



**Implementation of the U.S.-Russian HEU Purchase Program
(Megatons to Megawatts)**

By USEC Inc.

Executive Agent for the United States Government

Submitted for the Record by

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Executive Summary

This February marked the 10th anniversary of the monumental United States-Russian Federation government-to-government agreement to eliminate 500 metric tons of Russian nuclear weapons-derived highly enriched uranium (HEU), equivalent to 20,000 warheads. To implement the 1993 agreement, in 1994, the United States Enrichment Corporation (USEC), U.S. executive agent, and Techsnabexport (Tenex), Russia's executive agent, signed a 20-year, \$12 billion contract¹ to carry out this nonproliferation initiative on commercial terms that require no federal funding. The contract provides for Russia to downblend warhead HEU into low-enriched uranium (LEU), which USEC purchases to fuel its customers' nuclear power plants. Formally known as the U.S.-Russian HEU Purchase Agreement, this program has come to be better known as Megatons to Megawatts. To date, the successful implementation of this program has resulted in the elimination of weapons material capable of making 7,000 Russian nuclear warheads.

USEC, a global energy company, is the world's leading supplier of enriched uranium fuel for commercial nuclear power plants. Headquartered in Bethesda, Maryland, the Company operates a production facility in Paducah, Kentucky and employs approximately 2,800 people. One half of USEC's supply comes from the Megatons to Megawatts LEU purchased from Russia.

The U.S. Department of State is the lead federal agency overseeing the Megatons to Megawatts program and has been one of its chief proponents. Upon reviewing our 2002 progress report, John Bolton, Under Secretary of State for Arms Control and International Security, wrote to USEC commending the Company's contribution to the "substantial progress that has been made in implementing the HEU agreement."

Since deliveries of the warhead-derived nuclear fuel began in June 1995, the program has achieved steady results that contribute to reducing the threat of "loose nukes"—inadequately

¹ USEC is responsible for purchasing approximately \$8 billion for the enrichment component. The \$4 billion uranium component is returned to Russia for disposition.

safeguarded bomb-grade nuclear materials in Russia and elsewhere that could get into the hands of terrorists or rogue governments. Some key facts:

- 1. Approximately 176 metric tons of Russian warhead HEU have been converted to LEU fuel and purchased by USEC for use by its electric utility customers.**
- 2. The 176 metric tons of HEU is the equivalent of about 7,000² nuclear weapons**—enough nuclear explosives to destroy every large city in the world. The conversion of this material to fuel eliminates its potential use as a nuclear explosive. When the program is completed in 2013, 500 metric tons of HEU will have been downblended, equivalent to eliminating material for 20,000 nuclear warheads.
- 3. USEC and Tenex have established a strong, flexible, responsive and cooperative working relationship.** That relationship was further strengthened when the parties agreed on new market-based pricing terms that ensure mutually fair pricing for this important fuel supply over the agreement's remaining 11 years. The U.S. and Russian governments approved the new terms in June 2002.
- 4. No taxpayer dollars are required for this program.** USEC pays Russia approximately \$500 million a year for these purchases—a total of about \$3 billion to date. These funds secure a steady revenue stream that helps Russia pay for nuclear safety, cleanup and weapons material security programs and helps keep many of their nuclear workers employed.

These achievements demonstrate that the Megatons to Megawatts program is fulfilling the vision and objectives formulated in the early 1990s by both governments. Nuclear nonproliferation and national energy security objectives are being met and sustained by these commercial transactions. USEC and Tenex have been in virtually constant communication to facilitate the smooth implementation of the agreement. As executive agent for the U.S. government, USEC is subject to an ongoing consultative process that includes direction from the

² The exact amount of HEU required for a weapon is classified information and only estimates are used for illustration purposes.

State Department, U.S. Department of Energy, National Security Council and other parts of the administration before acting on contract matters.

Over the past nine years, several issues have emerged and been addressed. While each has been resolved satisfactorily, one continues to read reports that focus on the occasional bumps in the road rather than the milestones successfully achieved. There is still considerable distance to go, but we are confident the program's successful implementation will continue.

Russia's Ministry of Atomic Energy recently issued a statement noting the 10-year anniversary of the 1993 agreement. They stated the program has "no parallels in the sphere of global disarmament." And last October at an event announcing the elimination of the 6,000th warhead, Sen. Richard Lugar said USEC "has taken great leadership responsibility on what is I believe an important national security issue."

As concerns about proliferation of nuclear weapons material grow, new issues and ideas are emerging. Proposals have been made that the United States and its partners secure and account for all HEU and plutonium in the world. In the past year, numerous groups have proposed increasing—some suggest doubling—the yearly amount of Russian HEU downblended into fuel. Also, the U.S. Department of Energy's 2004 budget includes funding for the development of a strategic LEU stockpile to serve as a backstop against a potential supply interruption. We believe it is not necessary that a national reserve support the HEU agreement, which USEC has always backed up with its own inventory and production. In the few instances where there have been Russian supply interruptions, USEC fulfilled all customer orders from its inventory. Further, as acknowledged in some proposals, it is vital that at any excess stocks be kept off the commercial market in order to ensure that the market economics continue to sustain Russia's conversion of their warheads into LEU.

USEC has demonstrated its commitment to success in its role as the sole U.S. executive agent. USEC's global customer base, domestic enrichment operations, unique market experience, financial resources and continuing commitment have all contributed to the strong foundation that is essential to support the continuing implementation of this unique and challenging program.

New Pricing Terms

In June 2002, USEC and Tenex received approval from the U.S. and Russian governments on new flexible, market-based pricing terms for the remaining 11 years of the Megatons to Megawatts contract. The new terms, which went into effect in January 2003, ensure the contract's long-term stability.

Previously, purchases under the Megatons to Megawatts contract were made on a fixed-price basis. But the late 1990s saw an unexpected, dramatic decline in the market price of LEU, due in large measure to excess enrichment capacity and aggressive pricing by USEC's competitors. The commercial viability of the contract was being undermined. USEC's purchase costs for Russian material rose above market prices. Even so, USEC was determined to sustain the program going forward. It absorbed the financial losses and addressed the issue with the U.S. government and its Russian partner. The parties agreed to adopt market-based pricing in 2000, but government reviews were not completed until 2002.

The excellent working relationship of USEC and Russia's executive agent, Tenex, encouraged candid discussions and produced a mutually beneficial solution. Terms of the contract amendment include:

- A commitment through 2013 for annual purchase of at least 5.5 million SWU³, which is derived from approximately 30 metric tons of HEU.
- A market-based pricing formula that includes a discount from an index of international and U.S. price points, including both long-term and spot prices. A multi-year retrospective of this index will be used to smooth out the disruptive effect of any short-term market price swings.
- The amendment contemplates that Russia will receive at least \$7.5 billion over the 20-year term of the contract.

³ SWU, or separative work unit, is a unit of measurement for uranium enrichment; 5.5 million SWU is equivalent to approximately one-half of annual U.S. commercial nuclear fuel demand.

Ongoing Cooperation

Over the course of the contract, as both a government corporation and, after July 1998, as an investor-owned company, USEC has accommodated Russian requests for special considerations and flexibility. In fact, there have been 16 amendments to the contract reflecting the parties' ability to make such accommodations. On several other occasions, USEC made advance payments to Russia—totaling hundreds of millions of dollars—to help Russia meet budget expectations or fund further HEU downblending.

New Proposals

HEU Downblending

In recent months, several studies by non-governmental organizations have proposed expanding and extending the existing HEU Agreement. This has included calls for accelerating HEU blend-down from 30 to 60 metric tons annually and/or extending the agreement by 10 years to cover an additional 300 tons of material.

It is important to note that any such changes in the basic terms of the 1993 HEU Agreement would require a renegotiation by both governments. Russia has indicated that 30 metric tons of HEU a year consumes all of their capacity for blending down HEU material to commercial grade LEU and that more such material on the market could affect their sales of commercial enriched uranium and/or depress market prices they receive.

The HEU agreement requires that Russian LEU be introduced “in a manner so as to minimize disruptions in the market.” Given generally flat demand for the foreseeable future, a substantial increase in Russian enriched uranium in the market would clearly depress prices, hurt domestic production and potentially undermine the HEU agreement's continuity and successful implementation.

LEU Stockpile

The U.S. Department of Energy's fiscal year 2004 budget includes \$25 million for purchasing an additional 15 metric tons of downblended Russian HEU that would be used as a strategic stockpile in the event of a shortage of supply.

As stated previously, such an LEU stockpile is unnecessary to support or backstop the HEU agreement. USEC already maintains an inventory and its own production to ensure all customer orders are met on time. During the few occasions that Russia has interrupted deliveries under the contract, USEC fulfilled all customer orders from those sources.

As acknowledged by DOE, any government stockpile would have to be kept off the commercial market in order to ensure sustainable market economics. An oversupply still exists in the commercial market. Any additional introduction of material would depress prices, undermine the strength of the HEU agreement and threaten the economics of U.S. production.

Myths and Facts

Every year since the inception of the Megatons to Megawatts program, a few voices have continued to predict its failure and demise due to its implementation by a private sector company. While each and every year their predictions have been proven to be false, this repetition has created a widespread mythology that has dimmed the accomplishments of the two governments and participants in this remarkable program. We would like to clarify and dispel those myths.

Myth: USEC forced Russia to accept the new financial terms in 2002, which translates to millions less each year for Russia. This has provoked significant resentment among some Russian nuclear officials.

Fact: Not true and misleading. It is specious to characterize one or two dissenting voices in Russia as official government policy. The Russian government and Tenex have expressed their satisfaction with the new contract terms and the 10-year performance record of the Megatons to Megawatts agreement. Nearly three years ago, USEC and Tenex understood the need for long-term stability of the HEU Agreement, and reached mutual agreement on a market-based pricing mechanism to achieve this goal. Together, the partners secured approval of these terms by the U.S. and Russian governments. Market-based pricing is fair to both parties. The pricing arrangement takes into consideration USEC's expenditures for cylinders, testing, shipment, working capital carrying costs and a reasonable profit margin. The terms guarantee that by the end of the agreement, Russia will receive a minimum of \$7.5 billion for the enrichment component of the LEU purchases—the exact value expressed in the 1993 agreement.

Myth: Appointing multiple U.S. executive agents, who could compete with each other to buy the Russian material, would guarantee Russia a fair market price.

Fact: Quite the opposite would occur. There is already strong competition in the global market. The above recommendation is a recipe for undermining the successful implementation of the HEU Agreement. Multiple executive agents would drive the prices for enrichment DOWN, and Russia would receive LESS for its material. USEC is the only U.S. company that produces enriched uranium and has an inventory and production to guarantee deliveries in case of interruption in supply. Other executive agents could only destabilize the market, not protect it.

Myth: Commercial interests prevent a private sector company from carrying out a national security function.

Fact: False. This allegation is ridiculous given USEC's nine-year successful track record. The Megatons to Megawatts program is on track and in fact ahead of the original schedule. USEC has expended great effort to implement the program and is fully committed to purchase all the LEU to be delivered under the HEU agreement through 2013. It is precisely because USEC is a commercial entity, with substantial market presence, inventory, production facilities and infrastructure, that the program has been successful. Finally—and this is important—it was the

intention of the U.S. and Russian governments that the Megatons to Megawatts program be carried out commercially, at no cost to taxpayers. That means that the governments decided not to fund the blend-down or the purchases. Instead, these activities had to be paid for and sustained by commercial business terms. Bottom line, the financial and national security goals of the U.S. and Russian governments have been achieved and are on track to continue successful implementation of the program through its completion in 2013.

Conclusion

As executive agent for the U.S. government, USEC has successfully balanced national security policy objectives with the objectives of its own commercial interests. With its strong customer base, financial strength, inventory and domestic production capability in Kentucky, USEC remains uniquely suited and committed to its role as executive agent for the Megatons to Megawatts program.

For the past nine years, USEC has demonstrated a strong commitment to the Megatons to Megawatts program. The program has served as a unique example of the intersection of global security, commerce and the growing U.S. partnership with Russia. The success of this program also reflects the enormous dedication, commitment and accomplishments of numerous people in the U.S. and Russian governments, including most notably the U.S. Department of State, U.S. Department of Energy, National Security Council, the Russian Ministry of Atomic Energy and Tenex. The program has flourished on the strength of these relationships.

In addition to meeting the objectives of both the United States and Russia, this agreement has significantly reduced the threat of nuclear terrorism and demonstrated the effectiveness of the commercial implementation of this national security program.

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