

No Buyers, But Sellers Are Ready

A year ago, on August 10, 1994, a briefcase containing 363.4 grams of plutonium was confiscated at the Munich airport from Lufthansa flight 13369 arriving from Moscow. This created a scandal, one of whose goals was to prove the plutonium's "Russian connection" and then accuse Russia of inability to prevent the leakage of weapon-grade nuclear materials.

Vladimir ORLOV,

Moscow News

The proofs were a failure. Moreover, it was discovered that the operation had been staged by Germany's special services. The final impression is that the theme on possible thefts of fissionable materials in Russia is being used by Western special services in pursuit of their own missions, or by the naive press looking for scandals. However, it actually has nothing to do with the real situation. The impression is correct, but only in part.

Apparently, it is not accidental that during the "7-1" meeting in Halifax last June it was the Russian leader

that suggested holding a summit conference in spring 1996 on the problems of nuclear safety, notably, on the problem of nuclear leakages. Moreover, he suggested that it should be held precisely in Moscow. Judging by certain indirect data, Moscow is beginning to feel increasing anxiety over the threat of such leakages from enterprises, which only quite recently were qualified as "100 percent reliable." On the other hand, official rhetoric has remained quite optimistic.

To understand the nature of mounting anxiety, the problem of nuclear leakages should be divided into three independent categories. First, the contraband of fissionable materials from Russia; second, the thefts of these materials on Russian territory; third, the state of nuclear safety, particularly, the physical protection, accounting and control of nuclear materials.

When considering the first problem — contraband — the optimism of officials may be justified in the main. Indeed, to this day there is no knowledge of a single verified case of highly enriched uranium or weapon-grade plutonium being unlawfully transported from Russia to other states. In this way, the theory that Russian nuclear components are being sought after by Iraqis, Libyans, etc., has no factual grounds whatsoever. There remain several "disputed" cases, each

of which require additional proof. Until such verifications are completed, it is premature to conclude that nuclear contraband from Russia is completely ruled out, especially considering the situation on Russia's border with the states of the former USSR (above all, with Lithuania, as well as with Ukraine and Kazakhstan), which is favorable for organized criminal groups. Lastly, there is no clarity about the June episode of the shoot-out between the militia and the Federal Security Service (FSB) on Profsoyuznaya Street in Moscow, when (according to the official version) "a contrabandist was arrested at the moment of passing two kilograms of uranium to an FSB staff member." It was reported that "in this way a chain of an international group of nuclear contrabandists had been neutralized," yet it became impossible to obtain clarifications.

Moving to the topic of thefts on Russia's territory, which were cut short right away, it has to be admitted that in the past 18 months alone there has been information about 19 thefts of nuclear materials of varying degrees of enrichment from the enterprises belonging to the Ministry of the Nuclear Power Industry, and 12 thefts of ionizing radiation sources (isotopes of caesium and iridium, mainly from the enterprises of the State Committee on the Defense Industry). The total number of thefts of weapon-grade

materials amounts to an insignificant percentage. Nevertheless, if not the public, then at any rate specialists know that in 1995 there has already been a theft (or a loss?) of an insignificant quantity of weapon-grade plutonium in the Urals. Moreover, the lost part has still not been recovered. As admitted by Mikhail Kulik, an investigator for affairs of special importance at the Military Prosecutor's Office of the Northern Fleet, "organized criminal groups are ever more active in working on the receipt of considerable batches of radioactive materials from the Northern Fleet. They establish contacts and feel out the possibilities, the weakest links for large scale thefts."

It is becoming clear that, having found a really experienced specialist at an enterprise, criminals receive a definite chance to commit a theft. The fact that no "large-scale thefts" have occurred so far is a lucky exception, and not a rule. It is enough to take a closer look at the data on the level of physical protection at nuclear enterprises, such as the Instrument-Making Plant, the Machine-Building Works, the Start production association and the Luch Experimental Plant, to come to the conclusion that was already arrived at a year ago by the State Nuclear Surveillance Committee: "The real organization of physical protection at the facilities of the nuclear weapons complex falls short of modern requirements." This means that a whole number of such facilities are highly susceptible to nuclear thefts

both for the purpose of making money and terrorism.

So far there is no knowledge of cases of "nuclear thefts" committed for the purpose of carrying out a terrorist act. Thefts are carried out for the purpose of making money. Real buyers, however, even if they do look closely at the "commodity," are still in the shadow. Most likely, it is still premature to speak about the formation of an "underground nuclear market." The "narcobusiness" is by far safer and more lucrative. It is also possible that with time the threat of the rise of such a market will not manifest. It seems far more likely that the aim of thefts may be the receipt of "raw materials" for a terrorist act. However, the financing of operations linked to enhancing the nuclear safety of facilities and the creation of a system of accounting and control over nuclear materials looks catastrophically inadequate.

It is possible that some radical steps are being prepared before the Moscow summit on nuclear safety. However, nobody at the departments concerned knows anything about this so far. The question about the "who" also remains open: who should be invited? What kind of agenda must be formed? The new Russian initiative, unlike many others, cannot be accused of being abstract, and is still being sluggishly perceived by the West. There is a risk that leaders might miss their chance to openly discuss control over the leakage of nuclear materials.

Nuclear Thefts: What Do Documents Say?

Recently the mass media have featured many reports whose meaning boils down to the contention that the safety of nuclear materials is not ensured at enterprises of the nuclear cycle, that they can be taken out easily and in any quantity, that these materials are in increasing demand and anyone willing, having taken a risk, can easily earn a handsome sum of money.

Alexander MYTSYKOV,

Assistant to the Prosecutor-General of the Russian Federation

What is actually happening? The materials of public prosecutor's supervision, particularly reports by prosecutors from the localities, make it possible to examine the problem of ensuring the safety and physical protection of nuclear materials without excessive sensationalism and a desire to aggravate the situation. The problem of the accounting, storing and physical protection of nuclear materials has always existed and will probably continue to exist. Why? In an interview with the magazine *Yaderny Kontrol* (Nuclear Control), Viktor Mikhailov, minister of the Nuclear Power Industry, admitted: "Nobody knows the exact quantity of the capacities for the production of these materials and the exact quantity of the produced materials themselves due to technological losses in production..."

On the other hand, there have been cases of theft of nuclear materials and, most importantly, the possibility of such thefts is subsequently not ruled out. Criminal cases (there have been about a dozen of them in the past four years) cogently reveal what the result of the notorious "plus-minus" kilogram or other lapses in the accounting and storing of nuclear materials could be.

Let us examine the case against instrument-operator Smirnov from the shop of the Eko-Luch scientific-production association (Podolsk). A graduate of the Moscow Institute of Chemical Technology, he worked as an engineer, junior research associate, foreman and, immediately before committing the crime, instrument-operator. He had perfect knowledge of the technological process for the refining of radioactive raw materials. But not the process alone. The investigation revealed that

Smirnov used other knowledge as well: his knowledge of the imperfect accounting of raw materials and the processed product, whose weight after tempering increased by 2-3 percent. He also benefited from the leniency of security. Taking out 50-70 grams of unaccounted technological surpluses each time, during several attempts he managed to steal over 1.5 kilograms of uranium-235 in the hope of selling it with a profit. Along with the uranium, Smirnov stole three containers for the storage of radioactive substances.

Another channel of nuclear material leakage is illustrated by the case against Yatsевич, a keeper of special products at Shop No. 103 of the All-Russia Research Institute of Theoretical Physics (Chelyabinsk-70). Having entered into collusion with Shelomentsev, an engineer at the same shop, he stole an ingot of unenriched uranium-238 with a total weight of 5.5 kilograms. Yatsевич did not stop at other valuables. An interesting detail was discovered in the course of the investigation: no matter how many inventories were conducted at the warehouse, Yatsевич was found to have neither surpluses nor shortages. And besides uranium he stole 151 grams of platinum, 13.5 kilograms of titanium and 49.5 kilograms of tantalum. The explanation was simple: so-called efficient accounting was the storekeeper's main way of taking stock of special products and gave Yatsевич a free hand for a criminal maneuver.

The third case is the one that most accurately mirrors the existing situation. A certain Vasin, having no place of employment, was detained in Arzamas-16 with 5.1 kilograms of uranium-238. It was discovered that he had tried to sell the uranium through a group of citizens in Ukraine, but was unable to do this. When an expert examination was carried out, it turned out that the uranium was "local," from the All-Russia Research Institute of Power Physics. Regrettably, the investigation did not establish when the nuclear materials had been carried beyond the institute's confines, by whom and under what circumstances. However, the fact remains: their leakage did occur.

It is logical to presume that these cases have taught proper lessons. However, I am afraid that these lessons have been learned only in part. The check-ups carried out in 1994 made it clear that the procedure for taking stock at warehouses and installations existing at the enterprises of the Ministry of the Nuclear Power Industry did not ensure authentic information on the existence

of fissionable materials. For example, at Shop No. 1 of the Luch Experimental Plant production association, the post-operational accounting of uranium was not carried out even at the concluding stage of processing. Finished products were piled up in an unsealed container. Enriched uranium was taken into account solely upon the completion of the entire technological cycle.

The possibility of radioactive materials leakage is being multiplied manifold by the system of establishing the norms of their irretrievable losses. For instance, at the Mayak production association the statistically established norm of losses wavered within the confines of 0.08-0.85 percent. Considering that the quantity of the original material runs to tons at Mayak, any reserves of unaccounted surpluses may be created with such a normative gap. The checkpoints of special security enterprises are not equipped with technical means for the detection of radioactive substances, which in combination with the aforesaid creates a real danger of their unsanctioned possession or the committing of other unlawful actions in relation to them.

On the basis of generalized materials, the Prosecutor-General's Office has forwarded an inquiry to the minister of the nuclear power industry, and information memos to the government and the president of the Russian Federation. There has been no information on the president's reaction to the documents of the Prosecutor's Office. As far as the government is concerned, it has given an instruction to eliminate the identified violations to a number of departments, first and foremost, to the Ministry of the Nuclear Power Industry. Mikhailov had published a special order in which the heads of main departments and departments, the chairmen of committees, the leaders of concerns and joint-stock companies are prescribed to organize strict and regular control, to form commissions and conduct a detailed check of the state of the accounting and safekeeping of nuclear materials, strengthen the services charged with ensuring the safety of materials, and so on. In conclusion, the order says that the nonfulfillment of the prescribed measures could result in strict disciplinary measures, all the way to the dissolution of contracts.

However, despite such impressive resolutions, there has been no improvement in recent months in the physical protection of nuclear dangerous facilities in many regions. Concern is aroused by the numerous facts of the protective installations' imperfection and progress-



Seversk, alias Tomsk-7. There is weapon-grade uranium and plutonium. The physical protection of facilities is weakened.

ing decrepitude. The greatest source of anxiety, naturally, is the safekeeping of nuclear materials, nuclear and radiation safety. While it can be said that safekeeping is being ensured in the main (no essential facts of shortages, losses and thefts have been identified), ensuring safety remains an unresolved problem.

It is clear that the unfavorable situation in which the enterprises have found themselves in has been developing over decades, and it will take years to "undo" it. However, it is quite within our power to overcome elementary negligence and lack of control. For example, at the Nerpa ship-repair yard in the Murmansk Region it has been established that part of the barrier perimeter is not illuminated, and the external accesses to the restricted zone are not controlled in these parts. The communication of checkpoints and security posts has not been duplicated, the posts have not been equipped with alarm signalization, and no permanent observation is carried out over the yard's water area and coastline. At the Priborny (instrument-making) plant loading and unloading operations with nuclear ammunition and special products are carried out on a railway ramp located outside the protected zone of facilities. It turns out that the ramp is protected by the troops solely for the time of conducting the operations and is the most vulnerable for the capture of special products or for disabling its units and mechanisms.

At Sevmarshpredpriyatie, nuclear material in the first stage of the stand block is stored in a premise that is not equipped with signalization, not protected and does not have the required second locks on its doors.

The fleet of technical protection means at most enterprises is outdated and requires reconstruction. At checkpoints and posts for the passage of people, motor vehicles and railway transport there are still no instruments con-

trolling the unsanctioned transportation of nuclear materials. Security is sometimes limited to random check-ups. We can get some idea about the efficiency of such control from check-ups of servicemen's duty performance at the checkpoint of the Avangard electro-mechanical plant in Kremlev (Arzamas-16) in the Nizhni Novgorod Region. It was found that the sentinels let in and out every second-third conventional trespasser.

An even more discouraging picture was revealed in Severodvinsk. The water area of its port has turned into an exceedingly dangerous storage of nuclear submarines which had served their time. Specialists maintain that time or an accident may lead to radioactive contamination. This storage was formed in the course of more than one year. We can see how it all happened from the example of nuclear-powered submarine K-64, now referred to as "order 900" in official documents. After an accident in the steam-generating plant in June 1972, the submarine was phased out of the navy and cut, whereas its stern with the reactor compartment was sent to the Dubrava production association. The former Union Ministry of the Shipbuilding Industry and the Ministry of the Navy expected to mothball the stern and dump it in the sea. However, while preparatory work dragged on, an international convention forbidding the dumping of radioactive waste in the marine sphere was adopted in 1985, and it became impossible to carry out the utilization with the conceived method.

Four years later a decision was made to cut the reactor compartment out of the stern and put it in durable storage like the same compartments of nuclear submarines, but with unloaded fuel cores. The operations were to be concluded in 1991, yet they have still not been carried out, and the submarine, or rather whatever is left of it, has been laid up in Severodvinsk.