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National Security and  
International Affairs Division

B-279066

February 20, 1998

The Honorable Floyd Spence  
Chairman, Committee on National Security  
House of Representatives

Subject: Nuclear Weapons: U.S. Cooperation With Other Countries

Dear Mr. Chairman:

In light of the pending ratification debate on the Comprehensive Test Ban Treaty (CTBT), you asked us to examine whether certain countries are using U.S.-sponsored cooperative programs as a means of obtaining technical information that may be useful to their nuclear weapons programs.<sup>1</sup> Specifically, we reviewed the extent and nature of nuclear weapons-related cooperative activities concerning safety, security, reliability, and performance; and exports between the United States and Russia, China, India, Israel, and Pakistan. You also asked us to describe the executive branch's assessment of the potential impact of the CTBT on weapons modernization. We briefed your staff on our survey results on December 15, 1997, and this letter summarizes our briefing.

We found no evidence that the United States engages in international cooperative programs with these five countries that encompass nuclear weapon safety, security, reliability, and performance.<sup>2</sup> While not engaged in stockpile stewardship, however, the United States is engaged in unclassified scientific and technical projects with Russia that are limited to safety and security of nuclear weapons. In addition, the executive branch's assessment of the CTBT

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<sup>1</sup>The CTBT was signed by President Clinton and by other declared and undeclared nuclear weapons states on September 24, 1996. India and Pakistan have not signed the CTBT.

<sup>2</sup>Nuclear weapon safety, security, reliability, and performance are the four elements of what Department of Energy (DOE) identifies as "stockpile stewardship." It is U.S. national security policy not to engage in cooperative stockpile stewardship programs with these five countries.

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concludes that, by prohibiting nuclear explosions, the treaty constrains but does not preclude weapons modernization.

With regard to Russia, cooperative projects are governed by presidential decision, an implementing government-to-government agreement, and protocols that identify appropriate topics for cooperation. The U.S. policy of cooperation with Russia developed from U.S. concerns about the safety and security of Russia's nuclear arsenal at the end of the Cold War and the breakup of the former Soviet Union. The scientific and technical cooperation program with Russia emanated from discussions between the United States and Russia concerning the need to maintain confidence in the safety and security of their weapons under a CTBT.

On December 16, 1994, the United States agreed to exchange technical information with Russia to increase the safety and security of nuclear warheads and the materials used in them. Under subsequent protocols, the United States and Russia agreed to expand this effort to include two additional subject areas of computations, experiments, and materials, and CTBT monitoring and verification. The national weapons laboratories that execute these collective activities refer to them as the Science and Technology Cooperation Program. Under the program, all topics discussed must be approved through an interagency review process, only unclassified information may be exchanged, and each country must pay its own expenses associated with meetings and discussions. A protocol of June 24, 1996, identifies agreed-upon activities. The program activities agreed to are within the scope of those permitted by presidential direction.

Working groups with defined scope and parameters conduct discussions and exchanges of information in each of the three subject areas. As of January 15, 1998, the group on computations, experiments, and materials had met once, in April 1997. Agreed-upon topics for discussion included computer modeling and properties of materials. The group on nuclear weapons safety and security is the successor to, and continues the work of, a group formed in 1992 at the initiation of Russian scientists seeking technical assistance to enhance warhead safety and security. This group has met seven times since November 1996 and covered topics including safety effects of high explosive aging, accident response, accident environments, and special material containers. Since February 1997, the group on CTBT monitoring and verification has met three times. The group has held workshops on on-site inspection methods, verification technologies, and seismic calibration.

Our review of the Department of Commerce export license data base did not disclose any licenses for exports directly related to nuclear weapons to the five countries of interest from national weapons laboratories in fiscal year 1997.<sup>3</sup>

The CTBT prohibits, among other things, any state party from undertaking a nuclear weapon test explosion or other nuclear explosion but does not prohibit nuclear weapons modernization. Although the CTBT does not prohibit the development of new types of nuclear weapons or the improvement of existing nuclear weapons, the analysis accompanying the President's message transmitting the treaty to the Senate for ratification states that the banning of nuclear explosions will have the effect of constraining such activities. Knowledgeable officials and nuclear weapons scientists we spoke with concurred with this statement, noting that it would be unlikely for a nuclear power to place a new or modernized weapon in its stockpile without nuclear explosive testing. However, a country unconcerned with the reliability or performance of its weapons could choose to field a weapon without nuclear explosive testing.

#### AGENCY COMMENTS AND OUR EVALUATION

The Departments of Energy, State, and Defense provided oral comments. They concurred with our report and we have incorporated their recommended changes where appropriate.

#### SCOPE AND METHODOLOGY

To review U.S. policy and the extent and nature of any nuclear weapon-related activities with Russia, China, India, Israel, and Pakistan, we obtained documents from and interviewed officials of the Departments of Energy, State, and Defense and the national weapons laboratories at Livermore, California; and Los Alamos and Sandia, New Mexico. We obtained and reviewed over 500 contract abstracts from the weapons laboratories that involved work with Russia. These contracts included 289 (100 percent) of the contracts between Russia and the Lawrence Livermore Laboratory and 228 contracts from the Sandia and Los Alamos Laboratories. We reviewed the Department of Commerce export license data base for nuclear weapons-related exports by U.S. nuclear weapons laboratories to Russia, China, India, Israel, and Pakistan. We also reviewed trip reports, reporting cables, program and briefing documents, correspondence, and

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<sup>3</sup>There have been many reports of exports of supercomputers to Russia and other states for use in nuclear weapons programs. We testified on this issue on April 15, 1997. See Export Controls: Sales of High Performance Computers to Russia's Nuclear Weapons Laboratories (GAO/T-NSIAD-97-128). We are currently examining this issue in greater depth and will report on it later in 1998.

intelligence reports from the Departments of Energy, State, and Defense and from the intelligence community. We obtained classified briefings from officials in the DOE's intelligence office and from weapons labs officials.

To describe the executive branch's assessment of the effect of the CTBT on weapons modernization in a CTBT environment, we conducted an extensive literature search and analyzed documents on the subject of weapons modernization and the CTBT. We reviewed the President's message transmitting the CTBT to the Senate for ratification and interviewed officials at, and received briefings from, the Departments of State, Energy, and Defense and the national weapons laboratories at Los Alamos, Sandia, and Livermore.

We conducted our review between August and December 1997 in accordance with generally accepted government auditing standards.

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We plan no further distribution of this letter until 15 days after its issue date. At that time, we will send copies of this letter to the Secretaries of Energy, State, and Defense. We will provide copies to other interested parties upon request.

If you have any questions about the information in this letter, please call me at (202) 512-4128. Major contributors to this letter were Jim Shafer, Muriel Forster, Eugene Beye, and Minette Richardson.

Sincerely yours,



Harold J. Johnson, Associate Director  
International Relations and Trade Issues

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