NUCLEAR SECURITY AND SAFETY IN AMERICA:

A proposal on illicit trafficking of radioactive material and orphan sources

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The special nature of nuclear energy requires particular safety and security conditions and stronger protective measures. The International Atomic Energy Agency (IAEA), as do other international and regional organizations, provides assessment, but it does not know a great deal about the security status of most Member States. It is necessary to learn of and determine the needs and concerns of a State for improving legal framework, reviewing detection of and response to illicit trafficking, and in order to develop a strategic plan that will enhance work that results in tangible improvements of security.

Nuclear law has an international dimension because the risks of nuclear materials do not respect borders. Terrorist acts defy the law; they don't belong to a State. The possibility of transboundary impacts requires harmonization of policies, programs, and legislation. Several international legal instruments have been adopted in order to codify obligations of States in various fields, which can limit national legislation. There are legal and governmental responsibilities regarding the safe use of radiation sources, radiation protection, the safe management of radioactive waste, and the transportation of radioactive material.

The terrorist attacks of 11 September 2001 represented a clear challenge, but they must not stand as obstacles in the development of nuclear technology. It is necessary to reinforce these efforts in order to improve nuclear energy security, because energy is a vital issue that cannot wait.

Orphan Sources and Illicit Trafficking of Radioactive Material

This article will focus on self-contained radioactive sources that are no longer under proper regulatory control, often referred to as "orphan sources," and the illicit trafficking of radioactive materials, a serious threat to national and international security. Currently, there is no hard data reflecting specific numbers of orphan sources because there are not enough legal instruments to control the phenomenon. With the collapse of the former USSR, a secure State with closed borders was lost, as well as well-paid nuclear workers and strict surveillance of the KGB, particularly in Chechnya, Georgia, and Moldova. The problem of orphan sources persists today. Many facilities (where plutonium is stored) lack detectors and cameras. People with critical knowledge on the matter are poorly paid. In Mexico, three radioactive sources were stolen during a seven month period, from December 2013 to June 2014. In the United States, there are around 200 orphan sources per year, principally for medical uses.

Radioactive material accounts for only 5 to 10 % of detected illicit trade. Although none of these cases involved sufficient quantities to build a nuclear bomb, it is still extremely dangerous; even a small quantity of enriched uranium in the hands of a terrorist can cause a world catastrophe, as there is a black market for radioactive materials. It is vital to build a strong network of national and international cooperation and Information.

The Goiânia Accident: A Case Study

The accident in Goiânia, Brazil on September 28, 1987 was one of the world's worst radiological incidents.

Modern societies present a wide range of targets for attacks that could cause mass destruction or mass disruption, many of which would be far easier to attack than nuclear materials or the facilities where they are contained. The Goiânia accident was a radioactive contamination accident that occurred after an old radiotherapy source, a capsule containing highly radioactive caesium chloride, was stolen from an abandoned hospital site, the Instituto Goiano de Radioterapia (IGR). The equipment had remained at the site because of an order court, in spite of the fact that the owners of IGR wrote several letters to the National Nuclear Energy Commission, warning them about the danger of keeping a teletherapy unit at an abandoned site.

The thieves entered the partially demolished facility and, after disassembling the teletherapy unit to some degree, they placed the source assembly – which they believed might have some scrap value – in a wheelbarrow, taking it to a house near the IGR. There, they dismantled the source, which was later sold. Four people died, including a 4 year old girl, Leide das Neves, and more than 120.000 persons were taken to Goiania Olympic Stadium to be monitored for radioactive contamination, as a result of the source being passed around and handled by so many people. 22 people were seriously contaminated.

The cleanup operation involved removing topsoil from several sites and demolishing several houses. 730 persons worked on decontamination tasks for 6 months. The accident left 3,500 cubic meters of radioactive waste. The waste was managed and deposited in Abadia de Goias, 22 km from Goiania.

The consequences were both terrible and significant; from deaths and serious injuries from exposure to radiation, to demolished houses and cars, economic, financial, social, psychological effects, and discrimination suffered by the population for a long time.

Using the Goiânia accident as a benchmark, it is not difficult to imagine what could happen if the source was a target selected by a terrorist. There are many lessons to be learned from this fateful event.

A Proposal

The illicit trafficking of radioactive material and acts of nuclear terrorism pose serious threats to global security and need to have a continental response. There are several regional mechanisms that could be put into place, but as I think this is a global issue, it requires a global response – and in this case, a continental response.

The Inter-American Nuclear Energy Commission within the framework of the Organization of American States (OAS) was an important instrument, but it was dissolved by resolution of the General Assembly [AG/RES. 1453 (XXVII-O/97)] on June 4, 1997 due to financial problems. Yet it had to continue working in order to develop an important role in the American continent.

The need of taking actions to prevent the illicit trafficking of radioactive materials requires an adequate response. A response to this need must be to identify ways to improve a broad spectrum of nuclear security and safety activities, as for example, platforms for cooperation with programs of support, a practical working plan, maintaining confidentially of information, advisory and assistance to the States as well as others. In that sense, I recommend the creation of a **Specialized Inter-American Committee on the Prevention and Control of Illicit Trafficking of Nuclear and Radioactive Material** within OAS. It would be established by the General Assembly (art. 53 of OAS Charter) and would be comprised of competent authorities in global nuclear matters.

The purpose of the proposed committee would be to promote and develop the cooperation among Member States to prevent, combat, and eradicate the illicit trafficking of radioactive and nuclear material, according to the principles of the OAS Charter, the Convention on the Physical Protection of Nuclear Material and its Amendment, and other international instruments, such as IAEA recommendations, taking into account Resolution No. 1540 of the Security Council of United Nations and with full respect for the sovereignty of nations, the rule of law, and International law.

The main functions of the Committee would be to:

1. Develop inter-American cooperation, recommending specific measures to prevent and control the illicit trafficking of radioactive and nuclear material;
2. Encourage Member States to have adequate legal and governmental structures in place, following IAEA recommendations;

3. Urge Member States who still have not signed, ratified, or accessed, in accordance with their domestic laws, International Conventions related to the topic (e.g. the Convention on the Physical Protection of Nuclear Material and its Amendment);
4. Create a global database on illicit trafficking of nuclear and radioactive materials; and
5. Investigate the possibility of designating, in accordance with the laws of each State, national offices that would facilitate cooperation between Member States and the bodies responsible for preventing and controlling the illicit trafficking of radioactive and nuclear material.

The Committee recommends to the General Assembly:

1. To instruct the General Secretariat of the OAS to cooperate with the Committee in the preparation of draft statute and regulations;
2. The creation of a specific fund for implementing programs and activities approved by the Committee; and
3. The establishment of an Inter-American Convention on the Prevention and Control of Illicit Trafficking of Nuclear and Radioactive Material.

It must be taken into account that for successful performance of this specialized committee, a concerted commitment by all Member States is necessary, as well as the provision of essential financial resources. The security of the Continent depends on it.