

INTERNATIONAL REGULATORY ACTIVITIES

International Atomic Energy Agency

*Guidance on the Import and Export of Radioactive Sources**

Introduction

The 48th IAEA General Conference which took place from 20 to 24 September 2004 adopted a Resolution¹ aimed at strengthening the security of radioactive sources, including approval of Guidance on import and export of high-power sources that could lead exporters to refuse shipment to countries whose safety and/or physical protection infrastructure is deemed insufficient.

The Guidance, developed by an expert group as part of the IAEA-supported Code of Conduct on the Safety and Security of Radioactive Sources (see the article by Katia Boustany in *Nuclear Law Bulletin* No. 67; the text of the code is reproduced in the chapter “Texts” of this *Bulletin*), was approved formally by the IAEA Board of Governors in mid-September 2004, just before the General Conference convened.

The Code of Conduct [IAEA/CODEOC/2004] is the only legal instrument currently available to improve control over sources worldwide. As of September 2004, 64 countries had made political commitments to adhere to the code, and more than 30 countries had signaled the IAEA director general that they intended to work toward effective import and export controls by 31 December 2005, the date proposed by the expert group for implementation of “harmonised” export regulations.

The US was pushing for a Code of Conduct on source exports and imports that would operate as “something akin to the Nuclear Suppliers Group” guidelines on exports of nuclear materials, technology and equipment, said one IAEA official. Although, unlike a convention, a code of conduct is not legally binding, adherence to it carries a political commitment.

Countries supporting the Code of Conduct and related activities, such as inventories of high-risk radioactive items or registries to track international movements of such items, are beginning to ponder whether some more binding undertaking should be pursued, perhaps in the context of developing national regulatory infrastructures, a French expert said.

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1. GC(48)/RES/10 entitled “Measures to strengthen international cooperation in nuclear, radiation and transport safety and waste management”.

Lost sources

Source security has become a major focus of concern in recent years, especially since the September 2001 attacks in the US, which raised fears that radioactive sources could be used by terrorists as radiological dispersal devices, so-called “dirty bombs.” Although the effects of a dirty bomb – in which conventional explosives would be used to disperse radioactive material – would be much less devastating than those of a real nuclear weapon, “the psychological effects are probably very comparable,” in the judgment of Juan Eibenschutz, Director General of the National Nuclear Safety and Safeguards Commission of Mexico.

Millions of radioactive sources have been distributed worldwide over the past 50 years and hundreds of thousands are still being used, according to the IAEA, which has found that over 100 countries may have no minimum infrastructure in place to properly control such sources. The Agency is running a “model project” to help Member States strengthen their capabilities to control and regulate radioactive materials, including sources, but the IAEA says it is also concerned about the fate of sources in over 50 countries that are not members of the Agency. Even in the US and the European Union (EU), tens of sources are lost every year, and thousands more disused sources risk being lost from regulatory control, the IAEA said in a fact sheet.

Political approval via the General Conference (GC) of the resolution on “The Safety and Security of Radioactive Sources,” including the new import-export Guidance, lays another legal cornerstone for the IAEA to continue to develop guidelines and recommendations in the area, according to agency Deputy Director General for Nuclear Safety & Security Tomihiro Taniguchi.

An initial conference on safety and security of sources was held in Dijon, France in 1998, and the Agency has been implementing a GC-approved Action Plan on the subject since 2000. The Code of Conduct was part of that plan, and the first version of the code was published in 2000. It was revised following an IAEA conference in Buenos Aires later that year, partly to take into account the lessons of September 11th and partly to fill in the gaps found in the first version, including the export/import Guidance. Following a third conference devoted to the subject of radioactive source security, in Vienna in March 2003, the revised Code of Conduct was adopted by the General Conference in September of that year.

The code aims to establish in every country “an adequate system of regulatory control of radioactive sources, applicable from the stage of initial production to their final disposal, and a system for the restoration of such control if it has been lost.” This worldwide system, according to the code, is designed to “achieve and maintain a high level of safety and security of radioactive sources; prevent unauthorised access or damage to, and loss, theft or unauthorised transfer of, radioactive sources, so as to reduce the likelihood of accidental harmful exposure to such sources or the malicious use of such sources to cause harm to individuals, society or the environment; and mitigate or minimise the radiological consequences of any accident or malicious act involving a radioactive source.”

Among other things, the code encourages states to permit the re-import of disused sources for management by their original producers.

So far, the Code of Conduct and the 1979 Convention on the Physical Protection of Nuclear Material (see above and *Nuclear Law Bulletin* No. 71 on the ongoing negotiations to revise this convention) are the only international legal instruments covering nuclear security, Taniguchi said at a senior regulators’ meeting during the 2004 General Conference. Taniguchi’s division assumed responsibility for nuclear security, as well as for safety, in 2002 in the wake of the September 11th attacks and concerns they raised about nuclear installations, material and sources.

Higher status

The 2004 Resolution on “Safety and Security of Sources” was part of a package of measures considered, and adopted, by the General Conference to “Strengthen International Co-operation in Nuclear, Radiation, Transport Safety and Waste Management.” The measures included continuing support for the IAEA’s safety standards programme, for a separate Code of Conduct on the Safety of Research Reactors, and for transport safety, where for the first time a resolution was cosponsored by shipping states and coastal states (see *Nuclear Law Bulletin* No. 74 for a detailed description of the content of this resolution).

The GC also endorsed continued efforts to “protect against nuclear terrorism,” calling on states to accede to the Physical Protection Convention. A diplomatic conference to consider amendments to that convention could be called in 2005.

The source-security resolution – co-sponsored by Australia and Yemen – was taken out of the general IAEA General Conference “omnibus” resolution on strengthening safety and security, to give it higher status in keeping with the emphasis on source security at recent international meetings, officials said. One said that the US had wanted to highlight the issue – and the success of negotiations toward the measure’s adoption – in light of statements on the importance of source import-export control Guidance from the G-8 summit in Sea Island and the US-EU summit in Shannon, Ireland earlier this year. The Shannon summit resulted in an announcement that the US and the EU would put “adequate” export and import controls in place by the end of 2005 “and apply them in a harmonised and consistent manner.”

Source security, including safe disposition, control of imports and exports, and recovery of high-risk sources from insecure locations, is also one focus of the US-Russian Global Threat Reduction Initiative (GTRI), for which an “International Partners Conference” was held on 18-19 September 2004 in Vienna, just before the IAEA GC.

In his closing speech to that conference, then US Energy Secretary Spencer Abraham said that all IAEA Member States that use or hold radioactive materials must be “the responsible custodians of these materials and the facilities in which they are located. If we fail to protect and prevent these materials from falling into the hands of those who would use them for malevolent purposes, the global impact could be catastrophic.”

Abraham said that “an international plan, an international program, with international objectives and international solutions ... is the only responsible way to address what is clearly an international crisis.”

Although the 2004 GC did “note” the results of the G-8 and US-EU summits, members of the G-77 developing countries group rejected wording in the resolution that would have taken note as well of the findings of the GTRI partners’ conference, with which some of the G-77 did not agree.

Export Guidance

The Guidance on import and export of radioactive sources, as approved by the IAEA Board and the GC, codifies the recommended procedures for authorising exports of the most powerful sealed sources, identified by the IAEA staff as category 1 and category 2 in a listing established with the original Code of Conduct.

Category 1 sources are those which would be likely to cause permanent injury to a person in contact with them for more than a few minutes and would likely be fatal if contact lasted longer than that, according to the code. The IAEA list of sources in this category includes a 3-terabecquerel cobalt-60 source and an 8-Tbq iridium-192 source. Typical uses are in radiothermal generators, irradiators, and radiation teletherapy.

Category 2 sources, the code says, could cause permanent injury if handled for a short period (minutes to hours) and contact of “hours to days” could be fatal. They are typically used in industrial gamma radiography, high dose rate brachytherapy and medium dose rate brachytherapy, the code says. Their activity is generally about 100 times lower than those of category 1 and ten times higher than sources in category 3, which could still cause permanent injury if handled for more than some hours but are not explicitly covered by the export-import Guidance.

The export Guidance requires exporting states to review whether importing states have “the appropriate technical and administrative capability, resources and regulatory structure” to manage sources as the code stipulates. The document lists criteria for determining that, including whether the state has a regulatory framework covering at least Category 1 sources or whether it has told the IAEA director general that it plans to follow the code.

The Guidance does allow for export even if the criteria are not fulfilled in “exceptional circumstances,” defined as, for example, “cases of considerable health or medical need” or “cases where there is an imminent radiological hazard or security threat presented by one or more radioactive sources.” It also allows such export if the exporting facility or exporting state maintains control of a source in the importing state and brings it back after its use.

The most controversial part of the Guidance, diplomats said, is a provision that allows states to refuse export of sealed sources if “available information” indicates that the recipient has a history of clandestine or illegal procurement or use of radioactive sources. That refusal could also be based, according to the Guidance, on a determination by the exporting state that there is a “risk of diversion or malicious acts” involving the source(s). Potential recipient states, diplomats said, protested that this clause could be used to deny shipment of badly needed sources based on secret information, or as a political tool.

The largest exporter of sealed sources is Canada. Other big exporting states are France, the Russian Federation, Argentina, the Netherlands, South Africa, and the UK, IAEA officials said.

The IAEA, along with the EU and Interpol, the international police organisation, is organising another conference on source security next June in Bordeaux, France. According to Marc-Gerard Albert of the French *Commissariat à l'énergie atomique* (CEA), the meeting will address “the legacy of the past,” including the problem arising from “orphan sources” – those whose owners have ceased to exist – which he said “requires immense attention.” While reiterating political support for ongoing actions like the Code of Conduct, Albert told the IAEA senior regulators’ gathering, the Bordeaux meeting could also be a forum for decisions on the next steps to progress in controlling sources worldwide. That progress could include “more binding arrangements” for source use and trade under an international umbrella, he suggested.

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Convention on Physical Protection of Nuclear Material

Article 20(1) of the Convention on Physical Protection of Nuclear Material (CPPNM) provides that a State Party may propose amendments to the convention, which shall be circulated to other States Parties. A majority of states may then request the depositary to convene a conference to consider the proposed amendments.

On 5 July 2004, the Director General of the International Atomic Energy Agency (IAEA), depositary of this convention, circulated among all States Parties, pursuant to Article 20 CPPNM and following a request of 1 June 2004 by the government of Austria and 24 co-sponsoring states, a proposed amendment to the CPPNM. This proposal would extend the scope of the convention to cover also the physical protection of nuclear material used for peaceful purposes, in domestic use, storage and transport and the physical protection of nuclear material and nuclear facilities used for peaceful purposes against sabotage.

On 19 January 2005, a majority of States Parties to the CPPNM requested the Director General to convene a diplomatic conference to consider the proposed amendments circulated. Pursuant to Article 20, the Director General has invited the governments of all States Parties to participate in a Conference of Plenipotentiaries to consider and adopt proposed amendments to the CPPNM, which will take place at IAEA Headquarters, Vienna, from 4 to 8 July 2005.

In preparation of this conference a meeting was held from 4 to 7 April 2005, attended by 58 Parties to the convention (including Euratom). The meeting discussed, *inter alia*, the Provisional Rules of Procedure for the Diplomatic Conference, its agenda and officers.

International Expert Group on Nuclear Liability (INLEX)

The International Expert Group on Nuclear Liability (INLEX) established by the IAEA Director General in 2003, held its 4th meeting in February 2005. During the course of this meeting the Group discussed, *inter alia*, mechanisms for addressing possible gaps and ambiguities in the existing international nuclear liability regime and reached various conclusions in relation thereto. In particular, the Group recognised that, until all countries belonged to a global nuclear liability regime, there were some inevitable complexities resulting from the existence of different instruments. Various discrepancies between the existing nuclear liability regimes, including differences regarding access for non-Contracting States to the regimes established, the obligations of membership, difficulties in pursuing claims and the possible inadequacy of levels of compensation were raised.

INLEX's work is still ongoing and the group is in particular considering issues such as civil liability for nuclear damage in Asia, the Pacific and the Latin America region. The 5th meeting of INLEX is scheduled for July 2005.

European Union

Commission Regulation (Euratom) on the Application of Euratom Safeguards (2005)

Commission Regulation (Euratom) No. 302/2005 of 8 February 2005 on the Application of Euratom Safeguards is taken in implementation of Chapter VII [Articles 77 to 79] of the Euratom Treaty on safeguards which allows the Commission to verify that on the territory of Member States:

- ores, source materials and specific fissile materials are not diverted from their intended uses as declared by the users;
- provisions relating to supply and any particular safeguarding obligations assumed by the Community under an agreement concluded with a third state or an international organisation are complied with.

These regulations repeal and replace Commission Regulation (Euratom) No. 3227/76 of 19 October 1976. The 2005 Regulation therefore takes into account changes in the legal framework (enlargement of the European Community) and in the nuclear industry (increased number of installations to be taken into consideration), but also responds to new needs in terms of declaration and the opportunities offered by information technologies.

This text applies to any person or undertaking setting up or operating an installation for the production, separation, reprocessing, storage or any other use of source material or special fissile material. It describes the obligations resulting from the implementation of Articles 78 (declaration of the basic technical characteristics of installations) and 79 (nuclear material accountancy) of the Euratom Treaty.

Regarding Article 78, the regulation describes practical modalities of the declaration, the time limit within which such declaration must be made, the programme of activities of installations, and particular safeguard provisions. Regarding Article 79, the regulation establishes in particular the accounting system for materials, requirements in respect of operating and accounting records and reports, the initial book inventory, the inventory change report, the material balance report and physical inventory listing and special reports.

The regulation also contains provisions on export and import of source materials and special fissile materials, providing in particular that persons or undertakings to which it applies shall give advance notification to the Commission. Notification shall be given after the conclusion of the contractual arrangements leading to the transfer and shall reach the Commission at least eight working days before the material is to be packed for transfer.

Rules are established governing the accounting of waste as well as its processing and transfers of conditioned waste.

The regulation contains specific provisions applicable in the territories of the Nuclear-Weapon Member States. It provides that the extent to which it applies to nuclear materials, installations or parts of installations which are liable to be assigned to meet defence requirements and which are situated in these territories, shall be defined by the Commission in consultation and in agreement with the Member State concerned.

Beside standard questionnaires used for declaring certain categories of installations, a Council/Commission statement specifying that guidelines shall be adopted and published by the Commission, is annexed to the regulations. These guidelines will be used by operators as non binding orientations facilitating the implementation of the regulation.