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.

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Content of June 29, 2004, INEEL News Wire:

DOE completes 1 million miles of hybrid electric vehicle testing

June 23, 2004 - The U.S. Department of Energy, through its Advanced Vehicle Testing Activity (AVTA), has completed 1 million miles of hybrid electric vehicle fleet testing. The testing includes collecting the energy efficiency (miles-per-gallon fuel use), and vehicle maintenance and repairs data, as well as defining the types of missions the hybrid electric vehicles are driven in. At testing completion, the vehicles are sold and the total life-cycle costs - including depreciation, fuel, operating, maintenance and repair costs - are calculated and reported.

The number of each type of hybrid electric vehicle tested, the total miles accumulated, and average fuel economy to date include:
* 4 Honda Civics, 284,000 miles and 38.0 mpg
* 6 Honda Insights, 347,000 miles and 46.0 mpg
* 6 Toyota Prius (model years 2002 and 2003) 380,000 miles and 41.1 mpg, and
* 2 Toyota Prius (model year 2004) 16,000 miles and 44.6 mpg.

Each hybrid electric vehicle model is also dynamometer and track tested. Details of the hybrid electric vehicle testing methods and results are available from the AVTA Web pages at: http://avt.inel.gov/hev.html

Hybrid electric vehicle testing benchmarks and validates the performance of light-duty vehicles that feature advanced hybrid electric systems. Testing supports the development of industry and DOE technology targets. The AVTA produces information resources so fleet managers and the public can make knowledgeable

decisions when acquiring advanced technology vehicles.

The AVTA's hybrid electric vehicle testing partners include:
* Electric Transportation Applications
* Arizona Public Service
* Bank One, and
* Red Cross of Arizona.

In addition to testing hybrid electric vehicles, the Idaho National Engineering and Environmental Laboratory (INEEL) manages AVTA activities such as the testing of internal combustion engines operating on 100 percent hydrogen, and various blends of hydrogen and compressed natural gas (CNG). The use of hybrid electric vehicles and hydrogen and hydrogen/CNG fuels reduces the use of petroleum, and offers emissions benefits.

DOE, through its Advanced Vehicle Testing Activity, conducts baseline performance, accelerated reliability and fleet testing on advanced technology vehicles. The AVTA is a component of DOE's Office of FreedomCAR and Vehicle Technologies Program.

Advanced Vehicle Testing Activity light-duty vehicle evaluations are managed for the DOE Office of Energy Efficiency and Renewable Energy from the INEEL in Idaho Falls, Idaho.

For more information on this and other testing activities, visit the Advanced Vehicle Testing Activity Web page at http://avt.inel.gov or contact Jim Francfort (francfje@inel.gov, 208-526-6787, or Steve Zollinger, 208-526-9590, gaz@inel.gov

Specific Manufacturing Capability Project achieves safety milestone

June 10, 2004 – Think of the Utah Jazz playing 200,000 games* (almost 2,000 seasons) and none of the players getting hurt. Or running the Indianapolis 500 more than 17,300* times without an injury. How about a major league baseball team playing more than 74,000* games, again with none of the players being injured.

While a seeming impossibility, these are the types of statistics that put in perspective the accomplishment achieved by employees at the Specific Manufacturing Capability Project who have worked 2 million hours without a lost workday injury.

"The commitment to safe work operations is a core value of our operations," said Dave Kudsin, associate laboratory director in charge of SMC. "We have processes, programs and protective equipment. And most important, we have

employees who care about each other's well-being."

SMC is a unique project that began with a memorandum of understanding between the U.S. Department of Energy and the U.S. Army in February 1985. Operated by Bechtel BWXT Idaho LLC., at the Idaho National Engineering and Environmental Laboratory, the SMC Project manufactures armor for the Army's M1A2 Abrams battle tank. Each month, the 230 SMC employees fabricate and assemble thousands of pounds of materials that go into the manufacturing of the tanks.

In June 2002, SMC project employees received a challenge from representatives of the U.S. Army Abrams Tank Systems, Department of Energy Idaho and Bechtel BWXT Idaho to reach 2 million man-hours without a day-away injury. Employees and management of SMC rose to the challenge. This year, on May 28, the SMC team achieved that goal.

Few, if any, commercial manufacturing operations performing similar production work come close to SMC's impressive safety record. This is the fourth time in 11 years that SMC has reached the 1 million hour mark without a lost-time injury.

"The two million man-hour milestone is an indicator of our contractor's commitment to working safely," said Ron Gill, SMC facility engineer for the DOE. "Clearly, SMC has demonstrated how a safe work environment benefits employees and contributes to the production of a superior product. SMC personnel are very proud of the fact that we contribute to the safety of our service personnel and to our nation's defense."

SMC delivered its first product to the Army in October 1987. In 1988, SMC achieved full production capacity and 10 years later, celebrated the delivery of the 3,000th unit to the Army. SMC employees and management have been recognized for their outstanding operational and quality performance, high work ethic, on-time delivery and production schedule goals, and continuously having 100 percent acceptance rate on manufactured materials.

*Here is the math: Average length of National Basketball Association game estimated at two hours, times five players on the team, divided into two million hours.
*Average Indianapolis race estimated at three-and-one-half hours, times 33 drivers, divided into two million hours.
*Average length of a major league baseball game estimated at three hours, times nine players on the team, divided into two million hours

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American Nuclear Society to Honor Idaho Engineer

June 15, 2004 – Steve Herring, Ph.D., of the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory received the American Nuclear Society (ANS) 2004 Mishima Award.

Herring accepted the award at the ANS Annual Meeting at the Omni William Penn Hotel in Pittsburgh, Pa., on Tuesday, June 15.

"I'm honored as the first one from the INEEL to receive this particular award. I know several of the people who have received it in the past. Most of them have made very recognizable contributions to the nuclear field," Herring said.

The Mishima Award, established in 1991, honors the late Yoshitsugu Mishima, professor at the University of Tokyo. Recipients qualify for this award based on meritorious scientific and engineering achievements that have important implications to the science and technologies of nuclear fuels and materials development.

Herring received the award for his work on transmuter fuels for light water reactors. The analyses included in a paper, to be published in July, show that thorium-based or fertile-free fuels can reduce the amount of plutonium needing further transmutation or going to a repository by about 90 percent. According to Herring, "This is an area, the advanced fuel cycle, that will be increasingly important in reducing waste. It effectively increases the capacity of a geological repository so we only need one."

"This award is a great reflection on Steve as well as the INEEL," said James Lake, Ph.D., associate laboratory director for Nuclear Energy and former ANS president. "It demonstrates not only his hard work and dedication but also the positive direction in which we are heading in the nuclear energy field."

Herring received his bachelor's degrees in mechanical and electrical engineering from Iowa State University in 1971. After serving in the Army for three years, he attended the Swiss Federal Institute of Technology in Zurich as a Rotary Foundation Fellow. He received his doctorate in nuclear engineering from Massachusetts Institute of Technology. He has resided in Idaho Falls since 1979 and has been extremely active in the ANS, serving at one time as the chair of the Idaho section.

For more information, contact Teri Ehresman, 208-526-7785, ehr@inel.gov

INEEL hosts Western Phosphate Conference

June 18, 2004 – The U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory, along with industry sponsors Agrium, Monsanto,

and Simplot, hosted the first Western Phosphate Mining and Processing Conference. The conference gathered more than 75 of the Western regions' top industry representatives June 18 at the Red Lion Hotel in Pocatello.

Throughout the day the conference held two simultaneous breakout sessions featuring mining and processing presentations. In these sessions industry experts shared 22 papers that discussed best practices, innovative methods, and new technologies. Subjects presented included environmental management tools, greater cost effective methods, and competing in the global markets.

"Mining and processing challenges that companies face differ from one geographic region to the next; by restricting the conference to the western region we are able to learn from a more localized group of presenters addressing key issues," said Jerry May, INEEL Mining Program. The insightful presentations combined with a "spirit of improvement" to make the conference a success.

"For the first time ever we were able to have experts from both mining and processing sides of the industry together at the same conference to feed off one another's knowledge," May said. Many participants expressed their gratitude for the opportunity to network with other companies, and really understand how both the mining and processing need to work together to create a stronger industry.

The conference concluded with Ken Nyiri from CRU Group as the final presenter. His presentation focused on the economics of Idaho's phosphate industry. Nyiri indicated that due to the high cost of product transportation, Idaho's geographic location is ideal for consistent demand, offering strength and stability to the industry and future employment.

The INEEL plans to host a Western Phosphate Conference at least every other year to offer an opportunity for industry members to share advances.

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