

News Wire from Idaho National Engineering and Environmental Laboratory – Home of Science and Engineering Solutions

Welcome! This is the latest edition of the **INEEL News Wire**, which delivers news about current advances in research and technology at the multiprogram Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL), located in Idaho Falls, Idaho and operated by Bechtel BWXT Idaho for the U.S. Department of Energy. Published by the INEEL Communications Directorate, it delivers news to your desktop and is available at <http://www.inel.gov/newswire/>, along with an archive of all previous editions.

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Content of October 30, 2003, INEEL News Wire:

October 28, 2003 – **INEEL completes remediation of Central Facilities Area**

October 23, 2003 – **INEEL removes spent nuclear fuel from its final aged underwater storage basin; reduces risk to aquifer**

October 30, 2003 – **INEEL, partners team up to win greenhouse gas research grant**

October 27, 2003 – **INEEL earns highest DOE safety award**

October 28, 2003 – **INEEL 'Champion' conserves millions in energy savings**

INEEL completes remediation of Central Facilities Area

Idaho Falls, October 28, 2003 – Cleanup work is on the fast track at the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory with the completion of contaminated soil excavation at the Central Facilities Area and the start of operations at a new disposal facility near the Idaho Nuclear Technology and Engineering Center.

"Completing remediation work at the Central Facilities Area and starting operations at the disposal facility are major steps forward in accelerating cleanup and reducing risk at the INEEL," said Elizabeth Sellers, manager of DOE's Idaho Operations office. "The project team can be proud of their accomplishments. We were able to reach this goal by working in cooperation with EPA and the state of Idaho."

The final loads of soil and debris were removed from a former disposal pond at the INEEL's Central Facilities Area. The soil is contaminated with low levels of mercury and radionuclides. The pond received laboratory waste from the Chemical Engineering Laboratory between 1953 and 1969. Much of this waste was generated from experiments with the INEEL's liquid waste calcining, or solidifying process, using simulated waste. The pond also received runoff water until 1995.

The Central Facilities Area is the main service and support center for the INEEL's desert facilities. Activities at CFA support transportation, medical services, maintenance, construction, environmental and radiological monitoring, security, fire protection, warehouses, calibration activities and a cafeteria.

The excavation of contaminated soil from the Central Facilities Area marks the last of the physical cleanup work at the facility. All that remains is to backfill and re-vegetate the excavated areas, and monitor cleanup measures taken at the facility, to ensure that the remedy remains protective of human health and the environment. The agencies will then evaluate the cleanup across the Central Facilities Area before issuing a closeout report for the area.

The contaminated soil from the Central Facilities Area was taken to a new disposal facility that recently started operations southwest of the Idaho Nuclear Technology and Engineering Center. The disposal facility was part of the remedy for cleanup of contaminated soils and debris from INTEC and other INEEL facilities.

"Having a state-of-the-art landfill facility on site will streamline cleanup work across INEEL by allowing DOE to safely contain and consolidate the numerous contaminated soil sites at INEEL," said Michael Gearheard, EPA's director for Environmental Cleanup.

The remedy was selected in a 1999 agreement by the U.S. Department of Energy, U.S. Environmental Protection Agency and the state of Idaho. The agreement calls for the disposal of soil and debris from cleanup operations taking place under the Comprehensive Environmental Response, Compensation and Liability Act, otherwise known as CERCLA or Superfund. The INEEL CERCLA Disposal Facility, or ICDF, is a landfill with a special multi-layer liner system designed to safely contain contaminated soils.

"The CERCLA cleanup work at several sites across the INEEL depended on getting the ICDF up and running - it is a vital part of the cleanup program," Sellers said. "We worked closely with the state of Idaho and EPA Region 10 to design and build the ICDF."

Safety features of the landfill include a multiple-layer liner system that incorporates several feet of natural and synthetic materials, including a layer of compacted clay. A collection and removal system is built into the liner system of the facility to detect and remove liquids that may leach from material disposed of in the facility.

More details are at: <http://newsdesk.inel.gov/contextnews.cfm?ID=476>
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INEEL removes spent nuclear fuel from its final aged underwater storage basin; reduces risk to aquifer

Idaho Falls, October 23, 2003 – Aged underwater basins filled with spent nuclear fuel are no longer a potential threat to the Snake River Plain Aquifer because of accelerated work performed by the Idaho Completion Project at the Idaho National Engineering and Environmental Laboratory.

On Sept. 19, three months ahead of an accelerated schedule, the final shipment of spent nuclear fuel from the Power Burst Facility's underwater storage canal was safely moved to an aboveground dry storage facility. In total, 2,425 spent nuclear fuel units were transferred from the 30-year-old basin to the dry storage facility located at the Idaho Nuclear Technology and Engineering Center.

"Removing spent nuclear fuel from underwater basins situated over the aquifer has been a high cleanup priority," said Susan Stiger, vice president of the Idaho Completion Project that manages cleanup work for Bechtel BWXT Idaho. "With this accomplishment we have further reduced environmental risk by removing this highly radioactive fuel from our five oldest underwater storage facilities and placing it in dry storage."

Spent nuclear fuel consolidation at the INEEL began in 1997 when all the fuel was removed from the Advanced Reactivity Measurement Facility storage pool at the Test Reactor Area. Four other aged pools have been emptied of fuel in the past three years, including INTEC CPP-603, the pool at Test Area North, the Materials Test Reactor storage canal and now the Power Burst Facility basin.

The only remaining facility at the INEEL that provides underwater storage for spent nuclear fuel is the Fluorinel Dissolution Process and Fuel Storage (FAST) facility at the Idaho Nuclear Technology and Engineering Center. FAST is a state-of-the-art storage facility that has an engineered leak detection system and other advanced technologies that provide safe underwater storage.

Under an agreement with the state of Idaho, the INEEL is committed to moving all spent nuclear fuel into dry storage by 2023, with an accelerated cleanup plan goal to have this work complete by 2012. As the fuel is removed from water storage facilities, the decontamination and decommissioning process will take place. All of the spent nuclear fuel located at the INEEL will be consolidated in dry storage until it is repackaged and readied for shipment to a federal repository outside of Idaho.

The Idaho Completion Project is focused on completing the majority of cleanup work from past INEEL missions by 2012. The project is managed by Bechtel BWXT Idaho for the U.S. Department of Energy.

More details are at: <http://cleanup.inel.gov/>

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INEEL, partners team up to win greenhouse gas research grant

Idaho falls, October 30, 2003 – Scientists with the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory and its Inland Northwest Regional Alliance partners recently joined with Montana State University to form a world-class carbon sequestration team that was selected to receive a \$1.6 million grant from the DOE. This grant supports the current administration's goal to achieve an 18 percent reduction in greenhouse gas intensity by 2012.

"Carbon sequestration" is the term given to methods of capturing and removing carbon gases from the air, then safely and securely storing or isolating the gases in the environment.

At MSU's invitation, the INEEL and its university partners joined the Northern Rockies and Great Plains Regional Carbon Sequestration Partnership and named key researchers to lead the partnership's geologic investigations.

This newly formed research group is one of seven regional partnerships selected by DOE's National Energy Technology Laboratory for its Carbon Sequestration Program. These partnerships will serve as the centerpiece of a nationwide sequestration program to stabilize atmospheric levels of carbon dioxide without making large-scale changes to energy infrastructures in the United States and portions of Canada.

The purpose of this grant is to evaluate terrestrial and geologic sequestration opportunities in Idaho, Montana, South Dakota, and geologically contiguous areas in North Dakota and Wyoming. Its scope includes an examination of options and alternatives to sequester and manage greenhouse gases that exist in the region.

"Because of our Subsurface Science Initiative and INRA university connections with the University of Idaho and Boise State University, we quickly added to the technical depth of the partnership's geologic sequestration research capability," said INEEL consulting engineer David Shropshire.

"We were especially gratified that Bob Smith, faculty researcher at the University of Idaho, was willing to fulfill the role of lead technical scientist for geologic sequestration activities at a critical time during the formation of the partnership."

"This regional partnership is a major opportunity for our national laboratory to apply its world-class subsurface science knowledge and capabilities across the Intermountain West," said Bruce Reynolds, INEEL Fossil Energy Technology Department manager.

“The nature of this work clearly falls in line with our goal to expand the versatility of our geosciences expertise to support energy development and climate management. This expansion adds to our cleanup and applied engineering expertise that has evolved over several decades,” according to Reynolds.

“We also found a new application within this partnership for our Geographic Information System capabilities. By developing a geo-spatial database for resource assessments, we’ll be able to compare high-potential carbon storage areas in carbon sinks and other geologic reservoirs and terrestrial associations,” said Shropshire.

As part of the application process, INRA partners focused their respective geoscience specialties on making MSU’s grant proposal as technically attractive as possible. And, to make sure MSU was eligible to receive the maximum grant amount, INRA contributed \$50,000 towards the \$400,000 matching funds DOE required from grant applicants.

“From our perspective contributing part of the required matching funds for this partnership is an exceptional opportunity – especially since we have great confidence in our researchers to discover and recommend actions that will benefit the entire region,” said INRA Director Gautam Pillay.

For complete article visit www.inel.gov

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INEEL earns highest DOE safety award for low injury/illness rate

Idaho Falls, October 27, 2003 – For the second year in a row, the Idaho National Engineering and Environmental Laboratory has been recognized with the U.S. Department of Energy's "Star of Excellence" -- one of the nation's highest awards for safety performance. The award recognizes INEEL for having an injury/illness rate at least 75 percent lower than the average in its industry code - as determined by the U.S. Bureau of Labor Statistics.

"This award is an acknowledgment of the wonderful efforts of our employees, and that we have the momentum to take our safety to even higher levels of achievement," said Dick Watkins, INEEL vice president of Environment, Safety, Health and Quality Assurance.

The award is part of DOE's Voluntary Protection Program, used throughout the DOE complex to encourage workers to participate in and "own" the safety processes in their workplaces.

The "Star of Excellence" signifies that INEEL met annual DOE-VPP goals and demonstrated strong involvement in VPP mentoring and community outreach.

INEEL representatives received the award in Washington, D.C., at a recent ceremony.

"The award is further recognition of INEEL's emphasis on and continual improvement of safety and health," Watkins said.

In addition to this year's "Star of Excellence" award from DOE, the INEEL in May 2001 became the first DOE national laboratory to receive "Star" status under the DOE VPP. "Star" status signifies an injury and illness rate 50 percent below the national average for an organization's industry code. Since then, it has continued to be one of the largest employee groups in the nation to earn and maintain the coveted VPP Star status.

More details are at: <http://newsdesk.inel.gov/contextnews.cfm?ID=475>
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INEEL 'Champion' conserves millions in energy savings

Idaho Falls, October 28, 2003 – "Twenty-first century citizenship is being championed by engineers like Ernest Fossum of the Idaho National Engineering and Environmental Laboratory who, by providing technical leadership for INEEL's energy management program to identify and develop energy-savings projects, has helped the Department of Energy save over \$8.4 million since FY-1985."

So reads the citation given to Fossum Oct. 28 during the 2003 "You Have the Power" award ceremony in Washington, D.C. And, as further tribute for conserving energy over the course of his career, Fossum was proclaimed a "DOE Energy Champion."

When asked what this honor means to him, Fossum replied, "It's a significant honor...especially knowing that the nomination came from the federal program staff in Idaho and Washington, D.C., for whom I have a deep respect. To be recognized by them is really cool. It's the best part of the whole thing."

"What I like most about my job is that co-workers and I think of ways to improve the working environment for all company employees, whether they work on the desert or in town. We overcome the challenge of conserving energy to avoid higher energy costs. And," said Fossum, "what we do in this group matters when you consider that the money saved can be used for other important work that supports the Laboratory."

Fossum highlighted examples of INEEL energy-saving projects made possible

with funds from DOE's Energy Management Program. One involved a DOE-HQ alternative financing energy initiative for installing new energy efficient lighting and nine new primary transformers at the INEEL Research Center using an Energy Savings Performance Contract. The improvements save approximately \$100,000 per year.

Another effort involved the installation of automatic lighting controls at the Engineering Research Office Building at a cost of \$25,000 with a simple payback period of less than two years. Timing office lights to go off at night not only saves money, it tells passersby that the INEEL is energy conscious as well.

"You Have the Power" responds to the executive order requiring the federal government to achieve a 30 percent reduction in energy use by the year 2005. The Federal Energy Management Program leads this effort. During the last decade, the program helped federal agencies reduce energy consumption by 11.2 percent - saving the government and taxpayers nearly \$10 billion.

As an "Energy Champion," Fossum is featured on the FEMP Website (<http://www.eren.doe.gov/femp/yhpt>) and posters distributed nationally to U.S. Department of Energy facilities.

For entire story visit: <http://newsdesk.inel.gov/>
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