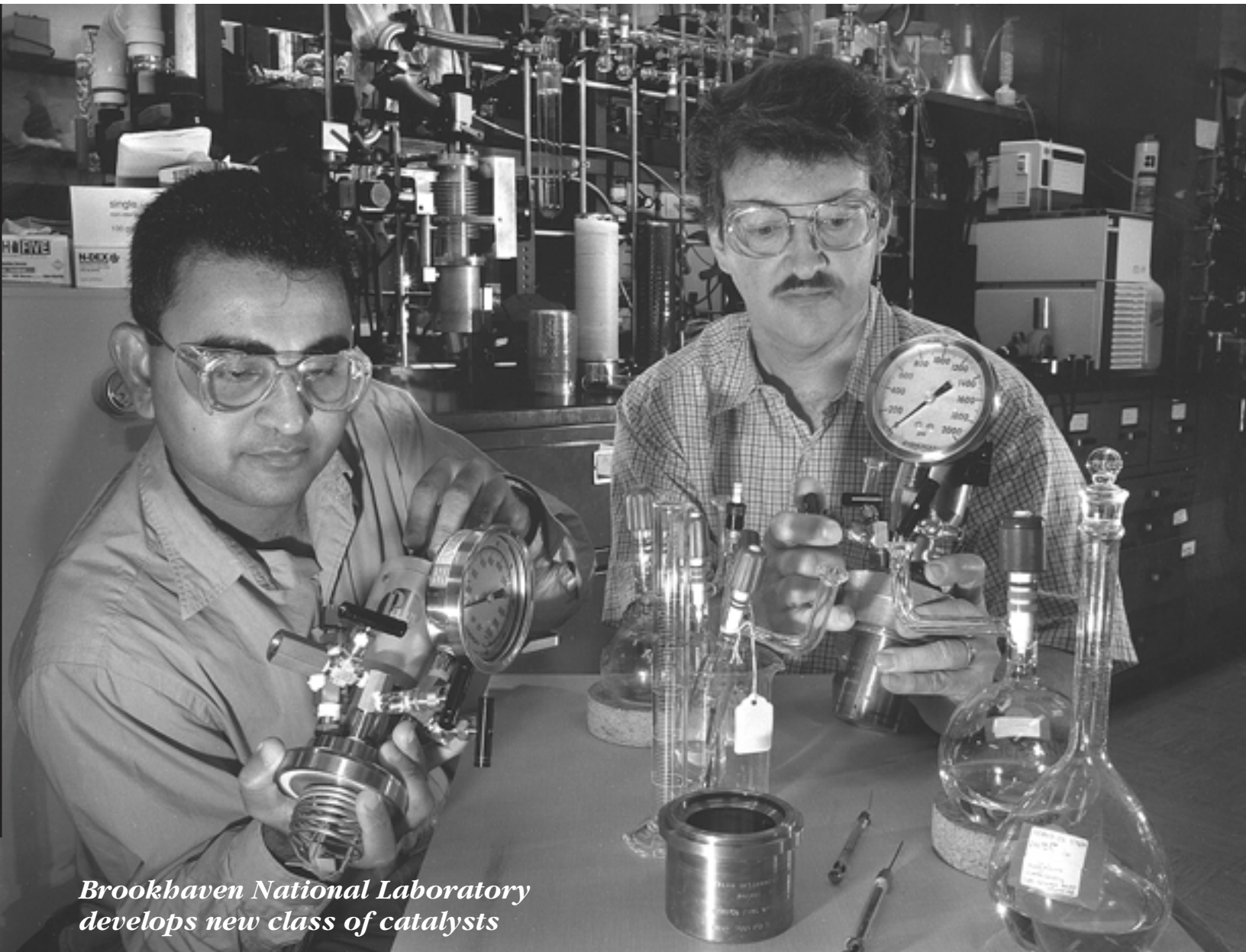


DOE

U.S. DEPARTMENT OF ENERGY

This Month

JANUARY 2002



*Brookhaven National Laboratory
develops new class of catalysts*

Department decides to deactivate FFTF

Fermilab contract extended for five years

U.S. Department of Energy



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Spencer Abraham
Secretary of Energy

Jeanne Lopatto
Director, Office of Public Affairs

Bonnie Winsett
Editor

Visual Media Group
Graphic Design

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A method of stopping a stolen or hijacked fuel truck, which potentially could be used in a terrorist bombing, has been developed by the Department of Energy's Lawrence Livermore National Laboratory.



On our cover

Researchers Morris Bullock (right) and Prasenjit Ghosh of the Department of Energy's Brookhaven National Laboratory prepare for an experiment to test a new class of catalysts that they developed with DuPont for converting renewable feedstocks to useful industrial materials. Industrial chemical and fibers are traditionally derived from petroleum-based feedstocks. These plant-based products may offer an economically advantageous, energy-saving, environmentally friendly alternative for DuPont and other chemical and synthetic-fiber manufacturers.

For more on the cooperative research, see page 5.

Caspian Pipeline opening, nuclear materials protection highlight Secretary's trip to Russia

Secretary of Energy Spencer Abraham made his first visit to Russia in late November. During his visit, Secretary Abraham and a team of Department of Energy officials represented the United States in events highlighting the completion and opening of the Caspian Pipeline Consortium (CPC) pipeline facility. Unfortunately, bad weather prevented Secretary Abraham from actually participating in the official opening ceremonies in Novorossiysk, Russia, on Nov. 27, 2001.

"The opening of the Caspian Pipeline marks a new day in the long history of Russian-American relations—a day of progress and a day of hope," Secretary Abraham said. "Eight companies from six different countries showed they could work for a common goal, to transcend the difficulties of the past and bring the world the energy it needs. This pipeline will strengthen international energy security by adding more than a million barrels of oil a day to global supply, and by creating new jobs and billions of dollars in revenue."

The CPC pipeline and facilities—the largest joint venture to date in Russia—required an investment of about \$2.5 billion by eight companies, including Chevron, Texaco, and ExxonMobil. The pipeline enhances energy security by making available more crude oil from the

Caspian Sea and enhancing diversification of energy supplies. It also provides a direct link from Kazakhstan's Tengiz oil field to the Black Sea and on to Western markets. Cooperation was essential among the governments of Russia, Kazakhstan, and Oman in order to achieve the completed pipeline.

Following two days of meetings in Moscow, Secretary Abraham and Russian Federation Minister of Atomic Energy Alexander Rumyantsev agreed to accelerate and expand joint U.S./Russia efforts to strengthen the protection of nuclear materials. The agreement builds on commitments by Presidents Bush and Putin at their recent Crawford, Texas, summit and will involve both bilateral efforts and a joint commitment to urge more effective international action.

"Minister Rumyantsev and I agreed to be personally engaged on a day-to-day basis in supervising this effort," Secretary Abraham said. "We both take this issue very seriously, especially in the aftermath of the September 11 attacks."

Secretary Abraham and Minister Rumyantsev agreed on the necessity of closer cooperation on enhancing



Minister Rumyantsev and Secretary Abraham at the conclusion of a meeting in Russia.

nuclear weapons nonproliferation; improving measures on nuclear materials physical protection, control and accounting; and preventing illegal trafficking and handling of nuclear materials.

A final stop of Secretary Abraham's visit was Vienna, Austria, where he met with International Atomic Energy Agency (IAEA) Director General El-Baradei and addressed the IAEA Board of Governors on Nov. 30, 2001. The Secretary continued the efforts he began in Moscow by emphasizing the importance of efforts to enhance IAEA's role in strengthening international standards for the protection and accounting of nuclear materials. The text of Secretary Abraham's remarks is available at http://www.energy.gov/HQDocs/speeches/2001/novss/IAEA_Board_Gov.html. ❖

Secretary names Electricity Advisory Board

On Dec. 10, 2001, Secretary of Energy Spencer Abraham named 39 members to the Department of Energy's newly formed Electricity Advisory Board. The Board, chartered under the Federal Advisory Committee Act on Nov. 9, 2001, was established by Secretary Abraham to attain authoritative advice from across all segments of the electricity industry.

S. Marce Fuller and E. Linn Draper will serve as Chairperson and Vice Chairperson of the Board,

respectively. "I am pleased that Ms. Fuller and Dr. Draper have agreed to serve the country in this crucial role," Secretary Abraham said. "The Electricity Advisory Board will focus on some of the most challenging issues facing the electricity industry and the Department of Energy today."

Fuller is President and Chief Executive Officer of Mirant, Atlanta, Ga. She has served in a variety of senior posts within the firm, including President and Chief Executive Officer of its North American Energy Risk

Management and Marketing Operations. Prior to joining Mirant, she worked for General Electric and Southern Company.

Draper is Chairman of the Board and Chief Executive Officer of American Electric Power Co., Inc., Columbus, Ohio. He has more than 20 years experience in the energy industry.

A complete list of the advisory board members is available at <http://www.energy.gov/HQPress/releases01/decpr/pr01205.htm>. ❖

Department will deactivate FFTF

On Dec. 19, 2001, Secretary of Energy Spencer Abraham announced that the Department of Energy (DOE) has concluded that restart of the Fast Flux Test Facility (FFTF) in Richland, Wash., is impracticable and that the Department will proceed with deactivation of the facility. The decision comes after a thorough and comprehensive review of the FFTF ordered by Secretary Abraham on April 25, 2001, which included an initial 90-day review of all information that might be relevant to a decision on the future of the research reactor, as well as a review of expressions of interests by public and private groups to commercially operate the facility.

"I want to thank the FFTF review teams who committed countless hours to this process," Secretary

Abraham said. "And in particular, I want to thank Congressman Doc Hastings, who worked longer and harder than anyone else to identify options for the potential restart of the FFTF. This review was conducted in an objective, exhaustive, and thorough manner. The Department's final determination is based on sound science, an extensive analysis of the costs and benefits of disposition options, and an in-depth consideration of the feasibility of commercial use options."

During the review process, the Department asked for submissions of proposals outlining potential commercial uses for the FFTF. Only one commercial proposal, submitted by the Advance Nuclear and Medical Systems (ANMS) proposing to use the facility for medical and research

isotope production, provided new information deemed worthy of further review. Subsequently, Secretary Abraham ordered an analysis of that proposal.

A working group of DOE personnel, directed by Under Secretary Robert Card, ultimately concluded that the ANMS proposal introduced significant drawbacks and presented potentially new legal and financial liabilities to the Department. Separate consideration was given to a related DOE-funded research mission proposed by the Department's Argonne National Laboratory to use the facility as a demonstration project related to nuclear fuel issues. Both proposals, collectively, would introduce significant liability and funding requirements for DOE that could exceed \$2 billion. ❖

Fermilab contract extended for five years

The Department of Energy has extended for five years its contract with Universities Research Association, Inc. (URA) to manage and operate the Fermi National Accelerator Laboratory. The contract extension is estimated to have a value of about \$1.5 billion over the term of the agreement, depending on future funding levels. The fiscal year 2002 budget for Fermilab is approximately \$307 million. Fermilab has a staff of more than 2,100 employees on its 6,800 acre site 35 miles west of Chicago, Ill.

"Fermilab's unique facilities and discoveries have helped establish our nation's international leadership in high energy physics," Secretary of Energy Spencer Abraham said. "This scientific leadership enhances our national security by laying the foundation for our understanding of nature and the possible development of future technologies undreamed of today."

DOE's Chicago Operations Office negotiated the new agreement and provides on-site administration of the contract with URA for management and operation of Fermilab through its Fermi Area Office.

Universities Research Association is made up of 89 member universities, many of which also participate in the research collaborations using Fermilab's particle accelerators and detectors. In all, more than 200 U.S. and foreign universities and institutions participate in Fermilab experimental programs. About a third of the 2,300 scientists using these facilities are from foreign countries.

Fermilab's Tevatron, with its new Main Injector, currently is the world's highest energy colliding beam accelerator. With its newly upgraded detectors, the Collider Detector at Fermilab (CDF) and DZero, the laboratory currently is the world's leading high energy physics laboratory in the search for new particles and phenomena. The Neutrinos at the Main Injector (NuMI) project and associated facilities, currently under construction at Fermilab, will examine the question of neutrino mass. Fermilab also is responsible for managing and coordinating U.S. laboratory and university efforts to develop magnets and detectors for the Large Hadron Collider in Europe. ❖



On behalf of Secretary of Energy Spencer Abraham, General John Gordon (left), Under Secretary for Nuclear Security and Administrator, National Nuclear Security Administration (NNSA), presented the Secretary's Gold Award to Admiral Richard Mies, Commander in Chief, United States Strategic Command, during a recent Nuclear Weapons Council meeting at the Pentagon. The Gold Award, the highest given by the Department of Energy (DOE), is granted for outstanding leadership and major contributions in support of the Department's missions and goals. Admiral Mies was recognized as a true friend of the Department and a dedicated advocate for the DOE/NNSA Stockpile Stewardship Program. ❖

New catalysts could convert renewable feedstocks to useful industrial materials

The Department of Energy's (DOE) Brookhaven National Laboratory (BNL) and Dupont's Central Research and Development Department in Wilmington, Del., have developed a new class of catalysts that in the future could convert plant-derived feedstocks into industrially useful materials, such as chemicals and synthetic fibers. The research is described in the Oct. 12, 2001, issue of the German journal *Angewandte Chemie*.

Industrial chemicals and fibers like nylon are traditionally derived from petroleum-based feedstocks. The biomass-based feedstocks may offer an economically advantageous,

energy-saving, environmentally friendly alternative for DuPont and other chemical and synthetic-fiber manufacturers.

The Brookhaven/DuPont collaboration used a ruthenium-based catalyst to accelerate the removal of oxygen from diols—organic compounds commonly found in plants that contain compounds of hydrogen, oxygen, and carbon. Selective removal of oxygen converts diols into alcohols, which are used for making industrial materials. The researchers hope to use this deoxygenation method on more complex compounds such as glucose for converting organic plant material into

chemicals for application in large-scale industrial processes.

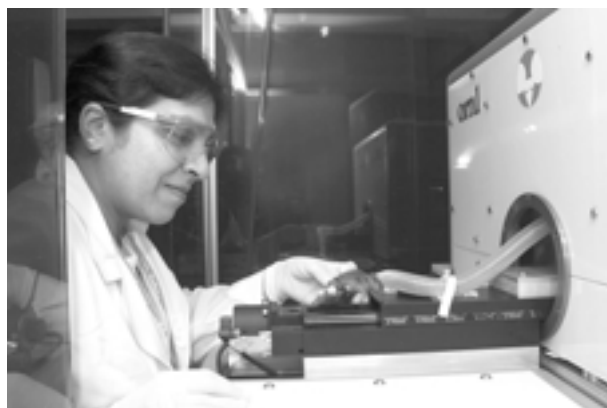
"This is an early step in a long-term goal to develop new ways to make chemicals and fibers," said Morris Bullock, BNL principal researcher. Research is continuing to improve the activity of the new catalysts so that they become attractive for industrial use. Two patent applications have been filed on the catalysts.

The work was carried out under a three-year Cooperative Research and Development Agreement, funded by DuPont and DOE's Office of Science, Laboratory Technology Research Program. ❖

Obesity – genetics or overeating?

With family gatherings and parties, most of us during the holiday season tend to overeat. And it is common knowledge that constant overeating and lack of exercise are prime causes of excessive weight gain and obesity. But, predisposition for obesity may be in the genes, according to researchers at the Department of Energy's Oak Ridge National Laboratory (ORNL) who recently pinpointed the location of an obesity-related gene on mouse chromosome 7.

Dabney Johnson, in whose lab the gene was discovered by research associate Madhu Dhar, says that mice, like humans, deposit fat in their bodies in different patterns that are genetically controlled. Humans and mice are genetically similar and produce similar proteins. In humans, chromosome 15 is similar to chromosome 7 in the mouse. The most recent fat gene discovered on mouse chromosome 7 is different from other obesity-causing genes so far characterized in mice as it does not act alone but in concert with other genes involved in maintaining the body's energy balance.



ORNL researcher Madhu Dhar places a mouse with the newly discovered obesity-related gene in the MicroCAT X-ray computerized tomography system to image the distribution of fat deposits.

"We have found that the normal mouse has a gene on chromosome 7 that probably plays a role in the transport of fat from the blood into fat cells, where fat is stored as a source of energy to keep the body healthy," Johnson says. "If a mutant form of this gene is inherited from the mother in certain genetic backgrounds, the offspring grow 35 to 50 percent fatter by middle age than does a normal mouse, even though they are both eating a normal mouse diet."

Using recombinant DNA techniques, the ORNL researchers have defined the small region on mouse chromosome 7 that contains the fat gene and its neighbors and have identified and characterized genes from this region in the normal mouse. The researchers also have identified mice with behavioral oddities, internal defects, and disorders such as epilepsy and obesity caused by the absence or alteration of one of these genes on chromosome 7. Looking at the abnormalities resulting from this genetic information gone awry gives strong clues about the normal function of the genes in this chromosome region.

The researchers have been able to image the distribution of fat deposits in mice with the obesity-related gene in three dimensions with the MicroCAT, a CT scanner for mouse-sized animals developed by ORNL. Using the imager and special software, they have been able to locate fat deposits in normal mice and mice with the obesity gene on chromosome 7 and measure the size and weight of the fat deposits. ❖

Department employees care and share

Throughout the year, and especially during the holiday season, Department of Energy (DOE) employees at Headquarters and field sites always are there to lend a helping hand to their local communities and to share with those in need. The year 2001 was no exception.

DOE Headquarters' annual Combined Federal Campaign (CFC) began on Nov. 1, 2001, with a goal of \$840,000. Secretary of Energy Spencer Abraham appointed General Counsel Lee Otis as his Vice Chairman to coordinate the drive. By the end of the campaign on Dec. 21, employees had pledged \$937,854—112 percent of the goal—to local, national, and international charities.

Federal and contractor employees at DOE field sites also gave generously to their local CFC and United Way charity campaigns. The 54 employees at the Kansas City Area Office raised \$17,265 for CFC charities, exceeding the goal of \$9,200 by 88 percent. The Kansas City Plant's prime contractor, Honeywell Federal Manufacturing & Technologies, also exceeded its 2001 United Way goal by raising more than \$620,000 through employee contributions and Honeywell corporate support. Employees for Savannah River Site con-



Savannah River Site employees Jeannine Mills, Bennie Wiggins, Jr., and Kim Prettel sort through a portion of the 18,480 pounds of food donated during the Site's annual food drive.

tractors Westinghouse Savannah River Company, Bechtel Savannah River Inc., BNFL Savannah River Corporation, and BWXT Savannah River Company donated a total of \$2,272,405 for area United Way agencies.

Oak Ridge National Laboratory (ORNL) firefighters raised more than \$23,000 for the families of victims of the Sept. 11 tragedy in New York. The firefighters, members of Union Local I-2, collected more than \$13,000 from ORNL staff and a match of \$10,000 from UT-Battelle. The fund-raising effort was spontaneous, with just a day's notice to staff that firefighters would be at the ORNL gates.

A truck loaded with gifts arrived in time for the holidays for the Shawnee Tribe in White Oak, Okla., thanks to the American Indian Winter Assistance Drive, a community effort sponsored by the Department's Fernald Environmental Management Project in Ohio. A donated 40-foot semi-trailer loaded with canned goods, clothing, computers, school supplies, and children's toys collected from Ohio, Kentucky, and Indiana made the holidays brighter for over 2,000 residents of the reservation.

Savannah River Site employees donated the equivalent of over 64 tons of food—\$23,346 in cash and 18,480 pounds of food—to Golden Harvest Food Bank during the annual holiday food drive and more than 10,000 toys during the site's 11th Annual Toys for Tots Drive. The Westinghouse Savannah River Company donated an additional \$2,000 to the food bank for the purchase of holiday turkeys and hams.

These are but a few of the many benevolent efforts of DOE Federal and contractor employees. A hearty thank you goes out to these and all offices not mentioned that care enough to share with others in need. ❖

'Grinch' foiled from taking holiday gifts

The quick action of an employee of the Department of Energy's Fernald Environmental Management Project and an officer from the Hamilton County (Ohio) Sheriff's Department helped rescue some holiday gifts from the hands of would-be thieves.

In mid December, Fluor Fernald Wish-Tree Coordinator Katie Payne was at a private security storage facility sorting over 300 gifts donated by Fernald employees when she noticed two teenage boys near the storage bay where the gifts were being housed temporarily. Several bags

had to be placed outside the entrance of the bay while gifts were being arranged by destination. Turning her attention to the bags near the door, Payne noticed that four bags of gifts were missing. When confronted, the boys denied taking the gifts and left.

The Hamilton County Sheriff's Department determined the teenagers were renting a storage bay and lived nearby. Deputy Dave Hill monitored the activity at the storage complex and residence that evening. Later that night, one of the teenagers returned to the bay to retrieve the packages. He was arrested and is

awaiting a decision from the grand jury on felony theft charges. In all, deputies recovered more than \$700 in stolen gifts.

"It's hard to believe that anyone would want to take packages clearly marked for area children," Payne said. "I'm just thankful that Deputy Hill and the Sheriff's Department were able to recover the gifts."

Each year, Fernald workers donate presents for children in need from area schools. Over the past seven years, Fernald employees have donated over 3,000 gifts through the Wish Tree Program. ❖

Employee Concerns Program reports progress

The Office of Employee Concerns in the Office of Economic Impact and Diversity has issued its *Employee Concerns Program Activity Report 2000*. The report, the fifth in a series of annual reviews, details the program's activities during calendar year 2000, based on data collected from Department of Energy (DOE) employee concerns offices across the DOE complex.

A total of 774 employee concerns were open during 2000, the highest volume of concerns since establishment of the program in 1996. Of that total, 604 concerns, or 78 percent, were closed. This closure rate is consistent with closure rates of about 80 percent in previous years.

The report highlights several positive trends since establishment

of the Employee Concerns Program. During the past five years, the percentage of cases open for more than six months has steadily declined from 31.6 percent to 18 percent. Such a reduction has been a goal of the program because concerns not resolved within that time period tend to remain in the system much longer; and the associated costs for DOE, as well as for the employee, are often very high.

The Office of Employee Concerns also has released a survey report produced by the National Academy of Public Administration. The *Survey of the Effectiveness of the Department of Energy's Employee Concerns Program* reflects feedback from DOE employees and their views on the program and the

Department's policy of "zero tolerance of reprisal."

There are both positives and negatives in the survey results. An overwhelming majority of employees believe their workplace supports the health and safety of the workforce, and 91 percent of employees agree that "employees have an obligation to express their concerns about workplace issues." However, 20 percent of all those surveyed did not feel free to raise concerns, including 36 percent of all DOE users.

For copies of the reports or to address questions or comments, contact Bill Lewis, Director, Office of Employee Concerns, or Cynthia Brawner-Gaines, Headquarters Employee Concerns Manager, on 202-586-4034. ❖

Energy, Interior Departments address safety, security of offshore platforms

The Department of Energy (DOE) has a longstanding mission of protecting the safety and security of United States nuclear weapons and nuclear material. Now, other government agencies are realizing that many of the risk analysis techniques developed by the Department also can be applied to their safety and security concerns.

Under an interagency agreement, the Minerals Management Service (MMS), U.S. Department of the Interior, turned to the Department of Energy for help in analyzing the risk of accidents and spills at offshore platforms in the Gulf of Mexico. For DOE, this offered a new forum to enhance the safety and security of one of the nation's most critical infrastructures—offshore oil and gas platforms. Approximately 4,000 oil and gas production platforms in the Gulf of Mexico account for about 25 percent of all natural gas and 15 percent of all oil consumed in the United States.

The goal of the interagency agreement was for the Department to provide the MMS with the necessary technical expertise and research to analyze

information on operator performance, inspection records, and accident records stored in several computer databases. The results of this analysis enabled the MMS to implement a risk-based offshore platform inspection program.

This cooperative effort shows how agencies can work together to solve problems that benefit each other: for DOE—strengthening energy security; for MMS—techniques for ranking platforms in terms of risk and a method for assigning platform inspection priorities. It also shows how expertise developed in the DOE security mission can be applied to a diverse set of circumstances.

The research results were presented by Dr. John Shultz, Office of Safeguards and Security Policy in DOE Headquarters' Office of Security, in November 2001 at the International Gas Research Conference. Shultz provided the Department's technical expertise under the interagency agree-



The interagency agreement included on-site risk analysis of offshore oil and gas platforms in the Gulf of Mexico.

ment on-site at the offshore oil and gas platforms for about 10 months. Approximately 400 people, including leaders in the natural gas industry from 28 countries, attended the conference. About 280 papers were presented on a variety of topics, including exploration and production, transport and distribution, utilization, and risk analysis. ❖

Humanitarian efforts extend to Siberia



The Office of Defense Nuclear Nonproliferation in the Department of Energy's National Nuclear Security Administration works very closely with Russian technical experts in the nuclear field. However, many of the dozens of men and women who travel to Russia for significant periods of time to support the Highly Enriched Uranium (HEU) Transparency Implementation Program (TIP) also share their personal free time with local orphanages and schools within the closed nuclear cities where Russian facilities are monitored.

During 2001, the HEU-TIP monitors visited orphanages and brought gifts to the children, ages infant to mid-teen, in the Siberian cities of Novouralsk, Ozersk, Zelenogorsk, and Seversk (at left). The monitors also have helped in finding free medical assistance for seriously ill children in those cities.

The HEU-TIP conducts up to 24 special monitoring visits each year to four Russian facilities where it closely monitors the process of blending weapons-grade HEU into low enriched uranium. ❖

PNNL a four-time 'WasteWise' champion



For the fourth consecutive year, the Department of Energy's Pacific Northwest National Laboratory (PNNL) and Battelle Memorial Institute have received the WasteWise Program Champion Award from the Environmental Protection Agency (EPA). WasteWise is a voluntary EPA program with over 1,130 members that focuses on the reduction, reuse, and recycling of solid waste.

PNNL and Battelle Columbus were honored for their aggressive accomplishments in reducing paper usage through electronic publishing and duplex copying, conducting Pollution Prevention Opportunity Assessments, and replacing 25 percent of older non-duplexing copiers, printers, and facsimile machines. Other achievements recognized include the laboratory's successful Environmentally Preferable Purchasing Program.

At left, PNNL Pollution Prevention Manager Glenn Thornton works with Resource Conservation Recycling Coordinator Judi Johannesen to fill an order at the Office Product Exchange. Laboratory staff can shop the exchange online to save money, reduce waste, and conserve resources. ❖

Livermore develops truck-stopping device



Last October, California Governor Gray Davis contacted the Department of Energy's Lawrence Livermore National Laboratory (LLNL) requesting assistance to develop a method of stopping a stolen or hijacked fuel truck, which potentially could be used in a terrorist bombing.

The result was a short, extra rear bumper attached to the back of a tanker truck. When bumped from the rear, a blade on the inside of the bumper shears a special air hose to the brakes, which are designed to lock in the event of the loss of air pressure. The air hose is reconfigured to run beneath the bumper.

At left, a California Highway Patrol cruiser helped demonstrate the LLNL-designed Truck Stopping Device on an empty tanker truck to California officials in November 2001. Future testing of the device is scheduled at the Department's Nevada Test Site this month and in February. Tests will include radio-controlled equipment, runs at high speeds, and actual fuel in the tankers. ❖

New method helps predict Hanford soil contamination

A new sampling method developed at the Department of Energy's (DOE) Richland Operations Office helps predict the movement of soil contaminants at DOE's Hanford Site in Washington State. The sampling work helps scientists understand how uranium moves through Hanford's soil and into the groundwater.

Bechtel Hanford Inc., Hanford's Environmental Restoration Contractor, and MSE-Technology Applications Inc. (MSE-TA) built and deployed a mobile unit (at right) that collects gas samples above the water table on Hanford's central plateau, where plutonium was separated from irradiated uranium fuel. The MSE-TA collects carbon dioxide gas samples from the vadose zone, the soil between the surface and the groundwater. The concentration of carbon dioxide affects the migration rate of uranium through the vadose zone and into the groundwater.

The results of this study will be incorporated into a computer model to predict the movement of uranium. The model will give DOE, regulators, and stakeholders the information necessary to evaluate future remediation options. ❖



Savannah River shows 'can'-do spirit in recycling

A successful partnership between the Pollution Prevention Team at the Department of Energy's Savannah River Site and the City of Aiken, S.C., made America Recycles Day on Nov. 15, 2001, better than ever. To mark the day and create public awareness for recycling, volunteers collected crushed aluminum cans and constructed a replica of the American flag.

As part of a Service Learning Project, a team of 34 students and four chaperones from Schofield Middle School worked on flag construction. Several students from Aiken High School also sorted cans, and numerous parents brought younger children out to help.

Nearly 16 hours of labor were required to construct the 55 foot, 2 inch tall by 104 foot, 2 inch wide flag. Approximately 80,000 red, blue, and white or silver cans were used for the flag. After the flag was dismantled, the cans were sold and the proceeds sent to the New York City relief effort. ❖



Department's technology benefits community project

Rita Bajura, Director of the Department of Energy's National Energy Technology Laboratory (NETL), and Mark Nesselroad, President, Monongalia County Schools Foundation, Inc., recently signed a Memorandum of Understanding that paves the way for the application of NETL technology to a community-based educational and recreational complex built on more than 300 acres of reclaimed surface mine land west of Morgantown, W. Va.

NETL teams identified eight technology areas most applicable to the complex: energy generation; combustion byproducts; electrical and natural gas distribution; energy efficiency; acid mine drainage and water remediation; carbon sequestration and methane extraction; and soil remediation. An advanced lighting system has been identified as an initial technology that can be applied to the complex entrance. Additional projects could include the use of coal combustion byproducts to construct trails, and the creation of an "educational" trail to showcase NETL technology and serve as a walking laboratory. ❖



Fernald site eliminates groundwater contamination source

Workers at the Department of Energy's (DOE) Fernald Environmental Management Project completed a high-profile soil remediation project in November 2001, eliminating the main source of contamination to the underlying Great Miami Aquifer, one of the largest sources of drinking water in the nation. The project involved the excavation and disposition of contaminated soil and debris from a 26-acre area called the Southern Waste Units.



A member of Fluor Fernald's Waste Acceptance Organization finishes a manifest for a truckload of waste material from the Southern Waste Units.

During nearly 40 years of uranium metal production, tons of contaminated construction debris, boiler plant fly ash, and soil were dumped in an isolated area on a southern portion of the Fernald Site to make room for new structures. In the mid 1990's, the contamination problem was discovered during a comprehensive environmental investigation. Sampling results from groundwater monitoring wells indicated uranium concentrations as high as 2,000 parts per billion (ppb), compared to background concentrations ranging from 1 to 3 ppb.

The Department and its cleanup contractor Fluor Fernald initiated several removal actions to address immediate concerns until a long-term cleanup plan was developed. Workers installed extraction wells to pump the contaminated water to on-site wastewater treatment plants and stabilized eroding banks along Paddys Run Stream, which borders the site.

In 1998, Fernald initiated the final cleanup plan for the Southern Waste Units. The plan involved characterizing the soil to determine contamination levels, excavating contaminated portions of the soil, and disposal of the waste in Fernald's on-site

disposal facility. A paved haul road was constructed to ensure safe transportation of the waste. During the three years of excavation, approximately 33,000 trucks carried more than 400,000 cubic yards of material to the disposal facility.

"While our building demolition tends to receive most of the attention, elimination of this environmental threat has the most direct impact on the health and safety of our neighbors," said Johnny Reising,

DOE-Fernald Associate Director for Remediation Management. "Our groundwater monitoring currently shows the uranium contamination levels at about 50 parts per billion beneath the former source area. Removal of the source, infiltration of clean rainwater, and aggressive pumping have helped to drive the contamination down."

As of November 2001, over 50 percent of the 1,050-acre Fernald Site has been certified as meeting Environmental Protection Agency cleanup standards. Fernald will begin ecological restoration of the Southern Waste Units area in 2002. ❖

Natural gas supply analysis released

The final phase of a two-part analysis of the United States natural gas market indicates that prices should continue to decline through next year and that supplies are expected to increase. The Department of Energy's Energy Information Administration (EIA) conducted the study at the request of Secretary of Energy Spencer Abraham because of broad concerns about tight supplies, volatile prices, and regional price disparities.

"EIA's analysis is welcome news for U.S. consumers and for our economy," Secretary Abraham said.

"The data clearly shows that the natural gas difficulties of 2000 were not caused by a fundamental inadequacy in the marketplace, such as a serious limitation in stock levels, but by an increase in demand overlaid with a shortage of supply."

The analysis found that natural gas prices are expected to continue declining from \$4.09 per thousand cubic feet in 2001 to \$1.96 per thousand cubic feet in 2002. Supplies should increase from 22.45 trillion cubic feet in 2001 to 23.53 trillion cubic feet next year. Natural gas prices have declined substantially

because additional drilling, mild weather, and a slowing economy have reduced the growth in natural gas consumption.

The final report, *U.S. Natural Gas Markets: Mid-term Prospects for Natural Gas Supply*, is available at [http://www.eia.doe.gov/oiaf/servicerpt/natgas/pdf/sroiaf\(2001\)06.pdf](http://www.eia.doe.gov/oiaf/servicerpt/natgas/pdf/sroiaf(2001)06.pdf). The interim report, *U.S. Natural Gas Markets: Recent Trends and Prospects for the Future*, can be found at <http://www.eia.doe.gov/oiaf/servicerpt/naturalgas/index.html>. ❖

Bonneville doubles wind power purchases

The Department of Energy's Bonneville Power Administration (BPA), which supplies roughly half of the electricity used in the Pacific Northwest, is doubling the amount of electricity it buys from wind projects. Bonneville Power agreed to purchase about 34 percent of the output from the Stataline Wind Project located on the Oregon-Washington border southwest of Walla Walla, Wash. About 90 megawatts of power will be delivered to BPA through PacifiCorp Power Marketing Inc., a subsidiary of ScottishPower. The purchase can provide energy for about 18,000 homes.

"BPA is excited to bring wind generated energy to its customers," Steve Wright, Acting BPA Administrator, said. "Wind projects are becoming increasingly cost competitive. The acquisition of these projects will allow us to better understand the real costs of wind integrated with our hydro system."

The Stataline project is built, owned, and operated by FPL Energy, LLC. When the first phase is completed, 399 wind turbines will be arranged in several strings on privately owned hilltops and ridges located west of Walla Walla and north of Pendleton, Ore., near the Columbia

River bend. Each machine can generate 660 kilowatts. The entire project can produce 265 megawatts, all of which is marketed by PacifiCorp Power Marketing.

BPA currently purchases 34 megawatts of wind power from Foote Creek in Wyoming and recently announced a 50-megawatt purchase from another wind power development in Condon, Ore. Last June, Secretary of Energy Spencer Abraham announced that Bonneville Power was negotiating for up to 830 additional megawatts of wind power, potentially making BPA one of the largest suppliers of wind power in the country. ❖

Weatherization program celebrates 25 years

On Nov. 27, 2001, the Department of Energy's (DOE) Weatherization Assistance Program celebrated its 25th anniversary by commemorating the weatherization of the five-millionth home under the program during the National Weatherization Training Conference in Atlanta, Ga. A team of technicians demonstrated weatherization assessment techniques and advanced diagnostic equipment in the home of a 74-year old Clayton County, Georgia, widow living on \$600 per month Social Security benefits. The home received

energy efficiency improvements that could potentially save her \$300 per year in energy costs.

"Weatherization assistance saves low-income families hundreds of dollars each year in energy costs—money that can be spent instead on other necessities," Secretary of Energy Spencer Abraham said. "President Bush's National Energy Policy calls for a nationwide increase in weatherization to lower home energy costs, costs that are especially high during the winter months."

Weatherization services are available to eligible homes in every county in the nation. DOE funds state weatherization offices that provide grants to local agencies to perform the work. Information on how to qualify and apply for weatherization assistance and the phone numbers of local weatherization offices can be obtained by calling the Department's Energy Efficiency and Renewable Energy Clearinghouse at 1-800-363-3732, or visit http://www.eren.doe.gov/buildings/weatherization_assistance. ❖

COMING Events

March

12 10th National Energy Modeling System/Annual Energy Outlook Conference, Arlington, Va. Sponsored by the Department of Energy's Energy Information Administration (EIA). The conference includes speakers and attendees from Federal and State governments, private industry, and trade associations discussing energy issues particularly related to EIA's *Annual Energy Outlook 2002* and the National Energy Modeling System. Session topics include the status and future prospects of electricity deregulation, electricity demand in build-

ings, challenges in transportation services, new developments in international energy modeling, and the prospects for renewables in the U.S. energy supply. Conference registration is free, but space is limited. For information, contact Peggy Wells, EIA, 202-586-0109, peggy.wells@eia.doe.gov; or visit <http://www.eia.doe.gov/oiaf/aec/conf/index.html>.

18-19 DOE 2002 Annual Information Technology (IT) Conference, Denver, Colo. Sponsored by the Department of Energy's (DOE) Office

of the Chief Information Officer and hosted by the Department's Bonneville, Western Area, Southwestern, and Southeastern Power Administrations. The conference provides a forum for DOE and contractor personnel to address issues and exchange strategic, tactical, and operational knowledge about information technology systems in support of the Department's missions. The annual IT Quality Awards will be presented at the conference. Additional information is available at <http://cio.doe.gov/aic/>. ❖

Los Alamos laser measures carbon in soils

Scientists at the Department of Energy's Los Alamos National Laboratory (LANL) have developed a small, portable instrument that uses a laser to analyze the amount of carbon in soils. The newly developed LANL technology will aid the researchers as they try to determine how soil-based carbon is released into the air through natural or manmade causes, or whether atmospheric carbon is being absorbed into soils.

A better and more cost-effective approach for measuring significant changes in the amount of land-based carbon has been sought by scientists for some time. But because the amount of carbon varies considerably from one spot to the next, measuring changes in land-based carbon in fields, ranch lands, and forests is difficult. With the Laser-Induced Breakdown Spectroscopy (LIBS) technology, scientists can now point a flashlight-sized laser device at a soil sample in the field or taken from the ground and determine how much carbon the sample contains.

Carbon-LIBS (C-LIBS) works by firing a brief, very intense pulse of laser light at a surface. The laser beam vaporizes a spot on the target sample that's roughly the size of a pencil point. A small spotting scope mounted near the laser source captures light emitted from the vaporized area and directs it to a spectral analyzer. This analyzer, part of the C-LIBS device, looks at the signature of the light to determine what elements are present. Each element creates its own spectral fingerprint.

The LANL researchers plan to take the instrument to other areas to determine how C-LIBS can be used to quantify carbon in soils throughout the world. The device is small, rugged, portable, and easy to use and maintain.

The Laser-Induced Breakdown Spectroscopy technology itself is not new. Earth and space scientists have proposed using the technology to determine the composition of the surfaces of other planets, asteroids, moons, and comets. In other Earth-bound applications, LIBS can analyze samples from as far as



David Cremers (left) and Monty Ferris of Advanced Chemical Diagnostics at Los Alamos National Laboratory, use Laser-Induced Breakdown Spectroscopy to determine the amount of carbon in a sample of soil contained in the tube.

50 feet away, or can be used to analyze areas inside tight spaces that might not be convenient to sample by conventional methods. ❖

NEW Publications

Office of Inspector General (IG) reports: ***Semiannual Report to Congress, April 1-September 30, 2001*** (DOE/IG-0023); ***Accounting for Government-Owned Nuclear Materials Provided to Non-Department Domestic Facilities*** (DOE/IG-0529); ***Inspection of the Management of Personal Property at the Ashtabula Environmental Management Project*** (DOE/IG-0530); ***Inspection of Cyber Security Standards for Sensitive Personal Information*** (DOE/IG-0531); ***Progress of the Spallation Neutron Source Project*** (DOE/IG-0532); ***Inspection of the Department of Energy's***

Automated Export Control System (DOE/IG-0533); ***Inspection on the Management of Excess Personal Property at Lawrence Livermore National Laboratory*** (INS-O-02-01); ***Review of Alleged Conflicts of Interest Involving a Legal Services Contract for the Yucca Mountain Project*** (I01IG001). 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/>.

Emissions of Greenhouse Gases in the United States 2000 (DOE/EIA-0573-2000), from the Department of Energy's Energy Informa-

tion Administration (EIA), reports that total estimated U.S. greenhouse gas emissions rose by 2.5 percent in 2000, increasing from 1,860 million metric tons of carbon equivalent (MMTCe) in 1999 to 1,906 MMTCe in 2000. Available electronically at <http://www.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057300.pdf>. Printed copies of the report's executive summary are available from the U.S. Government Printing Office, 202-512-1800, or EIA's National Energy Information Center, EI-30, Room 1E-238 Forrestal Building, USDOE, Washington, DC 20585, phone 202-586-8800. ❖

Pantex initiates new engineering program

The Department of Energy's (DOE) Pantex Plant and other organizations in the Texas Panhandle soon will have a new, local resource for training and recruiting engineers thanks to a new Engineering Graduate Studies Program initiated by management and operations contractor BWXT Pantex. The new program is a collaboration between BWXT Pantex, West Texas A&M University at Canyon, Texas Tech University at Lubbock, and the Amarillo Economic Development Corporation.

The organizations will pool resources such as funding, faculty members, and teaching facilities to

create and sustain the program. The program initially will offer degrees in the Amarillo area emphasizing subjects such as engineering management, chemical engineering, environmental technology, manufacturing systems, quality, cost analysis, decision theory, human factors, and safety. As the program grows, additional degree fields may be offered in the future. Classes are scheduled to begin this month at the Texas Tech Medical Center in Amarillo.

"We are very happy to see this program being started in the area," said Dan Glenn, Director, Amarillo Operations Office, DOE/National

Nuclear Security Administration (NNSA). "The NNSA places a high priority on educational outreach and a qualified workforce."

"We have been actively seeking a program like this because we want to increase the local pool of engineers we can hire at Pantex and provide educational opportunities in science and engineering in the community," said Dennis Ruddy, BWXT Pantex President and General Manager. "Our important national security mission requires that we have a highly trained workforce, and the ability to hire engineers with advanced degrees locally is very beneficial to us." ♦

New process treats radioactive waste faster, cheaper

A collaboration of U.S. and Russian scientists and engineers have made treating nuclear waste safer and cheaper with a new, one-step process that separates out much of the radioactive material. The team of scientists from the Department of Energy's (DOE) Idaho National Engineering and Environmental Laboratory (INEEL) and the Khlopin Radium Institute in Russia received an \$800,000 three-year grant from DOE's Environmental Management Science Program to study and improve their solution.

In 1994, a few INEEL scientists traveled to Russia to exchange the technologies each country had independently developed for nuclear waste cleanup. After examining what each had, they jointly came up with an extractant that works in one step. It removes radioactive strontium, cesium, and the actinides at once. The Universal Extraction, or UNEX, is the first demonstrated technology of its kind capable of removing multiple radioactive elements from high-level nuclear waste in one step.



INEEL scientists working on the UNEX process include (seated, l-r) Terry Todd, Fred Stewart, Jack Law, Scott Herbst, Tom Luther and (standing) Dean Peterman. Not pictured is George Redden.

"The idea is to segregate out this very small amount of radioactive material and concentrate this element of the waste into the smallest volume possible," Scott Herbst, principal INEEL chemical engineer on the project, said.

Just a sprinkling of radioactive elements turns volumes of waste into "high-level radioactive waste," subject to rigorous and expensive storage standards. Such waste usually contains a mixture of intensely

radioactive fission and long-lived radioactive elements plus hazardous and toxic materials. Separating most of the radioactive elements from the other materials can shrink the volume of high-level waste, reduce the total disposal cost, and minimize potential harm to the people and environment surrounding it.

Using the UNEX process, the scientists trim the volume of high-level waste by at least 20 times. Each gallon shrinks to less than a cup. And the twenty-fold volume reduction leads to

a corresponding twenty-fold reduction in disposal costs. The majority of the waste left over after the UNEX separation is far less expensive to treat and store than the highly radioactive portion.

"We're combining three separate operations into one," Herbst said. "I'm mesmerized that we've even been able to get this thing to work. It flies in the face of what everyone has attempted to do before." ♦

People IN ENERGY

Christoph W. Leemann is the new Director of the Department of Energy's (DOE) Thomas Jefferson National Accelerator Facility, a position he has held in an interim capacity for the past year. Previously, Leemann served as Jefferson Lab's Deputy Director, Associate Director for Accelerators, and a leader of the management team responsible for the successful design and construction of the \$600 million facility. Leemann came to Jefferson Lab in 1985 from DOE's Lawrence Berkeley National Laboratory.



President George W. Bush intends to nominate **Raymond L. Orbach** to be Director of the Department of Energy's Office of Science, subject to Senate confirmation. Orbach currently is Chancellor of the University of California Riverside and Professor of Physics. He served as Provost of the College of Letters and Science at the University of California from 1982 to 1992. Orbach has held numerous visiting professorships at universities around the world. He received an undergraduate degree from California Institute of Technology and a Ph.D. from the University of California at Berkeley.

Physical scientist **Charles E. Taylor** of the Department of Energy's National Energy Technology Laboratory has been elected to a three-year tenure as Secretary of the American Chemical Society's (ACS) Division of Fuels Chemistry. The ACS Division provides a forum for documenting and communicating research and development results to the international community to promote efficient and environmentally acceptable fuel production and use.



Eve Gohoure is the new Diversity Program Officer at the Department of Energy's Argonne National Laboratory.

She will oversee Argonne's equal employment practices, conduct training, and assist in developing targeted recruiting strategies. Previously, Gohoure was an Equal Opportunity Specialist/Senior Compliance Officer with the Department of Labor's Office of Federal Contract Compliance Programs in Detroit, Mich.

Chang Oh, a consulting engineer in the Nuclear Engineering Design Department at the Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL), has been named a Fellow of the American Society of Mechanical Engineers. Oh joined INEEL in 1985, and his research career spans 31 years in thermal and fluid science. He has made significant and original contributions to the field of nuclear reactor safety for INEEL, particularly for the Advanced Test Reactor.



Engineer **Brett Kniss** of the Department of Energy's (DOE) Los Alamos National Laboratory is the recipient of the Department's Distinguished Associates Award, the highest award DOE bestows upon a non-Federal employee. Kniss, chief engineer for the Lab Pit Production Project in Weapons Component Technology, received the award for his work in establishing Los Alamos' capability to produce small numbers of plutonium pits for the Department's Stockpile Stewardship Program.

Douglas Minnema, a radiological scientist in the Department of Energy's (DOE) National Nuclear Security Administration (NNSA), was recently named the DOE Price-Anderson Coordinator of the Year. The award is presented annually by the Office of Price-Anderson Enforcement in the Office of Environment, Safety and Health to an outstanding coordinator for their contributions in the area of DOE nuclear safety. Minnema has functioned as the Defense Programs/NNSA Price-Anderson coordinator for the past two years and developed a Memorandum of Understanding between NNSA and the Office of Price-

Anderson Enforcement on enforcement authority within the NNSA.

Jim Keselburg has been named Regional Manager for the Sierra Nevada Customer Service Region of the Department of Energy's Western Area Power Administration. Keselburg will play a key role in planning, coordinating, and directing construction of the Path 15 transmission addition. Most recently, he was Maintenance Manager of Western's Rocky Mountain Region and previously served as that region's Operations Manager and Power Marketing Manager.

Frank M. Stewart, Jr., Manager of the Department of Energy's Golden Field Office in Colorado, was recently honored by the Denver Chapter of the American Association of Blacks in Energy with a "Colorado Energy Pioneer" award. The award recognizes individuals who have made substantial contributions to the economic and educational development of African Americans. Stewart presently serves on a number of local, state, national, and international advisory groups. He has visited several African nations to advise governments on the use of renewable energy technologies.



Physicist **William Marciano** of the Department of Energy's Brookhaven National Laboratory is the winner of the J.J. Sakurai Prize for Theoretical Particle Physics awarded by the American Physical Society. Marciano will share the \$5,000 prize with his research collaborator **Alberto Sirlin** of New York University. The award recognizes the scientists' "pioneering work" on calculations necessary for testing the consistency of the Standard Model.

Lynn Boatner, a UT-Battelle corporate fellow and researcher in the Solid State Division at the Department of Energy's Oak Ridge National Laboratory, is the recipient of the 2001 Jesse W. Beams Award for excellence in research. The award is presented by the Southeastern Section of the American Physical Society. ♦

Milestones

YEARS OF SERVICE

January 2002

Headquarters

Chief Information Officer - Richard W. Minning (30 years), Roberta M. Durant (25). **EIA** - Ruth C. Wells (35), Rhonda S. Green (25). **Energy Efficiency & Renewable Energy** - Philip D. Patterson, Jr. (30), John B. Cadogan (25). **Envir. Management** - Dennis D. Hosaflook (25), Owen O. Thompson (25). **Envir., Safety & Health** - Sarbeswar Acharya (25), Janet A. Macon (25).

FERC - John P. Roddy (35), David H. Coffman (30), Howard B. Forman (30), Cynthia J. Klenk (30), Mohammad Akbar (25), Gregory A. Berson (25), Grace E. Goodman (25), Jonas P. Green (25), James R. Keegan (25), Francis S. Y. Lee (25), Frank J. Plata (25), Steven A. Rothenberg (25). **Fossil Energy** - Clifford P. Tomaszewski (30).

Management, Budget & Evaluation - Doreitha C. Lattisaw (30), Rita N. Moore (30), Scott E. Sheffield (30), Frances A. Feiner (25), Joann H. Luczak (25). **NNSA** - Linda T. Jones (30), Khawaja A. Akhtar (25), Abdul Q. Dasti (25). **Nuclear Energy** - Maxine L. Clipper (30). **Science** - Richard D. Kelley (40), Patricia B. Rice (30), Steven H. Rossi (25). **Security** - Linnea P. Raine (30), Jane C. Hope (25), Yvonne L. Jackson (25).

Field

Albuquerque - George P. Keary (30).

Albuquerque/NNSA - George K. Christensen (30), Michael H. McFadden (30), Michael J. Zamorski (30), John M. Bernier (25), John E. Cisco (25), Jane S. Cooper (25), Andrew R. Gonzales (25), Christina A. Houston (25).

Bonneville Power - Walter D. Banker (35), Douglas J. Mann (35), Diana L. Woods (35), Edwin K. Cross (30), Stephen E. Schloth (30), Darwin R. Schultz (30), Linda R. Capon (25), Douglas K. Dixon (25), Inez S. Graetzer (25), Greg C. Gustafson (25), Robert W. Lehman, Jr. (25), Jay G. Marcotte (25), Loren D. Ridling (25), Dan B. Ulvick (25), Gary E. White (25).

Chicago - Edward V. Gallagher (25), Gary A. Sowell (25). **Idaho** - Raymond A. Browne (25), David W. Newnam (25). **NETL** - Michael R. Schoffstall (35), Daniel C. Cicero (30), Harold R. Pratt II (30), John L. Trader, Jr. (30), Richard F. Hickey (25), John A. Ruether (25), Freda H. Stotts (25).

Nevada/NNSA - William E. Bunn (30), Judy M. Soesbe (30), Janine M. Ford (25). **Oak Ridge** - Wayne Missaggia (30), Larry L. Radcliffe (30). **Oakland** - Ann M. Raible (35). **Oakland/NNSA** - Karen N. Jones (35), Kenneth R. Zahora (25). **Ohio** - Robert J. Grandfield III (25), John E. Saluke (25), Patrick L. Vent (25). **Richland** - Ofelia T. Gloria (25).

Savannah River - Olan B. George, Jr. (25), John W. Poore (25), Karen L. Poore (25). **Savannah River/NNSA** - Kenneth

H. Besecker (30). **Southwestern Power** - Otis A. Keller (45), Aleta A. Wallace (25). **Western Area Power** - Stephen P. Szarka (35), Sandra R. Gold (30), Dennis A. Schurman (30), Sandra L. Parker (25), Robert F. Riehl (25).

RETIREMENTS

November 2001

Headquarters

Radioactive Waste - Stephen M. Goldberg (33 years).

Field

Albuquerque/NNSA - Michael D. Hanson (28), Richard E. Phillips (24). **Idaho** - Nina J. Wheeler (15). **Nevada/NNSA** - Leslie A. Monroe (27). **Oak Ridge** - Robert P. Luttrell (34). **Richland** - David W. Groce (25), Goerge Kalman (30). **Rocky Flats** - Paul L. Hartmann (25). **Southwestern Power** - Paul J. Richard (20).

December 2001

Headquarters

FERC - David P. Boergers (31), Jacqueline L. McDuffy (31). **Inspector General** - Rodney J. McKim (33). **Management, Budget & Evaluation** - Yvonne P. Reed (27). **Security** - Donald J. Cook (32).

Field

Chicago - Jackson E. Kinzer (9). ❖

NEW ON THE Internet

Did you ever wonder?

Did you ever wonder...about the best bugs for cleaning up toxic waste? How engineers make science work? How soil keeps the world in balance? Click on "Did You Ever Wonder?" at the home page of the Department of Energy's Lawrence Berkeley National Laboratory, <http://www.lbl.gov>, or go straight to <http://www.lbl.gov/wonder>. Each month features Berkeley Lab

researchers who investigate human health and the environment, new technologies, and nature's most fundamental principles.

Fernald closure plans

The Department of Energy and its cleanup contractor Fluor Fernald are working with the community and regulators to make important decisions about the future closure of the

Fernald Environmental Management Project. A new section called "The Future" has been added to the Fernald web site, <http://www.fernald.gov/AboutFernald/Future/Future.htm>. The section describes the Department's final land use plan for the 1,050-acre site, examines public use issues and the upcoming decision process, and highlights ecological restoration projects and cultural resources initiatives. ❖

Fossil energy lab earns Power magazine award

At the annual Power-Gen conference in December 2001, *Power* magazine presented one of its "Powerplant of the Year" awards to the turbine development team at the Department of Energy's (DOE) National Energy Technology Laboratory (NETL). The award recognizes work in producing breakthrough gas turbine technology for future power plants.

"It is a credit to the entire Department when one of the most prestigious awards in the electric power industry is presented to one of our laboratories," said Secretary of Energy Spencer Abraham in congratulating Abbie Layne, NETL's product manager for advanced turbine systems. "The partnerships you and your team helped create with the gas turbine industry led to revolutionary breakthroughs in efficiency and environmental performance that will enhance the power generating industry for decades to come."

The award cites a joint government-industry development effort that began in 1992 and culminated recently in the commercial introduction of a new generation of advanced utility turbine systems. Innovations now enable state-of-the-art utility-scale turbines to achieve combined cycle efficiency levels of 60 percent and single digit (in parts per million) emission levels of nitrogen oxides.

January 2002

AROUND DOE

Golden office rated family friendly for employees

Colorado Parent magazine has rated the Department of Energy's Golden Field Office one of the "Best Companies for Working Families in Colorado." In a survey of 4,500 companies, the Golden office was selected among the top small businesses in the state.

Currently, of the 56-employee workforce, 10 Federal employees telecommute; and about half the staff work a compressed schedule. The office also provides tuition-reimbursement with up-front cash advances.

"In today's world, you have to think differently," Golden Field Office Manager Frank Stewart said. "We want to attract and keep the best people. When employees do not feel they are valued and their needs are not considered, performance suffers, absenteeism increases, and productivity decreases."

Idaho Lab, Tokyo company sign license agreements

The Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL) and the Obayashi Corporation of Tokyo, Japan, have signed two license agreements to commercialize an environmental remediation technology system. The agreements were signed in a formal ceremony at the U.S. Embassy in Tokyo by Lyman Frost, INEEL Technology Transfer and Commercialization Director, and Yoshihisa Obayashi, Senior Managing Director, Obayashi Corporation.

The INEEL/Obayashi partnership is focused on developing and delivering to the marketplace a state-of-the-art system capable of containing contaminated sites, existing landfills, underground storage tanks, and other sites of environmental concern. The Advanced Containment System will tunnel beneath such sites. The resulting subsurface horizontal barrier is continuous, verifiable, and instrumented to measure long-term performance.

"The working relationship between INEEL and Obayashi dates back several years," said Kevin Kostelnik, INEEL program manager and inventor of the Advanced Containment System. "This licensing arrangement is another important step that will allow us to move this environmental solution from our research institutes into real-world field applications." ❖

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

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