



International Atomic Energy Agency

GENERAL CONFERENCE

GC(41)/21
18 September 1997

GENERAL Distr.
Original: ENGLISH

Forty-first regular session
Item 18 of the provisional agenda
(GC(41)/1)

MEASURES AGAINST ILLICIT TRAFFICKING IN NUCLEAR MATERIALS AND OTHER RADIOACTIVE SOURCES

1. Last year, in resolution GC(40)/RES/17, the General Conference, among other things, welcomed the activities in the fields of prevention, response, training and information exchange undertaken by the Secretariat in support of efforts against illicit trafficking, invited the Director General to continue working during the coming year in accordance with the relevant conclusions of the Board of Governors and requested the Director General to submit a report to the General Conference at its next regular session on activities undertaken by the Agency in the intervening period.
2. In response to that request, attached is a report by the Director General to the Board of Governors which is to be considered by the Board at its meetings starting on 22 September 1997. A brief account of the Board's consideration of that report will be provided to the General Conference in an Addendum to the present document.



GOV/INF/818
5 September 1997

International Atomic Energy Agency

BOARD OF GOVERNORS

RESTRICTED Distr.
Original: ENGLISH

For official use only

Item 7 of the provisional agenda
(GOV/2942)

MEASURES AGAINST ILLICIT TRAFFICKING IN NUCLEAR MATERIALS AND OTHER RADIOACTIVE SOURCES

Report by the Director General

Introduction

1. In September 1994, General Conference resolution GC(XXXVIII)/RES/15 called upon Member States "to take all necessary measures to prevent illicit trafficking in nuclear material". The resolution also invited the Director General "to intensify the activities through which the Agency is currently supporting Member States in this field" and to submit proposals to the Board of Governors. The General Conference's request was made at a time when many incidents of illicit trafficking in nuclear material were being reported.
2. In December 1994, the Board of Governors considered document GOV/2773, in which the Director General proposed actions whereby the Secretariat could intensify its support of Member States' efforts against illicit trafficking in nuclear materials and other radioactive sources. The Board of Governors asked the Secretariat to continue developing the proposals through further discussion and consultation with Member States, and decided to consider the matter further at its March 1995 session.
3. In March 1995, the Board of Governors considered document GOV/2773/Add.1 and requested the Director General to undertake the actions proposed in document GOV/2773 on the understanding that the Secretariat would take into account the comments made during the Board session.
4. The Secretariat has proceeded to carry out the activities described in documents GOV/2773 and GOV/2773/Add.1 within the framework of programme M, "Security of Material", of the Agency's overall programme for 1997 and 1998 (GC (40)/10). The Department of Safeguards, the Division of Radiation and Waste Safety, the Department of Technical Co-operation and the Legal Division contribute to the overall programme which is headed by the Deputy Director General for Safeguards.

5. In September 1996, in resolution GC(40)/RES/17, the General Conference - *inter alia* - welcomed "the activities in the fields of prevention, response, training and information exchange undertaken by the Secretariat in support of efforts against illicit trafficking" and requested the Director General to report to it at its 1997 session on activities undertaken in the intervening period. Pursuant to that request this report will be submitted (if necessary, including comments made on it during the Board session starting on 22 September 1997) to the General Conference, together with any decisions taken by the Board at that session.

6. With this report, the Secretariat presents to the Board of Governors an assessment of the present situation of illicit trafficking, a review of what it has done in the past few years, an overview of Member State activities and an outline of a continued programme to further assist Member States in their efforts to combat illicit trafficking of nuclear materials and radioactive sources.

Illicit trafficking: Assessment of the present situation

7. The primary responsibility for combating illicit trafficking of nuclear material and radioactive sources rests with the Member States' Governments. However, many States have noted that practical and effective complementary measures should also be taken at the international level. Based on information made available to it and from its activities in Member States, the Secretariat has made the following assessment of the illicit trafficking situation.

8. Fifty-four¹ States have agreed to report to the Agency incidents of illicit trafficking in nuclear materials and radioactive sources. While extensive, the Illicit Trafficking Database is necessarily limited to known, reported incidents and is only one indicator of the extent of the illicit trafficking problem. A majority of the reported incidents have involved radioactive sources and natural and low-enriched uranium. Only a few cases have involved high-enriched uranium or plutonium.

9. That the Secretariat continues to receive reports of trafficking incidents indicates that deficiencies remain in legal, administrative and technical arrangements for controlling nuclear materials and radioactive sources.

¹ Argentina, Australia, Austria, Belarus, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, Cuba, Cyprus, the Czech Republic, Denmark, the Dominican Republic, Ecuador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Hungary, Israel, Italy, Japan, Latvia, Lithuania, Mexico, Morocco, Namibia, the Netherlands, New Zealand, Norway, Peru, the Philippines, Poland, Portugal, Romania, the Russian Federation, Saudi Arabia, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Turkey, United Kingdom, USA and Venezuela.

10. The potential for the smuggling of large quantities of weapons-grade material may be low. However, even trafficking of small quantities of such material deserves attention in the context of non-proliferation, since larger quantities of nuclear material of strategic value (high-enriched uranium and plutonium) could be accumulated. Moreover, although not of direct concern from the viewpoint of non-proliferation, illegal movements of other radioactive materials can, and have, resulted in fatal ionizing radiation exposure to individuals², and must be considered as a serious issue of public health.

11. It is generally agreed that the problem of illicit trafficking of nuclear materials and radioactive sources should be addressed first through prevention. The complex of measures for safety, security, physical protection and accountancy and control (including the control of transborder movements) of these materials constitute the protective system as a whole. Much has been accomplished by way of strengthening this system through the efforts of several Member States and by the Secretariat, but despite these accomplishments more needs to be done. Some of the concerns relate to;

- *the legal basis for nuclear material control and radiation safety.* National legislation and regulatory oversight systems, including regulations and guidance for operators, still need improvement in many States;
- *the physical protection of nuclear material.* In many States the level of physical protection does not meet internationally accepted standards, thereby leaving the material vulnerable. To operate the advanced physical protection systems of some facilities, further staff training is required;
- *the State Systems of Accounting and Control (SSAC).* To strengthen the prevention of illicit trafficking, there is a need to improve SSACs and the training of staff at both the State and facility level;
- *the safety and security of radioactive sources.* In many States, there are large numbers of radioactive sources of which the regulatory authorities are not aware, as well as sources which may be kept without adequate safety and security arrangements;
- *the control of transborder movements.* Legal arrangements to achieve control over exports and imports of radioactive sources and nuclear material (e.g. through export licensing arrangements) are still needed in some States. Radiation measurements at borders to detect ionizing radiation from transports of radioactive material deserves serious consideration in many cases.

²

The well-known incident involving a discarded radiation source in Goiânia, Brazil, a few years ago caused several deaths and the radioactive contamination of a large part of the town.

12. Incidents listed in the database indicate that illicit trafficking is not confined to a single State or a group of States. Where national structures for nuclear non-proliferation, safety and security are inadequate, a potential exists for the illegal use and movement of nuclear materials and other radioactive sources. States with limited nuclear activities should also make arrangements to prevent illicit trafficking through their territory.

13. In view of the shortcomings which remain, it is desirable that the Agency's programme of activities dealing with illicit trafficking in nuclear materials and other radioactive sources continue. It should focus on supporting Member States in their efforts to establish and improve the national arrangements needed to *prevent* illicit trafficking and include provisions of advice and services to assist States in their *detection* of and *response* to illicit trafficking incidents.

Agency activities in assisting States combat illicit trafficking (1995-1997)

14. Article III.A.6 of the Agency's Statute, authorizes the Agency to establish - and to provide for the application of - "standards of safety for protection of health and minimization of danger to life and property (including standards for labor conditions)". As a consequence, the Agency has published the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources³, which include requirements related to the security of radiation sources. Subsidiary guidance will include the prevention and detection of and responses to illicit trafficking in radioactive materials.

15. Pursuant to Article III.A.5 of the Agency's Statute, the Agency is authorized to establish and administer safeguards "designed to ensure that special fissionable and other materials ... are not used in such a way as to further any military purpose". The Agency thus verifies the compliance by States with undertakings contained in safeguards agreements. Under such agreements, States undertake to establish State Systems for Accounting and Control (SSAC). SSACs provide for an accounting and control of nuclear materials which contributes to the prevention and detection of illicit trafficking. Under comprehensive safeguards agreements, States are obliged to report to the Agency all nuclear material in the State, any material missing from facilities, and also any material that has been gained from seizure of illicitly transferred material

³ The Basic Safety Standards are jointly sponsored by the Food and Agriculture Organization of the United Nations, the International Labour Organization, the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development, the Pan American Health Organisation, the World Health Organisation and the International Atomic Energy Agency. They were approved by the Board of Governors in September 1994 and issued by the Agency as Safety Series publication No. 115, in 1996.

16. The Programme approved by the Board in March 1995 included a number of activities that addressed nuclear and radiation safety legislation, improved exchange of information, physical protection of nuclear material, State Systems for Accountancy and Control, control of radiation sources, detection and response of illicit movements and training.

17. A summary of the Secretariat's activities and results are given below. The Attachment to this document provides more details on the activities that have been carried out. It should be noted that some activities are implemented under programmes other than the illicit trafficking programme (Programme M, Security of Material), e.g. establishment of basic legal frameworks, and implementation of radiation safety regulations.

- *Nuclear and radiation safety legislation.* The Agency has contributed to the efforts of Member States to establish basic national legislation. The contributions have been made primarily through Technical Co-operation projects, with the Agency's Legal Division and the Division of Radiation and Waste Safety providing the necessary expertise (e.g. projects INT/9/143 and RER/0/015).
- *The Illicit Trafficking Database.* The Secretariat has established and maintains an Illicit Trafficking Database containing confirmed reports of incidents received from participating States. The Secretariat follows up with the States concerned all reports of trafficking found in open source information. The database covers both radioactive sources and nuclear materials.
- *The physical protection of nuclear material.* The Secretariat has established an expert service for physical protection. Through the "International Physical Protection Advisory Service" (IPPAS), peer reviews of Member States' physical protection systems are arranged on request. Experts from Member States participate in the peer review teams which make assessments of the physical protection systems, at either the State or the facility level.
- *The State Systems for Accountancy and Control.* The Secretariat is actively engaged in co-ordinating activities and tasks conducted by donor States⁴ in their support of SSACs in the Newly Independent States (NIS). For that purpose, Co-ordinated Technical Support Plans (CTSPs) have been established based on needs identified by the recipient States, donor States and during fact-finding missions performed by the Secretariat and during implementation of safeguards. The Secretariat monitors the progress of activities, distributes relevant information, organizes seminars and facilitates information exchange between the parties. There are CTSPs established for nine recipient States.

⁴ Australia, Finland, France, Hungary, Japan, Norway, Sweden, the UK, and the USA.

- *Radiation safety.* Within the framework of the Agency's radiation safety activities, an interregional Technical Co-operation Model Project in "Upgrading Radiation Protection Infrastructure" (project INT/9/143) was launched in 1993 with the objective of strengthening the "radiation safety infrastructure of a number of selected Member States" in order to comply with the Basic Safety Standards. Currently, 53 States are covered by the Model Project, which includes all aspects of safety and prevention of loss of control of radioactive sources.
- *Detection and response.* With the assistance of Member States and international organizations, a Safety Guide on the prevention, detection of and response to illicit trafficking in radioactive materials has been drafted.
- *Training.* The Secretariat organized a training course on "Physical Protection, Transportation and Illicit Trafficking" and a "train-the-trainers" course on the prevention of nuclear trafficking. The Secretariat has also organized six training courses on physical protection and five SSAC training courses.
- *Information exchange.* The Secretariat arranged for a group of representatives of several international organizations⁵ concerned with illicit trafficking and its consequences to meet during 1995 and 1996 to discuss ways in which relevant intergovernmental organizations could benefit from each other's experience and assist States in their efforts to combat illicit trafficking of nuclear materials and radioactive sources. The group will meet again in September 1997.
- *Analytical services.* The Secretariat was asked to provide assistance in the classification of two separate incidents of illicit trafficking of nuclear materials. On-site measurements were made in these cases, and in one case additional analysis of seized nuclear material was performed at the Agency's laboratory.

Member States' activities to combat illicit trafficking

18. International legal instruments provide a basis for national arrangements for preventing, detecting and responding to illicit trafficking. Presently 127 States have concluded safeguards agreements with the Agency, 57 States are parties and 45 States signatories to the Physical Protection Convention and 33 States have declared their intention to apply the Nuclear Suppliers Guidelines for nuclear related exports; leading to national measures that contribute

⁵ The United Nations, the Universal Postal Union, the International Maritime Organization, the International Civil Aviation Organization, World Customs Organization, The International Criminal Police Organization, (Interpol), the Commission of the European Union, the European Police Office (Europol), the International Air Transport Association, The International Federation of Airline Pilots Association and the International Transport Union.

to the prevention or detection of illicit trafficking. Most exporting States now require adequate physical protection, accounting and control measures to be in place for nuclear material in recipient States.

19. Many international organizations have taken an interest in the prevention of illicit trafficking and in mitigating the associated risks. The United Nations, the Commission of the European Union, the World Customs Organization are among the organizations that have addressed the problem. These, and others⁵, have joined in the Secretariat's information exchange efforts and have participated in Agency training activities.

20. Several Member States have assigned significant amounts of resources to bilateral co-operation with Newly Independent States to support their efforts to establish nuclear material accountancy and control systems, physical protection systems, and radiation protection systems. These programmes cover periods of several years, as installation of new equipment and implementation of new techniques often require extensive training and acquisition of experience with the new systems.

21. In April 1996, eight IAEA Member States⁶, met at the Nuclear Safety and Security Summit held in Moscow. The need for the safe management of fissile material as a barrier against the risk of illicit trafficking in such material was reaffirmed. The Summit participants noted that international efforts to suppress illicit trafficking should address: accounting, control and the safe and secure storage of nuclear material to prevent and detect attempts at diversion. Co-operative intelligence, customs and law enforcement efforts were recognized as necessary for preventing the transportation and sale of diverted materials. Prevention was recognized as the most important first step. The Summit participants called for greater international co-operation, multilaterally and through the Agency, in strengthening the physical protection of nuclear materials and to put effective accounting systems in place.

22. Specifically, in the "Programme for Preventing and Combating Illicit Trafficking in Nuclear Materials" and the "Background Document on Nuclear Safety and National Security", the Summit participants reaffirmed their support for the Agency's safeguards regime and recognized the importance of effective nuclear material accounting, control and physical protection, as well as the need to adhere to established standards and recommendations for national and facility-level infrastructures and procedures. The Summit participants urged all States to ratify the Convention on the Physical Protection of Nuclear Material and to apply the recommendations in document INFCIRC/225/Rev.3. They welcomed the work already done by the Agency and encouraged additional international co-operation, including:

- *enhanced information exchange at the bilateral and the multilateral level, e.g., through international seminars and conferences;*

⁶ Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom, the United States of America.

- *bilateral co-operation* in the development of systems for nuclear material accounting and control and for the physical protection of nuclear facilities;
- *co-ordination of activities* to maximize the effectiveness of support given by donor States and the Agency; and
- *training* to help countries improve their procedures and increase their expertise.

23. The Eight States participating in the Denver Summit meeting in June 1997 confirmed their commitment to the "Program for Preventing and Combating Illicit Trafficking in Nuclear Materials".

24. In essence, the programmes agreed at the Summits in Moscow and Denver and that outlined in GOV/2773 and GOV/2773 Add.1, are mutually consistent.

25. It was agreed at the Summit of the Eight in 1997 that a number of additional States in Central and Eastern Europe and Central Asia will be invited to participate in the activities of the "Programme for Preventing and Combating Illicit Trafficking in Nuclear Materials". Their first meeting will be held in November of this year in Vienna, in facilities made available by the IAEA.

The IAEA Secretariat's plans for the continued programme

26. Combating illicit trafficking is a complex task both for States and for the Agency. The objective are first to *prevent* the removal of nuclear materials and other radioactive sources from their authorized locations; second, to *detect* and *respond* to incidents of trafficking which nevertheless occur. The following paragraphs outline the activities that the Secretariat plans to pursue in this regard.

International legal instruments

27. The importance of international legal instruments as an agreed basis for national administrative and technical systems for control of nuclear material and radioactive sources was emphasized in document GOV/2773 and has been confirmed in statements by many Member States.

28. Physical protection remains a national responsibility. However, the Agency has played a useful role in connection with physical protection since the early 1970s in particular in formulation and revisions of its "Recommendations for The Physical Protection of Nuclear Material" (currently INFCIRC/225/Rev.3) and the Convention on Physical Protection of Nuclear Materials. Together the two documents establish the basis for internationally acceptable physical protection regimes.

29. Although not a binding document, INFCIRC/225/Rev.3 is commonly referred to in legal documents, such as bilateral control agreements, and is frequently used by States as a standard for national regulations and in Nuclear Suppliers Group Guidelines. It is important that the Secretariat initiate reviews of this document, to ensure at all times that it reflects an international consensus regarding the minimum level for physical protection systems. A review of INFCIRC/ 225/Rev.3 might usefully take place during 1998. The Secretariat will consult with Member States on this issue.

30. The requirement in the Convention on the Physical Protection of Nuclear Material to ensure that nuclear material is protected at the specified levels applies only to nuclear material in international transit. The Secretariat continues to stand ready to make arrangements for a review of the implementation of the Convention and its adequacy in light of the prevailing situation.

Supporting activities for the prevention of illicit trafficking

Identification of needs

31. Through its activities in many States, the Secretariat is often in a position to identify needs for improvement of legal, administrative and technical arrangements for controlling nuclear materials and radioactive sources. Observations are shared with the State concerned, and, upon its request, the Secretariat can convey information to another State with supporting resources or advise on the possibility of obtaining assistance through the Agency's Technical Co-operation programme. This mechanism might be used more to bring about needed improvements.

32. The Secretariat has already established advisory services to help Member States assess the effectiveness of national radiation safety and physical protection systems. At the request of Member States, the Secretariat arranges peer reviews by experts from Member States e.g. the IPPAS missions, or peer reviews carried out in the context of the Technical Co-operation projects. At the request of Member States, the Secretariat could offer peer review services in other related topics, e.g. legal or regulatory infrastructures.

Legal and regulatory framework

33. In any State, a full legal and regulatory framework is needed for the control of the storage, use and movement of nuclear materials and radioactive sources. The Secretariat already assists the States participating in Technical Co-operation Projects with advice regarding legal and regulatory structures in support of nuclear safety. It plans to expand such support to include legal matters of non-proliferation relevance, including e. g. a regulatory framework for physical protection and transborder control of nuclear materials and radioactive sources.

Physical protection

34. Within the Agency's "Security of Material" programme, the physical protection-related activities rely heavily on extrabudgetary contributions from Member States. The need for advisory services in establishing physical protection systems is now recognized. The Secretariat plans to continue offering such services and to conduct three to five IPPAS missions a year, in 1998 and onwards.

35. The Secretariat further plans to prepare technical manuals offering guidance to establishing physical protection systems that meet the requirements of INFCIRC/225/Rev.3.

State Systems of Accounting and Control

36. The safeguards Co-ordinated Technical Support Programme has proved to be an effective mechanism for assistance in the establishing of SSACs in the NIS. The Secretariat's efforts have been of use to both the donor States and the recipient States. Periodic meetings have given opportunities for consultations and information exchange between the parties. The Secretariat will continue periodically to organize co-ordination meetings and prepare information on ongoing activities. Through this mechanism, needs for support in NIS states can be responded to and duplication of effort avoided. The Secretariat would propose to extend this programme to other states seeking such assistance.

Radiation Safety

37. Appropriate national regulatory systems are prerequisites for the implementation of the Basic Safety Standards. Several Technical Co-operation projects, including the Model project (INT/9/143) deals with systems of administrative and technical control of radioactive sources and other radioactive materials as well as the monitoring and verification of compliance and the keeping of records.

38. A safety guide on the prevention, detection of and responses to illicit trafficking in radioactive materials has been drafted. It has been developed in consultation with Member States and in co-operation with other international organizations with an interest or role in preventing illicit trafficking in such materials.

39. Together with the Austrian and Hungarian customs authorities, the Secretariat has organized a large-scale study of border monitoring systems to identify hidden radioactive materials and of hand-held monitors to locate such materials in transport vehicles and on persons. The results of the study will be distributed to interested Member States.

Training

40. To satisfy the demand of Member States it is planned to continue and expand the training activities. Training in areas such as the physical protection of nuclear materials at facilities and in transportation, SSACs and on responding to illicit trafficking has been well received. Four physical protection courses and three SSAC courses are planned for 1998.

Training courses on prevention, detection and response to illicit trafficking of radioactive materials will be continued and expanded, supplemented with "training packages" that can be used for States own training.

Information exchange

41. It is planned to continue the Illicit Trafficking Database and to provide information to Member States on reported incidents. Periodic summary reports will continue to be issued.

42. International conferences designed to foster information exchange at the technical level may be organized as the need for them is identified. An "International Conference on Physical Protection on Nuclear Material" will be held in Vienna in November 1997.

43. Information exchange in safety and security of radiation sources will also continue to be promoted. An "International Conference on the Safety of Radiation Sources and the Security of Radioactive Materials" is to be held in France, in September 1998. It is to be co-sponsored by the Commission of the European Union, the World Customs Organization and Interpol.

Supporting activities for the response to illicit trafficking incidents

44. At the request of Member States the Secretariat will continue to offer analytical services, and other technical assistance, to help characterize material seized in illicit trafficking incidents.

Resources

45. Implementation of the Agency's programme depends to large extent on the support of Member States. Extrabudgetary contributions to the programme have been made by Germany, Japan, Sweden, United Kingdom and United States of America.

46. The main part of the activities is carried out within Programme M "Security of Material". The resources of this Programme amount to about US \$ 0.6 million from the Regular Budget, and 1.2 million from extrabudgetary contributions both for 1997 and for 1998.

47. As noted above, other programmes contribute to the overall efforts of the Secretariat in respect of illicit trafficking. For example, a major contribution is the legal assistance. The regular budget and Technical Co-operation funds contribute to these activities.

48. Agency resources, mainly from Technical Co-operation funds contribute to the establishment or improvement of national arrangements for the prevention of illicit trafficking of radioactive sources. So far, only limited Agency resources have been used for the upgrading of physical protection arrangements. However, upon Member State's request,

Technical Co-operation projects could be used to meet needs for physical protection upgrades and for elements of nuclear material control.

49. To allow a reliable and longer term commitment of the Agency in the prevention of illicit trafficking a larger proportion of the funds required for the activities of Programme M, Security of Material, should be provided through the regular budget. The Secretariat will address this question in the budget process for 1999-2000.

AGENCY ACTIVITIES 1995-1997 AGAINST ILLICIT TRAFFICKING IN NUCLEAR MATERIALS AND OTHER RADIOACTIVE SOURCES AND A FORECAST OF ACTIVITIES 1998.

In GOV/2773 and GOV/2773/Add. 1, the Secretariat proposed to carry out a number of activities during 1995 and 1996 in support of Member States' efforts to prevent and respond to illicit trafficking in nuclear materials and other radioactive sources. These activities involved technical support, services, guidance, training and information exchange. Below is a compilation of the activities that have been carried out since the March 1995 Board of Governor's meeting.

Section 1 ACTIVITIES AGAINST ILLICIT TRAFFICKING IN NUCLEAR MATERIALS

Physical Protection

1.1. One of the major objectives of the physical protection activities was to convey a basic understanding of the need to protect nuclear materials and of the tools necessary for developing and operating a national physical protection system. Extrabudgetary contributions from Germany, Japan, Sweden, the United Kingdom and the United States of America made it possible for the Secretariat to carry out essentially all of the activities planned for 1995, 1996 and 1997. An account of the activities is given below, and a forecast of the activities planned for 1998 on the assumption that the Agency will receive the required extrabudgetary funds.

Technical Support

1.2. The Secretariat's very limited funds for the upgrading of physical protection systems have been used to improve the protection of high-enriched uranium stored at two research reactors, in two States. In one case the improvements were completed during the spring of 1997, and in the second case improvements are to be completed before the end of 1997.

1.3. It is expected that modest upgrades will be carried out of physical protection systems at selected nuclear facilities in 1998 and subsequent years.

Services

1.4. The Secretariat has established a service - the "International Physical Protection Advisory Service" (IPPAS) - through which Member States can obtain advice on their national and facility-level physical protection systems. Upon request from a Member State, the Secretariat assembles a team of physical protection experts from other Member States. It prepares the team's mission at a meeting held in the requesting Member State, and the team then travels to that State, conducts necessary discussions and visits facilities. The results of the mission (e.g. recommendations for improving the national physical protection system) are made available by the Secretariat to the Member State for action and, upon request by that State, to potential donor States.

1.5. Three IPPAS missions have been conducted so far: to Bulgaria, 20-29 November 1996; to Slovenia, 9-18 December 1996; and to Romania, 26 May-4 June 1997. The Secretariat has held meetings in Poland and Hungary in preparation for IPPAS missions to those countries later in 1997.

1.6. Several States have expressed interest in IPPAS and informally requested missions. The Secretariat plans to conduct three to five IPPAS missions a year from 1998 onwards.

Guidance

1.7. With the assistance of experts from Member States, the Secretariat is developing

- a technical document (IAEA-TECDOC) entitled "Guidance and Considerations for Implementing INFCIRC/225/Rev.3 - The Physical Protection of Nuclear Material"; and
- a handbook on the physical protection of nuclear materials (to be published in 1998).

1.8. The purpose of the IAEA-TECDOC, which is to be published in October 1997, will be to assist States in interpreting INFCIRC/225/Rev.3 and to provide a technical basis for a comprehensive review of that document.

Training

1.9. The Secretariat has helped to organize the following training courses:

- Regional training courses on physical protection held in Brno, Czech Republic, in 1995 and 1996 with participants from the Russian Federation, Newly Independent States and countries of Eastern Europe. A third course is to be held in October 1997;

- A training course entitled "Physical Protection, Transportation and Illicit Trafficking" held in Kiev in February 1997 for Ukrainian participants (for details, see 2.9);
- An "International Training Course on Physical Protection" held in Albuquerque, United States, in 1995 and 1997 for participants from a wide range of countries;
- A regional physical protection training course to be held in Kazakhstan in October 1997.

1.10. The following physical protection training events are planned for 1998:

- The "International Training Course on Physical Protection", Albuquerque, April;
- A training course to be held in China;
- A regional training course to be held in Argentina.

Information Exchanges

1.11. The Secretariat is organizing an "International Conference on Physical Protection of Nuclear Materials: Experience in Regulation, Implementation and Operation", which is to be held in Vienna from 10 to 14 November 1997. Arrangements have been made to hold a concurrent exhibition of physical protection equipment and services. The proceedings of the Conference will be published in 1998.

1.12. Physical protection experts from Newly Independent States and Eastern Europe have been awarded fellowships so that they may make scientific visits to facilities in other countries and observe how physical protection systems are being implemented there.

1.13. Arrangements have been made to add a physical protection page to the Agency's publicly accessible Internet site.

1.14. For 1998, the Secretariat is planning to grant of further fellowships for scientific visits by physical protection experts.

State Systems of Accounting and Control

Services and Information Exchange

1.15. Most of the Newly Independent States have comprehensive safeguards agreements with the Agency. In order to meet their resulting commitments fully and in a timely manner, they have taken steps to establish SSACs with appropriate administrative and technical

systems. A number of Member States (here referred to as "donor States"^{1/}) have committed resources to help those Newly Independent States, on a bilateral basis, to establish their SSACs, import/export control systems and systems for the physical protection of nuclear materials.

1.16. In 1992-94, the Secretariat conducted missions to most of the Newly Independent States to identify their needs as regards the establishment of SSACs. In implementing safeguards agreements, the Secretariat has performed initial inventory verifications in most of the Newly Independent States, and in the course of doing so it has noted the improvements made in nuclear material control systems. It has also noted, however, that further improvements are needed at both the State and the facility level to ensure the effectiveness of SSACs.

1.17. The Secretariat and several Member States have established a *Co-ordinated Technical Support Programme* to provide co-ordination services and thereby to avoid duplication of effort. Co-ordinated Technical Support Plans (CTSPs), developed by the Secretariat, has assisted both the donor and the recipient States during the past five years by providing a means whereby the donor States can optimize their support. The CTSPs provide detailed descriptions both of the support needed and of tasks being performed at the State and the facility level with regard to - inter alia - nuclear legislation, physical protection, SSACs, and export/import controls. Each plan represents a consensus involving donor States, the recipient State and the Secretariat. The objectives of each plan are (a) to define the needs to be addressed; (b) to set a time-frame for the activities to be undertaken; and (c) to make a preliminary allocation of responsibilities among donor States. Continuing discussions, co-operation and co-ordination based on periodic exchanges of information are essential for the attainment of those objectives

1.18. Co-ordinated Technical Support Plans have been drawn up and agreed upon for Armenia, Belarus, Georgia, Kazakhstan, Latvia, Lithuania, Ukraine and Uzbekistan and are being drawn up for Azerbaijan, Estonia, Kyrgyzstan, Moldova and Turkmenistan.

1.19. Progress of CTSP tasks is periodically reported to the Agency by the recipient and donor countries. This progress is monitored using a computerized monitoring system that provides the latest status on each task. This data has been recently made available to the donor and recipient States on CD-ROM. This data can be used by the individual donor and recipient States to assess the progress of the tasks and to identify open areas for support. The Secretariat updates and distributes a Calendar of Events and a data base containing the training profiles of the NIS safeguards personnel.

^{1/} Australia, Finland, France, Hungary, Japan, Norway, Sweden, the UK and the USA.

1.20. Each year the Secretariat organizes a meeting, attended by donor and recipient State representatives, to review the focus and implementation status of the co-ordinated technical support activities. The most recent meeting, held in Vienna on 6 and 7 November 1996, was attended by representatives of 14 Newly Independent States and nine donor States and by four observers.

Training

1.21. Training has been recognized as an important element in the programme against illicit trafficking. A large number of personnel from Newly Independent States have participated in training courses organized and conducted by the Secretariat and Member States. The following courses have been conducted during the past three years:

- International SSAC Training Course, held in the United States, 1995;
- National SSAC Training Course, held in Chile, 1995;
- National SSAC Training Course, held in Romania, 1995;
- Regional SSAC Training Course, held in Japan, 1995;
- Regional SSAC Training Course, held in the Russian Federation, 1996;
- International SSAC Training Course, held in the United States, 1997.

1.22. The following courses are planned for 1998:

- Regional SSAC Training Course, the Russian Federation;
- Regional SSAC Training Course, Brazil;
- Regional SSAC Training Course, Australia.

The Agency Database on Illicit Trafficking in Nuclear Materials and Other Radioactive Sources

1.23. The "Illicit Trafficking Database" dates from August 1995, when the Secretariat invited governments to participate in its database programme and to identify points of contact for that purpose. Currently, 54 States^{2/} are participating in the database programme.

1.24. The database currently contains: summary and detailed information about illicit trafficking incidents in chronological order; sample analysis results; information about radioactivity types and levels; information about persons involved in incidents; and information about law enforcement actions. Only basic information about incidents is widely disseminated to States; sample analysis results and any further information are treated confidentially and not distributed. Periodically, the Secretariat distributes summary reports to the States participating in the database programme.

1.25. The primary information source is States' points of contact, but information obtained from the media and other open sources is also entered into the database, acquiring official status if it is confirmed by information provided officially by one or more State. In cases where information from open sources is not so confirmed, the State to which the information relates is contacted for clarification and further details.

1.26. As of 1 July 1997, the database contained information on 217 trafficking incidents which had occurred since the Agency began compiling information on such incidents in 1993 (18 involving high-enriched uranium or plutonium; 122 low-enriched, natural or depleted uranium; and 77 other radioactive sources). The information for about 70% of the incidents has been confirmed by States.

1.27. The timeliness of reporting has improved and the clarity of the information provided has increased. Direct, rapid communications between States and the Secretariat are possible through a dedicated fax machine serving the Secretariat unit responsible for maintaining the "Illicit Trafficking Database".

^{2/} Argentina, Australia, Austria, Belarus, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, Cuba, Cyprus, the Czech Republic, Denmark, the Dominican Republic, Ecuador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Hungary, Israel, Italy, Japan, Latvia, Lithuania, Mexico, Morocco, Namibia, the Netherlands, New Zealand, Norway, Peru, the Philippines, Poland, Portugal, Romania, the Russian Federation, Saudi Arabia, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Turkey, the United Kingdom, the United States and Venezuela.

Section 2. ACTIVITIES AGAINST ILLICIT TRAFFICKING IN RADIOACTIVE SOURCES

Guidance

2.1. The International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (the Basic Safety Standards) provide the scientific foundations for Safety Guides that serve as direct input to national legislation. They relate to both the safety and the security of radiation sources.

2.2. Radioactive materials can become subjects of illicit trafficking only if they fall into the hands of the wrong people. Accordingly, such materials must be kept secure, with close control which is not relinquished and arrangements for the immediate communication to regulatory authorities of details regarding decontrolled, lost or stolen sources and for the periodic taking of inventories of movable sources.

2.3. The Secretariat is preparing a Safety Guide on the detection of and responses to illicit trafficking in radioactive materials^{2/}, to be co-sponsored by the World Customs Organization (WCO) and the International Criminal Police Organization (Interpol). In doing so, it is also co-operating with the International Civil Aviation Organization, the International Maritime Organization, the European Commission, the International Air Transport Association, the International Road Transport Union, the International Federation of Air Line Pilots Associations and other organizations. The first draft is near completion, but it will probably be two years before the Safety Guide (with the necessary accompanying technical manuals) is published.

2.4. The main purpose of the Safety Guide will be to assist States with the establishment or enhancement of systems for detecting and responding to illicit trafficking in radioactive materials. The Safety Guide will contain several supporting documents on border monitoring systems including performance specifications and protocols for testing and calibration, special operating procedures for response measures, customs inspection techniques, etc. These documents will also be distributed by WCO as technical manuals for customs-, postal-, law enforcement officers and procurement Agencies. Among the subjects which the Safety Guide will cover are: the establishment and enhancement of national radiation protection infrastructures; and the formulation of regulations concerning law enforcement and border control activities.

^{2/} The term "radioactive materials" here covers not only radioactive materials contained in radiation sources, but also nuclear materials and radioactive waste.

Detection and Response

2.5. As part of an evaluation of the effectiveness of border monitoring systems for radioactive materials of various types, the Secretariat - together with the Austrian and Hungarian customs authorities - is organizing a large-scale study for the testing and possibly the development and/or optimization of border monitoring systems. Following laboratory evaluation, test installations of selected equipment at borders are planned to derive realistic information on performance requirements, reliability and cost/effectiveness. The study will also consider border inspection procedures. This is designed to assist States in selecting and installing border monitoring systems (e.g. automatic vehicle monitors for use at road and rail border crossings and automatic pedestrian monitors for use at airports), for the identification and exact location of hidden radioactive materials, and personal monitors, for the radiation protection of customs and other officials. The study will last about two years.

Information Exchange and Training

2.7. In 1995 and 1996, the Secretariat convened meetings of representatives of the organizations participating in the work on the new Safety Guide. The meetings were devoted to discussions on ways in which relevant intergovernmental organizations could benefit from each other's experience and assist States in their efforts to combat illicit trafficking in nuclear materials and other radioactive sources. A further such meeting will take place in September 1997.

2.8. The Secretariat is planning for an "International Conference on the Safety of Radiation Sources and the Security of Radioactive Materials" to be held in Lyons, France, in September 1998. The Conference, which is to be co-sponsored by the European Commission, the World Customs Organization and the International Criminal Police organization will cover - inter alia - administrative, technical and managerial measures to prevent the theft and unauthorized use of radioactive materials.

2.9. The Secretariat, together with the World Customs Organization, has designed a detection and response training programme for customs and other officials. The following courses have already been conducted under this programme:

- A course on "Physical Protection, Transportation and Illicit Trafficking", held in February 1995 in Kiev, for Ukrainian officials representing nuclear regulatory organizations, nuclear facilities, the customs authorities, the police, the armed forces, the civil defense authorities and other Ukrainian entities. The course was designed to identify the problems being faced in Ukraine and discuss possible solutions.
- A five-day "train the trainers" course on the prevention of nuclear smuggling, held in June 1997 in Vienna and attended by participants from 16 East and Central European countries. The course was jointly organized and conducted by experts from Germany, the United Kingdom, the United States, the World Customs Organization and the Secretariat.

2.10. The Secretariat - together with the World Customs Organization - is developing a shorter course for senior managers, in order to increase their awareness of illicit trafficking issues and to help them formulate guidelines for counteracting illicit trafficking at the country level.

2.11. Peer review missions are scheduled to assist Member States in the implementation of Agency guidance and to assist in optimizing border monitoring systems. The missions will start in Poland and Romania this year, and continue at Member State request.

Section 3. ACTIVITIES PERFORMED THROUGH THE TECHNICAL CO-OPERATION PROGRAMME

The Model Project for Upgrading Radiation Protection Infrastructures

3.1. An interregional Model Project for technical co-operation in "Upgrading Radiation Protection Infrastructure" (project INT/9/143) was launched in 1993 with the objective of strengthening "the inadequate radiation safety infrastructure of a number of selected Member States" in order to comply with the Basic Safety Standards. Currently, the Model Project covers 53 States.⁴ The Division of Nuclear Safety and Radioactive Waste and the Legal Division are providing expertise for the Model Project.

3.2. The required interaction with responsible national authorities in some participating States is more time-consuming than expected, and it is unlikely that the objectives of the Model Project will be fully achieved in all 53 States by the year 2000, the envisaged completion year.

Legal Assistance

3.3. On 1 January 1997, TCPM began the implementation of the TC project RER/0/015 "Legislative Assistance for the Utilization of Nuclear Energy in Europe". Its objective is to support a number of Newly Independent States (NIS) in their national efforts to establish, develop or review the national laws governing the safe and peaceful uses of nuclear energy

⁴ Afghanistan, Albania, Armenia, Bangladesh, Belarus, Bolivia, Bosnia and Herzegovina, Cameroon, Costa Rica, Côte d'Ivoire, Cyprus, the Democratic Republic of the Congo, the Dominican Republic, El Salvador, Estonia, Ethiopia, Gabon, Georgia, Ghana, Guatemala, Haiti, Jamaica, Kazakhstan, Kyrgyzstan, Latvia, Lebanon, Lithuania, Madagascar, Mali, Mauritius, Moldova, Mongolia, Myanmar, Namibia, Nicaragua, Niger, Nigeria, Panama, Paraguay, Qatar, Saudi Arabia, Senegal, Sierra Leone, Sri Lanka, Sudan, the Syrian Arab Republic, the former Yugoslav Republic of Macedonia, Uganda, the United Arab Emirates, Uzbekistan, Viet Nam, Yemen and Zimbabwe.

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and to adopt implementing legislation for the international instruments to which they have adhered. The participating Member States are Armenia, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Ukraine and Uzbekistan. In addition, through extra-budgetary assistance, other NIS may participate in the project. The Agency will provide for the necessary co-ordination and funding for the provision of expert services and training through workshops and seminars.