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The US Second Line of Defense: Preventing Nuclear Smuggling Across Russia's Borders

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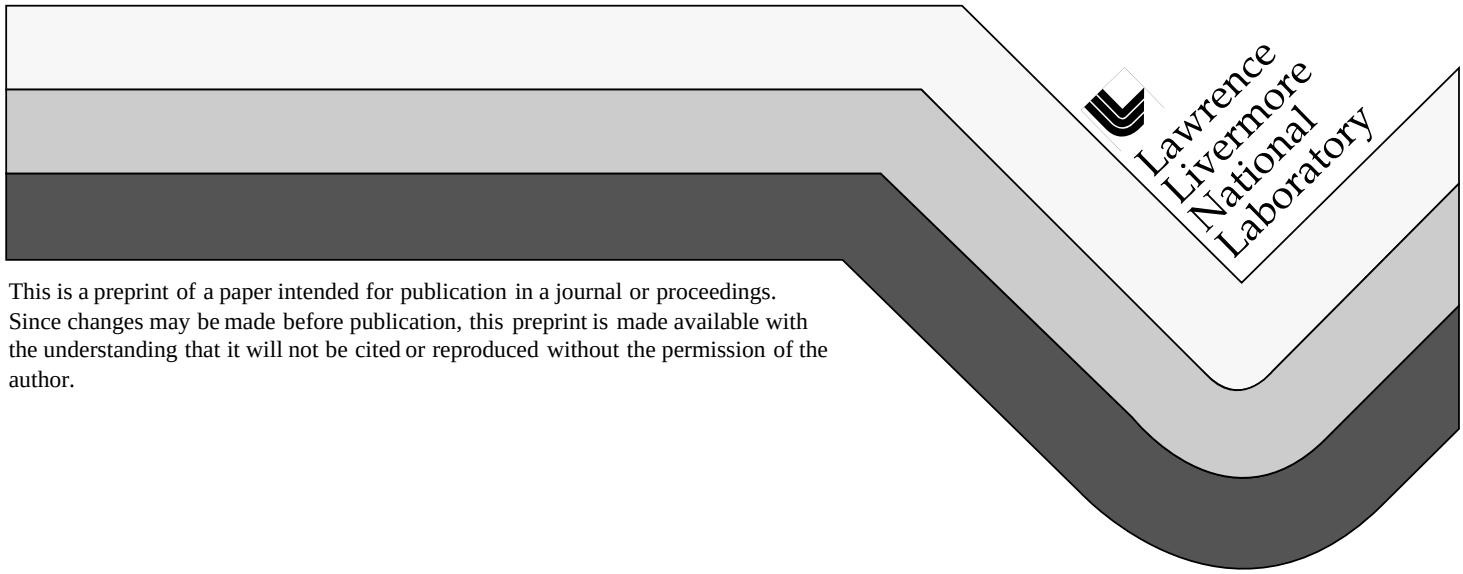

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The US Second Line of Defense: Preventing Nuclear Smuggling Across Russia's Borders

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Preventing the theft of weapons-usable highly enriched uranium and plutonium in Russia is one of the central security concerns facing the US today. The dissolution of the highly centralized USSR and the resulting societal crisis has endangered Russia's ability to protect its more than 200 metric tons of plutonium and 1000 tons of highly enriched uranium (roughly 8 kg Pu or 25 kg HEU is sufficient to make a bomb). Producing this fissile material is the most difficult and expensive part of nuclear weapons production and the US must make every effort to ensure that fissile material (and nuclear-related technologies) does not reach the hands of terrorist groups, rogue states or other potential proliferators.

In response to this concern, the US has undertaken a number of initiatives in partnership with Russia and other FSU states to prevent the theft of fissile material. The Material Protection, Control and Accounting Program (MPC&A) was begun in 1993 to prevent the theft of nuclear materials from Russian civilian complexes, that is facilities not under control of the Ministry of Defense, which is largely responsible for possession and oversight of nuclear weapons. The MPC&A program is considered the "first line of defense" against theft of nuclear material because its goal is to prevent theft of material at production and storage facilities.

This year the Department of Energy (DOE) initiated a new program called the Second Line of Defense (SLD), the goal of which is to assist Russia in preventing the smuggling of nuclear material and weapons at its borders, either by land, sea or air. The SLD program represents an important phase in the overall effort to ensure the security of nuclear material and weapons in Russia. However, as the US engages Russian customs officials in this important project, Americans should keep in mind that providing equipment--even indigenous equipment--is insufficient by itself; material aid must be accompanied by rigorous inspection and accounting procedures. In addition, the equipment must be assessed according to international standards to ensure a high degree of confidence in its nuclear detection capability.

Before elaborating these policy prescriptions, I will examine the changes Russia has undergone since 1991 as well as the continuities with the past, since both have important ramifications for the Second Line of Defense's attempt to prevent smuggling of nuclear material and weapons across Russia's borders.

Impact of Soviet Dissolution

The disintegration of the Soviet Union has dramatically increased the probability of nuclear smuggling occurring in Russia. Russia is in the midst of a systemic crisis: the economy is in shambles, people have not been paid wages for months, and the government has sought (and will receive) emergency food supplies from the US to help stave off shortages this winter. Private garden plots are so vital to Russia's food supply that even though they occupy 2.6 percent of cultivated land, they produce half of the nation's food. Russia's GNP is not much higher than the Netherlands, a nation with one-tenth the population. The overall population is in decline; infant mortality is on the rise and the life expectancy for the average male has dropped to 58 years. Malnutrition is widespread and the incidence of infectious and parasitic diseases is increasing. In August the government devalued the ruble and defaulted on much of its debt, precipitating the dissolution of the government for the second time in six months. The state is currently run either according to the whim of its President, or is not run because of his frequent maladies. The concentration of power in one individual hinders the emergence of a democratic and stable Russia, which requires the development of modern governing and policymaking institutions. Economic, political and social instability has led to a spiritual crisis in Russia. There is a vacuum of legitimacy: Russia is no longer a superpower and many citizens do not even conceive of it as a great power. The once-vaunted military is no longer a glorified institution; and communist ideology has been discredited as evidenced by Yeltsin's reference to the Soviet Union as a criminal state. In this climate, it would not be surprising for someone to attempt to steal and sell nuclear material or weapons for profit.

Despite the enormous changes that Russia has experienced with the dissolution of the Soviet Union, important cultural aspects of the old system remain, hampering Russia's ability to protect its nuclear material. The Soviet Union (and Czarist Russia for that matter) never had an independent legal process. Laws were arbitrary and typically used by the state against its citizens rather than on their behalf. This engendered disrespect for the law and a byzantine system of bookkeeping and accountability which in

turn undermined the creation of an effective system of accounting for nuclear material and weapons. Numerous other aspects of the system undermined the development of a safeguards culture. The authoritarian system that relied on terror and a network of informants to ensure the behavior of its citizenry had little need for a rigorous technological approach in protecting Russia's many nuclear installations. For instance, the Moscow-based Kurchatov Institute contains tons of fissile materials and was surrounded by a weak fence until the US MPC&A program was initiated. Finally, the Soviet economic system based on "fulfilling the plan" undermined accountability. Any smart factory manager understood the importance of sequestering goods produced beyond the planned or required amount. In this way, future shortfalls could be overcome. Unfortunately, this led to a bookkeeping system that failed to account for the exact amount of fissile material. (Keeping track of weapons, on the other hand, was a high priority, and was apparently more accurate.)

Strengthening Russia's Borders is a Complex Task

The Second Line of Defense program works directly with Russian State Customs (Gosudarstvennyi tamozhennyi komitet) to prevent smuggling of nuclear material and weapons. The task is daunting: Russia is the world's largest country (almost twice the size of the US) and borders 14 other countries. Iran and North Korea, two states that seek nuclear weapons capability and threaten the security of the US, can be reached directly without crossing another country. Reaching Iraq and Afghanistan (the latter home to the Bin Laden-run terrorist group) requires traversing through Central Asian states with weak or nonexistent border controls. The vast territory of the Russian Federation makes it all the more difficult to ensure that nuclear detection equipment is properly placed, installed and monitored.

In addition to the challenge posed by Russia's unique geography, Russian Customs is a relatively new agency and must cope with numerous challenges any new organization faces. Customs revenues provide about 25% of Russian GDP, placing enormous pressure on the agency to move goods through quickly. This of course undermines its ability to conduct thorough searches. The change from a command economy to a free market has introduced additional problems. As Russia attempts to increase its exports, it must adapt to its neighbors' operating procedures. For example, Russia is adjusting to European shipping preferences for truck over rail, with 40% of rail shipment currently being replaced by vehicle shipping, multiplying the problems for control and opportunities for smuggling. Finally, rampant corruption increases the likelihood that an insider's attempt at smuggling nuclear materials will be successful.

Second Line of Defense Goals and Strategies

In an effort to deal with the multitude of problems posed by a weak Russian state, a huge country, a weak safeguards culture, and a relatively new customs organization and all its attendant problems, the Second Line of Defense Program has adopted a measured and long-term approach. Its initial strategy is two-fold. First, it seeks to procure Russian-manufactured equipment for customs sites. The program recognizes that encouraging the development of indigenous equipment will help ensure that SLD becomes self-sustaining when US funding has ceased. In addition, DOE purchases of equipment will quickly reduce the vulnerability of Russia's weakest sites. At the same time, DOE has rightly concluded that if it is to provide funding for detection equipment, it must have the capability to identify those sites that would give the US the biggest security bang for its buck. Toward this end, DOE has supported a Strategy Study (conducted by Lawrence Livermore National Laboratory) that analyzes Russia's customs posts and prioritizes funding based on a number of considerations, including likely destination of material, availability of equipment, traffic volume, and location of nuclear material.

The second component of SLD strategy is to develop training programs for Russian customs officials. DOE has recognized that providing equipment itself is insufficient to ensure the impermeability of Russian borders if customs officials are incapable of using the equipment. Moreover, DOE plans to develop a joint training program with Russian customs inspectors that will focus on procedures and capabilities.

Evaluation and Recommendations

DOE's approach to combat trafficking of illicit materials across Russian borders is measured and thoughtful. Officials realize that Russia cannot simply imitate US customs procedures, but must adopt its

own, based on its unique geography, modes of transportation, and other political and economic considerations. Using limited funding, DOE is focusing from the outset on developing an indigenous Russian capability to produce its own equipment and train its people in the use of that equipment. At the same time, DOE is keenly aware of US national security needs and is focusing on the larger goal of preventing proliferation rather than simply purchasing equipment. A strategy study will determine which sites have the greatest need for equipment and improved procedures based on US security requirements.

The importance of procedures cannot be overestimated, and DOE should ensure that Russian Customs is held accountable. An overall evaluation of procedures should be conducted to ensure that purchased equipment is correctly used, that manifests are properly reviewed, and that measures are taken to prevent inside collaboration. State of the art detection equipment is of little use in the hands of poorly trained or irresponsible officials.

At the same time, DOE is considering developing new technology to aid Russia in this important task of preventing nuclear smuggling. If R&D is likely to result in equipment that can make a substantial contribution to Russia's ability to prevent smuggling, it should be pursued.

Finally, the equipment itself should be independently reviewed to assess its quality. Programs such as ITRAP (Illicit Trafficking Radiation Detection Assessment Program), an International Atomic Energy Association (IAEA) program that evaluates radioactive detection equipment worldwide, or the US national weapons laboratories, must be involved in the evaluation process.

Preventing the smuggling of nuclear material and weapons from Russia is the central security concern confronting the US today. A comprehensive, balanced approach that involves prioritization of key sites, provision and development of equipment, training in the use of that equipment, and implementation of proper procedures will help ensure that US nonproliferation goals are met, and that security is enhanced worldwide.

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