

Department
takes the
lead with
e-Government
action plan

Fuel economy
data out for
model year
2003 vehicles



*INEEL completes major
cleanup milestone*



U.S. Department of Energy



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Secretary of Energy Spencer Abraham hosted Russian Minister of Energy Igor Yusufov on a tour of the Department of Energy's Strategic Petroleum Reserve Bryan Mound site in Freeport, Texas, Oct. 1, 2002, as part of the United States/Russia Commercial Energy Summit.



Department of Energy researchers and laboratories have received 23 of the annual R&D 100 awards presented by *R&D Magazine*, including Steve Hicks (left) and Mitch Doktycz of Oak Ridge National Laboratory for Any Source, Any Position (ASAP) Fluid Handler.

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Researcher Luis Nuñez of the Department of Energy's Argonne National Laboratory has earned the Department's Outstanding Mentor Award.



On our cover

Fourteen drums of transuranic waste are lowered into a TRUPACT-2 shipping cask at the Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL) in preparation for shipment to the Department's Waste Isolation Pilot Plant (WIPP) in New Mexico. The 563rd and final shipment of the laboratory's transuranic waste, pictured below crossing the INEEL site border, was accepted at WIPP on Oct. 24, 2002—10 weeks ahead of the Dec. 31, 2002, deadline set in the 1995 Idaho Settlement Agreement. The total amount of transuranic waste shipped was 3,101.1 cubic meters in 14,909 55-gallon drums.

For more on the cleanup milestone, see page 4.

U.S., Russian officials discuss energy; Secretary, Russian Minister tour SPR

Secretary of Energy Spencer Abraham, Secretary of Commerce Don Evans, and the United States Energy Association hosted the United States/Russia Commercial Energy Summit in Houston, Texas, Oct. 1-2, 2002. The summit was an open dialogue among U.S. energy and commerce officials, Russian officials, and energy industry leaders from both countries regarding the role of public/private partnerships for international energy development and its economic impact.

"The emphasis that our presidents place on the development of energy cooperation between our two countries and our many companies offers the promise of a bright energy future based on partnership for the development not just of Russia's vast untapped energy resources, but on cooperation in energy projects of all kinds in both countries and around the world," Secretary Abraham said to summit participants. "This first commercial energy summit is an important step toward reaching our ambitious goals." The Secretary's complete remarks are available at <http://www.energy.gov/HQDocs/speeches/2002/octss/texas.html>.

As part of the summit, on Oct. 1, Secretary Abraham and Russian Minister of Energy Igor Yusufov visited the Department of Energy's Strategic Petroleum Reserve (SPR) Bryan Mound site in Freeport, Texas. Secretary Abraham hosted Minister Yusufov on a walking tour of the site and discussions of various SPR components. The visit allowed Minister Yusufov to observe SPR operations firsthand and to understand better the role of SPR in alleviating oil disruptions. Minister Yusufov is the first person from the former Soviet Union to visit one of the SPR sites.

"The Strategic Petroleum Reserve, which could be used to minimize the economic damage resulting from an oil disruption, is a vital element of our National Energy Policy," Secretary Abraham said. "A very short time from now, the SPR will hold



Secretary Abraham and Minister Yusufov discuss Strategic Petroleum Reserve operations with Jorge Aguinaga (right), DOE Senior Site Representative for Bryan Mound.

more oil than ever before in its history; and, as President Bush directed last November, the goal is to continue filling the SPR to its maximum capacity of 700 million barrels."

President Ford authorized creation of the SPR when he signed the Energy Policy and Conservation Act on Dec. 22, 1975. Construction of the first surface facilities began in June 1977, and the first oil was delivered to SPR the following month. Today, the SPR is the largest emergency oil stockpile in the world. ❖

'Smart pipe' a new advance in oil, gas drilling

A new system, aptly named IntelliPipe™, developed under a Department of Energy (DOE)-funded project by the engineering team of Grant Prideco, Houston, Texas, and Novatek Engineering, Provo, Utah, could revolutionize the way companies probe for oil and gas. The innovation turns an oil and gas drill pipe into a high-speed data transmission tool capable of sending data from the bottom of a well 100,000 times faster than technology in common use today.

IntelliPipe is a drill pipe with built-in telemetry that can transmit large amounts of data to the surface as fast as one million bits per second.

It also will allow data to be sent the other direction just as fast, giving drillers the first-ever capability to almost instantaneously direct and control the movement of a drilling tool thousands of feet below the surface.

"The IntelliPipe is one of the most remarkable advances in drilling technology in the last 25 years," Secretary of Energy Spencer Abraham said. "I think the IntelliPipe is exactly the type of technology we need to move our domestic production capabilities into the next century."

The key to the new system is a unique non-contacting coupler embedded in connections between 30-foot-long sections of drill pipe. The

coupler permits data to be sent across the connection and on through a high-speed cable attached to the inner pipe wall.

The IntelliPipe system represents one of the Department's most important government-industry success stories. DOE's Office of Fossil Energy helped generate the technology's development when it awarded a small business contract to Novatek in 1997.

The "smart pipe" has undergone several field tests and is expected to be introduced commercially next year. Grant Prideco and Novatek have formed a joint venture to market the technology. ❖

INEEL completes key cleanup milestone

On Oct. 24, 2002, the 563rd and final shipment of transuranic waste from the Department of Energy's (DOE) Idaho National Engineering and Environmental Laboratory (INEEL) was unloaded and accepted at the Department's Waste Isolation Pilot Plant (WIPP) in New Mexico. The acceptance marked the end of the critically important 3,100 Cubic Meter Project.

Removal of the 3,100 cubic meters of transuranic waste was a commitment in the court-ordered Idaho Settlement Agreement signed by DOE, the State of Idaho, and the U.S. Navy in 1995. The project was completed 10 weeks ahead of the set deadline of Dec. 31, 2002, maintaining INEEL's 100 percent compliance with agreement requirements.

"Moving waste out of Idaho is an important step forward for INEEL employees and the citizens of Idaho, but also for the Department. We could not have achieved this very important milestone without the strong support of the governor and the entire Idaho congressional delegation. It proves that working together, we can meet our commitments and cleanup goals," Secretary of Energy Spencer Abraham said. "Jessie Roberson, Assistant

Secretary for Environmental Management, and her staff and contractors deserve special credit for reaching this important goal."

The first shipment of transuranic waste left the laboratory on April 27, 1999. INEEL began shipping waste to WIPP at a rate of 14 to 17 shipments per week starting in mid-July 2002 to meet the deadline. The total amount of transuranic waste shipped was 3,101.1 cubic meters in 14,909 55-gallon drums. More than 3.5 million drum movements were safely performed to accomplish the milestone.

"Savor this moment. I do," Bill Shipp, President, Bechtel BWXT Idaho, told employees gathered for the final shipment's departure. "What we pulled off here becomes the way we do the work from here on."

Mark Frei, DOE Deputy Assistant Secretary for Environmental Management, also was on hand for the final shipment. "You have worked hard, worked safely, and you got it done. You poured your hearts into the effort. EM, the government, and the nation are proud of you," Frei told the workers.

The workforce overcame a number of hurdles and challenges to successfully complete the 3,100

Cubic Meter Project. The original time line was compressed from four years to 27 months. Procedures were revised to meet WIPP permit requirements. The INEEL transuranic waste facility had to be converted from pilot-scale to production. Additional equipment was brought on line to assist in characterizing activities and increase production. Employees worked seven days a week, 24 hours a day for 11 months.

Summing up the efforts, Susan Stiger, Vice President for Environmental Management, Bechtel BWXT Idaho, said, "An incredible amount of work was performed during the past two years, from creating a new plan to manage the project, to a 24-7 work schedule. You (project employees) have given your hearts and souls to complete this project in style and ahead of schedule."

DOE's National Transuranic Program, which facilitates shipments to WIPP, was an important partner in assisting INEEL reach its goal. Program management designated INEEL as the priority-shipping site and ensured enough shipping containers, trucks, trailers, and drivers to move the waste. ❖

e-Government strategic action plan released

New digital technology was demonstrated at Department of Energy (DOE) Headquarters on Oct. 16, 2002, when Secretary of Energy Spencer Abraham presented Office of Management and Budget Director Mitchell Daniels with a digitally signed copy of the Department's *e-Government Strategic Action Plan: A Road Map for Delivering Services* and a Governmentwide license to use the digital signature technology. "DOE is excited to be a lead on a number of projects under President Bush's e-Government initiative that are being delivered across the Federal Government to significantly

improve productivity and performance," Secretary Abraham said.

DOE became the first Federal agency to submit legislatively mandated documents with digital signatures and continues to use and develop electronic document and digital signature technology. Secretary Abraham used digital signature technology in February 2002 when he electronically transmitted to President Bush the Department's recommendation and thousands of pages of supporting documents and technical data on Yucca Mountain.

The e-Government Strategic Plan was developed through the Innova-

tive Department of Energy e-Government Applications (IDEA) Task Force. The first five projects to be implemented under this plan include redeveloping the Department's web site, implementing software standards across the DOE system, developing a digital repository to serve as an electronic warehouse for archived documents, developing e-Signatures for sharing official documents electronically, and managing research and development portfolios electronically.

The e-Government Strategic Action Plan is available at <http://www.energy.gov/HQPress/releases02/octpr/egreport.pdf>. ❖

Department labs win R&D 100 Awards

Department of Energy (DOE) laboratories are winners or joint winners of 23 of the 100 awards presented annually by *R&D Magazine* for the most outstanding technology developments with commercial potential. The awards were presented at a ceremony at the Navy Pier in Chicago on Oct. 16, 2002.

At the awards presentation, the Globus Toolkit™, a high-performance computing technology developed at the Department's Argonne National Laboratory and the University of Southern California, was named the most promising technology development of the year out of the 100 award winners. The toolkit is an open architecture, open-source set of software services and libraries that support computational "grids."

Information and descriptions of the DOE winners are available from the public affairs offices or the Internet home pages of the winning laboratories. Information on all 100 winning technologies is available at <http://www.rdmag.com>. The DOE winning technologies are:

Argonne National Laboratory

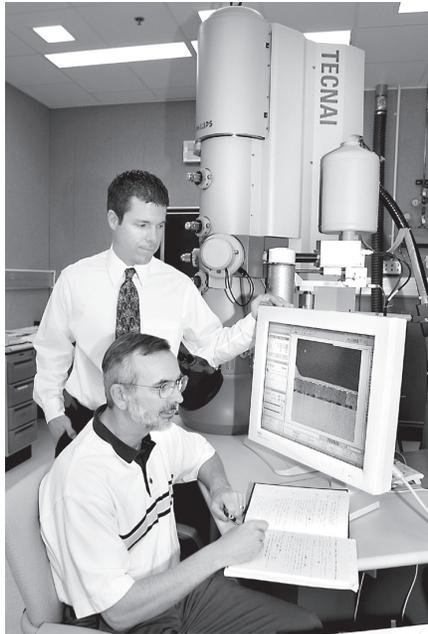
- A system to help incorporate "smart," miniature chemical sensors into experimental instrumentation. *Joint winner: General Atomics Corp.*
- Advanced electrodeionization for product desalting. *Joint winner: EDSEP, Inc.*
- Globus Toolkit™, open-source software for sharing computer resources. *Joint winner: University of Southern California.*

Idaho National Engineering and Environmental Laboratory

- Stainless Steel Plus, a fine-grained stainless steel powder.
- A system that quickly, precisely measures the strength of tiny connections between microchips and circuits. *Joint winners: Simpex Technologies; Johns Hopkins University Applied Physics Laboratory; National Institute of Standards and Technology.*

Lawrence Berkeley National Laboratory

- RAGE, a mobile robot that



Sandia National Laboratories scientists Paul Kotula (standing) and Michael Keenan won an R&D 100 Award for their development of the Component Analysis Software (Compass).

enhances two-way interactive audio/video capabilities.

- Nanovolume Crystallization Robot that automates and accelerates protein crystallization. *Joint winner: Syrrx Inc.*

Lawrence Livermore National Laboratory

- STIM-2002, a medical device that sends low-level electrical impulses through skin for pain relief. *Joint winners: Cyclotec Advanced Medical Technologies; Biophysical Laboratory Ltd., Arzamus, Russia.*
- Solid-State Heat-Capacity Laser System, a compact, high-average-power laser.
- SiMM Cooled Laser Diode Array, that cools temperatures and raises performance of laser bar arrays.
- A one-step process to identify a damaged or abnormal, disease-related DNA base.
- A thin film coating tool that controls individual coating thickness on a production scale. *Joint winner: Veeco Instruments Inc.*

Los Alamos National Laboratory

- GENIE, a system that mimics evolution to create more effective

algorithms for detecting features in complex digital images.

National Renewable Energy Laboratory (NREL)

- PowerView Semi-Transparent Photovoltaic Module, a window roof and building power source. *Joint winner: BP Solar.*
- A nanoscale, alumina-based ceramic fiber pathogen filter. *Joint winners: Argonide Corp.; Design Technology Center, Tomsk, Russia.*

NREL/Brookhaven National Laboratory

- Polyphenylenesulfide Coating System for steel systems used in hostile, corrosive environments. *Joint winners: Ticona Corp.; Bob Curran & Sons Corp.*

Oak Ridge National Laboratory

- ASAP Fluid Handler enables high-speed transfer of small volumes of liquid between source and target. *Joint winner: Innovadyne Technologies.*
- ORNL Spiral Notch Torsion Test System, a portable system that tests fracture toughness and strength of materials. *Joint winner: Inventure Laboratories Inc.*
- DSI AIR, a system that solves manufacturing problems in semiconductor fabrication. *Joint winner: Applied Materials Inc.*

Pacific Northwest National Laboratory

- OmniViz™, a data mining and visualization software tool. *Joint winner: OmniViz Inc.*

Sandia National Laboratories

- Compass, software that automatically analyzes the chemistry of a micro- or macrostructure. *Joint winner: Thermo NORAN Inc.*
- MTR8500, a transponder that provides less expensive, very short-reach fiber optic communications. *Joint winner: EMCORE Fiber Optics.*

Sandia, LLNL, LANL

- Hierarchical Data Format 5, a flexible management system for any data suitable for digital storage. *Joint winner: National Center for Supercomputing Applications, University of Illinois (Urbana-Champaign).* ❖

DOE employees, organizations honored for energy efficiency efforts

The annual observance of Energy Awareness Month in October by the Department of Energy (DOE) would not be complete without the presentation of the Departmental Energy Management Awards and the Federal Energy and Water Management Awards. Both awards programs are sponsored by DOE's Federal Energy Management Program in the Office of Energy Efficiency and Renewable Energy.

Secretary of Energy Spencer Abraham presented the Departmental awards, Oct. 22, 2002, in a ceremony at DOE Headquarters, Washington, D.C. Two individuals and six small groups were recognized for implementing cost-effective operational improvements and energy-efficient retrofit projects for DOE buildings and facilities across the country in Fiscal Year 2001. The awards were established in 1979 by the In-House Energy Management Program which is part of the Federal Energy Management Program.

The 2002 Departmental Energy Management Award winners are:

- **Outstanding Individual Effort:** Kathie Nell, Idaho National Engineering and Environmental Laboratory (INEEL); Wayne Shigley, INEEL.

- **Small Groups:** Fermilab Pumping Retrofit Team, Fermi National Accelerator Laboratory; Energy Research Office Building Energy Star® Label for Buildings Team, INEEL; Drain-Down Recovery of Heating and Cooling Circulation Team, Lawrence Livermore National Laboratory (LLNL); The Search for "Greener Pastures" Through Increased Energy Efficiency Team, National Energy Technology Laboratory; Waste Not, Water Not—A Campaign to Conserve Water Team, Pacific Northwest National Laboratory (PNNL); and Electricity Reduction Contest Team, PNNL.

On Oct. 23, 2002, the Department honored 53 groups and individuals from Federal agencies whose efforts during Fiscal Year 2001 saved the Federal Government more than \$63 million in energy costs. Winners of the 2002 Federal Energy and Water Management Awards represent the Departments of Energy, Health and Human Services, the Interior, State, Treasury, and Veterans Affairs; the United States Air Force, Army, Marine Corps, and Navy; the General Services Administration; the National Aeronautics and Space

Administration; Presidio Trust; and the Tennessee Valley Authority. Secretary Abraham and David Garman, Assistant Secretary for Energy Efficiency and Renewable Energy, presided over the awards ceremony in Washington, D.C.

The DOE winners of the 2002 Federal Energy and Water Management Awards are:

- **Energy Efficiency/Energy Management Award, Individuals:** Kathie Nell, INEEL.
- **Energy Efficiency/Energy Management Award, Small Groups:** Energy Research Office Building Energy Star® Label for Buildings Team, INEEL; Electricity Reduction Contest Team, PNNL.
- **Renewable Energy Award, Individuals:** Wayne Shigley, INEEL.
- **Water Management Award, Small Groups:** Drain-Down Recovery of Heating and Cooling Circulation Team, LLNL; Waste Not, Water Not—A Campaign to Conserve Water, PNNL.

A complete list of the 2002 Federal award winners is available at <http://www.eren.doe.gov/femp/newsevents/>, click on "Awards Program." ♦

NEW ON THE Internet

DOE aircraft scheduling

The Department of Energy's (DOE) Office of Aviation Management (ME-2.4) has developed a centralized Aircraft Coordination and Scheduling (ACS) system for official use by DOE, National Nuclear Security Administration (NNSA), and DOE contractor employees. The system is intended to encourage and facilitate trip consolidation on DOE-owned and -operated aircraft by improving

communications between personnel needing aircraft support and DOE aircraft managers.

DOE Federal aircraft managers can post notices of flights with available capacity; and employees needing aircraft support can search those notices and also post their needs where DOE aircraft managers can find them. Originally designed to facilitate the Department's scientific research and development activities,

the system was improved to include posting notices for personnel on official travel who need cost-effective transportation support.

Only DOE, NNSA, and DOE contractors can log onto the ACS Database at <http://ma.mbe.doe.gov/aviation>. For additional information, contact Randy Stewart, ME-2.4, 202-586-6171. ♦

2003 Fuel Economy Guide available

To wrap up the Department of Energy's (DOE) observance of Energy Awareness Month, on Oct. 29, 2002, Secretary of Energy Spencer Abraham and Environmental Protection Agency (EPA) Administrator Christine Todd Whitman announced the fuel economy leaders for 2003 and unveiled the newest edition of the web-based *2003 Fuel Economy Guide*, <http://www.fueleconomy.gov>.

The new and improved web site features fuel economy, emissions, and safety data for model year 2003 vehicles, as well as fuel-saving tips for drivers.

"By driving a more fuel-efficient vehicle, a vehicle powered by alternative fuels, or even by driving our current vehicles more efficiently, we can all do our part to reduce our nation's reliance on imported oil and strengthen our energy security," Secretary Abraham said. "The DOE

and EPA have joined forces to provide clear, unbiased information to help car-buyers choose the most fuel-efficient vehicle that meets their needs."

"By choosing more efficient models, people will not only save themselves money at the pump, they will help improve the quality of our environment," Administrator Whitman said. "I believe that when people are provided the information this guide contains, they will make smart decisions that benefit both their checkbook and the air we all breathe."

Printed copies of the *2003 Fuel Economy Guide* will be available



later this year at new car dealerships, public libraries, and credit unions nationwide. A table listing the "best in class" in vehicle categories is available at <http://www.energy.gov/HQPress/releases02/octpr/pr02230.htm>. ❖

Rocky Flats team earns patent for cryogenic waste sampling technique

Homogenized is a term more likely to evoke thoughts of milk than low-level-mixed waste. But Glen Doyle of the Department of Energy's (DOE) Rocky Flats Field Office; Virgene Ideker, Kaiser-Hill; and James Siegwarth, National Institute of Standards and Technology, thought otherwise. Doing so recently earned the team a patent for "Method and Apparatus for Homogenizing Soft Waste at Low Temperatures." The system, funded by DOE, reduces and maintains the temperature of the contents of a waste drum at 77 degrees Kelvin (-197 degrees Celsius) so it can be shredded, mixed, and remotely sampled without degradation of the contaminants.

Rocky Flats and other DOE sites have large numbers of waste drums filled with an assortment of items contaminated with a mixture of radioactive and hazardous chemicals resulting from past processing and current facility decontamination activities. These items include cotton coveralls, anti-contamination

clothing, wipes, rubber and leaded gloves, vinyl tape, vinyl overboots, and polyethylene supplied-air suits. The challenge was to obtain accurate, representative samples of the waste in these drums for analysis as required by the Resource Conservation and Recovery Act to determine compliance with storage, treatment, and disposal criteria, while reducing the risk of worker exposure.

Standard sampling methods involved workers manually cutting pieces off of the items in the waste drums at varying depths and locations. Because of the diversity of items in each drum and the unpredictability of where contamination might be located, the sampling did not always produce accurate or representative results and some hazardous constituents could be missed entirely.

After many tests and repeated refining of the design, the team produced a prototype model of the cryogenic shredding and sampling

system. Using cryogenic temperatures allowed the materials to be shredded into small enough pieces and kept volatile organic compounds from evaporating. The system components—a shredder, a mixer, and a remote sampler—are contained within an insulated box. Liquid nitrogen is used to freeze the waste and to maintain cryogenic temperatures of the waste and machinery while the system is operating.

Samples produced by the prototype system proved to be more accurate and fully representative of the materials and contaminants used for the tests. Along with reduction of risk to workers, other benefits of the new system are a substantial reduction in waste volume; a better waste form for mixing with encapsulation media, such as concrete, as treatment to prevent leaching into the environment; and a reduction in new waste produced to obtain the samples. ❖

ORNL, Habitat experimental house attracts interest



Jeff Christian (far left), Director of the Buildings Technology Center at the Department of Energy's (DOE) Oak Ridge National Laboratory (ORNL), gives a tour of an experimental house in Lenoir City, Tenn., that was built using new building construction technology. The project was a joint effort of ORNL, the Tennessee Valley Authority (TVA), and Habitat for Humanity of Loudon County.

The house includes air-tight structural insulated panels, enhanced duct work, mechanical ventilation, solar photovoltaic panels, and systems to improve indoor air quality by reducing the risk of mold and mildew. Researchers from ORNL and TVA estimate energy savings from the experimental technologies will result in an average monthly electric bill of \$21, compared to \$75 in other houses located in the Lenoir City subdivision.

The demonstration house, the first in a series to be built in the subdivision, is part of DOE's Building America and Zero Energy Building programs. ❖

Spent fuel shipment from Hanford 324 Building a success



The Department of Energy's Hanford Site in Washington State has successfully moved the first shipment of spent nuclear fuel from the 324 Building to safe storage in the Canister Storage Building. This achievement is a significant step for Hanford's mission of moving waste away from the Columbia River.

The fuel was remotely loaded into a NAC-1 cask in a large airlock radiological control area. Next, the cask was pulled into a "Cask Handling Area" where, as seen at left, it was checked by workers for leaks and welded shut for transport to the Canister Storage Building in an International Standards Organization (ISO) TC-104 steel container.

The fuel collection from the 324 Building measures about 600,000 curies of radioactivity. It is Hanford's fourth largest collection of spent nuclear fuel, representing less than one percent of all the spent fuel on site. All the pressurized water reactor and boiling water reactor fuel is expected to be removed from 324 Building by the end of this year. ❖

Savannah River aviation team wins interagency award



On Sept. 19, 2002, the General Services Administration (GSA) presented the Federal Aviation Awards in Washington, D.C., in recognition of aviation excellence in programs and professionals U.S. Governmentwide. The Department of Energy's (DOE) Office of Aviation Management nominated the winners of the DOE Aviation Program and Professional Awards for the Federal awards (*DOE This Month*, September 2002). Albert A. Major II, Aviation Safety Manager, Bonneville Power Administration, received a special recognition certificate in the 2001 Federal Aviation Professional category.

The team from the Department of Energy's (DOE) Savannah River Site, comprised of the Operations Office and Wackenhut Services Incorporated, Aviation Operations Division, received "Honorable Mention" as the runner-up for the 2001 Federal Aviation Program Award. At the awards ceremony are (l-r) John R. Daily, Lt. Gen. USMC (Retired), Director, National Air and Space Museum, Smithsonian Institution; Stephen Shelt, Aviation Manager, Savannah River Operations Office; Ernie Tussie, Director, Special Operations, Wackenhut Services, Inc., Savannah River; and Thurman Davis, Deputy Administrator, GSA. ❖

Los Alamos conducts high-explosives experiment

The desert floor erupted and a cloud of dust filled the skyline of the Department of Energy's (DOE) Nevada Test Site (NTS) on Sept. 28, 2002, as a team headed by DOE's Los Alamos National Laboratory (LANL) set off a spectacular high-explosives experiment with a yield equivalent to about 37,000 pounds of TNT. The Watusi experiment took place at the Department's Lawrence Livermore National Laboratory (LLNL) Big Explosive Experimental Facility.

The experiment sought to show that existing seismic and infrasound sensors at the Test Site and across the West used in the days of underground nuclear testing still can detect and characterize explosions accurately. Several new, promising diagnostic instruments that may provide more reliable or more sensitive capabilities also were tested. LANL scientists were pleased with the data returned from the various instruments monitoring the explosion.

Collaborating organizations included the National Nuclear Security Administration, LLNL, Sandia National Laboratories, NTS operating contractor Bechtel Nevada, and several Federal and state agencies. ❖



Brigham Young professor wins Homer H. Lowry Award

Dr. L. Douglas Smoot, a chemical engineer and professor at Brigham Young University's College of Engineering and Technology, is the recipient of the 2002 Homer H. Lowry Award. The award, administered by the Department of Energy's (DOE) Office of Fossil Energy, is DOE's highest honor for outstanding contributions to fossil energy science and technology. Secretary of Energy Spencer Abraham presented the award, which consists of a citation, a gold medal, and \$25,000, in Washington, D.C., Oct. 9, 2002. At the awards ceremony are (l-r) Secretary Abraham, Dr. Smoot, and Assistant Secretary for Fossil Energy Carl Michael Smith.

Dr. Smoot was recognized for his research into the computer modeling of fuel combustion which has led to groundbreaking insights into the formation and prevention of air pollutants. "Americans are breathing cleaner air today due in large part to the brilliance of Dr. Smoot's computer models and his advocacy of computer modeling through the fossil fuel industry," Secretary Abraham said. ❖



Interpretive Center dedicated at Weldon Spring Site

Environmental cleanup at the Department of Energy's (DOE) Weldon Spring Site in Missouri is approaching closure after 16 years. Work at the site focused on construction of a 45-acre, on-site disposal facility, which contains the debris of 44 buildings, four waste pits, and one quarry from the former uranium materials processing plant. Seven stories tall, the disposal "cell" is the highest accessible point in St. Charles County.

A new Interpretive Center that presents Weldon Spring's history back to the early 1940's and information on the site's cleanup recently was dedicated at the site. Cutting the ribbon are (l-r) Pamela Thompson, DOE Weldon Spring Site Manager; Paul Mydler, Vice-Chair, Weldon Spring Citizens Commission; and Jessie Roberson, Assistant Secretary for Environmental Management.

The next steps for the site include the completion of environmental documentation while making the transition to stewardship activities. These activities include groundwater monitoring, perpetual care of the disposal cell, and maintaining site records. ❖



Savannah River TNX area closes; decommissioning planned by FY 2006

For over 50 years, TNX played an integral role in the development and testing of processes, facilities, and equipment for the Department of Energy's (DOE) Savannah River Site. TNX, the first area constructed on the Site, included the first research facility to develop the technology for the Savannah River reactors and separations processes.

The area had over 30 buildings used for large-scale demonstration projects, analytical and research laboratories, pilot scale facilities, warehouses, and support facilities. TNX provided significant support for High Level Waste initiatives, primarily the Defense Waste Processing Facility (DWPF) process and the development of several new technologies.

In 1999, DOE decided to shut down TNX to reduce occupied



The TNX area at Savannah River Site.

Savannah River structures and save operating and support costs. The Westinghouse Savannah River Company, Facilities Decontamination and Decommissioning Division, completed a multi-year plan to close the TNX facilities.

The initial phase of closure removed 14 office trailers and 22 portable buildings. Four buildings were dismantled and donated to a

local economic development organization, the Tri-County Alliance. Over 800 glass canisters used during development of the DWPF were removed. Approximately \$3 million of equipment, parts, and material were returned for Site reuse. Over 8,000 square feet of contaminated areas were decontaminated. All the furniture, equipment, ceiling tiles, insulation, light fixtures, fire extinguishers, and carpeting were removed from the buildings.

Pending demolition, the structures can be kept cold, dark, and dry, with minimal surveillance and maintenance. In order to eliminate the remaining risk and maintenance cost, complete decommissioning of the shut-down facilities in TNX is planned by Fiscal Year 2006 as part of the Site's accelerated cleanup program. ❖

Ecologists make wetlands part of Fernald Site restoration

Working with engineers and cleanup crews, ecologists at the Department of Energy's Fernald Environmental Management Project are converting excavated and perimeter areas into restored ecological communities using simple, inexpensive restoration technologies. About 2.2 million cubic yards of contaminated soil will be excavated from the 1,050-acre Fernald Site, resulting in both shallow and sloping depressions, many 20 to 30 feet deep.

The ecologists are taking advantage of the numerous depressions and the high clay content in the soil, which together present optimal conditions for the creation of new wetlands. "Although we follow approved restoration designs, we expect to encounter changes in the field during such an extensive

cleanup operation," said Fernald ecologist Eric Woods.

In one project, workers exposed a shallow basin after removing contaminated debris from a two-acre area. To maximize water retention, the ecologists graded the basin, placed a large brush pile in the center, and seeded the area with native wetland grasses and forbs, creating an ideal habitat for nesting and migrating waterfowl, as well as amphibians and other aquatic organisms. From start to finish, Fernald completed the restoration in about one month, with no disruption to the cleanup schedule.

Earlier this year, Fernald initiated the first major restoration project in a remediated area. Using existing depressions made during the excavation of over 400,000 cubic yards of

contaminated soil and debris, ecologists are expanding the wooded corridor and creating an additional floodplain with wetland features along a nearby stream. To form a healthy wetland ecosystem, the ecologists are enhancing the remaining subsoil with composted wood chips and stockpiled topsoil; installing thousands of saplings, shrubs, and seedlings; and planting and seeding native grasses and wildflowers.

This fall, Fernald is conducting multiple restoration projects in remediated areas and non-remediated perimeter areas. This field experience and ongoing collaboration with engineers and cleanup crews will help the ecologists prepare for restoring the former production area. ❖

Department assesses Voluntary Protection Program, finds significant value

The Department of Energy's (DOE) Office of Environment, Safety and Health has issued a report that addresses the contributions to worker safety and increased safety performance resulting from the implementation of the Department of Energy Voluntary Protection Program (DOE-VPP). The DOE-VPP was established in 1992 to foster improved health and safety performance across the DOE complex and is patterned after the Occupational Safety and Health Administration Voluntary Protection Program for the private sector. To date, 19 Department facilities and sites are enrolled in the DOE-VPP.

The input for the report relies heavily on annual status reports

from DOE-VPP sites and data derived from the Bureau of Labor Statistics performance figures for recorded accidents and injuries. Specifically, the report addresses the benefits of or "value added" by Voluntary Protection Programs within the Department from two perspectives: a cost-saving model or "business case" approach and a non-costing focus.

The non-costing approach examined performance areas such as absenteeism, turnover, work quality, productivity, and waste. The cost-measured items included compensation costs, cost of recordable injuries and illnesses, and lost work time due to injuries and illnesses. Two standard models were applied to each of the 19 DOE sites for the cost model

approach: the DuPont and the DOE Cost-Index Models.

Using both approaches, DOE-VPP was shown to have had a significant value added. The analysis indicates that significant dollar savings occurred at each DOE-VPP site and that worker involvement and ownership—major attributes of a Voluntary Protection Program—have a major impact on all aspects of work safety and productivity.

The Value Added of the Department of Energy Voluntary Protection Program (DOE-VPP), DOE/EH-0647, is available at http://tis.eh.doe.gov/vpp/reports/vppvaluefinal_a.pdf. Additional information on the DOE-VPP is available at <http://tis.eh.doe.gov/vpp/>. ❖

NEW Publications

Final reports on electricity policy issues from the Secretary of Energy's Electricity Advisory Board (EAB): ***Transmission Grid Solutions Report*** and ***Competitive Wholesale Electricity Generation: A Report of the Benefits, Regulatory Uncertainty, and Remedies to Encourage Full Realization Across All Markets***. Available on the EAB website at <http://www.eab.energy.gov>.

From the Energy Information Administration: ***Foreign Direct Investment in U.S. Energy***, a Congressionally mandated annual report, indicates that 35 percent of all U.S. gasoline sales in 2000 were through outlets of foreign-affiliated companies, up from 32 percent in 1999, and that U.S. natural gas

production by foreign-affiliated companies in 2000 increased 18 percent, accounting for 13 percent of total U.S. production. The report is available at <http://www.eia.doe.gov/emeu/finance/fdi/advance/index.html>.

NYCT Diesel Hybrid-Electric Buses: Final Results (NREL/BR 540-32427), a yearlong National Renewable Energy Laboratory (NREL) study of 10 prototype diesel hybrid-electric buses in the New York City Transit fleet. The results show the hybrid buses have a 10 percent higher in-service fuel economy. The report is available through NREL's Alternative Fuels Data Center, 1-800-423-1363 or at http://www.afdc.doe.gov/pdfs/nyct_diesel_hybrid_final.pdf.

Savannah River Site at Fifty, a comprehensive, technical history produced by the Department of Energy's Savannah River Operations Office under a cooperative agreement with New South Associates. The book explores the events leading up to the decision to create the Savannah River Plant through the end of the Cold War and the evolution of the plant into the Savannah River Site and its current missions. The hardbound, 720-page book is indexed and fully illustrated. It is available for \$65 through the Government Printing Office (GPO) at (toll free) 1-866-512-1800, at <http://bookstore.gpo.gov>, or at the nearest U.S. Government Bookstore. The GPO stock number is 061-000-00959-1. A CD-ROM version is available by contacting the Office of External Affairs, DOE Savannah River Operations, 803-725-2889. ❖

Research DIGEST

The Department of Energy's **Oak Ridge National Laboratory** (ORNL) has signed a Cooperative Research and Development Agreement (CRADA) with SuperPower of Schenectady, N.Y., for testing and development of a new high-temperature superconducting wire. Superconductivity is expected to enable a new method of transmitting and distributing electricity within the next decade. Superconducting wires will significantly reduce loss of electricity and operating costs, as well as increase power transfer capacity. The CRADA takes advantage of SuperPower's unique capability to grow the superconductor on textured templates using two different reel-to-reel processes. ORNL will provide its textured template to demonstrate the feasibility of growing high current superconductor coatings using SuperPower's proprietary techniques. (Frank Juan, 865-576-0885)



New forms of ice, which some popular theories of water predicted should not exist, have been discovered by a team of researchers from the Department of Energy's **Argonne** and **Oak Ridge National Laboratories** and Canada. The results of their study appear in the Aug. 23, 2002, edition of *Science*. More than a dozen forms of ice are known, including high-density and low-density amorphous, or non-crystalline, ice. Many scientists believe that high- and low-density amorphous ices are the low-temperature manifestations of two different states of liquid water, and the transition between the ice forms is sudden, that is, discontinuous in density. The research team has found at least three amorphous states of ice that exist between the high- and low-density forms. (Donna Jones Pelkie, 630-252-5501)



Researchers at the Department of Energy's **Los Alamos National Laboratory** have created the first computer model of a key part of the E-coli ribosome that has applications in the development of new and powerful antibiotics for treating illnesses caused by pathogens. The research was published in the October 2002 *Nature*



Stan Bull (right), Director, National Bioenergy Center, National Renewable Energy Laboratory (NREL), demonstrates how near-infrared light can be used to obtain a complete chemical characterization of biomass in less than a minute to (l-r) Senator Wayne Allard of Colorado, Secretary of Energy Spencer Abraham, and Admiral Richard H. Truly, NREL Director, during the Secretary's visit to the laboratory, Oct. 17, 2002. Rapid Biomass Analysis is one of many new tools being developed at NREL that reduce the cost and improve the efficiency of biomass conversion technologies.

Structural Biology. A ribosome's function in a biological system is to decode the instructions in a cell's DNA for making proteins, which are essential for growth and survival of the cell. Many antibiotic drugs work by forcing the ribosomes of disease-causing microorganisms to malfunction, killing the microorganism and curing the disease. The new model is proof that large protein ribonucleic acid (RNA) complexes can be predicted on a computer and opens up the possibility for rapidly modeling ribosomes from a variety of organisms. (Kevin Roark, 505-665-9202)



The Department of Energy (DOE) and the National Aeronautics and Space Administration (NASA) have jointly funded six research projects intended to expand our understanding of the health effects of low doses of ionizing radiation. The three-year projects will be funded for a total of \$6.69 million. The research teams will apply similar experimental techniques and research designs to study problems relevant to both the DOE Low Dose Radiation Research Program and the NASA Space Radiation Health Program. DOE

researchers receiving funding are **Betsy M. Sutherland**, Brookhaven National Laboratory; **Terumi Kohwi-Shigematsu**, Lawrence Berkeley National Laboratory; and **Eric J. Ackerman**, Pacific Northwest National Laboratory. Additional information on the six research projects is available at <http://lowdose.tricity.wsu.edu>.



The Department of Energy's **Savannah River Technology Center** (SRTC) is embarking on a study that could lead to the extensive use of hydrogen-based energy sources. The research will examine an innovative approach to hydrogen production: using the heat from a nuclear power reactor to break water down into hydrogen and oxygen. The study will look at both the economic and technical issues related to reactor-produced hydrogen. SRTC will lead and manage the three-year study, working with the University of South Carolina and industrial partners. DOE's Nuclear Energy Research Initiative has provided \$440,000 of funding for the first year of the study, and is expected to provide \$1.35 million over three years to support this research. ❖

Education NOTES

The Division of Educational Programs at the Department of Energy's **Argonne National Laboratory** recently coordinated a two-week training course, "Emerging Nuclear Security Issues for Decision Makers." The course was cosponsored by the U.S. Department of State and the International Atomic Energy Agency. More than 30 people from 20 countries participated. Subjects in the course included nuclear security and the nuclear fuel cycle, combating nuclear terrorism, increasing safeguards and security at nuclear facilities, emergency response planning, and nuclear security-related international cooperation programs. Course presenters came from a number of institutions, including the Department's Argonne, Lawrence Livermore, Oak Ridge, and Pacific Northwest National Laboratories.

More than 40 students took part in the First Rare Isotope Accelerator Summer School on Exotic Beam Physics conducted by the Physics Division of the Department of Energy's **Oak Ridge National Laboratory** (ORNL). The school is the first in a series of programs aimed at educating young researchers who will use the planned Rare Isotope Accelerator, endorsed by the 2002 Nuclear Physics Long Range Plan as the highest priority for major new construction in the field. Oak Ridge Associated Universities facilitated the students' participation. The program is jointly organized by accelerator laboratories at the Department's Argonne, Lawrence Berkeley, and Oak Ridge National Laboratories, and Michigan State University. The school will rotate among the four participating organizations.

New undergraduate and graduate **nuclear engineering programs** are being established at South Carolina State University in Orangeburg and the University of South Carolina in Columbia. The programs are the first nuclear engineering university programs initiated in the United States in over 20 years. Both programs respond to state and national needs for nuclear engineering graduates. Since 2000, the Department of Energy (DOE) has provided over \$600,000 to South Carolina State University, assisting the school's transition from an engineering technology program to a nuclear engineering program. DOE's support has included funds for two junior faculty and scholarships for 12 to 14 students each year. Visit DOE's Office of Nuclear Energy website at <http://www.nuclear.gov> for more information on nuclear education initiatives. ❖

Nuñez receives Outstanding Mentor Award

Luis Nuñez, a researcher at the Department of Energy's (DOE) Argonne National Laboratory, has received the Department's Outstanding Mentor Award. Nuñez has been mentoring undergraduate students for 12 years, and says he will mentor students for as long as he is in science. His commitment to the program stems from his own experience as an intern at Argonne when he was both an undergraduate and graduate student.

"The mentors I had were very patient and provided guidance and inspiration to continue as a researcher," Nuñez says. "Now I try to get students involved in every research area that I'm involved with, ranging from nuclear waste separation to magnetic particle development for industrial applications."

Nuñez said both the mentors and



Raymond Orbach (right), Director, DOE Office of Science, presents the Outstanding Mentor Award to Luis Nuñez.

the students can benefit from the program. "I get to see the research I do from the eyes of someone that is unfamiliar with the topic, which gives me a fresh perspective on it,"

he said. "At the same time, I can provide them with the tools necessary to approach and solve research problems in the future."

The Outstanding Mentor Award, established in 2001, is sponsored by the Workforce Development for Teachers and Scientists Program in DOE's Office of Basic Energy Sciences. The award recognizes laboratory scientific and technical staff members who ensure an intern has a high quality and productive research experience. Mentors must provide well-defined research projects that match the student's interests; support student involvement in other

research projects; provide professional feedback on abstracts, papers, and poster presentations; and demonstrate practices that go beyond the normal responsibilities of a mentor. ❖

People IN ENERGY

Larry Satkowiak is the new Deputy Program Director for Nuclear Nonproliferation Programs at the Department of Energy's Oak Ridge National Laboratory (ORNL). His responsibilities include directing the laboratory's existing programs, managing program strategies, and coordinating the relationship with nonproliferation customers. Previously, Satkowiak managed the materials protection, control and accounting program at both ORNL and the Oak Ridge Y-12 National Security Complex.



David Huizenga, Associate Assistant Deputy Administrator for International Nuclear Safety and Cooperation in the Department of Energy's National Nuclear Security Administration, has been recognized for his support of the National Guard and Reserve. He is one of four recipients of the Committee Chair Award from the District of Columbia Committee for Employer Support of the Guard and Reserve, Office of the Assistant Secretary of Defense for Reserve Affairs. The award is based on the employee-nominated "My Boss is a Patriot" certificate of appreciation that Huizenga received while with the Office of Environmental Management.

Terri Morgan, Chief Information Officer (CIO) of the Department of Energy's (DOE) Chicago Operations Office, and **Paul Aaron**, Office of Information Management, Office of Environmental Management, DOE Headquarters, have received CIO Certification through the CIO University. The CIO University is a consortium of universities which offer graduate level programs that directly address the executive core competencies adopted by the Federal CIO Council in 1997 based on the Clinger-Cohen Act of 1996. Morgan graduated from Carnegie Mellon University; and Aaron, from George Washington University.

James Peery has been named Deputy Associate Director for Advanced Simulation and Computing at the Department of Energy's (DOE) Los Alamos National Laboratory. Most recently, Peery headed the Computational Solid Mechanics and Structural Dynamics Department at the Department's Sandia National Laboratories. Peery is a member of several key review committees, including the ASCI Burn Code Review Committee and the DOE Shock Physics Institute.



John I. Sackett has been appointed Associate Laboratory Director for Engineering Research at the Department of Energy's Argonne National Laboratory. In his new role, he will lead and determine the future direction of Argonne's entire nuclear program. Most recently, Sackett served as Deputy Associate Laboratory Director for Argonne-West near Idaho Falls, Idaho. Sackett will split his time between Argonne-East, located outside of Chicago, Ill., and Argonne-West.



Researcher **Kennedy Reed** of the V Division in the Physics and Advanced Technologies Directorate at the Department of Energy's Lawrence Livermore National Laboratory, has been named the 2003 recipient of the American Physical Society's John Wheatley Award. The biennial award is presented to a physicist who has made an outstanding contribution to the development of physics in developing countries by working with local physicists in research or teaching. Reed worked as a visiting scientist at universities in Senegal and Ghana during the summers of 1997 and 1999. ♦

COMING Events

March 2003
25-26 DOE Software Quality Forum 2003, Arlington, Va.; a triennial conference sponsored by the Software Quality Assurance Subcommittee of the Quality Managers within the Department of Energy's (DOE) nuclear weapons complex. The event is

cohosted by the Office of the Chief Information Officer and the Office of Advanced Simulation and Computing, Office of Defense Programs, National Nuclear Security Administration. The 2003 forum offers attendees an opportunity to gain knowledge and share experi-

ences in software trends and technologies with industry, government, and academia leaders. For more information or to submit a presentation proposal, contact Brenda Coblentz, 301-903-4632 or brenda.coblentz@hq.doe.gov, or visit <http://sqf.energy.gov>. ♦

Milestones

YEARS OF SERVICE

November 2002

Headquarters

Chief Information Officer - Jannie Kindred (35 years), Robert E. Wilson (30). **EIA** - Latonya Thomas (25). **Energy Efficiency & Renewable Energy** - Faith S. Lambert (30), James E. Rannels (30), John A. Garbak (25). **Envir. Management** - Gary R. Peterson (25). **Envir., Safety & Health** - George E. Detsis (25).

FERC - Cynthia B. Smallwood (35), Houshang Emami (30), Donald W. Griffith (30), Veronica T. Moten (30), Wendelin W. Whitfield (30), Sharon L. Dameron (25), Tim S. Kinsey (25), James K. Wing (25). **Fossil Energy** - Arthur V. Petty, Jr. (30), Marvin I. Singer (30). **General Counsel** - Dorothy M. Hamid (40). **Hearings & Appeals** - Otto S. Reid (35), George B. Breznay (30).

Management, Budget & Evaluation - Colin P. Powers (30), Charles U. Butt (25), Andrea Carter (25). **NNSA** - Dale C. Oliff (30). **Nuclear Energy** - John Pantaleo, Jr. (25). **Policy & International Affairs** - David H. Meyer (25). **Radioactive Waste** - William H. Lake, Jr. (30). **Science** - James F. Decker (30). **Security** - Robert A. Turner (30).

Field

Albuquerque - Steven C. Hamp (25), Rita J. Smotherman (25). **Albuquerque/NNSA** - Daniel E. Dominguez (30), Perrie T. Wolford (30), Elizabeth L. Heaslip (25), Eloy D. Martinez (25), Keith A. Peterson (25), James J. Szenasi (25). **Chicago** - Michael D. Polito (45), Deborah R. Perry (30), Jonathan P. Cooper (25), Michael R. Haben (25).

Bonneville Power - James J. Chorazy (40), William J. Johnson (35), Earl R. Kolanda (35), Robert G. Lieberman (35), Nancy K. Moore (35), Norman A. Breniser (30), David M. Caines (30), Bradley C. Colter (30), David R. Jones (30), Janice J. L. Sanderson-Wong (30), Constance J. Schwartz (30), James M. Bauman (25), Ronald L. Burnett (25), Mona M. Connell (25), Sandra J. Gonyon (25), Gary A. Hood (25), Elizabeth A. Johnson (25), Norma J. Kilgore (25), Deborah B. McGinness (25), John R. Woerner (25).

Idaho - Linda A. Hallum (30), Rosemary Haines (25), Harry M. Worrell (25). **NETL** - Robert B. Webster (30), Richard D. Keller (30), George Kazonich (25). **Nevada** - Michael O. Giblin (25). **Oak Ridge** - Erskine J. Hicks (30), Betty J. Watson (30). **Oakland/NNSA** - Walter R. Cyganowski (30). **Ohio** - Donald A. Pfister (25). **Richland** - Paul F. X. Dunigan, Jr. (30), James D. Kautzky (30).

Rocky Flats - Edward A. Pietsch (35). **Savannah River** - Jerald L. Taylor (35), Wade C. Whitaker (25). **Southwestern Power** - Donna M. Hause (30), Robert F. Purnell, Jr. (30), Ronald E. Wagstaff (30). **Western Area Power** - Lavon R. Bullock (30), Mark E. Fidrych (30), Lynn E. Richardson (30), Ruby G. Duran (25), James G. Hartman (25). **Y-12 Site/NNSA** - George W. Blanchard (30).

RETIREMENTS

September 2002

Headquarters

Chief Information Officer - Michael J. Distefano (33 years), Clifford E. Hoyt (30), William J. Martin (24), Steven E. Thompson (23), Rosalie H. Weller (42). **Economic Impact & Diversity** - Asghar A. Haqq (28). **Energy Efficiency & Renewable Energy** - Joseph F. Galdo (22), Gobind N. Jagtiani (15), Gail McKinley (34), Patrick L. Sutton (39), Richard N. Wares (24).

Envir. Management - Rosemarie Berkau (23), Patricia J. Byrns (36), Barbara A. Colletti (30), Craig W. Deremer (29), Sharyn M. Grimm (35), Patsy A. Hevner (36), Ralph G. Lightner (36), Virgil W. Lowery III (34), Barbara A. Mazurowski (30), Brian F. McCully (29), Donna J. Myers (32), Theodore S. Needles (28), John C. Tseng (25), Donald B. Williams (26). **Envir., Safety & Health** - Frieda A. Jackson (35), Peggy J. Lewis (27), J. Vincent Moskaitis (34).

FERC - James L. Bernhardt, Jr. (33), William P. Bushey (37), Connie B. Carey (38), Sylvia A. Dixson (33), Roland J. Ferguson, Jr. (28), Pamela S. Fox (27), Avis D. Gilliam (30), Esther D. Howard (20), Merita Hughes (26), David J. Iacono (26), Christopher A. John (21), Ralph A. Johnson, Jr. (35), Patricia D. Kilchrist (27), Robert J. Lynch (22),

Judith S. Martin (34), Rita M. Mastrorocco (30), John L. McClland (22), Barbara J. Morton (19), Barbara A. Murray (30), Jeffrey B. Norman (20), Marilyn L. Rand (32), Mary R. Sherwood (26), Richard B. Taug (30), Carol A. Terry (27), Philip Veres (25).

Fossil Energy - Theodore D. Atwood (21). **Hearings & Appeals** - Evelyn B. Sheffield (26). **Independent Oversight & Performance Assurance** - Jake W. Stewart, Jr. (11). **Management, Budget & Evaluation** - Caren C. Babst (21), Richard S. Baritz (31), Thomas C. Clark (21), Gloria P. Hill (29), Rita N. Moore (30), Bruce A. Pomponio (27), James R. Sweeney II (27), Mary E. Veit (25), Raymond I. Velez (32). **Radioactive Waste** - Richard J. Aiken (28), Susan E. Klein (27).

Field

Albuquerque/NNSA - John M. Andrews (32), John P. Arranaga (31), Adam Baca (27), Stephen E. Bacon (29), Dwight A. Brown (28), James H. Cardwell (23), Michael A. Chavez (30), N. Grace Crook (25), Susan K. Cummons (21), Kim E. Davis (28), Roberta E. Diblasi-Tate (21), David A. Gurule (30), Lyle J. Hofferth (37), John S. Johnson (35), Bennie C. Long (26), Joseph A. Lucero, Jr. (33), Marvin G. McElroy (30), Elaine C. Randall (29), Thomas E. Seese, Jr. (24), Ronald F. Short (40), Victor W. Simpson II (30).

Albany Research Center - David N. Nilsen (30). **Albuquerque** - Harold F. Klaus, Jr. (25). **Chicago** - Nancy A. Chieco-Knuth (40), Virginia M. Connelly (24), William Rivera, Jr. (29), Anthony J. Traina, Jr. (17). **Nevada** - Bobbie K. McClure (10). **Nevada/NNSA** - Tony L. Jensen (32), Andres R. Veloso (23). **Oakland/NNSA** - John A. Montella (28). **Rocky Flats** - Robert J. Ahlstrand (12), Kenneth J. Heidemann (26), Patricia L. Johnson (12).

Savannah River - James D. Arnett, Jr. (28), David G. Darugh (28), James A. Wright, Jr. (28). **Southwestern Power** - Doris De La Cruz (18), Robert F. Gardner (20). **Western Area Power** - Melvin K. Callen (31), Darryl S. Clark (23), Susan L. Dietrich (29), Doris I. Page (25), Loyce M. Richards (25), Karen R. Tallha (32). ❖

Fusion reactor removal successfully completed

In September 2002, the Department of Energy's (DOE) Princeton Plasma Physics Laboratory (PPPL) completed the dismantling and removal of the Tokamak Fusion Test Reactor (TFTR), which shut down in 1997 after 15 years of operation, on schedule and under budget. During its experimental life, TFTR set records for fusion performance and made major contributions to the development of fusion as a long-term energy alternative.

TFTR was the world's first magnetic fusion device to perform extensive scientific experiments with plasmas composed of 50/50 deuterium/tritium and also the first to produce more than 10 million watts of fusion power. In 1995, TFTR attained a world-record temperature of 510 million degrees Centigrade—more than 25 times that at the center of the sun.

Since 1997, PPPL has focused on nurturing the best new ideas in fusion research, both in advanced tokamaks and innovative confinement configurations. Two major experimental projects, along with increased theory and computation, will anchor this program. The National Spherical Torus Experiment already is producing an increased understanding of fusion physics, and the National Compact Stellarator Experiment, now being designed, will provide further insight into the capabilities of stellarators.

November 2002

AROUND DOE

'Red Storm' supercomputer next step in ASCI program

A \$90 million multiyear contract has been signed by the Department of Energy's National Nuclear Security Administration (NNSA), Sandia National Laboratories, and Cray Inc., for Cray to develop and deliver to Sandia a massively parallel processing supercomputer named "Red Storm" for NNSA's Advanced Simulation and Computing (ASCI) program. The system will have a theoretical peak performance of 40 trillion calculations per second (teraOPS).

Red Storm is the latest in a series of world-leading supercomputers following NNSA's strategy to provide computational capability for simulating complete operations of nuclear weapons and to provide computing resources necessary to ensure the continued health of the nuclear stockpile. The supercomputer is expected to become operational in Fiscal Year 2004.

ENERGY STAR® wins energy efficiency award

ENERGY STAR®, a voluntary program sponsored by the Department of Energy (DOE) and the Environmental Protection Agency (EPA), has earned the Charles H. Percy Award for Distinguished Public Service from the Alliance to Save Energy (ASE). The award, which recognizes Federal Government programs for their outstanding contributions to the advancement of energy efficiency, was accepted by Secretary of Energy Spencer Abraham on Oct. 9, 2002, in Washington, D.C.

"It's an honor for me to receive this important award," Secretary Abraham said. "Energy efficiency is as important to our future as energy generation—and the ENERGY STAR program is one very important way to achieve our energy efficiency goals. President Bush's National Energy Policy highlights ENERGY STAR and recommends an expansion of the program to other energy-intensive products."

ENERGY STAR works with more than 7,000 partners to improve the energy efficiency of products, homes, and commercial buildings and schools. The joint DOE/EPA program strives to increase consumer awareness, interest, and desire for energy efficient products by awarding the ENERGY STAR label to appliances and electronic equipment that significantly exceed the minimum national efficiency standards. ❖

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

Official Business