

*Fenyvesi Csaba, Ph.D., Assistant Professor
University of Pecs, Faculty of Law*

SMUGGLING NUCLEAR MATERIALS AS A FIELD OF ORGANIZED CRIME

Introduction

By the end of the 1980s and the beginning of the 90s there were some countries - mostly European ones - that had to face a new challenge; certain delinquents and criminal groups displayed illegal activities in crimes related to nuclear materials.

The weight of this phenomenon should not be underestimated or ignored at all, and every effort must be made to find an efficient way to stop it both within the states and between them. If no measures are taken, it may entail consequences that are difficult to foresee and that might affect not only, one given country but also continents, and perhaps I am not exaggerating if I say it may exercise influence in the whole world.

In my presentation I intend to give you an outline of the criminal situation in the former Soviet Union, and in Europe as well regarding smuggling nuclear materials, its legal regulations as well as ways and possibilities of its prevention.

I.

International Criminal Situation Regarding Nuclear Materials

At the end of the 1980s Eastern Europe saw a period of sweeping political changes and a deep economic recession, which brought about a totally new situation for people living in the region and especially in the former Soviet Union. It is a situation which we still have to learn to live together with. A major point here is that the state has ceased to guide and control everything, thus the fate of citizens is in their own hands.

New achievements such as freedom of speech, the possibility of receiving western TV channel broadcasts and communication have raised such pretensions in a lot of people that cannot be pleased with traditional and attainable means. All these reasons among others have made people leave their countries and start a new life somewhere else.

As a consequence of these great migrations potential criminals have also proceeded towards and are still heading for Western Europe with the aim of acting on their own or taking part in organized criminal activities.

This delinquent group is joined by those who believe that there is an existing market for radioactive materials, fittings or final products in the form of bombs, rockets and explosives.

Thoughts are followed by deeds. It is shown by the fact that hundreds of fissile materials were confiscated in Western Europe in the 90s, out of which in 20-30 cases uranium or plutonium was seized.

1. Criminal situation in CIS (Commonwealth of Independent States countries regarding nuclear materials

Russia 1992

Back in 1992 we heard alarming news concerning nuclear safety in Russia. Let me illustrate it with the following item of information.

There is evidence about the existence of a complete underground network that deals with the export of nuclear fissile materials - reported a French TV journalist having talked to the Paris correspondent of *Izvesztyija*. The correspondent, together with a colleague, used a candid camera to record a \$500,000 deal

in a Moscow flat clinched by a lawyer representing an Austrian-Russian joint venture company and a local member of the mafia accompanied by another person. During their 105 minute talk they discussed how they could forward the "goods" in a sealed up, 1 ton container all through frontiers, all the way to Kaliningrad.

The journalist is not absolutely sure that they talked about uranium, but it was mentioned during the secret negotiation, and both Russian and French experts are of the opinion - having watched the video sequence - that this is a well-established assumption. Anyway, there are no doubts that the mob people were planning the export of some kind of nuclear material. "Don't worry. I won't draw a black triangle representing radiation danger on the container" said one taking part in the negotiation. Another negotiator was convinced that there would be no problem even if the container was opened at the frontier, since "everybody can be bribed".

Judging from cases that had taken place before 1992, we could say that Russian authorities had to face different, separate mobs still small in number, so there was no organized and unified mafia in the field. Most of the sellers committed a fraud by stating that they possessed uranium ore and plutonium concentrate, though none of the cases have proven true. They all attempted to create a market for themselves.

But experts did not preclude the possibility that a professional mafia was to be organized which had access to delicate materials and technologies and that would establish contacts with countries wishing to produce nuclear weapons.

1993

The 58 page report of the Russian Atomic Energy Supervisory Board published in 1993 confirmed the reality of the assumptions made for 1992.

We can learn from this report that Russian conditions concerning fissile materials were revolting. The investigation was ordered by President Jelcin in April 1993, when there was an atomic accident in a closed town called Tomszk-7 and vast territories were contaminated in Siberia. The production of plutonium bombs had been going on since 1954 in this small town and as it was revealed by the report, practically all employees had easy access to fissile materials not registered in records. The control of consignments was also unaccomplished. The recommendations of IAEA (International Atomic Energy Organisation) were not always and everywhere complied with. It also happened that due to measurement inaccuracy records showed a 10 kg difference. When taking stock, they only checked documents and did not bother about nuclear stocks. Materials were easily accessible despite the fact that they were sealed.

What is more, once, by mistake, 45 bars of uranium concentrate were taken to the wasteyard.

The report states: there is a clear-cut possibility of stealing fissile materials unnoticeably and it is also childrens' game to carry them away. There is a shortage of guards and at check points identification is not properly done. Safety devices are obsolete and worn out. Nuclear materials are transported by road without any special precautions taken.

Pieces of news from 1993 also verify the contents of the report:

a.

129.6 g of uranium was stolen from two special containers at the Cernobil nuclear power plant.

b.

Uranium concentrate was stolen from a factory in the Noginski district of Moscow. The uranium was smuggled into Belarus, then to Estonia. From there it was shipped to Stockholm, then to London, where - according to Russian and English authorities - it was sold to unknown buyers. Its price exceeded \$1 m.

Victor Kalmikov, Russian Minister of Justice, stated in 1993 that organized criminal groups set as an aim to obtain nuclear weapons.

The head of the successor of KGB said that special units of their organization prevented terrorists from entering nuclear establishments 53 times in 1993.

Kalmikov's statements are well-founded and are confirmed by the official report on Russian organized crime in 1993 as well as by General Mihail

Jegorov, Vice Interior Minister, who is the supervisor of the fight against organized crime.

In CIS countries there are 174, in Russia more that 100 criminal groups known and registered, that take their share of commercial activities of all kinds. In Moscow it is performed by 8 organized groups that operate much better than the police.

The Moscow and German police say it is most alarming that Russian criminals are now targeting nuclear materials and strategic metals, which they steal and then sell abroad. The German Intelligence Agency (BND) reports that Russian criminal groups play an active role in selling nuclear materials such as

uranium concentrate or caesium 137, that can be used for producing nuclear weapons.

(The Kalmikov report also refers to the source and sale of nuclear materials; part of the nuclear materials were stolen from the Geophysical Institute of Tbilisi, Georgia, another lot from a warehouse in the harbour of Murmansk, which is maintained for the submarines of the navy. The stolen materials were smuggled to Germany via Lithuania, where they were sold at a high price on the black market: a kilogram of chromium-50 was worth \$25,000, a kilogram of caesium-137 reached \$1 m, a kilogram of lithium-6 was bought at \$10m.)

1994.

The situation did not change in 1994, either.

a.

In August 1994 Bernd Schmidbauer, (Secretary of State of the German Crown Office, supervisor of Secret Services), acting on behalf of Chancellor Kohl held talks with Russian authorities in Moscow about joint actions against fissile material smuggling. A couple of days later we were given news of a theft of a large quantity of uranium in Russia. The scene was a town the existence of which we had not heard before, called Arzamas-16; it was a secret until recently. This small town is situated close to Niznij Novgorod, "the prohibited town" which was also known as Gorkij for a long time, and can be found 400 kilometers to the east of Moscow.

In its laboratories and plants nuclear materials are processed. 9.5 kilograms of uranium-238 were stolen from this place, material, that could only be used for fuel cells. The two thieves were shortly after arrested and the uranium was taken back to its safe storage place.

b.

Also in August, Russian police caught hold of a consignment of radiation dangerous materials that could not be used for producing bombs, but was still worth \$1 m.

The Russian situation is well reflected in the following cases too.

c.

John Large, British nuclear engineer claimed that executives of power plants in Russia had offered him plutonium and uranium several times during his visits to them.

d.

Three Russian journalists, disguised as businessmen, succeeded in obtaining a small amount of plutonium. What is more, a private person offered them a warhead taken from an SS-20 rocket. They suspected it to be without its radioactive center since its price seemed too low, only \$70, 000.

The above described alarming safety circumstances and the events that had taken place did not hinder Russia from protesting against accusations that fissile materials confiscated in Bremen were of Russian origin. The Ministry of Atomic Energy declared that Russia had nothing to do with the plutonium found in Germany.

The commander of Russian strategic rockets stated that it was impossible to take away anything from the base or to enter without authorization. Head of counter intelligence, Sergej Stepacsin also stressed: the turnover of fissile materials that can be used to produce nuclear weapons is under strict control. The Russian State Customs Inspection categorically rejected the assumption of negligence. They emphasized that all the baggage undergoes double checking at airports so it is not likely that a certain bag that is said to have carried fissile materials to Germany could have escaped the attention of the special services or border guards.

1995-1998.

In recent years the number of smuggling cases has fallen due to more and more severe measures. But still, there is always a case that comes to light each year.

In 1995 the Cyprus customs authorities confiscated 35 tons of zirconium that had most probably been transported from Russia to Limassol back in 1992.

In 1996 unknown culprits broke into one of the chemical plants of Novotroick and stole a container with 20 grams of caesium-137.

In 1997 the Russian police confiscated 5 kilograms of uranium-235 isotope that had been stolen from the furnace of Ust-Kamenogorsk, Kazakhstan. The spokesman of Greenpeace international environmental protection organi-

zation is of the opinion that altogether about 180 tons of plutonium can be found in Russia, so there is plenty of reserves and in consequence further smuggling cases are to be expected.

1999-2003.

In the last five year, there have been many news about the seizure of fissionable materials which can be used to make nuclear masskilling weapons.

It seems like that the restrictions from the different international treaties and the international corporations, such as IAEA, INTERPOL, International Customs Organization, did not make their prevention goal against smuggling. This situation is stated in the INTERPOL's statement: radioactive materials are more consumable for customers than the marijuana shirts from Amsterdam.

The highest statistics can be found in the statistics of 2001. Current data shows that until the 11th of August in Europe, the police have arrested 32 people having nuclear materials and seized uranium or other dangerous radioactive material.

In most of these cases, the police seized smuggled uranium or other fissionable materials from the former USSR. Many cases like this happened in France and other Western European countries.

This cases are here for examples –not in chronological order.

2001.

a., The French police seized 5kgs of 80% (235) uranium and captured three people in Paris, who hid the nuclear material to a lead cylinder in a glass ampule.

b., In July the French police seized 5 grams of 80% (235) uranium from a criminal group of three people at one of the busiest squares in Paris, near the Nation.

c., At the end of July, the French police and the counter-espionage captured a swindler, named Serge Salfati and two men from Cameroon, who hid 5 grams of 90% (235) uranium at a flat in Paris's 17th district.

d., In Georgia at the port of the Black Sea's Batumi, people were captured selling nuclear materials. They were trying to sell 1.7 kgs of (235) uranium isotope. This kind of uranium is suitable to make atomic weapon from it.

In 2002, the news about smuggling nuclear materials haven't decreased. These cases stand for examples.

a., In January the secret agency seized 1.5 kgs of uranium in White Russia and arrested 6 people, who were trying to sell radioactive materials to foreigners for \$ 250 thousand. They had bad luck cause the foreigners were the employees of the secret agency.

b., The police prevented two sales last September in Munkacs and Dnyepropetrovsk.

c., At Sub.Carpathia in Mnkacs, a Russian worker attempted to sell 10 grams of uranium for \$3000. After the action, the police discovered a hiding place from where they occupied 400 gramms of uranium. The criminal wanted to sell this for \$300 thousand.

d., At the 11th of July, in Portugal they arrested a member of an international network, who smuggled uranium to the country. According to the police report, this guy smuggled the nuclear material from Eastern-Europe. The media states, that this man who was arrested in Porto, was looking for costumers.

Uranium sources at the former Soviet countries:

In general:

1. From the *exploration measures* of the uranium sources, it can be divided into three groups:

- proved sources
- estimated sources
- theoretical sources

2. From the producing costs of the uranium, there are also three categories:

- 80 USD/kg cost category
- 80-130 USD/kg cost category
- 130-260 USD/kg cost category

The position of Russian nuclear experts

People that know the Russian situation say that not only fissile materials but also nuclear experts are in great request.

In March 1993 the EU, the USA, Japan and Russia set up an International Science and Technology Center in Moscow with the objective of giving reasonably well-paid jobs and useful research topics to 3,000 nuclear scientists in Russia, but the director of the institute says that there are at least another 10,000 people with such skills and qualifications that would come in handy for countries trying to produce the atomic bomb.

The role and situation of nuclear scientists in Russia deserves special attention since they could play an important part in an emerging nuclear mafia. But let me make some distinctions here: on the one hand salaries and employment possibilities of scientists working in the civil sphere are declining - e.g. a professor teaching nuclear physics earns only half of the amount a bus driver would get. On the other hand employees, especially prominent scientists of nuclear weapons manufacturers find themselves in a distinguished social situation. They and their families live in special closed cities where no outsiders are let in. All of these cities can be found on the territory of Russia.

From 10,000 to 15,000 people are estimated to have such knowledge. We should also include such experts on this list that have specialist knowledge in certain fields of the nuclear industry, e.g. ore enrichment. Such experts in fissile materials enrichment can be found in a number of industrial countries that do not produce nuclear weapons themselves. There have been cases when experts gave advice on the spot of different nuclear programs. Approximately 2,000 experts know how to devise and operate nuclear weapons. The art of knowing how to press the fissile materials of a warhead by a complicated arrangement of explosives and igniters. An expert in the field could easily shorten the time to produce nuclear weapons by eliminating the need to try some experiments.

2. Nuclear crime situation in CIS countries, excluding Russia

Apart from Russia, we can find most of the nuclear establishments in the Ukraine. There are 14 generator reactors and 2 nuclear reactors for research and educational purposes on the territory of the country. Besides, it possesses such a metal-chemical complex that produces zirconium, hafnium and heavy water, all important components for nuclear weapon development programs.

In the Ukraine there is no operating or centralised register or control system for fissile materials. The Nuclear Energy Commission is now trying to build up such a system, but they meet difficulties when in the absence of registers they must solely rely on what operators of these establishments say. Then the furnished information cannot be checked, not even at random, because there is a lack of experienced control staff and measuring tools.

The physical protection of fissile materials (nuclear fuel and used fuel) falls on operators of plants and the Ministry of the Interior, but this latter one lacks technical expertise.

In the rest of non-Russian republics the situation is much similar or even worse.

Belarus seems to be the only exception, since they closely cooperate with the Russian Federation. At least there are some people in the Ukrainian Nuclear Energy Commission that understand tasks and responsibilities. Unfortunately the same could not be said about the authorities of Central Asian republics.

What dangers lie in this? Fortunately all the establishments that are suitable for producing fissile materials for nuclear weapons are under Russia's authority. But at the same time there are establishments in each republic that emit such final products that cannot directly be used for producing nuclear weapons, but would still shorten and ease the attainment of nuclear weapons. By way of illustration let me mention some of these establishments.

Armenia:	power supplying reactors, experimental reactor.
Belarus:	experimental reactor.
Estonia:	uranium ore mining.
Baltic states:	facility for handling nuclear fuel for submarines.
Georgia:	experimental reactor.
Kazakhstan:	experimental reactor, uranium ore mining, fuel cell plant, hot cabins for remaking fissile materials in labs (in the Semipalatinsk experimental zone), beryllium production.
Kyrgyzstan:	uranium ore mining, transformers.
Latvia:	experimental reactor.
Lithuania:	power supplying reactor.
Tajikistan:	uranium ore mining, heavy water production.
Ukraine:	power supplying reactors, experimental reactors, heavy water production, zirconium, hafnium.
Uzbekistan:	uranium ore mining.

From the point of view of fissile material thefts special significance must be attributed to the **Kazakhstan** fuel cell plant and reactor. Kazakh authorities have already expressed their intention to build a new reactor and want to establish a closed circulation of nuclear fuel used for civil purposes. But, as far as I am informed, the Kazakh fuel cell plant is still under Russian control, as well as the former experimental center with all its facilities.

Until 1998 only the only three Baltic states have started to put into force the safety recommendations of the International Nuclear Energy Agency, as they have joined this organization.

Then in 2000 Tadzskistan; in 2001 Azerbadjan; Later in

2003 Kirgizia also joined the IAEA. In these days security achievements came into force, in these former Soviet States, which are able to withhold the more and more recent smuggling of fissile materials.

In other states there are no controlling systems and international safety measures are not enforced either. There is a major risk that black markets will gather strength in such an unregulated situation. What makes the situation more intolerable is that we see inadequacy and disorder not only at civil nuclear establishments, but also at military units, e.g. how nuclear rockets are handled, disassembled or how their destruction is controlled.

The situation in CIS countries seems to have become aggravated in 1994: on 13 November 1994 the Lithuanian Ignalina nuclear power plant had to close down one of its 1,550 megawatt reactors because it was feared that the local mafia would carry out their threat and attack the establishment. In return for not doing so, the mafia demanded the release of Boris Dekanidze, Lithuanian mafia boss, or otherwise they would blow up the nuclear power plant.

So we can trace that the former prophecy came true: the mafia standing behind organized crime is not deterred from illegal trading in nuclear materials, nor from threats of a nuclear strike - and if I may add hesitantly - nor from launching attacks.

3. Nuclear crime situation in Germany

CIS countries (mainly Russia) target Germany as their destination, but experts presume that Germany, as well as Switzerland or Italy are only transit routes to get to the Middle and Far East, where certain countries are striving to produce nuclear weapons.

German authorities probed into cases of illegal trade in fissile materials 41 times in 1991, 118 times in 1992, 241 times in 1993 and 182 times in 1994. True, in half of the cases only fraud was committed since it turned out that the confiscated lead containers and capsules did not hold any dangerous materials, or sellers only promised to obtain such materials in the hope of a significant commission.

But 20% of the cases turned out to be real, so radioactive materials were confiscated in different packaging and transportation modes.

They were as follows:

- natural uranium
- uranium concentrate

- plutonium
- caesium 137
- cobalt 66
- californium
- americium

The German nuclear situation, just like the Russian, culminated in 1994. There was someone caught almost every month.

Since May 1994, it has occurred only four times to confiscate bigger quantities of smuggled fissile materials and plutonium that is apt to make nuclear weapons.

Particular cases:

a.

In May investigators found a 4.5 kilogram lead container that held 6 grams of plutonium embedded in mercury and antimon in the garage of Adolf Jakle of Tengen-Wiechs, Bavaria. Bern Schmidbauer, Secretary of State and supervisor of the secret service said that the 52 year old businessman had received \$100m from one of the smaller Asian countries to purchase fissile materials for them.

The confiscated material came in a ready-for-a-bomb form: it contained 99.7% plutonium 239 concentrate, which is the basic component for nuclear weapons.

Naturally, one cannot make a bomb from a couple of grams, but investigators and experts drawn into the case had every reason to think that this deal was only a sample for a bigger consignment at a later date.

American experts were also drawn into the investigation to ascertain the origin of the sample. They could only set up assumptions that the fatal powder may have originated from the gas centrifuge of one of the three former Russian nuclear plants - Celjabinsk-65 (Oharsk), Tomsk-7 (Seversk) or Krasnojarsk 26 (Zelenogorsk).

Such a dangerous material had never been confiscated in Germany, that is why the most severe, so called "red alert" was given in 1994.

b.

Six people carrying a small amount of uranium were arrested at a motorway restaurant close to Landshut in June.

c.

Victor Sidorenko, Russian Deputy Minister of Nuclear Energy flew to Germany to ask for technical and financial aid to further operate run down nuclear power plants. It was a mere chance that a Columbian and two Spanish men were also flying the same flight smuggling more than 300 grams of plutonium and lithium suitable for making a neutron bomb in their suitcases. They wanted to get through the Munich customs examination with that. It was the biggest ever capture of the German authorities. The amount of the confiscated material would have been more than enough to poison all of Germany's drinking water. (Experts say one thousandth milligram of it would kill a person.)

The smugglers would have liked to carry altogether 4 kilograms of plutonium into Germany, and this weight is close to the critical mass out of which a nuclear warhead can be made, supposing that the quality of the fissile material is also satisfactory.

The confiscated materials were examined in the lab of a Karlsruhe institute (Europäische Institut für Transurane) and it was found that lithium was kept in a tin box for biscuits. The material in question was lithium-6, one of the most important components of a hydrogen bomb.

The plutonium found was a 87% concentrate, so it had most probably been used as fuel for a nuclear power plant rather than a component for bomb making. It is not customary to produce such materials in CIS countries, so it is probable that its origin goes back to an experimental plant.

d.

A 34 year old man offered for sale 70 grams of plutonium in Bremen in August. He did not succeed though; after he handed over the 2 gram sample the buyers revealed their identity and instead of being "honest terrorists", they turned out to be detectives out of uniform. Unfortunately, most of the fissile materials remained with the accomplices of this person whose identities have not been cleared.

Thomas B Cochran, researcher at the Washington Natural Resources Defense Council stated that the above-mentioned Tengen and Munich captures

imply "serious threats for our safety". We can exclude terrorists now but should bear in mind that if certain countries take possession of plutonium of similar quality as confiscated, they may as well make a nuclear bomb in a year's time. True, they would need a lot more in quantity, but some dozen of kilos would be enough to start with.

II.

International Regulations Concerning Abuse of Nuclear Materials

I intend to outline the most important international agreements relating to the protection of fissile materials.

International Atomic Energy Agency (IAEA)

IAEA operates under the auspices of the United Nations. Its statutes took effect in 1957 with the main objectives of facilitating the peaceful use of atomic energy. It bears less importance from our point of view than a regional agreement called Euroatom, so I would rather expand on this latter one.

Interpol

This law enforcement corporation made a group, which task is to decrease the black trade of nuclear materials and disclose smuggling criminal groups. This class is based on 30 Western – and Eastern European countries's law enforcement cooperation.

Institutions and corporations in Hungary that deal with the protection and the decrease of smuggling nuclear materials

Even though Hungary is considered one of the most important transit countries of smuggling fissile materials in the 90s, the EU considered the situation, at the joining conferences, acceptable.

In Hungary, the ORFK Szervezett Bűnözés Elleni Igazgatóság and the national security services are dealing with cases involving fissile materials.

Hungarian Nuclear Agency

The Agency's task is to help the use of nuclear methods, and these methods would only be used with great knowledge, responsibility and under supervision, so that people's health, living circumstances will not be endangered.

The goals of the Agency are done by the following way:

It makes a connection between the different industries, corporations, educational and cultural institutions, agencies and other organs which are interested in the use of atomic energy and the economic utilization of ionized radio activities. Also makes agreements and treaties with other countries's similar agencies and other international corporations.

National Atomic Energy Agency

Foreign connections:

According to the atomic statute, the National Atomic Energy Agency has the task to coordinate the international cooperations about the use of atomic energy, to arrange and organise the enforcement.

The National Atomic Energy Agency has the law empowerment to do the cooperation tasks with the International Atomic Energy Agency and the OECD Nuclear Energy Agency.

The National Atomic Energy Agency is the member of the CONCERT group, which consists of the members of the western and eastern European nuclear authority; is the member of the VVER and the western-European WERNA. The NAEA participates in the controlling process of the export of nuclear products, in the Zangger Council and also in the Nuclear Carriers Group (NSG), which deals with the control of the export of nuclear products.

The 1999's report of the National Atomic Energy Agency discusses the danger of Hungarian uranium smuggling. Even though, there are no uranium duling, heater makeing or recycling factories, Hungary is considered to be one of the most important transit places of the uranium smuggling. The proof of this, that big amount of fissile materials were seized by law enforcement corporations: 21.7 kgs poor;4.6 kgs natural;and 2.5 kgs low dulated uranium; and these were almost in all cases taken from foreign citizens.

Deed of Foundation of the European Atomic Energy Union

Belgium, France, the Netherlands, Luxemburg, Germany and Italy signed the Deed of Foundation of the European Atomic Energy Union in Rome in 1957. Denmark, the UK, Greece, Ireland, Portugal and Spain joined later. Responsibilities are put down in article 2 point e: "with adequate supervision it must be ensured that fuel is exclusively used for scheduled purposes".

Section 7 specifically deals with "safety control". It describes the production, transportation and control of ores, raw and special fissile materials and provides directions for their record keeping, reporting and controlling duties as well as lists sanctions in case of breach of duty.

Agreement on the physical protection of nuclear materials

The contracting parties opened the agreement for signature in New York and Vienna on 3 March 1980.

It fully regulates illegal uses of nuclear materials. One of them is quoted below:

"In case of theft, robbery or any unlawful appropriation of nuclear materials or even if there is a probable danger for them the contracting parties give - in accordance with their own legal systems - utmost help in regaining and protecting such materials in any of the countries that asks for it."

The Schengen Agreement

We should view this agreement as part of a process since it has integral antecedents and logical consequences.

Apart from economic and financial unions that contributed to European integration the so called political union also plays a major role. Part of it is the opening of frontiers agreed on in Schengen in 1985 when Germany, France, the

Netherlands, Belgium, Luxemb'urg signed the agreement. (Later other countries joined it.)

The letter of intent stated - among others - that time has come to terminate controls at common frontiers and to move them to outer borders as well as to co-ordinate fight against organized crime, terrorism and nuclear materials smuggling.

III.

Legal, Organizational and Technical Ways and Possibilities of Preventing the Abuse of Nuclear Materials

1. between certain states

(Russia - Germany):

President Jelcin, in his reply to a letter written by Chancellor Kohl in 1994 promised close co-operation against nuclear materials smuggling. In the meantime the chancellor wrote another letter asking Jelcin to tighten control in Russian plants handling fissile materials.

The German Secretary of State (who supervises the activities of the secret services too) accompanied by several nuclear scientists was negotiating in Moscow between 20-25 August 1994. The talks were about actions to be taken against nuclear smuggling. Bernd Schmidbauer - discussed earlier at the German situation - also took along investigation results of the four smuggling cases of uranium concentrate and plutonium in 1994. The memorandum of these talks between the German Secretary of State and the Russian Head of Counter Intelligence was ratified by President Jelcin. The writers of the document pointed out that both parties acknowledged the necessity of curbing illegal trade of radioactive materials independently where the materials come from. We also got to know it from the memorandum that Moscow and Bonn were preparing a special agreement that would include the following fundamentals:

- the two countries will ease joint activities, they will set up a special branch in the other country,
- both parties will jointly act against fissile materials smugglers,

- they will join forces to make the fight against illegal trade a world-wide activity,
- Russian and German experts will jointly do origin examinations of confiscated fissile materials, what is more, it will be carried out in the laboratory of the country where the materials are confiscated.

(Russia - Italy):

Apart from Germany, Russia also held talks with Italy about possibilities of joint operations against organized crime after it came to light that the Italian mafia took a significant part in crimes committed in Russia.

The two governments had already signed an agreement in 1992 about co-operation to stop "money laundering, drug trade and organized crime".

In 1996, at the Moscow nuclear summit Boris Jelcin, Russian President submitted a 9-point plan to increase nuclear safety and stop nuclear smuggling, for which he was urging international co-operation. The participants of the summit, the seven most developed countries, the Russian and Ukrainian presidents accepted a declaration on joint activities against fissile material smuggling.

2. Initiatives of EU

A. The Berlin declaration

Ministers of Justice and the Interior of the EU and its associates such as Finland, Norway, Austria and Sweden had negotiations with the European Commission and Central and Eastern European ministers responsible for the fight against drug trafficking and organized crime.

The participants published the following statement in connection with nuclear materials:

a)

Co-operation should be strengthened in certain significant crime sectors. Priority is given to illegal drug production and trade, radioactive and nuclear materials related crimes, man trade, man-smuggling and finally money laundering, which goes along with the former ones.

b)

Having taken into account national laws and orders as well as already existing initiatives, it is advisable to further develop co-operation, highlighting the following topics:

- the possibility of an exact survey of the situation,
- increasing operative co-operation based on current legal requirements,
- exchange of contact people and experts in order to exchange information too on the techniques, methods and special forms of criminal investigation.
- exchange of experience and research results of the above mentioned criminal forms, especially those of newly emerged ones,
- co-ordination of consulting, equipping and training assistance,
- employing compatible technical appliances and methods.

c)

The states are confronted with the following tasks if they want to fight down thefts and illegal trade related to nuclear materials:

- making a common and comprehensive general survey on illegal accessibility to radioactive materials, how it changes, what potential dangers it holds and including an assessment of the nature of criminal groups and methods,
- co-operation in the protection and insurance of existing radioactive and nuclear stocks,
- tightening border controls by installing technically suitable control systems and controlling outward consignments at airports and harbours,
- introducing punitive sanctions for cases of theft and illegal trade of radioactive and nuclear materials as well as regulating the confiscation of profit coming from such crimes.

d)

The effects of the September 11, 2001 terror attack to the protection and control of the nuclear materials and institutions

The terror attack of September 11., made a realistic fear, that sooner or later it is going to be a dreadful masskilling terror attack either in the United States or in the developed Western. European countries.

This tragedy was the turning point that throughout the world the civil- and soldier nuclear institutions and fissile materials got to be protected and checked.

Here stands an example from Mohamed ElBaradei, the head director of the International Atomic Energy Agency. This a piece from his September 11th 2001 speech.

„The tragic attack against the United States was a wake up alarm for all of us. We can not be self-satisfied. We need and must make bigger effort in all fields- from the control of the illegal trade through the safety of nuclear materials- the more secure construction of nuclear buildings, so that they could resist against the attacks and also we could react in a better way in nuclear dangers.”

Although in May, 2001 Stockholm hold a conference, where the participant organisations, who are dealing with the supervision of nuclear materials, wanted to make an action plan. The Swedish Supervision of Nuclear Materials asked the international orgationation to make a special smuggling- hunter group. These efforts only came into force after the September 11 attack on the USA.

According to the report of the IAEA-SM-367/4/8 the most important tasks are the following:

- all nuclear weapon and all nuclear material, which are used to make nuclear weapons, should be kept in stricktly secured place
- all important nuclear creation and other important fissile material truck should be secured against the outside and inside attack or sabotas action.
- there should be an effective action against black trade

B. Prerequisites of international control within the EU

The prerequisites of international control for fissile materials can be summarized as follows:

a)

The task of physical protection of fissile materials in nuclear plants and during transportation falls on operators and the police. It comprises technical

measures (e.g. fissile materials must be locked and sealed, a sluice system should be used) and also measures that affect people (it is necessary to control staff, to employ guards and to keep the police on the alert).

b)

National supervisory systems and material balance systems must ensure the normal way of physical protection of fissile materials and at the same time they must comply with international safety measures. An authority was given the task to do "double-entry book-keeping" about the fissile materials found in a country. Part of it is to record where certain materials can be found at any time, how and by what route they are transported and how their substances have changed. Nuclear plant operators books should serve as the basis for this registration, which should be inspected by national auditors who can also collect material samples to check authenticity of data.

This system serves the following aims:

- central authorities can have a clear view of the movements of fissile materials within the country,
- nuclear plant operators are forced to effectuate measures for the physical protection of fissile materials,
- it may deter potential criminals from appropriating fissile materials unlawfully.

C. Ways of organizational and technical prevention

Interpol has also reacted on this new form of crime; they have set up a separate department to beat off nuclear terrorism. 24 Western and Eastern European countries take place in this co-operation. This new phenomenon is defined by NATO as "the most dangerous threat in the post cold war period".

The international criminal investigation office is insiting its members - especially neighbours of CIS countries - to tighten border and customs control and bring to date their technical equipment.

3. Preventive measures within CIS countries

a) Russia

In prevention, smaller republics have interests in utilizing their own nuclear potentials and exporting advanced technology. They are seeking western partners to be buyers or intermediaries or part owners of joint ventures. Home-countries of such partners are compelled to reckon with risks caused by the shortcomings of export control from legal, technical and organizational points of view. Again, Russia is the only exception since their authorities at least possess the necessary experience and expertise.

The Jelcin government was striving to establish a functioning export control system. Five presidential orders were necessary to reach it.

The export of fissile materials is arranged by the Export Control Inter departmental Committee assisted by Ministries of Foreign Affairs, Economics, National Defence, Science, Industry, Foreign Trade and by the Customs Committee. Two other commissions also contribute: one for the protection of Russia's economic interests and another that is competent in radiation protection.

On Russia's initiative 10 republics that possess nuclear plants - with the exception of Georgia - have signed an agreement that obliges all contracting parties to install an export control system.

b) The Ukraine

The question is how it could be ensured that strategic rocket complexes are safe and possible disasters are prevented in the Ukraine.

Major General Vladimir Nikitin - as a result of long negotiations with the Ukrainian Ministry of Defence - is of the opinion that they have partly succeeded in restoring warranty and producer supervision of rocket production plants in the Ukraine. To supply these rocket complexes it was necessary to draw in several dozen of companies, 40% of which are based in Russia.

Russian rocket troops mobilized several millions of roubles to carry out the most urgent work at Ukrainian launch bases. Experts have arrived at the Pervomajsk and Hmelnickij units, with the aim of restoring the rocket complex to satisfactory conditions. However, the general is not convinced that they have succeeded in eliminating all hitches of rocket maintenance.

According to experts the most important issue in the Ukraine would be the political solution of nuclear rockets, to decide at a state level where these rockets belong to. The direction and finance of rocket troops must also be

unified and there should be one control center. Responsibility for safety must be assumed at one place, otherwise too many cooks spoil the broth.

c) Latvia

In another CIS country, Latvia, Israeli reserve officers are training special commandoes. Their tasks include fighting against the Latvian mafia, drug traffickers and smugglers of uranium and plutonium in the fields of prevention and reconnaissance.

4. What is there to be done with Russian nuclear experts?

The first initiative concerning experts took place in 1992 when under Dietrich Genscher's inspiration (then German Foreign Affairs Minister) the UN, the USA, Russia and Japan founded the so called International Scientific and Technical Center with headquarters in Moscow.

Its main objectives were to motivate scientists and engineers with skills in producing nuclear weapons and other weapons of mass destruction to exert their knowledge to good and peaceful use in Russia. The institute functions as a consulting and job center. As regards jobs on offer, priority is given to applied research in environment protection, energy production and safety technology of nuclear plants.

The EU promised ECU20m, the US \$25m, Japan \$17m to finance the center. Some other Western European countries have also contributed to raise funds.

It is still little known though whether these resources can motivate Russian experts not to take up employment with other powers. Unfortunately it is to be feared that most funds will end up at the Kurcatov Institute that deals with nuclear physics and is more a civil institution than a military one. It is also questionable whether the foundation can succeed in establishing necessary contacts with scientists living in closed towns.

Closing Thought

The possibility for a nuclear strike, from an international conflict or a terror attack can not be neglected. The above mentioned international treaties and corporations have the goal to suppress from the beginning, investigate and prevent all tries, which could directly or indirectly cause a nuclear strike. Considering all these national and international efforts we have good reason to believe that our globe will further comply with the nuclear test ban and will remain peaceful in the coming decades.