



Upgrading perimeter security, such as erecting fences, is a key component of Canada's efforts to improve security of Russian nuclear materials  
Photo Credit: Canadian Nuclear Safety Commission

### Priority Area 3: Nuclear and Radiological Security

*There are an estimated 600 tonnes of potentially vulnerable nuclear material located outside nuclear weapons in facilities throughout Russia and the FSU.*

At the end of the Cold War, Russia inherited vast stockpiles of nuclear material for nuclear weapons, much of which has since been declared surplus to defence requirements. Russia lacks sufficient financial resources to adequately secure and protect these materials. As a consequence, there is an urgent need to support the accounting, securing and conversion of these materials into non-weapon-useable forms (dispositioning) in the interest of international security. Another area of concern relates to highly radioactive materials that are not related to nuclear weapons.

These materials pose a serious threat due to their potential malicious use in a radiological dispersal device or "dirty bomb." A "dirty bomb" could be used to damage human health and the environment by, for example, dispersing radioactivity in a populated area. Canada is addressing these threats through a number of multilateral and bilateral arrangements.

#### Project: Replacing the Zheleznogorsk Nuclear Reactor

The nuclear power plant at Zheleznogorsk, in eastern Siberia, has one of the three remaining weapons-grade plutonium-producing nuclear reactors in Russia. The reactor produces enough plutonium for about one nuclear bomb per week. Built in the 1960s, it presents serious safety concerns because of its antiquated design and aging technology. The local population is anxious to see these threats addressed, but they also depend on the facility as the region's only source of heat and electricity.

The Zheleznogorsk project is part of the U.S. Department of Energy's broader Elimination of Weapons-Grade Plutonium Production Program in Russia, which seeks to phase out the production of weapons-grade plutonium and complement the Plutonium Disposition Program (see below). The



Canada's contribution to the US-led construction of an alternative energy source will enable Russia to shut down its last weapons-grade plutonium producing reactor, located in Zheleznogorsk

Photo Credit: US Department of Energy (DOE)