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## U.S. Should Rejoin Revised Fusion Energy Project, Experts Say

By KENNETH CHANG

**A**n expert panel has recommended that the United States seek to rejoin a \$5 billion international nuclear fusion project it abandoned four years ago as overly ambitious and expensive.

The panel, convened by the National Research Council, said on Friday that changes in the design of the proposed reactor and recent advances in fusion science now made the endeavor worthwhile. The project seeks to use nuclear fusion, the process that powers the sun, to generate electricity.

"We have confidence it will work," said Dr. Raymond J. Fonck, a professor of engineering physics at the University of Wisconsin and a co-chairman of the panel.

The panel, which consists of 18 scientists, mostly physicists, is to present a final report reviewing the direction and scope of the United States' fusion research program by next summer.

The Department of Energy had requested the interim report to help decide whether the United States should begin negotiations to once again be a partner in the proposed International Thermonuclear Experimental Reactor, or ITER. If it were to join, the United States would be likely to contribute more than \$1 billion, over a decade.

The other ITER participants — Canada, Japan and a European consortium that includes Russia — are discussing possible locations for the reactor and how to divide costs and responsibilities.

Dr. Raymond Orbach, director of the science office at the Energy Department, said the report would "help inform the administration's continuing review" of whether to participate.

Dr. Murray Stewart, president of ITER Canada, said he hoped the American officials would decide before the next round of discussions in St. Petersburg, Russia, in February.

"We would very much like them at that meeting," Dr. Stewart said.

ITER (in Latin, "iter" means "the way"; it is pronounced "eater") would be the next step in large experimental fusion reactors.

Fusion, which produces energy by fusing hydrogen atoms into helium, has been looked on for decades as a potentially attractive energy source. Hydrogen is readily available, and fusion reactors would not produce long-lived highly radioactive waste as do current nuclear fission reactors, which split uranium atoms to produce energy.

But progress has been slow, and even optimists believe commercial fusion power plants are still decades away.

In the mid-1990's, many American fusion scientists criticized the original \$10 billion ITER design as too costly and too ambitious.

After the United States withdrew in 1998, the design was scaled back to \$5 billion. The new smaller design also incorporated more modern technology and dropped the goal of self-sustaining fusion.

The smaller ITER would still produce much more power than its predecessors.

Dr. William D. Dorland, a professor of physics at the University of Maryland who had been among the critics of the original design, said the new design addressed the major concerns that were raised. He said he supported the panel's recommendations.

"If ITER is going to go forward as an international project with this new design, it would be good for the U.S. to be a partner," Dr. Dorland said.

At a meeting this summer, more than 200 American fusion scientists reached a consensus that the United State should try to rejoin ITER, but that it should also continue design work for a smaller alternative project should ITER hit additional snags.

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