Missing in the public debate over the planned use of mixed oxide fuel in nuclear power plants is the success of the program to convert dangerous highly enriched uranium from Russia’s nuclear arsenal into fuel for U.S. power plants.

For the past decade, the United States and Russia have been working together to beat their powerful 20th-century nuclear swords into modern electricity plowshares — the electricity that powers our everyday lives.

This little-reported partnership has achieved a remarkable success. About 10 percent of all the electricity Americans use at home and at work comes from nuclear materials that had formerly been the explosive core of the Soviet Union’s nuclear weapons arsenal. More than 8,000 nuclear warheads have been dismantled by the Russian government, and the highly enriched uranium has been transformed into low-enriched material that serves as a fuel in nuclear power plants.

This low-enriched uranium is generating electricity at about 50 nuclear plants across the United States, where reactors are tapping the energy and disabling nuclear materials from Soviet missiles that were once targeted at U.S. cities. In turn, the Russians are getting hard currency — about $3 billion, under a long-term contract the United States and Russia signed in 1993.

This program of turning Soviet weapons into electricity has been a historic demilitarization success. But there are still mountains of nuclear materials rattling around in insecure countries, particularly Russia — not only uranium, but also tons of plutonium.

Russia reportedly has about 50 tons of weapons-ready plutonium from the old Soviet weapons program. The threat is obvious: Through the black market, some of the plutonium could fall into the hands of terrorists or outlaw governments.

Just as highly enriched uranium from scrapped warheads is being diluted to make reactor fuel for nuclear plants, essentially the same can be done with plutonium. A demonstration project is about to begin. The United States has arranged for the first shipment of plutonium from Russia, due to arrive any day at the Charleston Naval Weapons Station. The plutonium will be blended with uranium to produce what’s known as mixed oxide fuel, or MOX, for use at nuclear power plants. An expert panel of the National Academy of Sciences has said the production and use of MOX fuel is safe.

No surprise, anti-nuclear activists oppose the use of MOX fuel, claiming that a ship carrying the plutonium might be vulnerable to terrorist attack. But U.S. officials have made it clear that safeguards are in place to meet such threats. On the other hand, if we allow the plutonium to remain in Russia at poorly guarded weapons facilities, the threat is much greater. We would leave it there at our own peril.

It’s difficult to overstate the merits of this agreement. Without a program to eliminate weapons-grade uranium and now plutonium, the nuclear warheads would still exist, capable of being used in a nuclear weapon against the United States or any other country. Instead of risking that these materials might fall into the hands of the world’s most dangerous people, nuclear weapons materials are being disabled — and all destructive capability totally eliminated — in the process of providing our country with electric power.

The fact is, nearly every nuclear power plant in the United States has been fueled at some point over the past 10 years with uranium from dismantled Soviet warheads. With energy security such an important consideration, it’s worth noting that the energy we have received from that uranium fuel is equivalent to the energy in 4,000 supertankers of oil.

By showing that nuclear swords can be converted into electricity plowshares, we are pursuing the goal of generating electricity for U.S. homes and businesses while preventing nuclear weapons materials from falling into the hands of terrorists. This is a challenge and an opportunity that we cannot dismiss.

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