

# FOSSIL ENERGY TODAY

A Newsletter  
About Innovative  
Technologies  
for Fossil Energy



Office of Fossil Energy, U.S. Department of Energy • Issue No. 3, Third Quarter, 2011

## NORTH SLOPE WELL TO TEST HYDRATE PRODUCTION TECHNOLOGIES

Project Goals Include Injecting and Storing CO<sub>2</sub> While Producing Methane Gas from Hydrate

A fully instrumented well designed to test innovative technologies for producing methane from hydrate deposits has been safely installed on the North Slope of Alaska. As a result, the “Iñnik Sikumi” (Iñupiaq for “fire in the ice”) gas hydrate field trial well is available for field experiments as early as winter 2011–12.

The well, the result of a partnership between ConocoPhillips and the National Energy Technology Laboratory, is designed to test a technology that involves injecting carbon dioxide (CO<sub>2</sub>) into sandstone reservoirs containing methane hydrate. Laboratory studies indicate that the CO<sub>2</sub> molecules will replace the methane molecules within the solid hydrate lattice, resulting in the simultaneous sequestration of CO<sub>2</sub> in a solid hydrate structure and production of methane.

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Photo courtesy of ConocoPhillips.  
Nordick #3 Drill Rig at site of Iñnik Sikumi #1 well, Prudhoe Bay Unit, Alaska, in April 2011.

## TRAINING CENTERS PROVIDING IMPORTANT CARBON CAPTURE AND STORAGE INSTRUCTION

The Office of Fossil Energy’s research and development program has helped establish the U.S. as a leader in worldwide efforts to commercialize, deploy and fully realize the great potential of carbon capture and storage (CCS) technology. Continuous technological progress is essential for reaching FE’s goal of having first generation CCS deployed by 2020, and second generation technologies commercialized by 2030.

As with any emerging technology, challenges exist – some technical, others non-technical –

**As of March 2011, the ARRA Regional Carbon Sequestration Training Centers have provided instruction to over 700 participants and distributed more than 1500 professional development hours.**

that will also play a role in the effectiveness of CCS as a widely-used strategy for helping reduce atmospheric emissions of carbon dioxide (CO<sub>2</sub>). One of the most important non-technical challenges is anticipating and meeting the need for a significantly expanded workforce trained in the various specialties that extensive CCS deployment will require. It is expected that such a workforce will help accelerate CCS implementation and commercialization, while decreasing costs.

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# OFFICE OF OIL AND NATURAL GAS: DEVELOPING SOLUTIONS TO TODAY'S ENERGY CHALLENGES

By Christopher Smith

In March of this year, the President laid out his vision for the future of America's energy security. Rising international oil prices, turmoil in the Middle East, and the nuclear crisis in Japan all bring into sharp relief the need to redouble our efforts to ensure reliable, economic sources of energy for our Nation's economy. This is important work, and the Department of Energy has an important role to play.

The safe development of these resources will continue to be part of our overall strategy for energy security for decades to come. Recent innovations in producing gas from shale have dramatically increased estimates of our domestic natural gas resources. The Energy Information Administration currently estimates that shale gas resources are in excess of 800 trillion cubic feet. America's total natural gas resources are enough to supply our economy for over one hundred years at current rates of consumption. This represents a tremendous opportunity to create jobs, improve our balance of payments, diversify our energy mix, and reduce the price that American consumers pay for energy.

But increased shale gas development also brings with it concerns about safety and environmental impact. Stakeholders around the country have consistently expressed these concerns, particularly in regards to protecting groundwater. Acknowledging this, the President has tasked the Secretary of Energy with ensuring the safety of hydraulic fracturing and other processes associated with the production of shale gas.

We face opportunities and challenges offshore, as well. I served as the Designated Federal Official for the commission that investigated the BP Deepwater Horizon disaster in the Gulf of Mexico. This commission, which was established by executive order in May of last year, recommended that the Department of Energy refocus

offshore research efforts on safety. I now serve on the Department of the Interior's Ocean Energy Safety Advisory Committee. As producers march into deeper waters in search of the oil and gas that our economy needs, our job is to ensure that our understanding of the associated risks keeps pace.

The Department of Energy has a long history of using research and technology to develop solutions to the tough energy challenges that face our nation. We bring to this task an organization dedicated to science, a cadre of thirty thousand scientists and engineers in our network of National Laboratories, and partnerships with universities across the country. We also leverage the capabilities of the Research Partnership to Secure Energy for America (RPSEA), a public-private collaboration with industry and academia. And in all of our efforts, we're working closely with the Environmental Protection Agency and the Department of the Interior to ensure that our results are useful to them as they design and execute their regulatory mission.

The President has pointed out that we're poised to cut our oil imports by a third in a decade. Over the longer term, natural gas will contribute to reducing our reliance on oil, electrifying our transportation sector, and creating new options for America's consumers. These changes won't happen overnight, but we're taking steps today to create tomorrow's clean energy economy.



*Christopher Smith is Deputy Assistant Secretary for Oil and Natural Gas in the Office of Fossil Energy.*

## [Natural Gas Subcommittee of the Secretary of Energy Advisory Board](#)

*U.S. Energy Secretary Steven Chu charged the Secretary of Energy Advisory Board Natural Gas Subcommittee to make recommendations to improve the safety and environmental performance of natural gas hydraulic fracturing from shale formations. The Subcommittee will conduct a review, and will work to identify any immediate steps that can be taken to improve the safety and environmental performance of hydraulic fracturing.*

## [Ocean Energy Safety Advisory Committee](#)

*Secretary of the Interior Ken Salazar announced the formation of the Ocean Energy Safety Advisory Committee, a permanent advisory body of the nation's leading scientific, engineering, and technical experts that will provide critical guidance on improving offshore drilling safety, well containment, and oil spill response.*

## NETL COLLABORATES WITH JASON PROJECT ON AWARD-WINNING CURRICULUM

A new JASON Project geology unit, developed with assistance from the National Energy Technology Laboratory, has earned a “CODiE Award” as the nation’s Best Science or Health curriculum.

Operation: Tectonic Fury unlocks the Earth’s geologic mysteries through investigation of its past, present and future. It is the fourth unit in a new line of middle school science curricula developed by the nonprofit subsidiary of the National Geographic Society.

To create the unit, JASON selected a few teachers and student “Argonauts” to conduct fieldwork with host researchers. The students and

teachers spent three days at NETL investigating rocks, fossils, and coal, with a focus on predicting what happens underground during geologic

carbon sequestration. Interactions among teachers, students, and researchers were photographed and videotaped, becoming part of the curriculum.



NETL’s George Guthrie (left) and some of the JASON Project’s “Argonauts” explore an imaging unit similar to those used in hospitals for CT scans. The unit is located at NETL’s West Virginia site, where researchers analyze fluids flowing inside of rocks.

The annual CODiE Awards are presented by the Software & Information Industry Association to recognize excellence and vision in educational technology, digital content, and software. NETL was one of four sites used in making the unit.

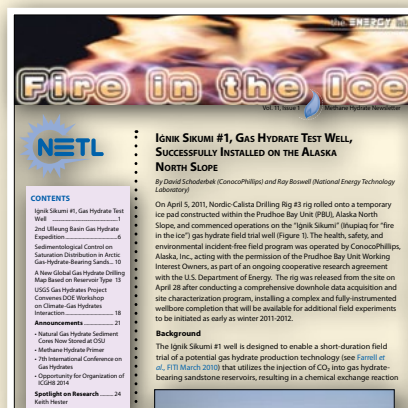
Complete curriculum units are free to download from the JASON Web site at [www.jason.org](http://www.jason.org).

*North Slope continued from page 1...*

Methane hydrate consists of molecules of natural gas trapped in an open rigid framework of water molecules. It occurs in sediments within and below thick permafrost in Arctic regions, and in the subsurface of most continental waters with a depth of ~1,500 feet or greater. Many experts believe it represents a potentially vast source of global energy and FE scientists have studied methane hydrate resource potential and production technologies for more than two decades. Researchers are addressing such important issues as seafloor stability, drilling safety, and a range of environmental issues, including gas hydrate’s role in changing climates.

The recently completed operations include the acquisition of a research-level suite of measurements through the sub-permafrost hydrate-bearing sediments. The data confirm the occurrence of 160 feet of gas-hydrate-bearing sand reservoirs in four separate zones, as predicted, and provide insight into their physical and mechanical properties. An array of down-hole pressure-temperature gauges were installed in the well, as well as a continuous fiber-optic temperature sensor outside the well casing, which will monitor the well as it returns to natural conditions following the drilling program.

In coming months, field trial participants will review the data to determine the optimal parameters for future field testing. Current plans are to re-enter the well in a future winter drilling season, and conduct a 1-2 month program of CO<sub>2</sub> injection and well production to assess the efficiency of the exchange process. Following those tests, the remaining time available before the spring thaw (as much as 40 days) may be used to test reservoir response to pressure reduction in the wellbore. This alternative methane-production method, “depressurization,” recently proved effective during short-term testing conducted by the governments of Japan and Canada at a site in north-western Canada.



Learn more about this project in the latest issue of *Fire in the Ice*, a newsletter on research and development in gas hydrates published by the National Energy Technology Laboratory. The newsletter is available online at <http://www.netl.doe.gov/technologies/oil-gas/Future-Supply/MethaneHydrates/newsletter/newsletter.htm>.

*Training Centers continued from page 1...*

To meet the challenge of training this workforce, FE has implemented through the National Energy Technology Laboratory seven highly specialized FE training centers, funded under the American Recovery and Reinvestment Act of 2009 (ARRA), to develop and implement CCS training.

These centers were provided about \$1 million each through 2012 to support the development of professional training classes and academic curricula for scientists, engineers, lawyers, business professionals and other individuals involved in CCS project development. They provide instruction on the science and process of planning and operating commercial CCS projects while building a business model to enable them to become self-sustaining without future Federal funding. They also augment and supplement outreach activities already underway in the Regional Carbon Sequestration Partnerships (RCSPs) Initiative, facilitating the transfer of knowledge and technologies required for site development, operations, and monitoring for future commercial CCS projects.

## Regional Carbon Sequestration Training Centers

### [Sequestration Training and Education Program \(STEP\)](#)

#### **Champaign, Illinois**

Partners: Illinois State Geological Survey, Midwest Geologic Sequestration Consortium

Training uses a modular, multi-track approach, allowing different professional participants to customize individual programs. The project provides curriculum, outreach and networking on five focal areas for carbon sequestration technology development.

### [Carbon Tech Alliance](#)

#### **Seattle, Washington**

Partners: Environmental Outreach and Stewardship Alliance (EOS), Pacific Northwest National Laboratory, Washington Society of Professional Engineers

Provides a platform for CO<sub>2</sub> sequestration-related technology information, establishing an advisory board, offering a suite of revenue-generating training classes, and implementing a marketing strategy for prospective students with the goal of becoming self-sustaining.

### [Southwest United States Carbon Sequestration Training Center](#)

#### **Socorro, New Mexico**

Partners: Texas A&M University, University of Utah

Uses a holistic approach to conduct outreach and training for current professionals, inclusive of industry, non-governmental organizations, the general public and the media. Training also engages students at all levels, from K-12 to college, and provides training and tools to secondary education teachers.

### [Wyoming CCS Technology Institute](#)

#### **Laramie, Wyoming**

Partners: University of Wyoming

Uses an industry-wide model to train a professional workforce, provide pathways for graduates and professionals from allied fields, and create a vehicle for communicating regional CCS knowledge and technology advances.

### [Permian CCS Center](#)

#### **Tulsa, Oklahoma**

Partners: American Association of Petroleum Geologists, Applied Petroleum Technology Academy, Petroleum Technology Transfer Council

Focuses on the development and delivery of technology training for the Permian Basin Region of western Texas and southeastern New Mexico, using such methods as regional workshops, extended CCS courses, research-oriented workshop, online certificate program, and webinars/e-symposia.

### [Southeast Regional Carbon Sequestration Technology Training Program \(SECARB-ED\)](#)

#### **Norcross, Georgia**

Partners: Clemson University, EnTech Strategies LLC, Geologic Survey of Alabama, Gerald R. Hill PhD Inc., University of Texas at Austin, Virginia Polytechnic Institute and State University

Trainings focus on the most promising sequestration options in the southeast region, various sources of CO<sub>2</sub>, the regional transportation infrastructure, and legal, regulatory, and institutional frameworks.

### [Alliance for Sequestration Training, Outreach, Research and Education \(STORE\)](#)

#### **Austin, Texas**

Partners: Sandia Technologies LLC, Striker Communications, University of Texas at Austin

Focused on promoting the transfer of scientific knowledge and applied engineering technologies related to CO<sub>2</sub> storage in the Gulf Coast Region. Curriculum includes sequestration workforce training, public outreach, research and technology dissemination, and workforce pipeline education.

## REDESIGNED CCS WEBSITE OFFERS INSIGHT ON WORLDWIDE PROJECTS

A wealth of information about worldwide carbon capture and storage (CCS) technologies and projects is available on the newly updated and redesigned National Carbon Sequestration Database and Geographic Information System (NATCARB) Web site.

NATCARB is an interactive virtual encyclopedia of key CCS information, including locations and information on field projects, a map of all publicly announced worldwide CCS projects and their status; and the complete latest edition of NETL's assessment of carbon storage resource potential in the U.S. and portions of Canada.

NATCARB was created by NETL with input from the seven RCSPs in the Carbon Sequestration Program. The information contained in NATCARB is current as of March 31, 2011, and will be updated quarterly as changes occur.

The updated site integrates new features and was specifically designed to make it easily accessible for public viewing and use. Among the highlights presented in a tabbed format:

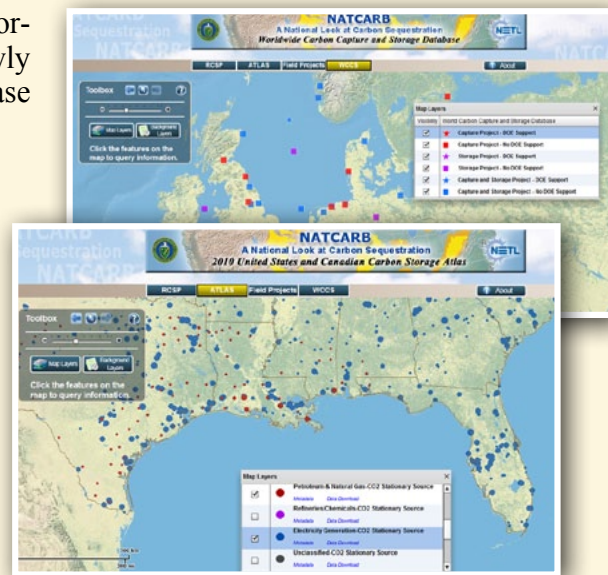
- Location and links to CCS projects undertaken by the Energy Department's seven Regional Carbon Sequestration Partnerships (RCSPs). The partnerships form a nationwide network that is determining the most suitable technologies, regulations, and infrastructure for CCS deployment in different areas of the United States and portions of Canada.
- An interactive version of data contained in the 2010 Carbon Sequestration of the United States and Canada – Third Edition. Released in November 2010, this edition among other things documents up to 5,700

years of carbon storage resource potential in the United States and portions of Canada. The layers in the NATCARB viewer show the unmineable coal areas, oil and gas reservoirs, saline formations, and sedimentary basins that provide this storage potential, as well as the locations of CO<sub>2</sub> stationary sources.

- The locations of small- and large-scale CCS field projects with links for more information, including the 10 site characterization projects funded by the Department of Energy as part of the Recovery Act. CCS field projects are designed to demonstrate

that geologic formations in the United States and Canada have the capability to store thousands of years of CO<sub>2</sub> emissions and confirm that CO<sub>2</sub> capture, transportation, and injection can be achieved safely, permanently, and economically.

- A user-friendly world map with pinpoints for all publicly announced CCS projects and their status. Clicking on a point in the Worldwide Carbon Capture and Storage (WCCS) database provides a link for more information about a project. This database is also available as a Google Earth layer on NETL's website.



Screenshots from the NATCARB Web site. The site can be viewed at [www.netl.doe.gov/technologies/carbon\\_seq/natcarb/index.html](http://www.netl.doe.gov/technologies/carbon_seq/natcarb/index.html).

## NATIONAL CARBON CAPTURE CENTER POISED TO BEGIN THIRD-PARTY TESTING

The recent commissioning of an Alabama-based test facility is another step forward in research to speed the deployment of innovative post-combustion carbon dioxide (CO<sub>2</sub>) capture technologies for coal-based power plants.

The Post-Combustion Carbon Capture Center (PC4) facility is part of the National Carbon Capture Center (NCCC), a testing and evaluation center established by DOE in 2009 and operated and managed by Southern Company. The NCCC works collaboratively with technology developers worldwide to test and evaluate both pre- and post-combustion carbon capture technologies under realistic conditions, accelerating develop-

ment of cost-effective CO<sub>2</sub> capture technologies and ensuring continued use of coal for power generation.

The PC4 is located at the Alabama Power Gaston power plant Unit 5, an 880 megawatt supercritical pulverized coal unit. Initial testing at the PC4 began recently when researchers used a solvent called monoethanolamine (MEA) to capture CO<sub>2</sub> from a slipstream of flue gas. To date, the MEA solvent has exceeded the expected 90 percent CO<sub>2</sub> capture, and the unit is now in steady operation capturing about 10 tons of CO<sub>2</sub> per day. Learn more at [http://www.fossil.energy.gov/news/techlines/2011/11024-NCCC\\_Launches\\_Post-Combustion\\_Test.html](http://www.fossil.energy.gov/news/techlines/2011/11024-NCCC_Launches_Post-Combustion_Test.html).

## NETL SUPPORTS POWER PLANT SUMMIT IN INDIA

Since 1982, the National Energy Technology Laboratory has provided technical assistance to the India Mission of the U.S. Agency for International Development (USAID/India) on cooperative projects in India's coal and power generation sectors. Under the ongoing US-AID/India's Greenhouse Gas Pollution Prevention Project, NETL played a lead role in planning *Power Plant Summit 2011 and Service Providers Network Conference*, which was convened during April 12-14 in Hyderabad, India, by the Confederation of Indian Industry (CII).

The Summit drew over 175 participants from India's power sector and U.S. service provider firms. NETL and CII arranged business-to-business meetings between the U.S. companies and potential Indian partners along with meetings between the U.S. service providers and potential customers in Indian utilities. Scott Smouse, Senior Management & Technical Advisor – International, from NETL's Strategic Center for Coal, participated in the Summit and delivered one of the keynote addresses.



*From the 2011 Summit: (L-R) Harish Chandra Prasad, CII and Malaxmi Infra Ventures (India) Pvt. Ltd.; Scott Smouse, NETL; and Jeremy Gustafson, Clean Energy and Environment and USAID/India.*

The Government of India intends to add ~122 gigawatts (GW) of new capacity by 2020 – with the vast majority of this being coal-fired. Adding this level of generation capacity and requisite transmission and distribution systems will require, apart from huge capital investments, expertise, experience, and skills that span many areas. Most of the required capabilities and resources do not currently exist in India to the extent that they can be relied upon to effectively and sustainably support India's planned power generation growth.

NETL has promoted the formation of a formal Service Providers' Network that could lead to the development of

strategic business relationships between the mature power plant service providers of the U.S. and their emerging India counterparts. Such a partnership will help India achieve this ambitious expansion plan.

The 2011 Summit reprised Power Plant Summit 2008, which NETL planned and convened with CII with USAID funding in New Delhi, to formally launch the development of the U.S./India service provider's network.

CII is a non-governmental, not-for-profit, industry-led and -managed organization that plays a proactive role in India's development process.

A highly valued partner, CII works closely with DOE under the ongoing U.S.-India Energy Dialogue. The Dialogue was launched in May 2005 to increase bilateral energy trade and investment by identifying areas of collaboration and promoting the shared vision of energy security and economic growth on an environmentally sustainable footing.

### Coal Conference Offers Financial, Technical Sessions

The National Energy Technology Laboratory has organized a unique series of financial, insurance, policy, and technical information sessions for the 28<sup>th</sup> annual International Pittsburgh Coal Conference this September 12–15 in Pittsburgh, Pennsylvania.

Business professionals, researchers, and developers within the energy, power, mining, and chemical industries

will have the opportunity to interact with leading scientists and business experts to learn more about the technical and business sides of coal and power technology developments and deployment of applied energy research.

For more information, visit [http://www.netl.doe.gov/publications/press/2011/110701\\_NETL\\_Hosts\\_Carbon\\_Capture\\_and\\_Storage\\_Demonstration.html](http://www.netl.doe.gov/publications/press/2011/110701_NETL_Hosts_Carbon_Capture_and_Storage_Demonstration.html).

#### Keynote speakers include:

Charles McConnell  
Office of Fossil Energy

Thomas Bonner  
Cogentrix Energy, LLC

Steve Herman  
Energy Capital Partners

Steve Orlins  
National Committee on U.S.-  
China Relations

## THREE NETL-DEVELOPED TECHNOLOGIES RECOGNIZED AMONG MOST SIGNIFICANT

Three technologies developed by the National Energy Technology Laboratory have been recognized by R&D Magazine as among the 100 most technologically significant products to enter the marketplace in the past year.

“I want to congratulate this year’s R&D 100 award winners. The Department of Energy’s national laboratories and sites are at the forefront of innovation, and it is gratifying to see their work recognized once again,” said Energy Secretary Steven Chu. “The cutting-edge research and development done in our national labs and facilities is helping to meet our energy challenges, strengthen our national security and enhance our economic competitiveness.”

Since 1963, the R&D 100 Awards have identified revolutionary technologies, many of which have become mainstays of life, including: the digital wristwatch, anti-lock brakes, automated teller machines, and HDTV.

NETL’s award-winning technologies:

- **APECS v2.0 with ANSYS® DesignXplorer™ and ROM Builder**  
The grand challenge facing the power and energy industries is the development of efficient, environmentally friendly, and affordable technologies for next-generation power production and chemical processing plants. These vital industries are relying increasingly on the use of sophisticated computer-aided process design and optimization tools, such as APECS v2.0 with ANSYS® DesignXplorer™ and ROM Builder. This versatile, innovative, and powerful software toolkit makes it easier, faster, and cheaper to design future plants with a high degree of confidence using advanced process/equipment co-simulation and comprehensive design optimization. Developed jointly by NETL and ANSYS Inc., the toolkit is a major enhancement of a previous R&D 100 Award-winning software tool, APECS v1.0 with ANSYS® Engineering Knowledge Manager™.
- **Mn-Co Coating for Solid Oxide Fuel Cell Interconnects**  
This manganese-cobalt (Mn-Co) spinel coating was specifically tailored for interconnects of solid oxide fuel cells (SOFCs). The coating was designed to prevent the evaporation of chromium from the ferritic stainless-steel-based interconnect while maintaining the electrical conductivity of the interconnect system. Chromium acts as a poison, increasing the resistance of the interconnect and thus reducing the electrical conductivity and operating lifetime of the fuel cell. Chromium poisoning is one of the major challenges to be overcome before SOFCs can become commercially viable power sources. The coating was co-developed by NETL and West Virginia University and was then transferred to Faraday Technology Inc. who has continued to develop and optimize the coating under Phase I and Phase III STTR grants.
- **Novel Platinum/Chromium Alloy for the Manufacture of Improved Coronary Stents**  
This novel alloy is the first austenitic stainless steel formulation with significant concentration of a highly “radiopaque” element to be produced for the stent industry. This high radiopacity, which increases the x-ray visibility of the stent inside a patient, is key to solving a longstanding problem of poor visibility when using standard 316 stainless steel for coronary stents. Better visibility means greater ease and precision of placement of the stent inside the patient’s artery, and less chance of damage to the artery. The alloy was jointly developed by NETL and Boston Scientific Corporation Inc. and became commercially available in Europe in 2010 and in the United States in 2011 after extensive FDA testing.

## CSLF MEETING IN CHINA

The Carbon Sequestration Leadership Forum (CSLF) will hold its Ministerial Meeting in Beijing, China, September 20-23. The meeting, hosted by the Chinese government, will feature a Stakeholders Forum as well as a conference of Ministers from CSLF member countries.

The Ministerial Meeting provides an opportunity for decision-makers from industry and governments to discuss the key challenges facing carbon capture and storage (CCS) and to agree to a strategy and action plan for closer collaboration on the commercialization of CCS.

At the meeting, Secretary of Energy Steven Chu will be conferring with energy ministers from member countries. WAN Gang, Minister of Science and Technology, China, and XIE Zhenhua, Vice Chairman, National Development and Reform Commission, China, will host the conference. Several prominent global energy executives and international energy organizations will also participate.

The CSLF is a Ministerial-level international initiative focused on the development and deployment of cost-effective carbon capture, transport and long-term storage technologies. Established in 2003, the CSLF currently has 24 country members and the European Commission and has approximately 300 registered stakeholders.

Since its inception, the CSLF has helped facilitate the development and deployment of improved cost-effective technologies for the separation and capture of carbon dioxide for its transport and long-term safe storage.

For more information, visit the CSLF Web site at [www.csforum.org](http://www.csforum.org).

## HURRICANE PREPAREDNESS BEGINS AT THE STRATEGIC PETROLEUM RESERVE

The Atlantic Hurricane season begins June 1 each year and runs through November 30. The four Strategic Petroleum Reserve (SPR) sites are located along the Gulf coasts of Texas and Louisiana in the heart of the Gulf Coast petroleum industry. Their locations allow easy delivery of crude oil to the SPR for storage and easy distribution of SPR crude oil to refiners for processing into products. The locations also leave them vulnerable to the effects of hurricanes. Preparedness is a key component of the Reserve's readiness and emergency response.

The SPR's primary mission to drawdown emergency stocks of crude oil when called upon must be carried out even in the aftermath of a devastating hurricane. Releases of crude oil from the SPR following hurricane events in the Gulf Coast have occurred four times: 2002 Hurricane Lili; 2004 Hurricane Ivan; 2005 Hurricanes Katrina and Rita; and 2008 Hurricanes Gustav and Ike.

The SPR sites maintain a state of readiness to respond to a drawdown and preparations for the hurricane season are underway by ensuring the condition and availability of necessary backup supplies and equipment. Recovery equipment such as pumps and motors, generators and transformers, and piping and associated fittings are stored in secure locations that can be reached by emergency response personnel and deployed where needed. Some pre-positioning of equipment may also occur.

The staff at the Program Office in Washington, D.C., and at the Project Management Office in New Orleans, La.,



*The flooded surface of Cavern Six at the West Hackberry, La., site after a hurricane.*

and at the four SPR storage sites begins to plan well in advance of hurricane season.

The three stages of the SPR's contingency planning are pre-event preparation, event consequence management, and recovery and restoration. Pre-event planning includes initiating contacts with refiners to ensure that we have current contact information and that refiners are familiar with the SPR procedures for requesting assistance in the event of an oil supply interruption. Partner terminals and pipelines are queried in advance about emergency power capabilities and throughput rates.

Coordination occurs with local and state security personnel for Mississippi, Louisiana and Texas to assure expedited re-entry authority for SPR sites should the sites be evacuated due to a hurricane event. The SPR maintains a Memorandum of Understanding with the U.S. Army Corps of Engineers to replenish pumping capability should a failure of the SPR's Raw Water Intake Structures occur.

*Continued on page 9...*



*A hurricane left the parking lot at the Big Hill site covered with close to 3 feet of debris.*



*Hurricane Preparedness continued from page 8...*



*An Emergency Command Vehicle deployed during Hurricane Gustav in 2008.*

The SPR's Emergency Command Vehicle (ECV) serves as a mobile command post for the Emergency Management Team during real-world and exercise emergencies or incidents. The ECV has its own internal generator and fuel tank and can be deployed on or off-site depending on the type of incident.

The ECV is integrated with the DOE Emergency Communications Network that ensures connectivity with each site, the Headquarters Program Office, and DOE Emergency Management. The ECV was successfully deployed to Monroe, Louisiana, in support of emergency operations due to Hurricane Gustav.

In January 2011, the SPR conducted a Continuity of Operations Plan exercise which successfully tested the bandwidth capacity of our Information Technology infrastructure. The first objective tested the activation of essential DOE and contractor personnel during off-hours and in a telework situation. The second objective validated essential DOE and contractor ability to access the SPR network remotely. The third objective demonstrated data systems capability to successfully host multiple employees via the CITRIX network using multiple programs over a sustained period of time.

In May 2011, the SPR conducted a successful three day hurricane exercise. This year's exercise scenario was a fast developing storm that threatened two SPR storage sites. All four storage sites (two in Texas and two in Louisiana), the Stennis Warehouse (an alternate work site located in Mississippi) and the Project Management Office in New Orleans were linked via video teleconference for daily weather updates and review of

completed hurricane preparedness checklists.

Some of the items on these checklists include: operational impacts, relocation of vehicles to higher ground or protected locations, repositioning of valves to reduce vulnerabilities, daily briefings to management, and notification to SPR employees of intended actions. Adding to the realism of the exercise were weather slides produced by the local National Weather Service Office in Slidell, Louisiana.

Both exercises are designed on a multi-year strategy to test components of each plan. Lessons learned are documented from each exercise which better posture the SPR's ability to respond to an actual emergency or incident.

The SPR's operational readiness to draw-down assures the response capability to meet the mission and mitigate severe regional supply disruptions when such an event as a hurricane occurs.

### Petroleum Sold from the Nation's Petroleum Reserve

On June 23, 2011, the International Energy Agency (IEA) announced that its 28 member countries would release 60 million barrels of crude oil and refined products into the global market. As part of that action, the President directed the Department of Energy to auction 30.237 million barrels of light, sweet crude oil from the Strategic Petroleum Reserve.

Industry interest in the Department of Energy's sale of Strategic Petroleum Reserve (SPR) oil was very high. Over 90 offers to purchase oil were received and the Department's offering of 30.2 million barrels of light, sweet crude oil was substantially oversubscribed.

The Department expects all contract awards to be completed by July 11, 2011, at which time details about purchasers and sales prices will be released.

The Department has been in close consultation with key oil exporters to ensure the IEA action and the producer response to the current oil supply disruptions are mutually reinforcing.

For more information, visit [www.spr.doe.gov](http://www.spr.doe.gov).

## Upcoming Events

<http://www.fossil.energy.gov/news/events/index.html>

**August 17 - 19**

[Coal-Gen 2011](#) - Columbus, Ohio  
DOE Contact: Gene Kight, 301-903-2624

**September 22 - 24**

[Life@50+ \(AARP Annual Meeting\)](#) - Los Angeles, Calif.  
DOE Contact: Eileen Division, 202-586-3474

**September 25 - 27**

[Radio Television Digital News Association](#) - New Orleans, La.  
DOE Contact: Jenny Hakun, 202-586-5616

**October 17 - 19**

[2011 Gasifications Technologies Conference](#) - San Francisco, Calif.  
DOE Contact: Gene Kight, 301-903-2624

**December 13 - 15**

[2011 Power-Gen International](#) - Las Vegas, Nev.  
DOE Contact: Gene Kight, 301-903-2624



## Fossil Energy Today

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Comments are welcome and may be submitted to the editor.