

## NEWS

### **Low yield Nuclear Warheads**

The AIP's FYI #61, dated May 9, 2003 and authored by Richard M. Jones, concerns House and Senate considerations of nuclear weapons research, development, and testing. The considerations stem from the Bush Administration's interest in using low-yield nuclear warheads for destroying deeply buried enemy assets. The Armed Services Committees of both houses of Congress are nearing completion of defense spending bills for FY2004 that include provisions for low-yield nuclear weapons' research as well as future testing of nuclear weapons. The APS recently reaffirmed a Statement on Nuclear Testing that warns of "serious negative international consequences" from nuclear testing by the U.S.

In addition, during the same week, the House Subcommittee on Strategic Forces considered draft provisions of HR 1588, The National Defense Authorization Act for FY2004. According to Jones' FYI, Section 221 of HR1588 "rescinds the prohibition on research and development of low-yield nuclear weapons (with yields of five kilotons or less.)"

Sidney Drell, at an arms control press conference last week, referred to the proposal to use nuclear weapons for bunker busting as a "dangerous thought". In response to Drell and other critics who contend that conventional weaponry, used appropriately, can suffice for bunker busting, supporters of the use of nuclear weapons for such purposes argue that radiation is necessary to kill biological weapons of mass destruction that are hidden in bunkers.

There is also momentum in the Congress to reverse the current moratorium on nuclear testing. According to Jones, "The [House Subcommittee on Strategic Forces] defeated, on a party line vote, an amendment offered by Spratt and Tauscher to make the observed testing moratorium official U.S. policy."

### **UC Must Bid to Run Los Alamos**

This was a headline on page 1 of the San Francisco Chronicle on May 1, 2003. Energy Secretary Spencer Abraham announced on April 30 that UC will have to compete with other bidders to keep its contract to manage Los Alamos National Laboratory after the present contract expires in September 2005. Among the organizations against which UC will likely have to compete is the University of Texas. The value of the contract is \$2.2 billion. The Secretary's decision is an unprecedented event in the 60-year tenure of UC as the LANL manager, and it follows months of very visible news and acrimony surrounding charges of mismanagement of LANL by UC. From the standpoint of UC, a positive aspect of the announcement is that UC will be allowed to continue in its management role until September 2005. Secretary Abraham had recently considered immediate termination of UC's contract owing to charges of fraud and theft.

### **U.S. Participation in International Thermonuclear Experimental Reactor (ITER)**

The International Thermonuclear Experimental Reactor (ITER) is a program that originated with a 1985 proposal in Geneva, by the Soviet Union, for an international collaboration on fusion energy involving nations with the world's leading fusion energy programs. The ensuing program involved Europe, Japan, the Soviet Union, and the United States. However, in 1998 the US withdrew from ITER over concerns about cost and management effectiveness.

On January 30, 2003 Secretary of Energy Spencer Abraham announced President Bush's decision that the U.S. will rejoin negotiations to build and operate the international fusion energy project, and a major milestone was achieved in St. Petersburg, Russia in February when

representatives from the US and China joined those from Canada, the European Union, Japan, and Russia at the Eighth ITER Negotiations Meeting on planning the next steps for ITER. At the meeting, several of the delegations reiterated their governments' commitment to fusion energy development and pointed out advantages of particular sites in their countries for ITER. The Canadian delegation, for example, emphasized the excellent technical and cultural characteristics of the municipality of Clarington in the Region of Durham, whereas the French delegation offered Cadarache as the European site. The four sites under consideration include Clarington, Cadarache, Vandellos in Spain, and Rokkasho-mura in Japan. The Report on the Joint Assessment of Specific Sites can be found on the ITER Website ([www.iter.org/jass](http://www.iter.org/jass)).

Delegations discussed approaches to decision making and emphasized their desire to start ITER construction as soon as possible. The Ninth Negotiations Meeting will be held on 20-21 May 2003 in Vienna. US Secretary of Energy Spencer Abraham has stressed that U.S. participation in ITER will be in parallel with a continued American research effort into controlled fusion, specifically at Princeton.

### **Cosmic Ray Muons versus Terrorism**

Cosmic-ray muons might be put to use in the fight against terrorism. The March 20 issue of Nature and the March 22 issue of Science News describe a technique developed by scientists at Los Alamos National Laboratory in which the high-angle scattering of cosmic-ray muons by heavy metals is exploited to detect metals, such as plutonium and uranium, inside of containers that are opaque to visible radiation. According to the Science News article, the technique relies on the formation of free electrons when muons collide with argon molecules and the detection of such electrons by a grid of wires. Two chambers filled with argon gas and equipped with wire grids, located on opposite sides of a container such as a truck, are used to determine particle trajectories and, from those trajectories, the shape of heavy metal objects between the chambers.

Unfortunately, fissile materials could be nestled among other metals (e.g. tungsten, or even steel) so as to obscure their apparent shape. However, enthusiasts of the LANL idea are working on ideas to make the cosmic-ray equipped detector smart enough to foil attempts at heavy-metal camouflage.

### **Physical Science - Biological Science Funding Imbalance**

The website <http://www.govexec.com/dailyfed/0403/040303tdl.htm> concerns critical remarks from U.S. Senators, such as Christopher Bond (R-Missouri) and Barbara Mikulski (D-Maryland), regarding the disproportionate funding for physics research vs. that for biological sciences that is proposed by the Bush Administration. Senator Bond stated, "I am alarmed and troubled by this disparity because the decline in funding for the physical sciences has put our nation's capabilities for scientific innovation at risk and, equally important, at risk of falling behind other industrial nations." This subject is also the concern of the AIP's FYIs #32 and #33. The House Science Committee raised concern that the biomedical sciences "continue to dwarf the remainder of the R&D budget." Audrey Leath wrote in FYI #52, "Dismal" and "inadequate" were some of the terms used by members of the House VA/HUD Appropriations Subcommittee as they reviewed NSF's FY 2004 budget request on April 10. After Congress passed legislation last year authorizing the doubling of the foundation's budget over five years, the subcommittee was disappointed that the \$5.5 billion requested by the President for FY 2004 would not keep NSF on track toward that goal.... Noting that President Bush had signed the doubling legislation, Chairman James Walsh (R-NY) asked, "Did he really mean it?"

