

Weapons experts and Congress slow warhead program

In the wake of a report that criticizes the Bush administration's failure to articulate a broad nuclear weapons policy, both Democratic and Republican members of a House Armed Services subcommittee have voted to cut millions of dollars from the proposed fiscal year 2008 budget for the Reliable Replacement Warhead.

The cut of \$45 million from the administration's \$119 million RRW request is intended to tell the Department of Energy (DOE) and the National Nuclear Security Administration (NNSA) to "walk before they run with the modernization of the nuclear weapons stockpile and the weapons complex," said Representative Ellen Tauscher (D-CA), chair of the strategic forces subcommittee. The cut in funding, if it stands through the full congressional appropriations process, will limit the RRW work to "cost and design" studies (see PHYSICS TODAY, February 2007, page 24).

If advocates of faster RRW development hoped to get support from the Republicans on the subcommittee, they were disappointed. Rep. Terry Everett (AL), the subcommittee's ranking Republican, said the cut in funding "reflects a strong bipartisan agreement on the Atomic Energy Defense Activities, particularly on the Reliable Replacement Warhead."

The subcommittee's action came just after the American Association for the Advancement of Science released its first major issue-oriented report, put together over the past year by a panel that included three former directors of the national weapons laboratories and several national security experts formerly with DOE and the Department of Defense. The report, released 24 April, came about a month after NNSA officials selected an RRW design from Lawrence Livermore National Laboratory in California to replace some of the existing warheads in the US nuclear arsenal (see PHYSICS TODAY, April 2007, page 33).

The AAAS study committee, chaired by Bruce Tarter, a former director of LLNL, made a series of specific recommendations, but the overall theme of the report was that until more is known about the implications and impacts of building the replacement warhead, the program should slow down. "There are just too many unanswered questions, things that we don't know," Tarter said.

The RRW is intended to be a safer, cheaper, and more secure replacement for warheads in the current stockpile. RRWs built to the design approved by NNSA would replace the existing W-76 warheads, and later RRWs would eventually replace most types of warheads in the US arsenal.

In reference to the RRW design just approved, the AAAS panel recommended an independent evaluation of any new designs. The panel also said that NNSA should avoid claiming longer-term benefits of the RRW program to the overall nuclear stockpile program "until the analysis and work to justify those conclusions has been carried out."

The panel also said, "Development of an acceptable plutonium strategy should be the highest priority in planning the future production complex." Tarter said a central question in the nuclear weapons debate is what to do about the plutonium pits that are the heart of nuclear weapons. Los Alamos National Laboratory currently has the capacity to build a limited number of pits each year that can be used to replace aging pits in existing weapons. But if the RRWs move into the production phase, will Los Alamos need to be expanded, or will a new pit facility be required?

Answering that question depends on the more basic question of the future direction of the US nuclear program, a question that the report notes hasn't been adequately addressed.

The report also outlined the need for studies that explore the implications of the RRW program on the Treaty on the Non-Proliferation of Nuclear Weapons and other international agreements. "Nuclear weapons are ultimately an instrument of policy and strategy rather than of war fighting," the report says, "and only with the leadership of the president can there be major changes in that instrument. Only a president and a well-thought-out diplomatic strategy can put this in terms likely to be constructively understood by the international community."

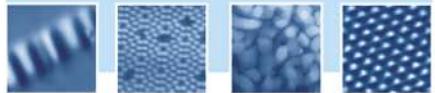
Tarter noted that the timing of the report is a little awkward for the Bush administration. "It's unfair to ask this administration to do the major tasks involved when they are distracted [by the war in Iraq] and going out of business. So the question is, How do you get this issue across the boundary into the new administration?"

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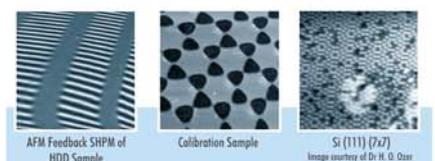


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Thomas D'Agostino, the acting head of NNSA, issued a statement after the report was released saying its recommendations were "consistent with NNSA's ongoing plans to move forward with RRW."

Jim Dawson

Chemical society reinstates ousted Iranian members

Last December the American Chemical Society rescinded the memberships of 36 scientists in Iran and 1 in Sudan, claiming the move was necessary to adhere to US law. In mid-April the society applied to the Treasury Department's Office of Foreign Assets Control (OFAC) for a license to provide membership services to scientists in countries under trade sanctions. Then, in a turnaround, ACS sent a letter in mid-May to the ousted scientists welcoming them back as members.

In a widely circulated letter dated 30 April, ACS executive director and CEO Madeleine Jacobs explains that lawyers reviewed OFAC regulations and consulted with OFAC before advising ACS that providing membership services to sanctioned countries violates US law. Surprisingly, Jacobs says she learned about the expulsions from a 30 March report in *Science*. "We had a serious breakdown in communications," she writes.

Some ACS members and members of other professional societies were upset that the Iranians were expelled and that Jacobs did not immediately reverse the decision. "A lot of people are getting a lot of letters and e-mails about this, from people in the US and outside," Zafra Lerman, chair of ACS's subcommittee on scientific freedom and human rights, said before the reversal was announced. They are asking, she added, why, if the government did not come to ACS, is ACS taking and standing by this preemptive action? Indeed, OFAC spokesperson Molly Millerwise said, "There hasn't been a new restriction announced by OFAC... [but] guidance can be open to interpretation."

Hamid Javadi, an engineer at NASA's Jet Propulsion Laboratory in California and president of the Iranian-American Physicists Network Group, said, "We are worried that the action by ACS may force other scientific organizations to follow suit." Expelling people "is wrong," he added. "It dismisses the most scientifically educated, independent, critical thinking, and open-minded members of Iran as US OFAC tries to contain the Iranian government."

Other scientific organizations kept an eye on the matter. But Cecelia Jankowski, managing director of regional activities for the Institute of Electrical and Electronics Engineers—which was at the center of an earlier publishing battle with OFAC (see *PHYSICS TODAY*, May 2004, page 28)—said, "We have not seen anything new from OFAC related to membership activities in the past couple of years." Added American Physical Society associate executive officer Alan Chodos, "APS is not planning to do anything similar to what ACS did." Both IEEE and APS have members in Iran.

In her 30 April letter, it seemed Jacobs was not changing the ACS's course of action. But on 11 May, ACS reinstated the 14 ousted Iranian scientists who had been paid-up members. "To express our regret over the disruption of your membership, we are reinstating your ACS membership, and your ACS membership dues for the next 12 months are being paid for you," the society wrote to the former members. The other 22, and the scientist in Sudan, can renew their memberships.

The letter—which ACS officials declined to share, but which was disclosed to *PHYSICS TODAY* by another source—goes on to say that the reinstatement follows additional contact with OFAC "and our own rigorous review of federal requirements." As for the license application ACS submitted to OFAC, it's still pending, says Jacobs. She adds that ACS "is planning to work with the National Academy of Sciences and other scientific societies to get OFAC to clarify what is and isn't allowed in terms of scientific membership services."

"I can't believe it took so long," Lerman says. "But what ACS did is the right thing. And I am very happy with the solution."

Toni Feder

Purdue reopens fusion fraud probe

Under pressure from Congress, Purdue University has started a new investigation into possible research misconduct by Rusi Taleyarkhan, a faculty member who claimed in a 2002 paper in *Science* that he had achieved sonofusion in an experiment at Oak Ridge National Laboratory (see *PHYSICS TODAY*, April 2002, page 16). The new investigation comes after a staff report by the subcommittee on investigations and oversight of the House Committee on Science and Technology sharply criticized earlier, more

limited investigations by Purdue officials into issues related to the publication of Taleyarkhan's research.

Taleyarkhan, in an e-mail to the *New York Times*, called the congressional staff report "a gross travesty of justice."

In 2006 Purdue set up a fact-finding committee that focused not on the validity of Taleyarkhan's original research but on "independent" follow-up papers confirming the research. Those papers listed as coauthors two graduate students who worked with Taleyarkhan. One of the students later said he had nothing to do with the writing of the papers, and the other refused to discuss who did. Purdue's fact-finding committee's report had specific allegations of fraud, the congressional report says, but Purdue officials responded by setting up another inquiry committee to undertake another fact-finding investigation. That investigation concluded that there was no research misconduct as defined by Purdue's research standards. Attempts by several independent groups, including a group sponsored by the Defense Advanced Research Projects Agency, to replicate Taleyarkhan's sonofusion work have failed.

In discussions with Purdue officials about beginning a new investigation, subcommittee chairman Brad Miller (D-NC) said he was "disappointed to learn" that three of the members selected to conduct the new probe were on the panel that did the previous investigation. Miller insisted, and Purdue officials have now agreed, on appointing at least one new member.

Congress is involved in the issue because the research was conducted at a national laboratory with some federal funding. The science committee's investigations subcommittee was shut down when Republicans took control of the House 12 years ago but was reestablished when Democrats won the House last November.

Jim Dawson

news notes

Reactor security. Fingerprinting and criminal background checks are now required to gain unescorted access to US research and test reactors. Most of the 33 such reactors are operated by universities, with a few at company and government labs. The Nuclear Regulatory Commission (NRC) announced the tightened security measures on 1 May.

Similar measures were already in force for power reactors, but security at reactors used for educational purposes had been less strict.