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## Nuclear Smuggling:

### How Serious a Threat?

by James L. Ford

#### Conclusions:

The unprecedented leakage of nuclear materials from the former Soviet Union (FSU) in 1994 signaled a clear shift in the nature and significance of the nuclear smuggling problem.

The apparent pause in leakage in 1995 does not provide much comfort since conditions in the FSU conducive to nuclear leakage remain relatively unchanged.

The barrier once faced by a rogue state or a terrorist group to the acquisition of a sufficient amount of special nuclear material to construct a nuclear weapon (or some other nuclear device) has been breached and is no longer as formidable.

The U.S. government has recognized that the current threat is very serious and that it could get a lot worse.

Critics believe that the U.S. government has not responded adequately to the nature and seriousness of the threat.

#### Historical Aspects of Illicit Transactions Involving Nuclear Materials

Cases of illicit transactions in nuclear materials have occurred over the last 20 years virtually throughout the world, to include the United States. Of the 450 reported attempts of illegal trafficking recorded by the Department of Energy through 1994, most proved to be nothing more than profit-motivated scams involving bogus material, perpetrated by opportunists .

The unprecedented leakage of nuclear materials from the former Soviet Union (FSU) in 1994 signaled a clear shift in the nature and significance of the nuclear smuggling problem. While recognizing that the reporting was incomplete and of mixed reliability, there were increases observed in the numbers of attempted transactions including the number of participants and in the types and quantities of materials offered for sale. The apparent pause in the leakage of nuclear materials in 1995 is welcome, but does not

provide much comfort because conditions in the FSU conducive to nuclear smuggling remain relatively unchanged and substantial leakage (still unrecovered) may have already occurred.

### **Understanding the Threat: Not Just a Bomb**

Experts agree that obtaining a sufficient amount of special nuclear material (SNM) is the single most difficult challenge in the construction of a nuclear weapon. The technical difficulty and expense of acquiring such material provided the principal barrier against the proliferation of nuclear weapons during the Cold War. Although still a significant challenge, that barrier has now been breached and is no longer as formidable.

But the possibility of a rogue state acquiring enough SNM to construct one or more rudimentary nuclear weapons is not the sole threat, nor perhaps the one that is the most likely or worrisome. Other possibilities include rogue states and even subnational groups using nuclear materials to construct an improvised nuclear device (IND), or a radiological dispersal device (RDD). An IND is designed to produce a nuclear explosion but has a lower yield than an actual weapon. An RDD produces a conventional explosion designed to scatter radioactive materials over an area to contaminate it and spread fear and insecurity among its inhabitants. This not only broadens the threat in terms of available material and technology, but increases the number of potential proliferators and the likelihood of an incident. Delivery on target also has been simplified, especially in terms of an IND or RDD; it is not necessary to have sophisticated military aircraft or missile delivery systems. Terrorists can load one of these devices into a van and deliver it on target, in much the same manner as occurred at the World Trade Center in New York City or at the Federal Building in Oklahoma City.

The steep increase in observed nuclear smuggling activity, and the mounting concern expressed by the national security community, raise some fundamental questions: What is going on? Why is it occurring? Who is involved? Where is it occurring? What does the future hold? And finally, what does it mean to our national security?

### **What Is Going On:**

#### **The Nuclear Smuggling Problem**

Germany is on the front line of the current trafficking in illegal nuclear material and offers an ominous picture of what is going on. The trends revealed over the last few years are disturbing to law enforcement officials: sharp increases in the number of incidents; ever greater numbers of cases believed to involve genuine nuclear materials, as opposed to frauds or scams; and only a small number of seizures of nuclear material in cases where it was believed to be present.

In essence, a black market in nuclear materials has arisen in the FSU, most notably in Russia. The stolen materials range from highly-enriched uranium and plutonium, the so-called sensitive nuclear materials which are the key ingredients of a nuclear weapon, to nuclear reactor and submarine fuel, and other materials associated with the nuclear industry such as lithium, beryllium, radium, palladium and others. In 1994, police authorities in Germany and elsewhere in Europe confiscated SNM in proliferation-significant (greater than microgram) quantities for the first time outside the FSU.

Intelligence and law enforcement experts, in both the United States and abroad, agree that these are worrisome trends but that, to date, there has not been a single documented case of stolen nuclear materials actually reaching a *bona fide* customer. Most have ended in arrests, the result of sting

operations by law enforcement authorities and a lack of professionalism by part-time thieves. This type of smuggling can be described as "supply-driven." It is characterized by thefts of relatively small quantities of material by non-professionals, often involving "insiders," who have access to a supply, but probably do not have a customer at the time of the theft.

### **Why Is It Occurring:**

#### **Loosened Control and Opportunism**

The collapse of the Soviet Union was so swift and so complete that it left a void in the government, economic and social infrastructure of Russia and other successor states. As a result, activities that once were very tightly monitored by the KGB and other control organs of the State, are no longer watched over so carefully. This is the case with respect to the protection, control, and accountability of the FSU's nuclear material, especially that outside the control of the military. In addition, the current restructuring brought on by the Soviet collapse has adversely affected the FSU's vast nuclear arms and research complex, idling many highly skilled scientists and leaving others with scarcely enough money to care for their families' basic needs. This scenario has been repeated in the military sector as well, transforming segments of the once-privileged Soviet military-scientific-industrial elite into a newly disenfranchised underclass--with a difference: it still retains access to nuclear materials and nuclear weapons.

#### **Who Is Involved: The Newly Disenfranchised**

Most reported nuclear smuggling cases to date have involved opportunistic thieves, "insiders" within the vast Russian nuclear complex who have taken something of perceived value to which they had access, and tried to sell it for personal gain. Some acted individually, while others co-opted a small number of accomplices. Lacking a comprehensive analysis, it is difficult to say just what motivated these people to act--perhaps need in some cases, but most assuredly greed and the hope of making big money in others.

The role of organized crime in nuclear smuggling is unclear. The so-called Russian mafia has reportedly been engaged in cases involving the smuggling of nuclear-associated materials such as beryllium, but to date, in no known case with weapons-usable materials, according to law enforcement authorities. Some believe that it may be just a matter of time before organized crime will begin to deal in weapons-usable materials, while others believe that it may already be happening and that law enforcement authorities simply have not detected it. Still others believe that the Russian mafia would be ill-advised to shift its focus from current high-profit, low-risk crime to the smuggling of nuclear materials, an activity that would surely result in high-level domestic and international countermeasures. However, one cannot discount the possibility that, at some future date, the Russian mafia may conclude that the expected profit from nuclear smuggling operations outweighs the perceived risks.

#### **Where Is It Occurring: Europe and Elsewhere**

Of special interest is the role played by the Baltic countries of Estonia, Latvia, and Lithuania, whose territories have served a trans-shipment function for material leaving the FSU enroute to other parts of Europe. To date, most of the recent seizures of nuclear and nuclear-related materials have taken place in Europe, with Germany accounting for the largest number by far outside Russia, followed by other countries in Central Europe. American citizens, to include businessmen and even U.S. Government officials, have also been approached both at home and abroad about buying such materials. Furthermore, if the Russian mafia does become involved in nuclear smuggling at some future date, it already conducts illegal activities in the United States, and so can take advantage of an existing infrastructure for

transborder smuggling and extortion rings which could be expanded to include nuclear materials.

Some analysts are concerned because they have heard of few nuclear smuggling activities along the traditional trade routes from Russia into neighboring countries where they would expect to see such trafficking, specifically along the southern routes into Turkey, Iran, and Afghanistan, as well as along the far eastern routes into Mongolia and China. Law enforcement and intelligence officials readily admit that they need much better information on these areas before they can conclude that such activities have not taken place.

### **What Does the Future Hold:**

#### **Smuggling as Supply- or Demand-Driven**

A more troubling concern than the "supply-driven" smuggling previously discussed, and one that is not measurable from evidence accumulated so far, is "demand-driven" nuclear smuggling (representing a specific request from a client state or group). U.S. government studies have concluded that the demand for nuclear materials and weapons is indeed present among the world's would-be proliferant states, and perhaps among sub-national groups seeking items on behalf of others or for themselves. Demand-driven nuclear smuggling would be characterized by an acquisition network involving a complex mixture of government, quasi-government, private business and front organizations, both legitimate and covert--not unlike the network put together by Iraq in assembling its nuclear capabilities. Identification of such a network and specifically its intended use is made extremely difficult by the fact that legitimate government acquisitions through official channels take place simultaneously with and may even mask illegal acquisitions through covert channels. This denies authorities the full picture and intent of a concerted effort on behalf of a would-be nuclear state or sub-national group.

While the focus of this discussion is on special nuclear materials, another aspect of this problem--the possible theft of an actual nuclear weapon-- cannot be ruled out under present conditions in the FSU. In at least one reported instance involving strategic missiles, however, Russian troops deserted their missile battery in the field while they all went foraging for food to eat. Whereas most observers regard nuclear weapons in the Russian strategic arsenal as still relatively secure in the hands of the military, there is concern for the security of the large number of widely dispersed storage sites for tactical nuclear weapons.

Concern over the protection, control and accountability of nuclear materials remains the key focus, however. Russia is currently dismantling thousands of nuclear weapons under agreements with the United States. This creates additional stockpiles of special nuclear material which then must be transferred from military to civilian custody--widely regarded as more lax than that in the military. With the disappearance of much of the old Soviet infrastructure for control of nuclear weapons and materials, security of these items--from transport through storage--continues to suffer because a new system of Western-style administrative control and accountability has not been fully instituted in its place.

#### **What Does This Mean for U.S. National Security: Beyond the Threat**

U.S. leaders have already recognized that the current threat is very serious, and that it could get a lot worse. The Departments of State, Defense, Energy, Justice (FBI) and Treasury have been in the forefront of efforts to address the many facets of the nuclear proliferation problem. Major initiatives range from Summit talks and Gore-Chernomyrdin discussions to the Energy Department's Lab-to-Lab initiative and the Defense Department's Cooperative Threat Reduction Program, sometimes referred to as the

Nunn-Lugar Program. Under this program, some \$1.2 billion has been identified for a variety of nonproliferation projects in the FSU nuclear successor states, including about \$250 million for "Chain of Custody" projects (e.g., safe and secure transport and storage of fissile material) which will help to counter illegal trafficking in nuclear materials. The FBI and Customs Bureau have expanded their overseas presence and increased their coordination, education and training programs with foreign counterparts. In spite of measurable progress, critics maintain that the U.S. government still has not responded adequately to the nature and seriousness of the threat. The encouraging news is that there may still be time in which to act, as evidenced by the apparent lull in 1995; a real deluge of sensitive nuclear materials is not yet apparent, nor is the active involvement of organized crime.

**Recommendation:**

The U.S. government must break through its present threshold of effort and create, in conjunction with its international partners--both West and East--a comprehensive plan of action for stemming the trickle of illegal transactions in nuclear material before it becomes a flood.

**About the Author**

James L. Ford is a Senior Visiting Fellow at National Defense University's Center for Counterproliferation Research. He is on detail from the Department of Energy where he last served as Associate Deputy Director for the Office of Nonproliferation and National Security. He can be contacted at (202) 475-0875, Fax (202) 475-1012, or Internet e-mail fordj@ndu.edu.

**Nuclear Smuggling Cases in Germany**

	1991	1992	1993	1994
Total Cases	41	158	241	267
Frauds		59	118	85
Believed True		99	123	182
Material Seized		18	21	19

Source: CSIS Global Organized Crime Project

**Weapons-Usable Samples Recovered in 1994**

May	5.6 grams (g) of plutonium-239 (99.75%pure) in Tengen, Germany.
June	0.8g of uranium-235 (88% enriched) in Landshut, Germany.
August	350g of plutonium-239 (87% pure) in Munich, Germany.
September	Slightly more than 1g of plutonium, said to be fit for military use (uncon- firmed), in Verona, Italy.
December	2.7kg of uranium-235 (88% enriched) in Prague, the Czech Republic.

Source: CSIS Global Organized Crime Project

***"There is now a clear and present danger that the essential ingredients of nuclear bombs could fall into the hands of radical states or terrorist groups."***

Statement of Dr. John P. Holdren, Chairman of the President's Committee of Advisors on Science and Technology, before the Senate Foreign Relations Committee Hearings in August 1995.NOTE

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