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ITER Siting Decision Clears One Important Obstacle in Congress

"This is real . . . we've got a project on our hands." - DOE Office of Science Director Ray Orbach

Earlier today, an announcement was made in Moscow that representatives of the United States, European Union, Japan, the Russia Federation, China and Korea had agreed that ITER will be located in Cadarache, France. In a telephone briefing from Moscow, Raymond Orbach, the Director of the Department of Energy's Office of Science, and the U.S. minister at this meeting, described the "most moving ceremony" that cleared a substantial hurdle for the experimental international fusion reactor. In describing this meeting, Orbach spoke several times of "a sense of community," and a feeling that "the world had come together" to determine if fusion energy, through ITER, was feasible.

The agreement signed in Moscow will resolve a major difficulty surrounding U.S. participation in ITER. The United States withdrew from ITER participation in 1998 because of concerns about the projected cost and management. On January 30, 2003, then Secretary of Energy Spencer Abraham announced that the U.S. would rejoin the negotiations to build and operate ITER (see <http://www.aip.org/fyi/2003/013.html>.) In remarks to the Fusion Energy Sciences Advisory Committee after that announcement, Orbach said that President Bush is a strong supporter of fusion energy, seeing it as a key component of releasing America from the straitjacket of imported oil (see <http://www.aip.org/fyi/2003/035.html>.) ITER was identified as Priority #1 of twenty-eight projects in the twenty year facility plan for the Office of Science that was released in late 2003 (see page 14 of www.sc.doe.gov/Sub/Facilities_for_future/facilities_future.htm.)

Congress has been both supportive and skeptical about fusion energy. In the Senate Appropriations Committee report released last week, the appropriators stated: "The Committee has reduced funding for the International Thermonuclear Experimental Reactor [ITER] by \$28,000,000, equal to the amount domestic research has been increased. The Committee is disappointed that a decision has not been made in selecting a site for the location of this international burning plasma user facility. Without a final decision on a location or allocation, the Committee is skeptical the Department will be able to expend the full budget request for this project in fiscal year 2006. If a site is selected,

the Committee will work with the Department to provide an allocation that is consistent with the expected needs for this project." (See <http://www.aip.org/fyi/2005/098.html> .) At a House Energy and Water Development Appropriations Subcommittee hearing on the FY 2006 budget request, Rep. Rodney Frelinghuysen (R-NJ) asked Orbach about the ITER siting problem, questioning why funding for the domestic program should be reduced even though a site had not been selected (see <http://www.aip.org/fyi/2005/033.html>.)

The long-running controversy over whether ITER should be sited in France or Japan has loomed over the project to the extent that Orbach said in today's briefing that he was worried a skeptical Congress would see this as an unresolvable stalemate. Today's agreement, he said, has "given reality to the project."

DOE's site at <http://www.science.doe.gov/> provides the details of today's agreement. The agreement is 2 Ω pages long, stating as "common understandings" that ITER should be implemented by the ITER Organization, "with the possibility of accession by any state or international organization subject to unanimous agreement of the Parties"; "ITER shall be sited at Cadarache, France"; that cost-sharing and allocations should be as previously agreed upon; and that other Parties of the Agreement may participate in "the Broader Approach [research] activities that will be implemented through bilateral cooperation between EURATOM and the Government of Japan." A two-page Joint Paper on "The Roles of the Host and the non-Host for the ITER Project" is attached to the agreement. It calls for the Host to contribute 50% of the estimated cost of ITER construction, with the non- Host(s) each contributing 10%. There are additional details regarding the procurement of components, the selection of the Director-General and staffing of the ITER Organization, headquarters functions, and weighted voting. Of note is the final statement, "If the future demonstration reactor, DEMO, is realized in the framework of an international co-operation, the Host will support the candidature of the non-Host to host DEMO."

In his remarks at the Moscow ceremony today, Orbach described the next steps for the U.S. as follows: "The United States looks forward to getting ITER construction underway as soon as practicable. To be successful, however, the ITER negotiations must resolve not only the siting of the project, and an agreed-upon financial and procurement arrangement, but also critical management and oversight arrangements. In these negotiations, the U.S. will continue to strive for a robust management structure and an oversight program based on the principles of equity, accountability and transparency to ensure both the success of the project and the best use of American taxpayer dollars."

Looking ahead, Orbach thought the agreement could be initialed by the end of the year, to be followed by an additional three to four months for review. The signing of an agreement could occur next spring, with construction to start soon after. Construction would take approximately eight years. While it would be known within a few years of start up if the machine works, it would probably take, Orbach predicted, up to ten years to reach optimum performance. Following a successful DEMO facility demonstration, commercial utilities might be able to produce between 10 - 20% of their power from fusion by the end of the century.

There is considerable concern on Capitol Hill, and in some sections of the fusion community, about the financial impact of ITER on the domestic fusion energy sciences program. Orbach addressed this question in his briefing today, stating that he was "committed to a very strong domestic program," calling it "essential" to the success of ITER. Director Orbach explained that the domestic program would be restructured around ITER. There was considerable language about the impact of ITER funding on the domestic program in the recent House and Senate Appropriations Committee reports (see <http://www.aip.org/fyi/2005/072.html> and <http://www.aip.org/fyi/2005/098.html>.) In addition, the House agreed to an amendment by House Science Committee Chairman Sherwood Boehlert (R-NY) during its consideration of the FY 2006 funding bill that stated: "None of the funds made available by this Act may be used before March 1, 2006, to enter into an agreement obligating the United States to contribute funds to ITER, the international burning plasma fusion research project in which the President announced United States participation on January 30, 2003." Said Boehlert to his colleagues: "We have time to ensure that the Administration and the Congress and the fusion science community agree on how we're going to pay for ITER before we sign on the dotted line."

In a statement released today by Energy Secretary Samuel Bodman, he stated: "Plentiful, reliable energy is critical to continued worldwide economic development. Fusion technologies have the potential to transform how energy is produced and provide significant amounts of safe, environmentally-friendly power in the future. The ITER project will make this vision a reality." The coming months will be crucial ones for the Administration, Congress, the U.S. fusion community, and the ITER Organization in realizing the vision Secretary Bodman spoke of.

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