

NUCLEAR WEAPONS AND FISSILE MATERIAL SECURITY IN RUSSIA

TESTIMONY

OF

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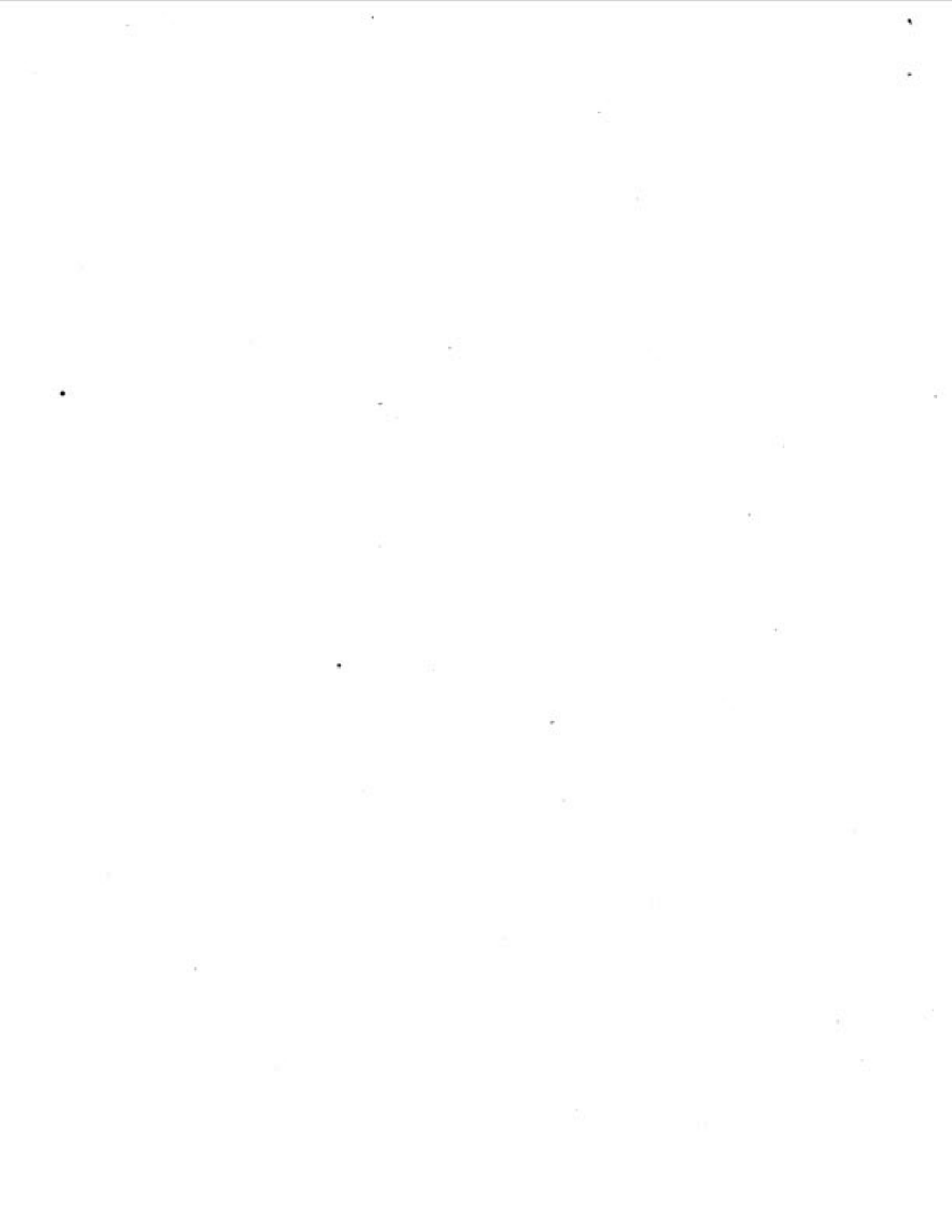
BEFORE THE

COMMITTEE ON FOREIGN AFFAIRS

SUBCOMMITTEE ON INTERNATIONAL SECURITY,

INTERNATIONAL ORGANIZATIONS AND HUMAN RIGHTS

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I. INTRODUCTION.

Mr. Chairman, my name is Thomas B. Cochran. I am a physicist and director of the Nuclear Program of the Natural Resources Defense Council (NRDC). NRDC has been engaged since 1986 in a series of joint demonstration projects, site visits and studies related to the verification of a nuclear test ban, verification of nuclear warhead disposition, and fissile material control. We have worked with various institutions in the Soviet Union and Russia, including the Soviet/Russian Academy of Sciences, Foreign Ministry and Ministry of Atomic Energy. I welcome this opportunity to present NRDC's views on the security of nuclear weapons and fissile material in Russia and the Administration's policies and programs for assisting Russia in improving its security over these materials.

II. SECURITY OF RUSSIAN NUCLEAR WEAPONS AND FISSILE MATERIALS.

Earlier today you heard testimony from the Director of Central Intelligence, James R. Woolsey. There is little we can add to his assessment of the situation in Russia. Nevertheless, I want to reiterate, or highlight, a few reasons why we believe the issue of security of nuclear warheads and weapons-usable fissile materials in Russia should be among the very highest U.S. national security concerns.

There are about 30,000 nuclear warheads in the Former Soviet Union, about 1000 tons of weapon-usable highly-enriched uranium (HEU) and about 160 tons of separated plutonium in weapons or available for weapons, and about 30 tons of separated civil plutonium stored in Russia. Most, if not all, of these inventories are stored under inadequate conditions of physical security and of material control and accounting.

Russian President Boris Yeltsin has said that 40 percent of individual private businessmen and 60 percent of all Russian companies have been corrupted by organized crime. Reports of illegal activities in Russia associated with nuclear materials--offers to sell and successful and unsuccessful attempts to steal nuclear materials--are appearing in the Russian and European press on the order of several per week. Low-enriched uranium fuel has been stolen. An unknown quantity of HEU, said to be on the order of 0.8 kilograms, together with a much larger quantity of beryllium, was stolen from a Russian nuclear facility, perhaps the Institute of Physics and Power Engineering at Obninsk. These materials were recovered last year by Lithuanian authorities in Vilnius. This may be the case involving the theft of several hundred grams of HEU that has been confirmed by the Russian Ministry of Atomic Energy (Minatom). In another case a Russian nuclear scientist from the Luch Production Association, which manufactures nuclear space reactors, was apprehended in October 1992 at the Podolsk train station with 1.5 kilograms of HEU in his suitcase. These are cases we know about because the materials were intercepted. We know for certain that kilogram quantities of weapons-usable materials are being stolen from Russian nuclear institutions, and some of it has

crossed international borders. There may have been other diversions of nuclear weapons-usable materials that were successful and have gone undetected.

Corruption is rife in the Russian Army; approximately 3,000 officers have been disciplined for engaging in questionable business practices, and 46 generals and other officers face trial on criminal charges, according to a recent Department of Energy report.¹ In 1992, some 40,000 charges of corruption were brought against members of the Russian armed forces. In the same year, the Russian defense ministry reported 4,000 cases of theft of conventional weapons from military depots and nearly 6,500 cases in 1993.²

Nuclear warhead storage capacity in Russia is inadequate to store the inventory of nuclear warheads that have been returned to Russia from other former Soviet republics. Many nuclear warheads are now being stored in facilities constructed for the storage of conventional munitions under less than adequate physical security. Some Special Operations ("Spetsnaz") units of the Russian military are trained in how to use atomic demolition munitions (ADMs) and have the necessary knowledge, skills and, in some cases, access to nuclear weapons storage depots. Current and former Spetsnaz soldiers, either for profit or political reasons, could steal ADMs or other easily transportable tactical nuclear weapons. As evidenced by the illegal traffic in conventional munitions, it is rather easy to smuggle weapons stolen from storage depots in Russia across the border into Poland, or some other East-European country, and from there via a third party to anywhere in the Middle East.

The Russian central government is highly unstable. There is only limited rule of law. Political authority is often ignored. President Boris Yeltsin is increasingly currying favor with ultra-nationalist factions. Colonel Vladimir Zhirinovskiy or another hard-line nationalist may be the next president. In order to retain power the next Russian president may seek a politically hostile relationship with the United States in order to strengthen the military and turn attention away from a failing economy. Nuclear arms reductions may be halted or reversed.

This sorry state of affairs is not a criticism of the efforts of the many dedicated officials within the Russian central government and ministries who are trying to cope with this situation. Rather, it is a reflection of the desperate state of the Russian economy and the instability of the Russian government. Nevertheless, these are among the reasons that improving physical security over nuclear warheads and weapons-usable fissile

¹ U.S. Department of Energy, Office of Intelligence and National Security, Office of Threat Assessment, "The Russian Mafia," 15 November 1993.

² "The High Price of Freeing Markets," *The Economist*, 19 February 1994, as cited by Jonathan Dean in "The Final Stage of Arms Control," *Union of Concerned Scientists*, 21 May 1994.

material, and improving fissile material control and accounting in Russia, should be among the very highest U.S. national security priorities.

III. A COMPREHENSIVE GLOBAL SAFEGUARDS REGIME SHOULD BE A PRIORITY U.S. OBJECTIVE WITH RESPECT TO FISSILE MATERIAL CONTROL AND DISPOSITION.

As we have watched the situation in Russia deteriorate, we also have witnessed an effort by North Korea to gain nuclear weapons in violation of its Nonproliferation Treaty (NPT) and International Atomic Energy Agency (IAEA) obligations. Also, as tens of tons of plutonium are removed from retired weapons in the United States and Russia, there is an even larger and growing surplus of plutonium that has been separated from civil nuclear power reactor spent fuel in Europe and Japan. In both the military and civil sectors, neither the countries involved, nor the IAEA, are able to provide adequate material accounting of plutonium inventories at most of the facilities involved in the chemical separation of plutonium and the manufacture of weapons components or civil mixed-oxide (plutonium and uranium oxide) nuclear fuel. At present there is no way to determine through inventory material accounting procedures alone whether weapon quantities of plutonium are being diverted from these military and civil bulk handling facilities.

Given the substantial nuclear proliferation risks today, building toward a comprehensive non-discriminatory safeguards regime should be a high priority in its own right. If such a program were initiated promptly, even on a bilateral basis, we would improve our chances of achieving an effective international safeguards regime that can prevent proliferation by providing the international community with timely warning of any theft or diversion from peaceful use.

A comprehensive nuclear non-proliferation program would:

- (a) seek deep reductions in the deployed and reserve arsenals of all nuclear-weapon states, declared and undeclared;
- (b) achieve a universal, global fissile material control regime with the minimum objective of having all retired weapons and weapon components subject to some type of monitoring, and other fissile materials stored under international safeguards, such as those of the IAEA;
- (c) achieve a global, verified cutoff in the production of fissile materials for weapons purposes with safeguards over fissile material production facilities;
- (d) actively discourage and seek a moratorium on programs for the civil production and use of separated plutonium and HEU, with particular emphasis on

programs in Japan and Russia. The objective here is a complete ban on civil production, stockpiling and use of weapons-usable fissile materials, with verified declarations and reductions of existing stocks;

(e) seek to cap and draw down the world inventories of weapons-usable fissile materials; and

(f) reinforce and strengthen regional and global norms against the proliferation of nuclear weapons.

The Clinton Administration's nonproliferation policy shares some of these objectives, but unfortunately the Administration does not have as one of its objectives building toward a comprehensive non-discriminatory safeguards regime that covers all nuclear weapons and weapon-usable fissile material.

IV. SHORTCOMINGS OF THE ADMINISTRATION'S NUCLEAR WARHEAD FISSILE MATERIAL CONTROL STRATEGY.

The United States does have a coherent set of national security objectives related to the elimination of nuclear weapons and weapon-usable fissile material in Russia. Below I review the progress that this and the previous Administration have made with Russia in each of the following areas:

- * cooperative reduction and elimination of nuclear weapon delivery systems;
- * verified, safe, secure dismantlement of nuclear warheads;
- * providing adequate physical security and material control and accounting of the nuclear warheads and weapons-usable fissile materials; and
- * capping and drawing down the stocks of weapons-usable materials.

A. Cooperative Reduction and Elimination of Nuclear Weapon Delivery Systems.

This is the one area where this and the previous Administration have made important tangible progress. Most recently the Clinton Administration has made real progress in insuring that Ukraine, Kazakhstan, and Belarus will eliminate nuclear weapons from their national territories and join the NPT as non-nuclear nations.

On the downside, there is a widespread view among Russian experts that the START II Treaty unfairly favors the United States. Consequently, the Russian Duma appears unlikely to ratify the START II Treaty. The Administration has not tried to

resolve the Russian concerns over fairness in order to insure ratification of START II. Nor does the Administration appear willing to engage the Russians in negotiations designed to bypass START II and seek deeper reductions in the arsenals that are satisfactory to both sides. The lowest force posture in the Pentagon's Nuclear Posture Review has more than 3,000 operational warheads. The Pentagon may wish to retain an additional few thousand strategic warheads as a reserve. This corresponds to U.S. force levels in the 1960s, at the height of the Cold War. The Pentagon is apparently not interested in deeper cuts in the superpower arsenals at this time.

B. Verified, Safe, Secure Dismantlement of Nuclear Warheads.

In response to the unilateral initiatives by Presidents Bush and Gorbachev to eliminate most tactical nuclear warheads, and as a consequence of START I, the United States and Russia have been dismantling some 1,500 to 2,500 warheads per year and plan to continue dismantling at this rate until 2000 to 2003. It should be noted, however, the U.S. government does not know within thousands how many nuclear warheads the Russians have. We don't know within hundreds how many warheads are dismantled annually. We don't know within tens of tons how much plutonium the Russians have produced, or within hundreds of tons how much HEU the Russians have produced.

The logical first step is to engage the Russians in a reciprocal of exchange of data related to warheads and weapons-usable fissile material. Such a data exchange, if accompanied by agreed measures to substantiate the data, would:

let us know what the Russians have and where it is;

allow us to independently tell whether weapons and weapons-usable fissile material have been diverted; and

give us a better assessment of what improvements are needed with respect to Russian physical security and material accounting programs.

But such a program, if it is to be effective, must be comprehensive; and if it is to be accepted by the Russians, it must be implemented with full reciprocity. A bilateral verified data exchange with Russia could be the first step in developing the global fissile material control regime called for above.

On 12 February 1992 Foreign Minister Andrei Kozyrev formerly proposed a reciprocal data exchange among all nuclear nations on inventories of nuclear weapons and fissile materials, and on nuclear weapons production, storage and elimination facilities. Even to this day, the U.S. Government has failed to respond positively to this initiative or offer a constructive alternative proposal. The principal problem was opposition, primarily from the Pentagon, to reciprocal inspections of U.S. nuclear weapon

facilities by the Russians. The Clinton Administration actively quashed a recent German initiative to add nuclear weapon inventories to a U.N. registry now limited to conventional arms, and even opposed a registry limited to warheads dismantled.

Within the past two weeks we have had something of a breakthrough within the Clinton Administration. The Pentagon, prodded by the DOE, has finally agreed, at least in principle, to propose to the Russians a bilateral data exchange, and some yet to be defined verification measures, covering all warheads, except operational and inactive reserve warheads, and all fissile materials. In other words, the proposed data exchange and verification measures would cover those warheads awaiting dismantlement, those being dismantled, and the fissile materials recovered from dismantled warheads and in civil stocks. This agreement in principle has not yet been developed into a concrete proposal, and a major opportunity was lost last week when it was omitted from the discussions between Vice President Albert Gore and Russian Prime Minister Viktor Chernomyrdin.

In sum, the U.S. Government has not yet advanced a coherent program for verifying the elimination of tens of thousands of former Soviet warheads and tracking the ultimate disposition of hundreds of tons of surplus bomb-grade materials in the Russian nuclear stockpile. The steps that have been taken are in the right direction, but are minimal and slow. Overall the U.S. transparency effort has been moving at a snail's pace and has been a history of missed opportunities.

C. Providing Adequate Physical Security and Material Control and Accounting of the Nuclear Warheads and Weapons-Usable Fissile Materials.

Since the United States is paying for a major share of the storage facility in Russia that will be used to store fissile material removed from weapons, Russia has indicated it would be appropriate for the U.S. to have some yet to be defined level of transparency over the materials stored therein. But this does not address the immediate problem of the adequacy of the physical security and material accounting at Russian facilities used for storage and processing weapons-usable material today and other civil and military facilities that will continue to be used in the future. With respect to what should be the highest priority--safeguarding existing facilities--the Administration's approach is too narrowly circumscribed, is too slow in its implementation, and has been marked by failure.

The Administration has no program whose objective is to improve the physical security of the thousands of Russian nuclear warheads in interim storage prior to their disassembly. As noted earlier, many of these weapons are stored under inadequate physical security at facilities designed for the storage of conventional munitions. We have no program because the Russian Ministry of Defense will not give the U.S. access to Russian nuclear weapons storage sites except on a reciprocal basis, and the Pentagon will

not engage in any program that gives Russia access to U.S. operational nuclear weapons or those retained as an inactive reserve. The U.S. program designed to safeguard Russian warheads is limited to two inconsequential programs for providing Kevlar armored blankets and secure rail cars under the DOD-administered Safe Secure Dismantlement (SSD) program.

The U.S. proposals for improving the safeguards over the fissile material presently in storage in Russia have been unsuccessful to date. Not one single improvement has been made in the physical security or material control and accounting at a fixed facility in Russia as a consequence of funds allocated by Congress under the Soviet Threat Reduction Act of 1991 ("Nunn-Lugar"). The U.S. proposals have not provided sufficient incentive for the Russian Ministry of Atomic Energy (Minatom) to participate, and the Russians have rejected or made meaningless the U.S. proposals to date. For the most part the U.S. proposals provide no means by which the United States can determine independently the adequacy of material control and accounting and physical security at specific Russian sites. Nor do they provide a capability to measure the success of the proposed U.S. initiatives.

D. Capping and drawing down the stocks of weapons-usable materials.

There are two parts of this aspect of the Administration's effort: purchase of Russian HEU, and cutting off the production of weapon-grade plutonium. With respect to the first, the United States stopped production of HEU for weapons in 1964. The United States has agreed to purchase 500 metric tons of HEU from Russia which will be blended down into low-enriched uranium in Russia. By failing to engage the Russians in a data exchange, the U.S. Government does not know what fraction of the total Russian HEU inventory it is purchasing.

The HEU purchase agreement includes a recently negotiated protocol that was meant to detail how the United States would be assured that the HEU was derived from dismantled Russian weapons. The transparency protocol negotiated by the Administration may permit the U.S. to confirm that the uranium was HEU, but it apparently does not permit the U.S. to confirm that the HEU actually is from dismantled weapons. Moreover, Russia continues to produce HEU for "nonweapons purposes," in effect replacing the HEU being sold to the United States.

With respect to providing assistance to enable Russia to stop the production of weapon-grade plutonium at three dual-purpose reactors in Siberia that co-produce electricity and heat for the surrounding regions, the Administration was slow to respond to a Russian request for assistance. The Administration did not get serious until Congress conditioned the release of Nunn-Lugar money for plutonium storage on a serious commitment to halt plutonium production for weapons (via the Markey amendment). The DOE began to take charge. Secretary O'Leary and Minister

Mikhailov signed a protocol that looked good enough superficially to satisfy the Markey amendment; but the agreement represented a step backward, in terms of an early shutdown of the remaining Russian plutonium production reactors. The DOE undermined its own initiative by failing to identify a source of western financing before agreeing to condition the reactor shut-down on the availability of western financing without first identifying a source for such financing.

In late-May, Ambassador Goodby negotiated a follow-on agreement that commits Russia to shut down its three remaining plutonium production reactors by the year 2000 at the latest, and to implement safeguards to ensure that plutonium produced by these reactors would not be used in weapons. This agreement was signed by Vice President Gore and Prime Minister Chernomyrdin last week. While the goal is laudable, this latest agreement does not represent significant progress. Presidents Gorbachev and Yeltsin have already made public commitments to shut down the reactors by the year 2000. The new agreement excludes two other production reactors in Russia that are used for tritium production, and it excludes the chemical separation facility that processes the spent fuel from these reactors. Half of the plutonium produced in Russia today is chemically separated at this facility, that is also used to process spent naval and civil reactor fuel. The Russians refuse to include this chemical separation plant in a bilateral safeguards agreement, primarily because the United States refuses to give the Russians reciprocal oversight over U.S. naval reactor fuel. Moreover, in an effort to get the Russian Ministry of Atomic Energy to consider a broader safeguards agreement at some later date, Ambassador Goodby's team assured the Russians that the U.S. Government would not use a future broader agreement as a means to restrict civil reprocessing in Russia.

V. Summary.

In sum, the Soviet Threat Reduction Act of 1991 ("Nunn-Lugar") had as its fundamental purposes to **destroy nuclear weapons, safeguard weapons in connection with their destruction, and establish verifiable safeguards** against the proliferation of such weapons. Now, some two and one-half years later, we see that implementation of Nunn-Lugar by this and the previous Administration has largely failed to accomplish its central purposes, and it is unlikely to do so unless there are fundamental reforms in the Administration's policies and implementation efforts. The Administration's program can be characterized as attempting too little, moving too slowly, and most regrettably, it may be too late to achieve the desired result.

The Administration's current package of initiatives will not succeed. There is no coherent comprehensive objective. There is no effort to achieve a universal, global safeguards regime that covers all nuclear weapons and weapons-usable fissile material. There is no incentive for the key Russian ministries to participate. The Administration is not making constructive use of U.S. and Russian nuclear weapons laboratories to attack this problem. The negotiation process is too slow to provide timely results.