



**Sam Nunn on NTI's Accelerated Blend Down Project:
"Reducing global stockpiles of HEU will reduce the risk of nuclear terrorism"**

I want to draw your attention to the results of a project that could provide the basis for dramatically accelerating the elimination of excess stockpiles of highly enriched uranium (HEU) in Russia.

HEU is the easiest material for terrorists to make nuclear weapons from, because unlike plutonium, HEU can be used in a simple "gun-type" bomb. HEU does not emit much radiation, making it relatively easy to handle and easily shielded from radiation detectors. During the Cold War, Russia produced hundreds of metric tons of this material.

Under the 1992 U.S.-Russian HEU purchase agreement, Russia identified 500 metric tons of excess HEU. To date, 250 metric tons of HEU from dismantled Soviet nuclear weapons have been blended down to low enriched uranium and used to meet civilian energy needs. The material is then shipped to the United States, where it supplies 50 percent of the United States' nuclear fuel needs and approximately 10 percent of the nation's total power supply. That means that approximately one out of every 10 light bulbs in America is lit by energy supplied from former Soviet nuclear weapons.

This new conceptual study, carried out jointly by Russian, U.S. and other experts and funded and directed by the Nuclear Threat Initiative, is the first detailed analysis of the technical, cost, and schedule issues associated with various options to go beyond the current annual blend down rate of 30 metric tons of HEU, if governments were to adopt such a policy.

I hope you will take a moment to review the attached fact sheet on this project. Reducing global stockpiles of HEU will reduce the risk of nuclear terrorism. This study provides a roadmap for negotiations to accelerate this work.

Laura Holgate, NTI's Vice President of Russia/New Independent States Program, directed this project for NTI and is available to discuss the project in greater detail. If you would like to speak with Laura or have other questions, please contact Cathy Gwin at (202) 454-7706 or gwin@nti.org.

Sincerely,

Sam Nunn
Co-Chairman, Nuclear Threat Initiative

FACT SHEET

JOINT PROJECT TO EVALUATE THE ACCELERATION OF THE BLEND DOWN OF EXCESS RUSSIAN HIGHLY ENRICHED URANIUM

The Accelerated Blend Down Project, funded and directed by the Nuclear Threat Initiative, brought together Russian, U.S. and other specialists to examine options for accelerating the annual rate of blend down of nuclear weapons-grade Russian highly enriched uranium (HEU) from the current 30 metric tons per year to up to 60 metric tons per year.

This analysis offers an essential common basis for initiating negotiations between the U.S. and Russian governments, as well as other interested parties, to accelerate the blend down of excess HEU.

The excess HEU would be blended down to low enriched uranium (LEU) for use in nuclear power plants or other civilian applications. Significant stocks of HEU remain in storage in Russia where they raise concerns about security risks and costs of long-term storage.

Project participants included representatives from all Russian sites involved in the current HEU purchase agreement, plus relevant design bureaus and research institutes, as well as experts from private industry, academia, and a U.S. national laboratory. The project does not represent or reflect the official views of the U.S. or Russian governments.

The project examined 12 options, including increasing HEU processing by 5, 10, 20, or 30 metric tons of highly enriched uranium per year above the current level of 30 metric tons per year; 4%, 12% and 19% LEU products; and immediate transfer of LEU products to potential customers, as well as deferred transfer after temporary storage.

For each option, the project's participants estimated what equipment and facilities would be required to achieve the additional blend down, what the costs and schedule of constructing those facilities would be, and what the annual direct costs would be. The participants also analyzed trends in the uranium markets, including current supply and demand, as well as ways to limit the impact of additional LEU on the markets.

The rough order-of-magnitude costs for all 12 options range from \$157 million to \$1.6 billion in equipment and facility upgrades (over a range of 2.3 to 10 years) and \$1.5 million to \$44.6 million in annual direct costs. These estimates indicate that by far the largest cost and schedule driver is the production of 1.5% enriched uranium blendstock, which requires significant additional enrichment capacity beyond that currently installed in Russia. Therefore, options involving intermediate LEU products (which require less blendstock) have lower costs and faster timeframes.

Russia and the United States have cooperated since 1992 under the U.S.-Russian HEU Purchase Agreement to blend down 250 metric tons of HEU from dismantled Russian nuclear weapons. Under this agreement, 30 metric tons of HEU are blended down each year and shipped to the United States, where they supply 50 percent of U.S. nuclear fuel requirements. The HEU Purchase Agreement envisages the processing of 500 metric tons of Russian HEU into low enriched uranium (LEU) by 2013.