PrincetonUniversity

Energy secretary announces U.S. participation in international fusion research effort

by Steven Schultz

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Current news and events
Releases to the media
Weekly Bulletin
Calendar of events
Previous caption pages

Praising the achievements of the fusion energy research program at the Princeton lab, Abraham said the decision to join ITER builds on that success and becomes an important element of President Bush's national energy policy, which calls for the development of new technology to reduce the nation's dependence on foreign oil.

"All of us recognize the possibilities fusion power offers to feed the energy needs of growing economies around the world," Abraham said. "And Princeton is the ideal place to come to launch our international fusion efforts. You have a well-deserved reputation for innovative research and highly professional management of resources."

ITER (International Thermonuclear Experimental Reactor) began in the late 1980s as a collaboration between the United States, the former Soviet Union, Japan and Europe with the goal of designing and building a fusion test reactor that would demonstrate the feasibility of nuclear fusion as a source of energy. The United States removed itself from the collaboration in 1998. A National Research Council panel concluded in 2002, however, that revisions in the ITER plan and recent advances in fusion science warranted rejoining the effort, which now involves Canada, Europe, Japan and the Russian Federation.

Dignitaries from Japan, Germany, Spain, France, Russia, the United Kingdom, Italy, Canada, the European Union and China, as well as U.S. Congressmen Rush Holt and Rodney Frelinghuysen, attended the announcement.

Princeton President Shirley M. Tilghman noted that the idea for tapping nuclear fusion as an energy source originated at Princeton in 1952 when astrophysicist Lyman Spitzer secured government funding to build a fusion experiment on the University's Forrestal Campus. Fusion, the nuclear reaction that fuels the sun and stars, occurs when light atoms such as hydrogen are forced together so they fuse into heavier elements such as helium and release enormous amounts of energy.

The full story is available in a news release.

Plasma Physics Lab Director Rob Goldston (left) gives a tour of the lab facilities as Spencer Abraham, U.S. secretary of energy, looks on.

photo: Elle Starkman

University home | Princeton Web pages A-Z | Search
Previous caption pages | Communications Office | Web page feedback

up

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For immediate release: Jan. 30, 2003
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PRINCETON, N.J. -- U.S. Secretary of Energy Spencer Abraham, speaking at the Princeton Plasma Physics Laboratory Thursday, announced that the United States will rejoin the planning and funding of a major international fusion energy initiative called ITER.

Praising the achievements of the fusion energy research program at the Princeton lab, Abraham said the decision to join ITER builds on that success and becomes an important element of President Bush's national energy policy, which calls for the development of new technology to reduce the nation's dependence on foreign oil.

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Efforts to control and harness that reaction became the focus of research at the Princeton Plasma Physics Laboratory, which is a national laboratory funded by the Department of Energy and administered by Princeton University. Abraham emphasized that, even with U.S. involvement in ITER, a critical component of the nation's energy research program will come from domestic laboratories such as PPPL.

"Your work couldn't be more important," Abraham told the scientists, engineers and other staff of PPPL. "Over the lifetime of a child born today, the demand for energy will more than triple... And if fusion power proves practical, it will kick in at the right time. It will be there to meet the increasing need for large-scale sources of clean energy around the world."

"This is an historic event," said Robert Goldston, director of the plasma physics lab. "We are very pleased with the president's commitment to the development of fusion energy as articulated by Secretary Abraham. The laboratory very much looks forward to participating with other countries and other U.S. laboratories, universities and industry on ITER."

Goldston and Department of Energy officials will travel to St. Petersburg, Russia, on Feb. 18-19 to participate in negotiations over plans for the $5 billion project, which is slated to start construction in 2006 and be ready for experiments by about 2014.

During his visit, Abraham toured the Plasma Physics Lab's current major research effort, called the National Spherical Torus Experiment, and inspected the site of the lab's former experiment, the Tokamak Fusion Test Reactor. He praised the lab for its recently completed effort to dismantle the tokamak reactor, which through innovative engineering, was done for significantly less than its budgeted cost and ahead of schedule.

Abraham further praised the laboratory's extensive outreach and science education programs directed to secondary school children. "The success of science depends on an influx of young people into every field. That's just not happening today. We are working on initiatives to support teacher training at our labs and I want to commend the fine progress you are making here at Princeton."

More information is available on the Plasma Physics Lab site, including the full text of Abraham's talk.

top