

Abraham: U.S. participation in international fusion effort builds on success at PPPL

By Steven Schultz

Princeton NJ -- U.S. Secretary of Energy Spencer Abraham, speaking at the Princeton Plasma Physics Laboratory Jan. 30, announced that the United States will rejoin the planning and funding of a major international fusion energy initiative called ITER.



U.S. Secretary of Energy Spencer Abraham toured the Princeton Plasma Physics Laboratory Jan. 30 before making a major policy announcement about fusion energy research. Laboratory Director Rob Goldston (from left) showed the National Spherical Torus Experiment to Rep. Rush Holt, Abraham, Rep. Rodney Frelinghuysen, Energy Department Office of Science Director Raymond Orbach and President Tilghman.

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 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. Reps. Rush Holt and Rodney Frelinghuysen, attended the announcement.

President 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.

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 the 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

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."

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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 a 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."

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