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[2002](#)

[2001](#)

[2000](#)

## Orbach on Fusion and DOE Science Outlook

"My request to you is to support the President's budget," DOE Office of Science Director Ray Orbach told the Fusion Energy Sciences Advisory Committee at a February 28 meeting. In an upbeat one hour presentation, Orbach discussed the FY 2007 Office of Science budget request, and what it would portend for the fusion energy sciences program.

At the outset of his presentation, Orbach praised the long service of two officials at the Department of Energy who will be retiring. N. Anne Davies, Associate Director for Fusion Energy Sciences, will be retiring at the beginning of April. Orbach described Davies as "an elegant advocate" for the program who has "laid the groundwork for our future." Also retiring is Michael Roberts who as the department's contact point for ITER negotiations played a key role in ensuring a favorable outcome in the lengthy and complicated seven-party deliberations.

Orbach gave high praise to the President's State of the Union address, saying that the President "spoke about us" when describing the importance of science to America's competitive position. Orbach then made several key points about the American Competitiveness Initiative and its goal of doubling total funding over ten years for the Office of Science, National Science Foundation, and the research programs of the National Institute of Standards and Technology. It is important to remember that the doubling objective applies to the sum of the three agencies' budgets, as distinct from a doubling of each budget. Future budget requests will depend on each agency's performance, Orbach saying that the doubling objective is "not a done deal for any given agency."

It is also important to view the 14.1% requested increase for the Office of Science in context. The total DOE budget request for FY 2007 was flat. The additional one-half billion dollars for the Office of Science were offset by cuts in other DOE programs. Orbach said that Energy Secretary Samuel Bodman was under considerable pressure when shifting so much money to, as Orbach put it, "right the ship." Bodman's words to Orbach are relevant to the science community: "okay, let's see what you can do."

Orbach's comments then turned to the fusion energy sciences program, and in particular, ITER. He reminded the committee that ITER was the first priority in the Office's 20-year facility plan, and called fusion "a hope for mankind we will achieve." He brought the committee up to date on the ITER negotiations. The final wording of the agreement is done. On May 24, representatives of the seven parties will initial the agreement, after which Congress has 120 days to review it.

There is a \$1.122 billion cap on the U.S. share for ITER. The Congress and Administration's willingness to invest such a significant amount of money in this project is largely due to the Office of Science's ability to manage large projects. Pointing to the \$1.4 billion Spallation Neutron Source which will be completed in June "on time and on budget," Orbach said "our ability to deliver has given us credibility in the Administration and in Congress."

Project management is critical, he said, warning, "I can't tell you the danger that lurks out there" if a future project should be mismanaged.

Orbach then spoke of the damage that earmarking the FY 2007 Office of Science appropriation could have on future budgets. Should funding be earmarked, Orbach predicted that future increases in budget requests will go to the National Science Foundation and the core research programs of the National Institute of Standards and Technology.

Another caution that Orbach shared with the committee was his concern about congressional response to the \$503 million requested increase for the Office of Science. Money is very tight on Capitol Hill this year, and Orbach said "we are sitting ducks" for those looking for money for their own programs. Orbach had an exhibit explaining "every reduction from the President's FY 2007 SC [Office of Science] Budget Request could be compounded over 10 years (a 1% cut could mean as much as \$550M total reduction over the period).

"How do we maintain our leadership when things are abroad?" Orbach asked the committee. He was referring to large cutting-edge physics facilities such as ITER and the Large Hadron Collider that are being built overseas. It will be a challenge that the Office of Science's various advisory committees must focus on in coming years, he said.

One of the concerns that the fusion community has discussed is the allocation of money between the domestic program and ITER. Orbach addressed this, saying it was necessary to keep the domestic program "very, very strong." He also spoke of the scientific and technological challenges confronting ITER, explaining "it isn't a done deal . . . we've got to prove that this thing works."

While some of Orbach's remarks were cautionary, he was clearly upbeat. "This is a renaissance for science," adding that if the budget request is funded the "next few years will be absolutely fabulous . . . we will have a wonderful time," he said. As he had said earlier in his remarks about the President's budget request, "This is a very important year for us; we must not lose it."

Richard M. Jones  
Media and Government Relations Division  
American Institute of Physics  
[fyi@aip.org](mailto:fyi@aip.org)  
301-209-3095

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