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ORNL snares prime fusion energy project

Teams with Princeton University in \$5 billion international effort

By **FRANK MUNGER**, munger@knews.com
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OAK RIDGE - Oak Ridge National Laboratory, in conjunction with Princeton University, has been chosen to head the U.S. involvement in a \$5 billion international fusion project.

U.S. Energy Secretary Spencer Abraham announced Tuesday that the U.S. project office for the International Thermonuclear Experimental Reactor will be at Princeton, N.J. The Princeton/ORNL team was selected to run the office, which will oversee procurement of major components for the prototype fusion reactor and assign U.S. scientists and engineers to work on the giant project.

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"I'm very excited," Stan Milora, ORNL's fusion energy chief, said Tuesday.

"ITER is going to determine the scientific and technical feasibility of fusion, and this establishes ORNL as an international leader in the quest for fusion energy," Milora said. "It reflects very positively on what we already knew - that we have an outstanding fusion program here and that we are DOE's leading multipurpose national laboratory."

Nuclear fusion is the same process that fuels the sun and other stars. Unlike nuclear fission, which releases energy by splitting atoms, fusion occurs when light atoms fuse together to form helium - a process in which mass is lost and converted to energy. If fusion can be harnessed in a working reactor, proponents say it would provide an almost unlimited supply of energy, without the amount of waste associated with fission or other drawbacks.

ITER is considered a big step toward the practical use of fusion energy. Construction is supposed to begin in 2006, with first operations in 2013. Scientists and engineers from the United States, China, Europe, Russia, Japan and South Korea are collaborating on the project, with funding from the respective governments.

The test reactor will be built either at Cadarache, France, or Rokkasho, Japan. Negotiations on the site are still taking place. The United States is supporting Japan.

Milora said ORNL's selection to help manage the U.S. role in the project likely would broaden the Oak Ridge involvement in the scientific and engineering aspects of the international project.

Hundreds of millions of dollars will be invested in research and development projects for ITER, in addition to the huge construction tasks.

ORNL has been a long-time partner with the Princeton Plasma Physics Laboratory on fusion-related projects. Some Oak Ridge fusion researchers spend much of their time working on experiments at Princeton.

Lawrence Livermore National Laboratory and the Idaho National Engineering and Environmental Laboratory also submitted proposals for the ITER leadership role.

Abraham said the selection of ORNL and Princeton "is the clearest possible indication that our nation takes ITER - and our role in ITER - very seriously."

ORNL Director Jeff Wadsworth welcomed the news. "I applaud our staff for the second big win for ORNL in 90 days," he said, making reference to the recent selection of ORNL to build the world's fastest computer.

"The ITER project will establish ORNL and the Princeton Plasma Laboratory as international leaders in the quest for fusion energy," Wadsworth said.

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