

## **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 key issues and current advances in both 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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### **INEEL helps Idaho rank first in generating high-technology patents**

May 10, 2004 – The National Science Board rated Idaho first in generating high-technology patents per 1,000 individuals in science and engineering occupations. Idaho earned 81.5 patents per 1,000 scientists and researchers, more than double the rate of the next closest state, California, which posted a figure of 38.3.

The NSB report noted that the Idaho number reflected "the presence of a high-patenting Department of Energy National Laboratory" - INEEL - which contributed to its significant generation of patents and inventions. In its coverage of the NSB report, the Associated Press produced an international story and noted that the state of Idaho has pursued a high-tech strategy that is supported by the presence of a national laboratory, Micron Technology, Hewlett Packard, and many spin-off companies from these enterprises.

Details of the report are contained in the National Science Board report "Science and Engineering Indicators 2004," Volume 1, on pages 46-47 in Chapter 8, (<http://www.nsf.gov/sbe/srs/seind04/pdf/volume1.pdf>)

**INEEL patent database:** <http://www.inel.gov/techtransfer/patentSearch.asp>

**Inventors Hall of Fame:** <http://www.inel.gov/techtransfer/halloffame/>

**License an INEEL technology:** <http://www.inel.gov/techtransfer/licensing/>

## **INEEL Information Fair scheduled for May 17**

May 5, 2004 – Idaho National Engineering and Environmental Laboratory is partnering with DOE Idaho and many others to sponsor a special Information Fair to inform Eastern Idaho residents about important changes taking place at the INEEL.

Scheduled for Monday, May 17, the Information Fair will be held at Bennion Student Union Building in University Place (1784 Science Center Drive) in Idaho Falls from noon to 9 p.m.

The Information Fair will provide extensive detail on past and current environmental cleanup efforts performed by the ICP, the types of wastes being managed at the Site, and the actions being taken to protect the Snake River Plain Aquifer and other resources.

Exhibits, special displays, and informative demonstrations also will tell about successful INEEL technologies developed, or in development, in support of national security, nuclear energy research, the hydrogen economy, and other key engineering accomplishments.

Participants include representatives from BBWI, the Department of Energy, Idaho Department of Environmental Quality, Environmental Protection Agency and U.S. Geological Survey.

Specific presentations will be given throughout the day on the following topics:

2:30 p.m. -- Early Cleanup Actions -- Accelerated Cleanup

4:30 p.m. -- Future of Cleanup at the INEEL

6:30 p.m. -- Nuclear Energy -- Research and Development Mission

7:30 p.m. -- Retrieval of Stored and Buried Transuranic Waste from the Radioactive Waste Management Complex's Pit 4

For more about the Information Fair, contact **Erik Simpson** (526-4700, [eas@inel.gov](mailto:eas@inel.gov)).

## **INEEL to host active interrogation workshop**

Idaho Falls, ID, May 10, 2004 – In collaboration with the Defense Threat Reduction Agency and Idaho State University's Idaho Accelerator Center, the Idaho National Engineering and Environmental Laboratory is sponsoring a workshop on Active Interrogation for the Detection of Weapons of Mass Destruction (WMD) June 29-30 in Idaho Falls, Idaho.

Dale E. Klein, assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs will be the keynote speaker. He is the principal

staff assistant and advisor to the Secretary of Defense and Deputy Secretary of Defense and the Under Secretary of Defense for Acquisition and Technology for all matters concerning the formulation of policy and plans for nuclear, chemical and biological defense programs. Klein is directly responsible to the Secretary and Deputy Secretary of Defense for matters associated with nuclear weapons safety and security, chemical weapons demilitarization, chemical and biological defense programs, and smoke and obscurants.

The workshop will focus on active interrogation (examination) solutions for WMD detection including nuclear, chemical/biological and explosive configurations. Active interrogation methods use an external means to stimulate measurable signals that would not normally be present or would not be of a magnitude to be detected and identified during inspection of items. X-rays are a common example of an active interrogation technology.

This timely workshop will bring together experts in the field of active interrogation technologies to focus on and discuss potential solutions to today's complex inspection scenarios related to military, homeland and international security, and nonproliferation applications.

More information available at [www.inel.gov/conferences/activeinterrogation](http://www.inel.gov/conferences/activeinterrogation)  
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### **INEEL's PINS system helps Army evaluate bombs found in Baltimore**

Baltimore, MD, May 5, 2004 - Several World War II-era bombs were discovered Wednesday, May 5, in an old shipyard near Maryland's Baltimore Tunnel. The U.S. Army Technical Escort Unit (TEU) responded to the site and used INEEL's portable isotopic neutron spectroscopy (PINS) system to evaluate the munitions.

PINS, a 1992 R&D 100-award winner, is used routinely by the U.S. Army to identify the contents of recovered munitions in the United States and abroad.

INEEL scientists review the information, photographs and X-rays supplied by the TEU.

More information on PINS: <http://www.inel.gov/nationalsecurity/nonproliferation/>  
Baltimore Sun article: <http://www.baltimoresun.com/news/local/bal-tunnel0506.0,1157689.story?coll=bal-home-headlines>

***California governor opens way to 'Hydrogen Highway'***  
**INEEL program provides hydrogen vehicle support**

Davis, Calif. - In signing an executive order April 20 to create a network of hydrogen fuel stations in California, Gov. Arnold Schwarzenegger said, "All Californians deserve clean air and the promise of a healthy environment for generations to come, and this is exactly what we are doing here today."

INEEL is playing a role in the development of this technology by managing the light-duty vehicle testing activities for the U.S. Department of Energy's Advanced Vehicle Testing Activity.

Teamed with Electric Transportation Applications and Arizona Public Service, INEEL and its partners have developed the Alternative Fuel Pilot Plant that produces and dispenses hydrogen on site.

The hydrogen is produced through electrolysis by operating a proton exchange membrane (PEM) fuel cell in reverse. The pilot plant also compresses natural gas on site and fuels internal combustion engine test vehicles that operate on 100 percent hydrogen, and blends of 15 to 50 percent hydrogen and compressed natural gas.

INEEL and its teammates provided a light-duty, hydrogen-powered truck for the signing ceremony in Davis, Calif. California plans an extensive network of 150-200 hydrogen-fueling stations by 2010 (for more information, click on the links below).

"The INEEL has a successful program of testing and monitoring advanced alternate-fueled vehicles that have logged more than 200,000 miles using blends of hydrogen and compressed natural gas in internal combustion engines," said INEEL's project manager, Jim Francfort.

"With the information we have gathered," Francfort said, "we've made quite a contribution to the knowledge of hydrogen use in fleet operations and the infrastructure necessary to support the storage and distribution of hydrogen and hydrogen-blended fuels."

The program managed by INEEL includes the Alternative Fuel Pilot Plant, hydrogen subsystem development, a compressed natural gas subsystem and internal-combustion engine vehicle testing. More information is available at the links below.

Schwarzenegger said that by 2010, he hopes there are at least 500,000 hydrogen-fueled vehicles on California roads.

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[http://www.inel.gov/whats\\_new/05-04-04-1.shtml](http://www.inel.gov/whats_new/05-04-04-1.shtml)

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