ITER panel votes to postpone non-vital physics work

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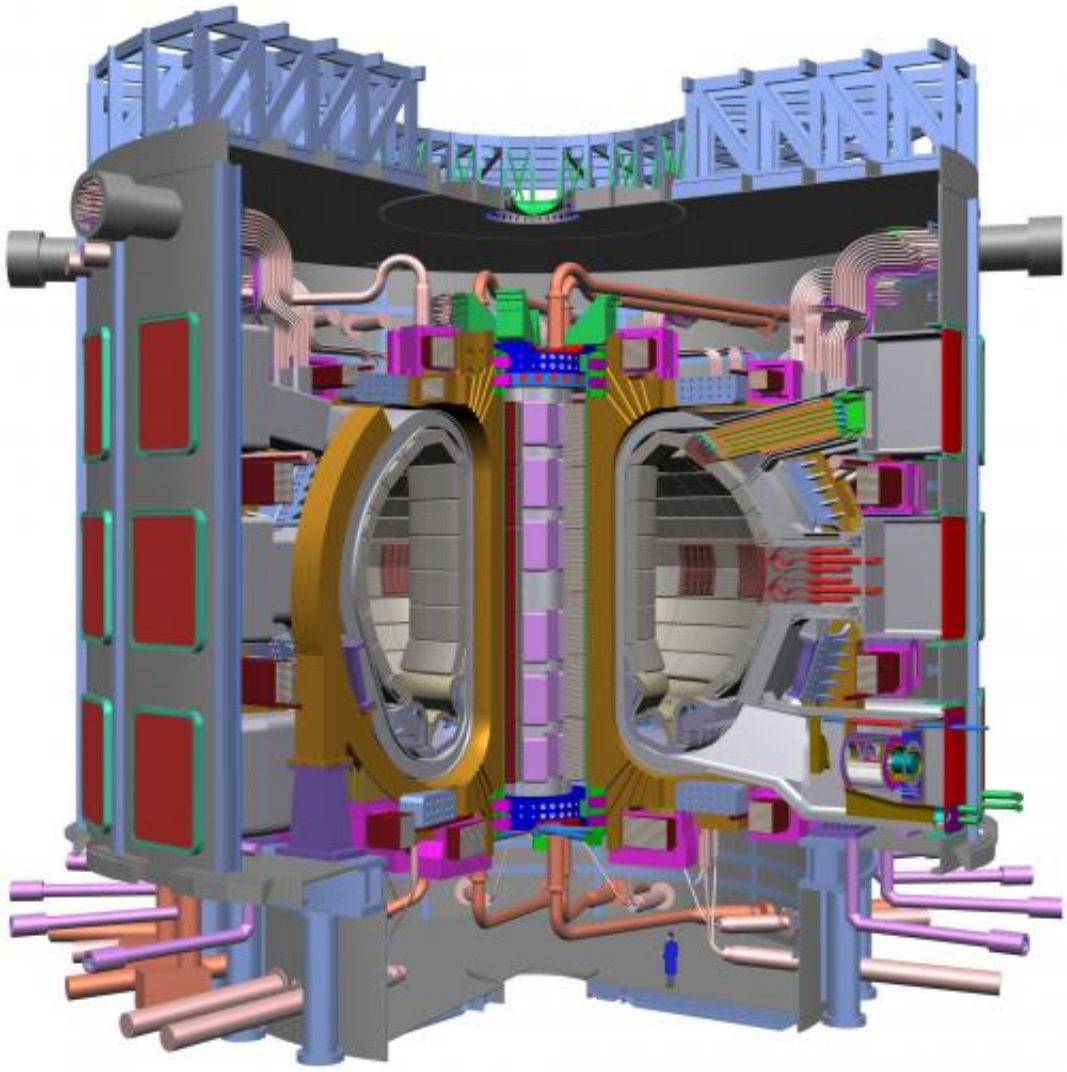

Credit: ITER

(Phys.org) —*Nature* is reporting that a panel of experts and International Thermonuclear Experimental Reactor (ITER) staff has announced that non-essential physics work and other experimental studies being conducted as part of the fusion reactor project, will be put on hold in order to focus exclusively on the main goal of the project: prove the viability of fusion as an energy source.

ITER is an international project with members from China, the European Union, Japan, India, Korea, Russia and the United States. Construction was begun in 2007 with a goal of completion by 2027. The following year, researchers hope to run the ITER in such a way as to achieve its ultimate goal of producing 500 megawatts of output power using only 50 megawatts of input power (shortened to $Q \geq 10$). The EU is footing most of the bill, chipping in 45 percent of construction costs—the other members will each contribute 9 percent each.

The idea is to find out if fusion can be a viable source to economically produce electrical power to replace current methods such as burning fossil fuels. The concept is simple, squeezing atomic nuclei with such force as to fuse them together causing the creation of another element and in the process releasing large amounts of energy. The implementation, on the other hand, is very complex and expensive. The original plans called for ITER to achieve its goal by building a large tokamak thermonuclear facility in St-Paul-lez-Durance in southern France. The fuel used in the experiment will be plasma created from the hydrogen isotopes, tritium and deuterium—intense magnetic fields will then be used to force the fusion to take place. That plan remains in place—it's other non-essential projects that are now at risk.

Recently, some of those involved in the project have begun to worry that other experiments scheduled to be conducted as the facility is being built could cause delays to the set goal date for $Q \geq 10$. Such worries were aired at this week's Science and Technology Advisory Committee

meeting which led to a discussion and eventually a vote to post-pone other projects that are seen as not necessary for completion of the overall project. Planned experiments such as testing longer-pulse and steady-state plasmas will therefore be moved to the years after the facility is up and running.

More information: www.nature.com/news/iter-keeps … eye-on-prize-1.13957