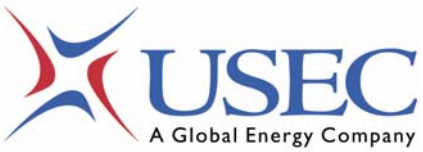

Combating Proliferation of Weapons of Mass Destruction:

The Elimination of Highly Enriched Uranium From Nuclear Warheads Through the Megatons to Megawatts Program

Submitted for the Record by USEC Inc.

Executive Agent for the United States Government

Implementing the Megatons to Megawatts Program

For the Hearing on

Combating Proliferation of Weapons of Mass Destruction With Non-Proliferation Programs

United States Senate

Subcommittee on International Security, Proliferation, and Federal Services

Committee on Governmental Affairs

November 14, 2001

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Summary

Since the end of the Cold War, the United States and Russia have made enormous progress in reducing their nuclear arsenals. Along with this unprecedented reduction of nuclear stockpiles have come heightened concerns about ensuring safeguards for these weapons and weapons-grade fissionable materials. Through the Nunn-Lugar Cooperative Threat Reduction program and other initiatives, the U.S. government has provided Russia with financial assistance and expertise to help improve the effectiveness of its nuclear safeguards activities. The urgency of these safeguards and non-proliferation efforts was obvious. A steady stream of news reports told of terrorist group intentions and efforts to secure nuclear weapons of mass destruction.

Through the early 1990s, U.S. and Russian negotiators sought mutually acceptable ways to increase the effectiveness of Russian safeguards for its nuclear weapons and weapons materials. One such effort culminated in a 1993 government-to-government agreement to implement an historic and innovative program to reduce the potential threat posed by excess Russian nuclear fissile materials. In essence, the agreement put a new twist on the swords into plowshares goal—the two nations would work together to beat Russian nuclear bombs into fuel rods to generate electricity.

The 1993 U.S.-Russian HEU Purchase Agreement stipulated that over a 20-year period 500 metric tons of highly enriched uranium (HEU) extracted from dismantled Russian nuclear warheads would be diluted in Russia into low enriched uranium (LEU) suitable for use as fuel for commercial nuclear electric generating stations. The total value to Russia for conversion of this weapons material would be $12 billion--$8 billion for the enrichment component of the fuel and $4 billion for the natural uranium component.

The parties also agreed that this program would be implemented on a commercial basis. Purchases by the United States of the Russian enrichment component of the low enriched uranium would fund Russian conversion of the warhead material into fuel. The fuel would be sold to electric utility customers operating nuclear power plants. This commercial transaction would be financially self-sustaining—no taxpayer funds would be required.

The United States appointed USEC and Russia appointed Tenex as their executive agents authorized to implement the agreement. In 1994, the executive agents signed a 20-year commercial implementing contract and promptly began working together on the historic program, which has come to be known as Megatons to Megawatts.

In September 2001, the parties celebrated an important milestone in the Megatons to Megawatts program. Fissionable material equivalent to 5,000 warheads has been eliminated by its conversion into power plant fuel. At a time of global concern about weapons of mass destruction, the elimination of that many potential nuclear warheads is indeed good news. The Megatons to Megawatts program is continuing to fulfill its mandate, and the number of weapons eliminated increases steadily.

In brief, this is the current status of the Megatons to Megawatts program as of November 14, 2001:

- The U.S and Russian executive agents, USEC and Tenex, are forty percent ahead of the original 1993 schedule for implementing this 20-year program which, when completed, will have eliminated weapons-grade material equivalent to 20,000 nuclear warheads.

- As of November 14, 2001, 137 metric tons of warhead HEU has been converted into power plant fuel purchased by USEC, eliminating the equivalent of 5,481 nuclear warheads.

- A seven-year working partnership between USEC and Tenex has established a record of trust, cooperation and accommodation by the executive agents.

- USEC inventory and financial resources have ensured continuity during periods of temporary shipment disruptions and accommodation of Russian financial needs.

- Current terms for commercial implementation of the Megatons to Megawatts program expire December 31, 2001. A review of the program has been underway by the Administration, and USEC is in consultation with the Administration about pursuing new financial terms with Russia beginning January 1, 2002. These new, market-based terms will apply through the completion of the contract in 2013.

Given recent events and possible future threats to our national security, it is likely that an increased urgency and emphasis will be placed on nuclear weapons material management and protection. In that context, effective and timely implementation of the Megatons to Megawatts program becomes even more important.

Concern is growing about the risks of proliferation of nuclear weapons and the threat of weapons of mass destruction. The Megatons to Megawatts program is one successful effort to minimize those risks. USEC is committed to the continued success of this program.

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Background Information on the Megatons to Megawatts Program

Actions taken in the early 1990s by the Bush administration and the Congress to reduce potential nuclear threats were truly visionary. That vision has been translated into tangible results:

- 428 ballistic missiles, 87 bombers, 483 long-range nuclear cruise missiles, 225 submarine launched ballistic missiles—all these, as well as additional nuclear weapons, have been dismantled and destroyed.
- 5,600 nuclear warheads that were on strategic delivery systems aimed at the United States have been deactivated. A substantial quantity of fissionable material from those warheads has been sequestered in Russian storage facilities.

From the outset of these efforts, it was clear that this very success would create new challenges of nuclear materials protection, control and accountability (MPC&A). The removal of warhead materials on such a scale created substantial problems of how to safeguard the highly enriched uranium (HEU) and plutonium taken from such warheads. Given the magnitude of such activities by Russia, the U.S. government has been actively assisting and helping to fund MPC&A programs to enhance security of these nuclear weapons materials. A particularly attractive proposal focused on what to do with the large stocks of Russian HEU resulting from weapons system destruction.

In 1992, the Bush Administration structured an agreement with Russia to eliminate 500 metric tons of HEU taken from dismantled nuclear warheads over a 20-year period by converting the HEU to LEU that would be purchased by the U.S. for use in commercial nuclear power plants. The result was the 1993 U.S.-Russian HEU Purchase Agreement. This agreement specified the implementation goal of being financially self-sustaining using commercial business terms. In other words, this was to be a business transaction that would pay for itself and not require taxpayer funding. This commercial undertaking was to pay Russia $8 billion for the enrichment of the fuel on delivery and ultimately return $4 billion in natural uranium component to them.

In 1994, a commercial implementing contract was signed by the United States Enrichment Corporation (USEC), acting as the executive agent for the U.S. government, and Techsnabexport (Tenex), executive agent for the Russian Federation. The national security objectives of the Megatons to Megawatts program are clear—eliminate Russian nuclear warhead material equivalent to 20,000 nuclear warheads, assist in their nuclear housekeeping functions and do so without taxpayer funds. The business objectives are equally clear—purchase fuel derived from warheads from Russia and sell that fuel to customers. This is a symbiotic relationship—one cannot exist without the other. Profits from the sales of this warhead-derived fuel make it possible to achieve the national security goals without taxpayer funding. The ongoing success of the Megatons to Megawatts program demonstrates that national security objectives can be consistent with commercial business objectives.

As you would expect of such a unique, immense undertaking, there have been occasional challenges, differences of opinion, and temporary obstacles to overcome. Yet, all of these matters were addressed and resolved through flexibility, ingenuity and accommodation by both partners who were, and remain, steadfastly committed to the long-term success of this landmark undertaking. Several examples exemplify this point:

- Both parties worked together in 1994 to resolve technical problems to assure that the weapons-derived LEU could meet commercial nuclear fuel specifications and thereby be sold at a fair market value.

- Over the past seven years, USEC has made advanced and early payments to its Russian partner numerous times totaling more than $500 million in order to facilitate dilution and processing or to meet Russian budgetary requirements.

- Despite four separate interruptions in deliveries, USEC used its production and inventory resources to ensure customer sales were met and both parties cooperated on the resumption of deliveries to continue the implementation of this important national security program.

USEC and Tenex have established a strong, productive and mutually beneficial partnership. And that partnership has achieved an impressive track record consistent with the objectives and mutual interests of their respective governments.

Megatons to Megawatts Results to Date

The results achieved by this seven-year partnership between USEC and Tenex confirms that the deal is working very effectively. As of today:

1. Approximately 137 metric tons of Russian warhead HEU have been converted in Russia into LEU fuel and purchased by USEC for use by its electric utility customers.

2. The 137 metric tons of HEU eliminated is the estimated equivalent of 5,481 nuclear warheads—enough nuclear explosives to destroy every city in the world. The peaceful utilization of 137 metric tons of HEU to LEU fuel will produce electricity to power a city the size of Boston for nearly 200 years or meet the entire electric power demand of America for half a year.

3. The executive agents are 40% ahead of the original 1993, 20-year schedule for conversion of a total of 500 metric tons of HEU into fuel—the equivalent of an estimated 20,000 nuclear warheads.

4. USEC has paid Russia approximately $2.3 billion for purchases of this weapons-derived fuel to date. No taxpayer funds have been spent on these purchases.

5. As the global leader in uranium enrichment, USEC has integrated this substantial amount of LEU into its business. HEU-derived enrichment purchased from Russia now constitutes approximately half of USEC's product mix.

The 1996 contract amendment that provides for five-year fixed terms on price and quantities will expire at the end of next month. USEC and Tenex negotiated proposed new contract amendment terms in May 2000 that were intended to go into effect January 1, 2002. The new terms adopt market-based pricing for the remainder of the contract as well as other terms that are mutually acceptable to the parties.

Approval of these terms by the Administration is still pending. Our Russian partner has also informed us that further delay on terms that would allow us to continue deliveries in 2002 and beyond will decrease the amount of nuclear weapons HEU conversion. Accordingly, we believe there is an urgent need for the Administration to approve the proposed new terms so the executive agents can continue their work of converting weapons material into fuel—on time and at levels that will optimize market stability and product value.

USEC has negotiated a revised pricing arrangement that is fair, equitable and ready to be executed—and when executed, it will ensure the continued success of the HEU contract through the permanent disposal of another 15,000 nuclear warheads by 2013.

Considerable attention has been given to the potential for increasing the conversion of nuclear warhead HEU and plutonium into power plant fuel. While the conversion of nuclear warhead materials into fuel for power plants has provided a unique opportunity to support non-proliferation efforts, there are practical limitations as to how much of this weapons-derived material can be absorbed in the commercial market place.

For example, without an increase in the number of nuclear power plants, there is a limit to the amount of weapons-derived fuel that can be introduced into the marketplace without having an effect upon global production of nuclear fuel. If and when the renewed interest in nuclear power results in widespread resumption of nuclear power plant construction and operations, the benefits would be considerable. In addition to environmental benefits and reduction of global climate change, expansion of nuclear power plant operations would offer additional opportunities for consumption of Megatons to Megawatts fuel.

There is no shortage of creativity among those in the non-proliferation community. A number of innovative concepts have been proposed to advance the objectives of reducing the potential risks of diversion or theft of weapons-grade fissionable materials. These range from dilution and storage of weapons-grade fissionable material in Russia to the conversion of weapons-grade material to fuel and the creation of a strategic enrichment reserve in the United States. These and other concepts add to the choices of policy makers, and all will require substantial government funding to implement.

In conclusion, during the past seven years, USEC and its Russian counterpart, Tenex, have forged a strong, cooperative partnership with mutual interest in making the HEU deal work. In terms of actual performance, USEC has met the objectives of the U.S.-Russian HEU Purchase Agreement ahead of schedule and at no cost to the taxpayer. Finally, USEC has submitted a pricing amendment for approval by the U.S. Government that will ensure this success continues over the next 13 years.

Given recent events and possible future threats to our national security, it is likely that an increased urgency and emphasis will be placed on nuclear weapons material management and protection. Effective and timely implementation of the Megatons to Megawatts program becomes even more important in this context.

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