

LAWRENCE LIVERMORE REPORT

A weekly collection of scientific and technological achievements from Lawrence Livermore National Laboratory: March 9-March 16, 2009.

***New York Times* columnist highlights NIF**



During his visit to the Lab, Thomas Friedman, right, toured NIF and met with NIF Director Ed Moses.

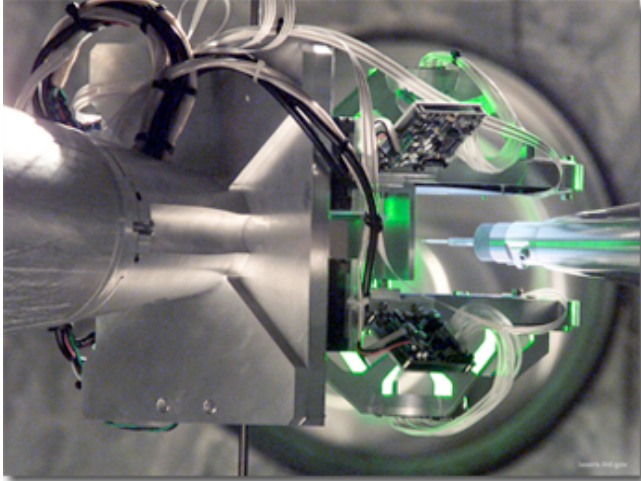
New York Times foreign affairs columnist Thomas Friedman, who visited the Lab earlier this month, wrote his Sunday column about the National Ignition Facility.

While taking a tour of NIF, Friedman spoke with the Lab's Ed Moses, principal associate director of NIF and Photon Science, about NIF's potential for creating fusion in the laboratory.

On the morning of March 10, NIF became the first laser facility in the world to break the megaJoule barrier, delivering 1.098 MJ of ultraviolet energy to the center of the target chamber.

To read Friedman's column, go to <http://www.nytimes.com/2009/03/15/opinion/15friedman.html>

NIF breaks megaJoule barrier



The target positioner and alignment system precisely locate a target in the NIF target chamber.

At 3:15 Tuesday morning, the National Ignition Facility became the first laser facility in the world to break the megaJoule barrier, delivering 1.098 MJ of ultraviolet energy to the center of the target chamber.

It's been less than two weeks since NIF successfully fired all 192 of its laser beams to the center of the 10-meter diameter target chamber. But already, the lasers are creating history.

In only a few nanoseconds, the 1.1 MJ pulse precisely matched the shape necessary for achieving ignition. The main laser delivered 1.952 MJ of infrared energy.

"The shot cycle went extremely smoothly," NIF Director Edward Moses said. "Congratulations to all. On to ignition!"

Wiping away contamination



LLNL chemical engineer William Smith holds a decontamination system currently used by the military.

The Laboratory and Texas Tech have developed a new chemical weapons decontamination kit for troops and first responders.

The wipe -- a thin layer of carbon encased in absorbent fibers -- is part of a new, model portable kit that a national lab designed for use after a chemical attack to clean equipment, skin and even sensitive eyes and wounds.

The U.S. government called years ago for a new decontamination system to replace limited products now in use. The Laboratory recently introduced the low-cost kit that was developed with money from the U.S. Department of Homeland Security.

An article on the technology and a video with Texas Tech's lead researcher recently appeared in the *Avalanche Journal* out of Lubbock, Texas. To read more or see the video, go to http://lubbockonline.com/stories/031009/loc_407367667.shtml

History Channel pays a visit to NIF



The History Channel interviews NIF Projects Program Director Ralph Patterson in the NIF laser bay.

A History Channel production crew visited the Laboratory last week to tape a show about the Lab's National Ignition Facility (NIF).

The crew spent the day taping interviews with NIF Director Edward Moses, NIF Projects Program Director Ralph Patterson and taping various areas of the interior and exterior of the facility.

The show is scheduled to appear in fall 2009.

The revival of nuclear power



Pacific Gas and Electric's Diablo Canyon Power Plant at Avila Beach operates two of California's four nuclear reactors. (Paul Chinn / The Chronicle)

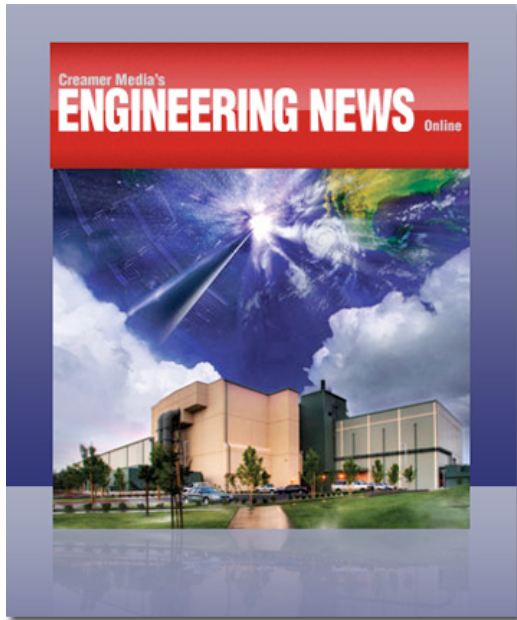
The *San Francisco Chronicle* recently reported on the state of nuclear power and how there may be a revival in the technology by the U.S. nuclear power industry by building more power plants.

But, 30 years after the Three Mile Island accident led to moratoriums on new plants across the nation, concerns about the cost and safety of nuclear power remain, including what to do with the growing stockpiles of highly radioactive waste from the nation's reactors.

President Obama's campaign has pledged to find an alternative to burying the deadly waste at Yucca Mountain, Nev. -- yet the waste must be dealt with before the nuclear industry can provide a larger share of U.S. energy needs. The article features interviews with LLNL nuclear energy experts Bill Halsey and Jim Blink.

To read the full story, go to <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2009/03/09/MN3H16ANEN.DTL&hw=Jim+Doyle&sn=001&sc=1000>

International buzz on NIF



The South African newspaper *Engineering News* recently featured an article on LLNL's National Ignition Facility (NIF).

NIF scientists plan to replicate the extreme conditions needed to achieve fusion ignition and energy gain, which are two key milestones in the scientific pursuit of fusion energy as a source of electricity.

NIF's 192 intense lasers will be used to initiate a nuclear fusion reaction. NIF will be the first facility to demonstrate fusion ignition and energy gain in a laboratory setting.

To read more of the article, go to <http://www.engineeringnews.co.za/print-version/electricity-from-nuclear-fusion-still-science-fiction-2009-02-27>

Latest *Newsline* available



Newsline provides the latest Lab research and operations news. See the most recent issue at <https://newsline.llnl.gov/rev02/index.php>

Photo of the week



Who's looking at you, kid: A barn owl found in one of the eucalyptus trees on site at LLNL peeks at passers-by.

LLNL is managed by Lawrence Livermore National Security, LLC, for the U.S. Department of Energy's National Nuclear Security Administration.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

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