal and U.S. Secretary of Energy Spencer Abraham.

Assembled for the official Energy Ministers meeting on May 3 are (l-r) Dominique Maillard of France, Dr. Christel Moeller of Germany, Antonio Marzano of Italy, Minister Dhaliwal of Canada, Secretary Abraham of the United States, Takeo Hiranuna and Shigeo Uetake of Japan, Igor Yusufov of Russia, Brian Wilson of the United Kingdom, and Loyola De Palacio of the European Commission, representing the European Union.

For more on the G-8 energy summit, see pages 3 and 4.

G-8 energy ministers meet in Detroit; prelude to heads of state June summit

Senior energy leaders of the eight major industrialized nations met in Detroit, Mich., May 2-3, to discuss energy policy and issues of common interest. Secretary of Energy Spencer Abraham, Canadian Minister of Natural Resources Herb Dhaliwal, and Michigan Governor John Engler were the official hosts of the second ever Group of Eight (G-8) Energy Ministerial Meeting. The meeting was one of several being held by G-8 ministers in advance of the G-8 2002 Summit for heads of state in Canada this summer.

The energy meeting included exhibits of emerging energy technologies, a public Energy Forum sponsored by the U.S. Energy Association, and the official meeting of the energy ministers of the G-8 nations and the European Union. The G-8 nations are Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States. The European Union consists of 15 member countries and is represented by the European Commission.

Secretary Abraham opened the event on May 1 with a tour of energy technology exhibits. Several Department of Energy (DOE) offices and national laboratories were among the organizations across the United States and Canada featuring current research and developing energy technologies. Karl Gschneidner, Jr. of Ames Laboratory was on hand to explain magnetic refrigeration research and a prototype refrigerator system. Argonne National Laboratory featured its research in clean-burning hydrogen-powered fuel cells and a fuel-processing technology that can "reform" conventional hydrocarbon fuels into a hydrogen-rich gas for fuel cells. (See related article on exhibits, page 4.)

Energy Forum

On May 2, Secretary Abraham welcomed participants to the Energy Forum. Concurrent sessions on various energy topics continued throughout the day. During a break in his meetings with other energy ministers, Secretary Abraham, joined by DOE Assistant Secretary for Energy Efficiency and Renewable Energy David Garman, announced that the Department will host an International Conference on the Future of Energy Transportation Technologies in fall 2002 in Detroit.

The upcoming conference will provide a forum to discuss many transportation research issues in a collaborative manner with nations and companies from around the world. Specific conference details are to be determined, but the Administration's FreedomCAR initiative will be one of the conference sessions. Under the FreedomCAR program, the Federal Government and the private sector will fund research into advanced, efficient fuel cell technology which uses hydrogen to power automobiles without creating any pollution.

Secretary Abraham gave a major energy policy speech at the Energy Forum luncheon. He noted that the G-8 nations share similarities in their institutional arrangements and societal achievements and face similar energy challenges in three general areas:

- rapidly increasing demand;
- inadequate infrastructure for future needs; and
- reconciling energy growth with environmental protection.

The Secretary said there are four broad areas where working together will accelerate progress in overcoming these energy challenges:

- placing greater emphasis on energy security;
- expanding energy trade and investment;
- increasing cooperation in technology research and development; and
- intensifying international dialogue between nations.

Particularly important are smoothly functioning international markets and the G-8 nations' ability to react quickly and effectively to any sudden disruption in supply, Secretary Abraham observed. "We need to prepare for the possibility of oil supply disruptions," he said. "The best immediate preparation is the maintenance of emergency oil stocks and the collective commitment to use them during disruptions. On this, of course, international cooperation is fundamental to success."

The complete text of Secretary Abraham's remarks is available at **http://www.energy.gov/HQDocs/speeches/2002/mayss/PublicEnergyForumLunch.html**.

Ministerial meeting

As the Energy Forum continued on May 3, the G-8 Energy Ministerial Meeting convened in a closed session. Secretary Abraham and Minister Dhaliwal of Canada served as co-chairs of the meeting. A statement issued following the meeting focused on several areas of discussion and agreement, including:

- the key role of energy in G-8 economies and world economic and social development;
- close cooperation to enhance energy security and flexible emergency response;
- preparedness to respond to oil disruptions and the importance of maintaining and coordinating emergency oil stocks;
- how improved energy efficiency and a mix of energy sources supports energy security, economic growth, environmental protection, and sustainable development;
- the essential role of continued research, development, demonstration, and deployment of energy technology options; and
- the need for significant investments in energy development, production, infrastructure, and improved energy efficiency.

The complete statement is available at **http://www.energy.gov/HQPress/releases02/maypr/G8Statement.htm**. ❖

Technologies displayed at G-8 meeting

Emerging energy technologies were on display May 1-3 at the Group of Eight (G-8) Energy Ministerial Meeting in Detroit, Mich. Meeting participants were able to view and interact with about 30 exhibits from the Department of Energy (DOE), its national laboratories, and other energy organizations across the United States and Canada. Secretary of Energy Spencer Abraham officially opened the Ministerial Meeting with a tour of the Marriott Renaissance Center Exhibit Hall.

The DOE participating organizations and featured technologies included:

- **Ames Laboratory** – magnetic refrigeration research and a working prototype magnetic refrigerator currently being tested by Astronautics Corp.
- **Argonne National Laboratory** – hydrogen fuel cell research and a fuel reformer which "reforms" gasoline and other hydrocarbon fuels to hydrogen.
- **Brookhaven National Laboratory** – the Flame Quality Indicator, an electronic device that monitors flame brightness in residential oil burners to give homeowners advance alert when service is required.
- **Lawrence Berkeley National Laboratory** – research on standby power loss from appliances and electrical products that continue to consume energy when switched off.
- **Oak Ridge National Laboratory (ORNL)** – hybrid solar lighting system that collects and distributes sunlight via large-core optical fibers to reduce the need for electric lighting in buildings during daylight hours.
- **Pacific Northwest National Laboratory** – technology developments in the areas of fuel cells, exhaust after treatment, bio-based products, carbon management, and secure energy management software programs.
- **Princeton Plasma Physics Laboratory** – ongoing fusion energy research and computer simulations of plasma in a fusion research device.
- **Office of Civilian Radioactive Waste Management** – information on the Yucca Mountain tunnel and work in progress at the site.
- **Office of Energy Efficiency and Renewable Energy** – renewable energy and energy efficient technologies, including a small, 400-watt wind turbine and a photovoltaic/battery-powered wireless surveillance camera and monitor.
- **Energy Information Administration (EIA)** – information on the importance of G8 countries in the world economy and energy markets, individual country analysis briefs, and ways to obtain customized EIA data and statistics.
- **Office of Fossil Energy** – zero emission technologies, the President's Clean Coal Power Initiative, and liquid phase methanol—a clean coal technology.
- **Office of Nuclear Energy** – several ongoing research programs, including Nuclear Power 2010, Nuclear Energy Research Initiative, Generation IV Nuclear Energy Systems, and a demonstration model of the Westinghouse AP600 nuclear reactor.
- **Office of Science and ORNL** – Genomes to Life, a basic life-science research program that goes beyond characterizing such individual life components as genes and other DNA sequences toward a more comprehensive, integrated view of biology at a whole-systems level. ❖

Secretary Abraham (left) and Hermann Grunder, Director, Argonne National Laboratory, cut the ribbon to officially open the exhibits and the energy summit.

House supports Yucca Mountain

On May 8, the U.S. House of Representatives approved by a 306-117 vote a resolution supporting the development of Yucca Mountain as the nation's permanent repository for high-level nuclear waste. Secretary of Energy Spencer Abraham praised the House for its overwhelming statement of bipartisan support.

"By approving this resolution, the House of Representatives has overridden the State of Nevada's disapproval of the development of the Nation's nuclear waste repository at the Yucca Mountain site," Secretary Abraham said. "This vote indicates that the House overwhelmingly agrees that the final determination on whether the site meets established and stringent regulatory requirements should be made by the independent experts at the Nuclear Regulatory Commission (NRC). I believe that it does, and I believe the NRC will ultimately approve Yucca Mountain.

"It is now up to the Senate to reject Nevada's veto and certainly the Senate will take note of the overwhelming bipartisan support the Yucca Mountain project has received in the House. I urge the Senate to quickly approve our recommendation so that the NRC can make the final determination on the site's suitability to serve as a repository." ❖

Virginia team wins National Science Bowl®

Sixty-four student teams from 41 states, the District of Columbia, and the U.S. Virgin Islands competed for top honors at the 12th annual Department of Energy (DOE) National Science Bowl®, May 3-6, at the National 4-H Conference Center in Chevy Chase, Md. The teams were the winners of regional science bowl tournaments held earlier this year at DOE sites, other Federal agencies, and educational institutions. More than 12,000 high school students from 1,800 schools participated in the regional competitions.

The team from Thomas Jefferson High School for Science and Technology displays its first place trophy. From the left are Under Secretary Robert Card; students Steven Sivek, Kay Aull, Jeffrey Cohen, Gregory Price, and Gary Sivek; and coach Sharon Baker.

On May 4, the students attended Saturday Science Bowl seminars. Dr. William Phillips, a Nobel laureate, was the plenary speaker. The teams then selected from a variety of seminar speakers, including Dr. Natalie Roe of the Department's Lawrence Berkeley National Laboratory; Dr. Steven Woodruff of DOE's National Energy Technology Laboratory-Morgantown; Dr. Judith Young, University of Massachusetts-Amherst; Dr. Carole Baldwin, National Museum of Natural History; and Mr. Magnet (Paul Thomas), MIT.

Tournament action began at noon May 5 and concluded with the awards ceremony around noon the next day. After an intense two-day competition of round-robin matches and double-elimination rounds, the student team from Thomas Jefferson High School for Science and Technology, Alexandria, Va., took top honors. The school's regional sponsor was the Department's Thomas Jefferson National Accelerator Facility. Under Secretary of Energy Robert Card presented the first-place trophy to the team. In addition, the team will attend the two-week International Youth Science Forum in London, England.

Secretary of Energy Spencer Abraham congratulated the winners and praised all the student competitors. "I believe in encouraging talented, scientific minds to develop their skills with the goal of one day leading our nation's research activities," Secretary Abraham said. "I know you will add to the future success of our scientific endeavors and will enhance our country's ability to maintain a position of leadership in math and science."

Placing second was Boulder High School in Colorado, sponsored by the Rocky Mountain Region of the Department's Western Area Power Administration. The third place winner was Mission San Jose High School, Fremont, Calif., sponsored by DOE's Sandia National Laboratories, California. Sycamore High School, Cincinnati, Ohio, came in fourth; Fluor Fernald sponsored the team. Placing fifth was Hanford High School, Richland, Wash., sponsored by the Department's Richland Operations Office.

The second, third, and fourth place winning teams each will attend a one-week science research trip to a DOE facility in New York, South Carolina, or Wyoming. Texas Instruments provided TI-83 silver edition calculators to each student on the top five teams and computer-based laboratories to the top three schools. Each coach of the top five teams received a Personal Data Assistant from IBM. The top 18 teams each received $1,000 for their school's science department.

More information about the National Science Bowl is available at **http://www.scied.science.doe.gov**. ❖

Middle school students vie in first national competition

The Department of Energy held its first National Middle School Science Bowl, March 21-24, 2002. Eight regional winning teams came to Washington, D.C., for the final tournament. The teams competed in both an academic question-and-answer competition and in an event where they designed, built, and raced junior solar cars.

Each team received $300 and a plaque for their school. Trophies and gift certificates to Discovery.com were awarded to the top three teams.

The results of the academic competition are:
1st Place–Samford Middle School, Auburn, Ala. • 2nd Place–St. Thomas More Catholic School, Portland, Ore. • 3rd Place–Honey Creek Middle School, Terre Haute, Ind. • 4th Place–Albuquerque Academy, New Mexico

The junior solar car race results are:
1st Place–Samford Middle School • 2nd Place–Memorial Middle School, Albany, Ore. • 3rd Place–Canyon Junior High School, Texas • 4th Place–Honey Creek Middle School

The other competing schools were Jane Long Middle School, Bryan, Texas, and Lake Highland Preparatory School, Orlando, Fla. ❖

DOE makes largest-ever purchase of renewable power for Headquarters facilities

On April 22, 2002, Department of Energy (DOE) sites across the country observed the 32nd anniversary of Earth Day by sponsoring and participating in local activities. At the DOE Headquarters celebration, Secretary of Energy Spencer Abraham announced the largest-ever purchase of electricity generated from renewable energy for the Department's facilities in Washington, D.C., and Germantown, Md., and challenged its other sites to take similar action. The ceremony included Dr. Edward Mayberry, President and CEO of PEPCO Energy Services; Stephen Perry, Administrator, General Services Administration (GSA); and David Garman, DOE Assistant Secretary for Energy Efficiency and Renewable Energy.

"Today, I am pleased to announce that the Department of Energy will purchase electricity generated from renewable resources to power roughly 17 percent of our electricity needs at DOE Headquarters," Secretary Abraham told employees. "Our new contract calls for an annual purchase of 6 million kilowatt-hours, roughly the amount of electricity needed to power 600 homes each year."

The DOE Headquarters Engineering and Facilities Management Group in the Office of Administration arranged for the renewable energy to be supplied by PEPCO Energy Services as part of a competitively awarded contract for electricity. The contract was awarded and administered by the GSA's Energy Center of Expertise.

The Department purchased a blended renewable power product comprised of 25 percent wind power, supplied by Community Energy Inc., and 75 percent landfill gas-fired generation to demonstrate the importance of a diversified domestic energy resource base. The premium for the renewable portion of the contract is funded using the savings realized through the competitive procurement process, resulting in no net increase in the Department's utility bill.

The renewable energy purchase allows DOE Headquarters to become a partner in the Environmental Protection Agency's Power Partnership, a voluntary program that encourages public and private organizations to purchase renewable power. The purchase also supports the goal that 2.5 percent of Federal facility electricity consumption be derived from new renewable energy sources by fiscal year 2005.

For more information or assistance with renewable power purchases, contact David McAndrew, Federal Energy Management Program (FEMP), Office of Energy Efficiency and Renewable Energy, 202-586-7722. For information on other FEMP activities, contact Annie Haskins, 202-586-4536. ❖

River Corridor Project earns safety 'star'

Employees of the River Corridor Project at the Department of Energy's (DOE) Hanford Site in Richland, Wash., recently were honored for reaching "Star" status in the DOE Voluntary Protection Program (VPP). A special ceremony was held at the Department's Volpentest HAMMER Training and Education Center.

The ceremony included formal presentation of the Star flag and certificate by Dr. Harry Pettengill, Director, Office of Regulatory Liaison, Office of Environment, Safety, and Health. That office administers the VPP for workers in the DOE complex. "This is a heck of an achievement," Pettengill told the crowd. "We are really proud of what you've done and how you've done it."

"This is a win-win-win situation for all of us," said Mal Wright, Director, 324 Deactivation Project. "It's a win for us as a group because we have a safer working environment. It's a win for our company because that safe environment makes us more productive. And it's a win for DOE because, as a result, they are able to honor their commitment to the American people—to establish as safe a working environment as they can."

Beth Bilson, Assistant Manager for the River Corridor Project, DOE Richland Operations Office, said stakeholders share in the win. "They need to know there are jobs out here that are safe to do and that the work is getting done and the risk is being reduced."

"Each of you won this award," Norm Boyter, Fluor Hanford Vice President of the River Corridor Project, told the employees. "It puts you in an elite class of workforces. And when I think of the work you do in terms of the demands, physically and radiologically, I think of you as the elite of the elite."

The DOE Voluntary Protection Program promotes safety and health excellence through cooperative efforts among labor, management, and government at the Department's contractor sites. The program was initiated in 1994 to promote improved performance through public recognition of outstanding efforts. Star is the highest level of achievement in the program.

The River Corridor Project award is the sixth at the Hanford Site and the 19th Star award across the DOE complex. At Hanford, Star status is being sought by individual projects, facilities, and contractors, in contrast to the site-wide approach used at most other DOE sites. ❖

PUREX operations end at Savannah River; son completes what his father began

In late March 2002, the F Canyon and FB Line facilities at the Department of Energy's Savannah River Site in South Carolina completed their last production run for the Plutonium and Uranium Extraction (PUREX) process. For nearly 50 years, the facilities processed most of the plutonium that makes up the United States' nuclear arsenal.

F Canyon and FB Line, both located in the Site's F Area, are two of Savannah River's four chemical separations facilities. The other two are H Canyon and HB Line. The F Area facilities historically recovered plutonium, through the PUREX chemical process, from material that had been irradiated in Savannah River reactors. The canyon dissolved the material from the reactors into a solution and then purified and concentrated the solution. FB Line made the solution into metal buttons, about the size and shape of a hockey puck.

When Loy Filmon started up the F Canyon dissolver the first time in February 1955, he wasn't thinking about making history. Loy came to Savannah River in 1953 and was part of the initial staffing of the F Area. Crews moved around as needed in those days. Loy spent time in all the separations facilities and also was on the startup crew for H Canyon. He retired in 1993 after 40 years service.

Loy Filmon (right) and his son Wayne were there at the start and finish, respectively, of the F Canyon PUREX process.

His sons Jeff and Wayne both work at Savannah River. Like everyone in F Canyon, Wayne heard rumors of shutting down operations numerous times in the last 10 years. The final piece of business was to finish what his father started. "I told Phil (Breidenbach, F Canyon Facility Manager) months ago that when the canyon shut down for the last time, I wanted to be the one to do it." So Breidenbach made it happen for him.

Unless additional feed materials are identified, F Canyon will enter a suspension phase where the facility will be cleaned up and all hazards removed. FB Line has at least three years of full operations remaining. Money saved in completing work in F Area facilities will be used to further accelerate the Site's environmental management missions.

Associated personnel will be transferred to other facilities, such as H Canyon and HB Line, as work in the F Area concludes. Some F Canyon personnel, including Wayne Filmon, will transfer to H Canyon this month, for the new mission of blending down highly enriched uranium, formerly used in Savannah River reactors, into low-enriched uranium, which eventually will be used as fuel in Tennessee Valley Authority power reactors. ❖

INEEL begins Nuclear Power 2010 work

The Department of Energy's (DOE) Idaho National Engineering and Environmental Laboratory (INEEL) is testing a German pebble-bed fuel as part of the Administration's Nuclear Power 2010 initiative. The testing is to support pebble-bed nuclear reactor research at the laboratory's Advanced Test Reactor. Testing is expected to last about a decade at a cost of about $30 million. INEEL is partnering with the Department's Oak Ridge National Laboratory on part of the research project.

"INEEL was selected for these tests because of our nuclear expertise," says Finis Southworth, program manager of the advanced gas reactor fuel development and qualification program. "We are the only DOE facility with a test reactor capable of handling this type of research. We hope this is just the first step in continued focus on INEEL's expertise in nuclear research."

Scientists will spend the next few months designing ways to irradiate the fuel. "The tests will use state-of-the-art techniques developed at INEEL to track the conditions of the fuel during irradiation. The tests will provide important information about how the fuel reacts to higher temperatures and burnups than those experienced in German pebble-bed reactors in the 1980's," says David Petti, engineering Fellow responsible for developing the test program. "The new design of 'pebble-bed modular gas-cooled reactor' being proposed by Exelon Corp is significantly improved, but imposes different conditions on the fuel."

Over the next several years, INEEL will run two irradiation tests on the fuel. Parallel tests also are planned in Russia and South Africa, and the information gathered from all the tests will be used to help further develop the pebble-bed reactor.

The major objective of the Nuclear Power 2010 initiative is to begin building new nuclear power plants in the United States by the end of the decade. Additional information on the initiative is available at **http://www.ne.doe.gov**. ❖

Beryllium Technology Facility awarded for excellence

The Beryllium Technology Facility (BTF) at the Department of Energy's (DOE) Los Alamos National Laboratory (LANL) has received a Defense Programs Award of Excellence from the Department's National Nuclear Security Administration. The award recognizes five years of work to begin processing beryllium metal. "This is the very first state-of-the-art facility in the United States designed specifically for working with beryllium," said Steve Abeln, BTF team leader.

The team effort included the destruction and demolition of an existing facility and the design, construction, preparation for readiness, and final approval of the new 16,000-square-foot facility. The moderate-hazard facility received an especially intense readiness assessment and review due to new regulations and concerns about chronic beryllium disease.

At left, Rick Lauer, LANL, machines the surface on a beryllium sample. A high-powered vacuum connected to the clear plastic hose rapidly removes and collects for disposal all waste material from the work area. ❖

Paper sailboards give students an energy challenge

Wind surfing on a sailboard made only from paper products, a team of chemical engineering students from Georgia Institute of Technology placed first and raced away with $15,000 in the annual Energy Challenge, held this year at Lake Lanier in Flowery Branch, Ga. Seven university teams were entered in the competition. At left, Georgia Tech's Philip Timm tries to catch up to North Carolina State's Damon Buus during the race.

Over the last eight months, the teams designed and built sailboards completely from paper products. The sailboards were judged on gross weight, material composition, tensile energy absorption, stiffness, novelty of design, and performance in a timed race.

The Energy Challenge was sponsored by the Department of Energy; Institute of Paper Science and Technology; Hercules, Inc.; and WindSense. The competition encourages innovation, increases interest in science and engineering, promotes energy awareness, and supports DOE's Agenda 2020, a program to enhance the economic competitiveness and energy efficiency of the U.S. forest industry. ❖

Visualization center enables concurrent engineering

Visualization has been incorporated into the work environment at the Department of Energy's Kansas City Plant. The high-resolution display technology is part of an ongoing effort to bring collaboration tools and digitization to the National Nuclear Security Administration facility.

Two 12-foot by 4-foot visualization display systems are helping technical staff increase their comprehension of complex engineering designs and reduce design iterations and cycle time. The systems also enable work to be performed in geographically dispersed locations in a web browser environment, allowing staff to share applications and information to increase product quality, reduce cost, and shorten cycle time. The Department's Pantex, Y-12, and Savannah River sites are implementing similar capabilities so all four locations can interact on projects.

At left, the complex mechanical assembly displayed on screen demonstrates some capabilities of visualization. The three infrared emitters on top of the screen send a signal to specially designed liquid crystal shutter eyewear, creating the perception of depth for the viewer. ❖

International effort begins tree genome sequence

Scientists from the Department of Energy's (DOE) Oak Ridge National Laboratory (ORNL) and Joint Genome Institute and other institutions and universities around the world are collaborating to sequence the *Populus* tree genome. *Populus* includes the cottonwood, hybrid poplar, and aspen and was selected as the first tree genome to sequence because of the trees' rapid growth rate, small genome size, and widespread use in areas of interest to the forest industry and DOE.

"Genetic sequencing of *Populus* is expected to lead to faster growing trees, trees that produce more biomass for conversion to fuels, while also sequestering carbon from the atmosphere," said Stan Wullschleger of ORNL's Environmental Sciences Division. "In addition, trees with unique traits may be used in phytoremediation, a process where trees...could be used to clean up hazardous waste."

In the photo, (l-r) Sandy McLaughlin and Mark Downing of ORNL conduct tree research. The international effort expects to make the *Populus* genetic blueprint available within 18 months. ❖

Site-Specific Advisory Boards tour Fernald

The Fernald Citizens Advisory Board hosted the biannual meeting of the Department of Energy's (DOE) Environmental Management Site-Specific Advisory Board Chairs, April 11-13, 2002. The meetings are held to discuss complex-wide issues and to share information pertinent to the advisory boards' missions. Meeting topics included the DOE Top-to-Bottom Review, the Fiscal Year 2003 budget, and long-term stewardship issues.

At right, a tour of the Department's Fernald Environmental Management Project began the meeting of chairs from nine advisory boards. Johnny Reising, DOE associate director for the Fernald cleanup, highlighted the site's remediation efforts. Those who had visited Fernald in the past were impressed with the amount of completed remediation work and the open spaces left after removal of six of the 10 major production plants in the former processing area. The advisory board chairs especially were interested in Fernald's On-Site Disposal Facility. Reising noted that DOE and Fluor Fernald are on target to complete cleanup and site closure by 2006. ❖

Savannah River salvaging resources, saving money

With the renovation of formerly abandoned Building 253-H, the Department of Energy's Savannah River Site now has a convenient facility where contaminated radiation monitoring equipment can be processed. Several shops on site handled clean equipment, but none handled calibration and repair of radiation monitoring equipment contaminated with low levels of radioactive materials. Previously, such equipment was thrown away as low level radioactive waste.

At right, James Howell, Canberra Industries, calibrates air monitors in the radiological control area of Building 253-H. Future plans call for other material and test equipment considered impractical to calibrate and repair, such as torque wrenches, to be processed in Building 253-H rather than being disposed of as waste.

Savannah River realizes several benefits from the new facility. Less waste is generated and equipment simply out of calibration need not be replaced on a routine basis. The total estimated savings is approximately $2 million per year. ❖

Research DIGEST

Pregnant women living on South Dakota Indian reservations where infant mortality rates are more than twice the national average are receiving specialty care under the first commercial test of a telehealth system called MUSTPAC-3 (for the third version of the Medical Ultrasound, Three-dimensional and Portable with Advanced Communications). The state-of-the art portable ultrasound system was developed at the Department of Energy's **Pacific Northwest National Laboratory**. The system won the Discover Award in 1997 for technological innovation in computer hardware and electronics. It recently was deployed at two reservation clinics for data acquisition and also was installed at a Sioux Falls medical center, hundreds of miles away, where health care providers will use MUSTPAC-3 to monitor 100 women in their first trimester of pregnancy. Information from these studies will be used to gain Food and Drug Administration approval for MUSTPAC-3. (Staci Maloof, 509-372-6313)

Researchers at the Department of Energy's **Oak Ridge National Laboratory** (ORNL) are developing a personal cooling system that would provide chilled air to circulate within the suit and helmet of a fighter pilot. The system uses high thermal conductivity graphite foam, an award-winning ORNL-developed material that boasts thermal conductivity five times greater than aluminum. "Our proposed system would enhance the performance of a person's natural cooling mechanisms," said graphite foam developer James Klett of ORNL's Metals and Ceramics Division. "Instead of simply cooling the skin through a uniform, our approach would remove heat from the body surface and provide cooled air to breathe." While the initial use is expected to be for fighter pilots, the system would be applicable for race car drivers, firefighters, hazardous materials workers, and others who have to contend with protective clothing and hot working environments. (Ron Walli, 865-576-0226)

A new generation of solar cells that combines nanotechnology with plastic electronics has been launched with the development of a semiconductor-polymer photovoltaic device by researchers with the Department of Energy's **Lawrence Berkeley National Laboratory** (LBNL) and the University of California at Berkeley. Such hybrid solar cells would be cheaper and easier to make than their semiconductor counterparts and could be made in the same variety of shapes as pure polymers. "...potentially you get the best of both worlds," said Janke Dittmer of LBNL's Materials Science Division. "Inorganic semiconductors offer excellent, well established electronic properties and are very well suited as solar cell materials. Organic polymers offer the advantage of solution processing at room temperature, which is cheaper and allows for using fully flexible substrates, such as plastics." The research is reported in the March 29, 2002 issue of the journal *Science*. (Lynn Yarris, 510-486-5375) ❖

Argonne, NIH sign biology research agreement

The Department of Energy's Argonne National Laboratory and two institutes of the National Institutes of Health recently signed an agreement to build new biological research capabilities at the laboratory's Advanced Photon Source (APS). The National Institute of General Medical Sciences (NIGMS) and the National Cancer Institute (NCI) will build the specialized user facility consisting of three new beamlines at the Advanced Photon Source, which produces the Nation's most brilliant X-rays for research. Research at the new beamlines will center on structural studies of biological molecules.

"We are delighted that NCI and NIGMS are collaborating to build an outstanding new protein crystallography facility at the Advanced Photon Source," said J. Murray Gibson, Argonne Associate Laboratory Director for the APS. "They share our confidence that our outstanding X-ray photon source, run by Argonne and the University of Chicago for the Department of Energy, can make a major impact in combating disease."

X-ray crystallographers determine the three-dimensional shape of a molecule by blasting a beam of X-rays through a crystallized sample of the molecule and then analyzing the pattern of the scattered beam. The NIGMS/NCI beamlines will be designed to optimize certain properties of X-rays most useful for specific biological studies.

These studies are expected to reveal the structures of proteins and other molecules involved in human health and disease. Scientists can use this information to help develop new medicines and diagnostic techniques. In addition to such structural studies, the new synchrotron beamlines can be used for work in cancer biology, immunology and virology, and basic studies in biochemistry, cell biology, molecular biology, and biophysics.

The three beamlines will be fully operational in about three years. ❖

Augusta Newsprint showcases energy-efficient business practices

The next time you pick up a copy of the *Washington Post* or the *Atlanta-Journal Constitution*, think energy efficiency. Why? Because the newsprint used by these and other newspaper publishers around the country comes from a plant in Augusta, Ga., that has some of the most energy-efficient business practices in the United States.

Energy represents a significant business cost in the forest products industry—about $7.6 billion was spent on purchased fuels and electricity in 1998. Augusta Newsprint Company, under continuous pressure to lower operating costs to remain competitive, adopted a proactive strategy to reduce energy use by one percent over each of the next five years.

The Institute of Paper Science and Technology (IPST), Atlanta, Ga., introduced the company to the programs conducted by the Office of Industrial Technologies (OIT)—now the Office of Technology Deployment—in the Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy. Recognizing the value of the programs, Augusta Newsprint agreed to become the site for OIT's first Forest Products Showcase and provide a forum so that others in industry could learn from its experiences.

For over a year, the company and OIT worked together to identify and target opportunities for energy savings and process efficiency improvements. Recommended technologies and practices were measured and validated by mill personnel and an independent consulting engineering firm. The Department provided the company with a wide variety of energy assessment tools and services and helped underwrite the costs for the showcase.

Augusta Newsprint Company installed a plate heat exchanger and associated piping to use the steam heat from normal operations for preheating water for the boiler, saving 16 billion Btu/year.

The Forest Products Showcase was held March 6-7, 2002. DOE was joined by its industry partners Augusta Newsprint Company, IPST, and the American Forest and Paper Association. The showcase highlighted nine projects for process and system improvement, including recapturing steam operations for boiler use, pump controls, and energy-efficient lighting. The projects totaled about $1.7 million in combined Federal and partner investments, with annual energy savings of more than 130 billion Btu and annual cost savings of more than $1.4 million.

"Our first Forest Products Showcase went well and we are extremely pleased with the results at Augusta Newsprint Company," said Valri Robinson, OIT Team Leader, Forest Products Sector. "Annual energy savings of more than 130 billion Btu demonstrate that energy efficiency is smart business."

"Working with DOE and industry partners helped us achieve dramatic results," remarked John Green, Project Engineer, Augusta Newsprint Company. "The projects and processes we implemented will pay back in about 1.2 years. This helps us stay competitive and keep jobs close to home." ❖

Hans Oldewage (right, front) and Franz Lauffer, of the Environmental Management Department at the Department of Energy's Sandia National Laboratories, talk to students about career opportunities in health physics on March 9, 2002, at School to World, a career exploration event attended by approximately 2,800 New Mexico students and their families. The event was organized by Sandia's Community Involvement Department and sponsored by Sandia, Lockheed Martin, and area businesses, government agencies, and educational institutions. More than 150 careers were featured in fields ranging from medicine to art and social work to business. Over 35 Sandia employees volunteered to explain their career fields. ❖

Secretary names new SEAB head, members

Secretary of Energy Spencer Abraham has named M. Peter McPherson, President, Michigan State University, as the new Chairman of the Secretary of Energy Advisory Board (SEAB). He also appointed 17 new members to the Board, bringing the total membership to 38.

"The new Board and Chairman Peter McPherson will provide essential, independent advice and recommendations on issues of national importance for this Department," Secretary Abraham said. "Given the diverse interests of the members of this Board, I am confident I will be well-served by an array of experts in areas that represent our greatest energy challenges."

Prior to becoming president of the university in 1993, McPherson was Group Executive Vice President, Investment Management Group at Bank of America. He held several other executive-level positions at Bank of America from 1989 to 1993. From August 1987 to March 1989, he was Deputy Secretary of the U.S. Department of Treasury. He served as Administrator of the Agency for International Development from February 1981 to August 1987.

A list of the new members is available at **http://www.energy.gov/HQPress/releases02/maypr/pr02079.htm**. ❖

Department, Idaho agree on Pit 9 cleanup

A settlement and agreement has been reached between the Department of Energy (DOE) and the State of Idaho that will significantly speed up and reduce the costs of retrieving buried waste from the Pit 9 area at the Department's Idaho National Engineering and Environmental Laboratory (INEEL). The agreement also sets out a new process and schedule for conducting a comprehensive technical study of cleanup options for the entire 88-acre Subsurface Disposal Area at INEEL.

Under the agreement, DOE will excavate 80 to 100 cubic yards of buried transuranic waste in the one-acre Pit 9 by Oct. 31, 2004. Preliminary design of the project is complete; construction is scheduled to begin in June 2002.

The Pit 9 settlement establishes a $5 million reserve fund that could be tapped by regulators if the Department fails to meet future commitments on the Pit 9 demonstration project. ❖

Headquarters observes African American, Women's History Months

On March 27, 2002, Department of Energy (DOE) Headquarters celebrated National African American History Month and Women's History Month with an employee program focused on the future and centered around the theme "The Best and the Brightest—Keys to Recruiting, Retaining, and Developing Women Scientists and Engineers." The keynote address was delivered by Dr. Frederick S. Humphries, President and Chief Executive Officer (CEO), National Association for Equal Opportunity in Education. David Garman, Assistant Secretary for Energy Efficiency and Renewable Energy, spoke about the need to create a culture at DOE that allows all employees to achieve their full potential.

The program included a panel of experts in science, engineering, and personnel. Claudia Cross, Acting Deputy Director of Human Resources Management at DOE, provided insight into current initiatives by the Department's Office of Management, Budget and Evaluation to enhance recruitment, retention, and advancement of minorities, women, and people with disabilities. DOE environmental engineer Colette Broussard gave a personal perspective on diversity. Attendees heard a private-sector viewpoint on diversity from Eric Adolphe, Esq., President and CEO, Optimus Corporation. Esmerelda Nava, Director of Strategic Initiatives, Drexel University, provided practical guidance on maximizing diversity in the recruitment of top-notch college graduates.

Headquarters employees heard an interesting talk from keynote speaker Dr. Frederick S. Humphries.

The Office of Civil Rights and Diversity in the Office of Economic Impact and Diversity sponsored the history months' program. The event, which took place in the Forrestal Building Auditorium in Washington, D.C., was simulcast to DOE employees at the Germantown, Md., location.

A follow-up program currently is being developed to provide employees with practical information on career development. The program also will focus on the tools managers need to recruit, retain, and develop the best and brightest employees. ❖

Environment, safety, health training on-line

The Technology Supported Learning (TSL) Index is a Web-based index of technology supported learning resources for environment, safety, and health training. The index was developed by the Office of Technical Training and Professional Development in the Department of Energy's (DOE) Office of Environment, Safety, and Health (EH). About 55 training resources developed by DOE and its contractors, other Federal agencies, academia, and the private sector are listed on the TSL Index.

DOE and contractor employees can find environment, safety, and health courses to help meet their training requirements. Training professionals can find resources useful for developing their own courses or adapting existing courses to meet site-specific needs. The index provides a quick, user-friendly summary of the design, content, and technical features of the training resource. An access point to the course from the listing also is provided.

The TSL Index is available at **http://www.orau.gov/eh/training/tsl_index/tsl_index.htm**. To list a course on the index, contact Deborah McFalls by e-mail at mcfallsd@orau.gov. The EH point of contact is Veronica Parham, 202-586-0509 or roni.parham@eh.doe.gov. ❖

Department launches E-Government initiative

The development and improvement of electronic government practices in the Federal Government and among Federal agencies is one of the five key elements of President Bush's management agenda. In support of this agenda, the Department of Energy (DOE) has kicked off a new electronic government initiative known as IDEA. The goal of IDEA (Innovative Department of Energy E-Government Applications) is to ensure that information technology is prudently introduced and managed to increase efficiency, improve resource management, simplify processes, and unify information flow across the Department's business lines.

"We are committed to using information technologies to improve the service we provide to citizens, businesses, and Federal and state agencies," Secretary of Energy Spencer Abraham said. "We want to identify technologies that will help us reform the way the Department does business."

Karen Evans, DOE Chief Information Officer, heads a task force of representatives from all Department elements that will identify priority actions to achieve strategic improvements in four areas of service:

- deploying easy to find one-stop shops for individuals/citizens;
- reducing burden on businesses by using common standards and consolidating reporting requirements;
- making it easier for intergovernmental institutions to meet reporting requirements and participate as full partners in citizen services; and
- improving DOE's internal efficiency and effectiveness by using E-business best practices.

The Department's goal is to complete and approve an action plan and road map in June 2002. ❖

Just a reminder, *DOE This Month* is available on the Internet for reading and downloading. Issues are available for the current and last calendar years. From the DOE Home Page, **http://www.energy.gov**, click on "A-Z Index," then click on "D," then scroll down and click on "*DOE This Month*" listed under "Department of Energy." The direct URL address is **http://www.energy.gov/subscriptions/sub/doe_month/doe_month.html**. ❖

COMING Events

June

2-5 Energy 2002, Energy Efficiency Workshop and Exposition, Palm Springs, Calif. Cosponsored by the Department of Energy's Federal Energy Management Program, the Department of Defense, and the General Services Administration. The workshop, designed for Federal, state, and local government and private sector energy managers, offers the opportunity to learn about the latest cost-effective energy-saving, renewable energy, and water efficiency products and equipment, and to share success stories. For additional conference and registration information, contact JoAnn Stirling, Florida Solar Energy Center, 800-395-8574, or visit **http://www.energy2002.ee.doe.gov**.

3-5 2002 Future Car Congress, Arlington, Va. Cosponsored by the Department of Energy and the U.S. Council for Automotive Research. The international conference will showcase the latest developments in automotive technologies aimed at reducing the world's transportation energy consumption and minimizing vehicle emissions. The conference features panel discussions with industry and government leaders, technical sessions, a student competition, and an exhibition. Additional information is available at **http://www.futurecarcongress.org/**. ❖

People in Energy

Joanna Fowler, a senior chemist at the Department of Energy's Brookhaven National Laboratory, has won the American Chemical Society's 2002 Glenn T. Seaborg Award for Nuclear Chemistry. The award honors Fowler for her "pioneering contributions to positron emission tomography (PET), including the development of fluorine-18-fluorodeoxyglucose—a radiotracer used worldwide for measuring brain function and diagnosing cancer—and tracers for monoamine oxidase found to be reduced in the brains of smokers."

Chip Hultquist is the new Director of the Emergency Management Laboratory at the Department of Energy's Oak Ridge Institute for Science and Education. He has been a project manager at the laboratory since 1992. Previously, he was Director of Radiological Emergency Preparedness for the State of Florida.

William Feiereisen is the new leader of the Computer and Computational Sciences Division at the Department of Energy's Los Alamos National Laboratory (LANL). The division provides basic and applied computing research in support of LANL's multidisciplinary programs. Previously, Feiereisen was chief of the Advanced Supercomputing Division at the National Aeronautics and Space Administration's Ames Research Center.

Jeff Brinker and **Gordon Osbourn** of the Department of Energy's Sandia National Laboratories have been elected members of the National Academy of Engineering. Brinker, a senior scientist in Sandia's Inorganic Materials Chemistry Division, was honored for his contributions to the science of sol-gel processing. Osbourn, Laboratory Fellow and team leader in Sandia's Lasers and Optics Department, was recognized for originating the field of strained-layer superlattices and related structures.

Tom Wilbanks, corporate fellow and manager of the Global Change and Developing Country programs at the Department of Energy's Oak Ridge National Laboratory, has been appointed for a three-year term to the Board on Earth Sciences and Resources of the National Research Council. The board oversees a large number of program and committees of the National Academy of Sciences/National Research Council Division on Earth and Life Studies.

Senior chemist **Louis DiMauro** of the Department of Energy's Brookhaven National Laboratory has been named a Fellow of the Optical Society of America. DiMauro was recognized for his work in developing the "Rescattering Model" theory, which explains how an ultra-bright laser pulse shining on an atom can produce very energetic electrons and photons.

Physicist **Charles Carrigan** of the Geosciences and Environmental Technologies Division at the Department of Energy's Lawrence Livermore National Laboratory (LLNL) has received the prestigious Fulbright Scholar Award. He will take a year off from work at LLNL to pursue research at the Department of Earth Sciences at Cambridge University in the United Kingdom. The Fulbright Program was established in 1946 under legislation introduced by former Senator J. William Fulbright of Arkansas. The traditional Fulbright Scholar Program sends 800 U.S. faculty and professionals abroad to 140 countries each year.

Department of Energy Inspector General **Gregory Friedman** recently was named by Comptroller General of the United States David M. Walker to a three-year term on the Advisory Council on Government Auditing Standards. The Council works with the General Accounting Office to keep generally accepted government auditing standards current and provide interpretive guidance. Members include professionals from Federal, state, and local government; academia; and the private sector.

Two women employees at the Department of Energy's Brookhaven National Laboratory were among 10 honorees at Brookhaven Town's Women's Recognition Night on March 21, 2002. **Margaret Bogosian**, Manager, Office of Intellectual Property and Industrial Partnerships, was recognized for her contributions to law; and **Linda Chang**, Chair, Medical Department, for her contributions to science.

The National Safety Council has elected **Dennis J. Erickson**, Director of the Environment, Safety and Health Division at the Department of Energy's Los Alamos National Laboratory, to its 51-member Board of Delegates. The board develops the Council's mission agenda, creates, policy, and tracks safety, health, and environmental trends. Erickson will serve as a Member at Large. ❖

Milestones

YEARS OF SERVICE

May 2002

Headquarters

Chief Information Officer - Paul J. Paradis (25 years). **Congressional & Intergovernmental** - Marguerite V. Adams (30). **EIA** - Derriel B. Cato (30), John H. Wood (30), Susan M. Henry (25). **Energy Efficiency & Renewable Energy** - Hugh Saussy, Jr. (35), Raymond A. Sutula (35). **Envir., Safety & Health** - Eleanor H. Crampton (35), Harold T. Peterson, Jr. (35), James T. Bachmaier (25).

FERC - Robert Kimberlin (35), Jeannette S. Starkey (35), Irene Barlow (30), Fannie L. Kingsberry (30), Peter J. Roidakis (30), Frances D. Young (30), John S. Blair (25), Sheila D. Hernandez (25), Diana Royster (25), Gajinder Singh (25), Philip Veres (25). **Fossil Energy** - Peter R. Lagiovane (30), Lynnette H. Le Mat (30). **General Counsel** - Prentis Cook, Jr. (30).

Independent Oversight & Performance Assurance - Virginia M. Johnson (35). **Inspector General** - Clement A. Gallo, Jr. (35), Paul Christian (30), Sandra S. McGraw (25). **Intelligence** - Lee Ann P. Chandler (30). **Management, Budget & Evaluation** - Melvoid Anderson (35), Connie V. Choudhry (35), Richard B. Langston (35), Emma M. Greenfield (30), Octavius Gorham-Greenhill (25), Warren E. Jackson (25), Linda R. Strand (25).

NNSA - Gwendolyn Johnson (35), Gerald E. Gears (30), Anatoli Welihozkiy (30), Cheryl P. Alford (25), Richard J. Ball (25), Paul F. Krumpe (25). **Policy & International** - Kathleen L. Deutsch (30). **Radioactive Waste** - Karen M. Pigee (25), James B. Zimmerman (25). **Science** - Martin R. Rubinstein (25), Myrna J. Vallette (25). **Security** - Alice V. Wyatt (30).

Field

Albuquerque - Gilbert T. Maldonado (35). **Albuquerque/NNSA** - Gary T. Echert (30), Everett R. Goodman (30), Patrick T. Hoopes (30), Jerry S. Johnson (30), M. Elaine Lujan (30), Dolores S. Lucero (25). **Chicago** - Roberta J. Dalton (30), Alan C. Zook (25). **Golden** - Timothy A. Rea (30). **Idaho** - Larry B. Arnold (25).

NETL - Kenneth S. Askew (30), Donald K. Harrison (30). **Oak Ridge** - Jo Ellen Ferguson (25), Susan G. Hiser (25), David H. Level (25), Susan L. Phillips (25). **Y-12/NNSA** - Teresa D. McCarten (25), Caryl A. Milton (25). **Oakland** - Carl E. Schwab (30). **Oakland/NNSA** - Margaret Y. Carroll (30). **Ohio** - Diane M. Aplin (25).

Rocky Flats - Mary O. Hammack (30), Gary S. Lietz (25), Elizabeth A. Wilson (25). **Strategic Petroleum Reserve** - Geralyn H. Champagne (30). **Western Area Power** - Merle W. Tucker, Jr. (35), Ronald J. Johnson (30), Richard J. Perri (30), John A. Ragan (30), Robert C. Temple (30), Craig M. McComb (25), Randall R. Rau (25).

Bonneville Power - Gary W. Kydland (40), Kenneth H. Canon (35), Jon F. Daume (35), James A. Vinson (35), Terry A. Bowersox (30), William J. Daniels (30), James L. Hall (30), Stephen D. Holcomb (30), George T. Reich (30), Russell E. Walker (30), Gregory J. Ward (30), Catherine S. Albrecht (25), Deborah A. Armstrong (25), Susan R. Bailey (25), Donald A. Barnhart (25), Gene H. Hoffman (25), Richard L. Knight (25), Robert A. Lesniak (25), John Marquez (25), Charles L. Misner (25), Timothy R. Smith (25), Sheryl D. Welch (25).

RETIREMENTS

March 2002

Headquarters

FERC - Tilak R. Dhir (7 years).

Field

Idaho - Diane C. Standage (20), Tansy L. Taylor (25). **NETL** - Larry E. Cross (30). **Western Area Power** - Ronald L. Bowersock (35), Janet A. Bruning (26).

April 2002

Headquarters

Envir., Safety & Health - Francis C. Hawkins (25).

Field

Bonneville Power - Emily C. Diehm (22), John R. Hubbard (24), Harold V. Jennings (24), Lawrence V. Slate (32), Donald E. Ward (39). **Nevada/NNSA** - Thomas D. Wiard (30). **Schenectady Naval Reactors/NNSA** - Jerry M. Cochran (20). **Western Area Power** - Donald R. Schuette (27). ❖

NEW Publications

International Energy Outlook 2002 (DOE/EIA-0484-2002), from the Department of Energy's Energy Information Administration (EIA), projects that worldwide energy consumption will increase by 60 percent over the next two decades, with much of the growth expected to occur in the developing world. The report is available on the Internet at **http://www.eia.doe.gov/oiaf/ieo/index.html**. Additional information on EIA reports is available from the National Energy Information Center, EI-30, Room 1E-238 Forrestal Building, USDOE, Washington, DC 20585, phone 202-586-8800.

Inspection of the Accountability and Control of Sealed Radioactive Sources at Selected Department of Energy Sites (DOE/IG-0544); ***Cyber-Related Critical Infrastructure Identification and Protection Measures*** (DOE/IG-0545); ***Accounting for Sealed Sources of Nuclear Material Provided to Foreign Countries*** (DOE/IG-0546); ***Inspection of the Licensing of Trade Secrets by Sandia National Laboratories*** (DOE/IG-0547); ***Personnel Security Clearances and Badge Access Controls at Department Headquarters*** (DOE/IG-0548). 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/**. ❖

May 2002

AROUND DOE

Livermore Lab has a groundbreaking day

The Department of Energy's Lawrence Livermore National Laboratory (LLNL) recently broke ground on two major research facilities.

The International Security Research Facility will consolidate LLNL's nonproliferation and intelligence-related operations. The two-story, 64,000-square-foot facility will house elements of the Nonproliferation, Arms Control, and International Security Directorate, as well as other areas of the laboratory involved in global security and counter-proliferation research and analysis. The building, expected to be completed in late 2004, will help LLNL meet the U.S. intelligence community's growing need for accurate and timely expert analysis of the proliferation of weapons of mass destruction.

The Terascale Simulation Facility will house LLNL's next-generation supercomputers, designed to simulate nuclear weapons performance under the National Nuclear Security Administration's Stockpile Stewardship Program. The 253,000-square-foot facility, scheduled for completion in 2006, has over an acre of computer floor space—larger than a football field. It will provide LLNL with a state-of-the-art supercomputing center capable of siting the world's most technologically advanced systems.

Fossil Energy revives the Homer H. Lowry Award

The Department of Energy's Office of Fossil Energy (FE) is reviving the Homer H. Lowry Award to recognize a living U.S. scientist or engineer whose scientific or technological achievements have advanced the understanding and use of fossil fuels. A nationwide call was issued for nominations by May 20, 2002, with the winner to be announced this fall. The Department last presented the award in 1995.

The Lowry Award, established in 1985 by the Secretary of Energy, consists of a citation, a gold medal, and a $25,000 cash award. It honors Dr. Homer H. Lowry, founder of the Carnegie Institute of Technology's Coal Research Laboratories and editor of *Chemistry of Coal Utilization*, considered the standard work of reference for coal scientists and technologists.

Los Alamos instrument maps Martian water

Scientists at the Department of Energy's Los Alamos National Laboratory (LANL) have mapped where hydrogen, a sign of water and ice, may lie just below the surface of Mars. Using data from the LANL neutron spectrometer on board the National Aeronautics and Space Administration's Mars Odyssey now in orbit around the planet, large amounts of hydrogen have been identified near the southern pole of Mars and smaller amounts, elsewhere.

"We will be mapping Mars' surface for well beyond one Martian year, so we will get maps of its surface during all of its seasons," said LANL researcher Bill Feldman, who led the team that built the spectrometer and a similar instrument that located hydrogen on the Moon. A Martian year lasts 687 Earth days.

Some scientists believe that Mars at one time may have had a large ocean and flowing rivers. "Our understanding is that the elements necessary to foster and sustain life here on Earth may also exist on Mars," said Feldman. "If there was standing water on Mars at some point, that means that Mars had a warmer climate and there could have been life." Mars Odyssey's discoveries will help determine where future missions should explore for clues about the planet's history. ❖

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