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Nuclear Security Report 2011

Report by the Director General

Summary

This report has been produced for the fifty-fifth regular session (2011) of the General Conference in response to resolution GC(54)/RES/8, in which the General Conference requested that the Director General submit an annual report on activities undertaken by the Agency in the area of nuclear security, highlighting significant accomplishments of the prior year and indicating programmatic goals and priorities for the year to come. This report covers the period 1 July 2010–30 June 2011.

Recommended Action

It is recommended that the Board of Governors:

a. Take note of the Nuclear Security Report 2011;

b. Transmit this Report to the General Conference with a recommendation that Member States continue to contribute on a voluntary basis to the Nuclear Security Fund;

c. Note that six years after its adoption, the Amendment to the Convention on the Physical Protection of Nuclear Material has still not entered into force;

d. Call upon States to adhere to the Amendment and to promote its early entry into force; encourage all States to act in accordance with the object and purpose of the Amendment until such time as it enters into force; implement the legally binding and non-binding international nuclear security related instruments; invite States to make full use of the assistance available for this purpose through participation in the Agency's nuclear security programme; and

e. Encourage all States to participate in the Illicit Trafficking Database programme.

Nuclear Security Report 2011

Report by the Director General

A. Introduction

1. This report has been produced for the fifty-fifth regular session (2011) of the General Conference in response to resolution GC(54)/RES/8, in which the General Conference requested that the Director General submit an annual report on activities undertaken by the Agency in the area of nuclear security, highlighting significant accomplishments of the prior year and indicating programmatic goals and priorities for the year to come. This report covers the period 1 July 2010–30 June 2011.

2. Recognizing that responsibility for nuclear security rests entirely with each State, the Agency continued to provide assistance, upon request, to States in their national efforts to establish effective nuclear security systems. During the reporting period, the Agency continued to assist States' efforts to build and develop a sustainable nuclear security capacity by providing nuclear security guidance and to help States to establish comprehensive national nuclear security infrastructure in order to protect nuclear and other radioactive material and associated facilities; to detect nuclear and other radioactive material out of regulatory control; to respond to nuclear security events, should such events occur; and to collect and share relevant information. All activities were undertaken with due regard to the protection of confidential information.

3. In light of the accident at the Fukushima Daiichi Nuclear Power Plant in Japan, States have started reviewing their national nuclear security infrastructure to ensure that they are properly prepared to respond to both the safety and security aspects of a severe nuclear incident, should one occur. The Agency stands ready, upon request, to assist States in making such evaluations.

B. The International Legal Framework

4. Adherence to the international legal instruments relevant to nuclear security continues to increase, but at a slow pace. During the period covered by this report, two States became Parties to the Convention on the Physical Protection of Nuclear Material (CPPNM)[1], bringing the total number of Parties to 145. This convention has the largest number of Contracting Parties of all the legal instruments adopted under the auspices of the Agency. During the same period, seven States endorsed

[1] http://www.iaea.org/Publications/Documents/Conventions/cppnm_status.pdf

the 2005 Amendment to the CPPNM[2], bringing the number of Contracting States to 49: more than half of the States supporting the Amendment are from Europe, 10 are from the African region, 12 are from the Asian region and two are from the Americas.

5. On 18 November 2010, the Secretariat convened a meeting on Facilitating Adherence to the 2005 Amendment to the CPPNM. 55 Member States and Euratom participated in the meeting, as well as representatives from the United Nations Office on Drugs and Crime (UNODC) and the Organization for Security and Co-operation in Europe (OSCE). The meeting examined the status of the Amendment, which, almost six years after its adoption, still had not entered into force. The meeting recognized that, upon its entry into force, the Amendment would make a strong addition to the complement of legal instruments for strengthening nuclear security, although it acknowledged that each State faced a different situation with regard to the ratification process. Meeting participants also noted the importance of further promoting States becoming parties to the Amendment to the CPPNM. In this regard, information was shared regarding assistance available from the Agency and other sources to States wishing to adhere to the Convention and its Amendment.

6. The Code of Conduct on the Safety and Security of Radioactive Sources is a non-binding international legal instrument that provides guidance for ensuring the control of radioactive sources and for mitigating/minimizing any consequences should control measures fail. Also legally non-binding, the supplementary Guidance on the Import and Export of Radioactive Sources was developed to support States' implementation of the Code. As of 30 June 2011, 103 States had informed the Agency's Director General of their intention to implement the Code of Conduct, and 64 States of their intention to implement the supplementary Guidance[3].

7. The International Convention for the Suppression of Acts of Nuclear Terrorism[4] gained nine adherents during the reporting period, bringing the number of State Parties to 77 as of 30 June 2011.

8. In the course of the year, the Agency published two nuclear security related documents in the International Law Series. The first *Handbook on Nuclear Law: Implementing Legislation*[5] includes model texts of legislative provisions covering the key elements needed in a national nuclear law. The second document entitled *The International Legal Framework for Nuclear Security*[6] serves as a guide to the respective legislative history of the instruments and scope of application, including the relevant obligations undertaken by States and the specific functions assigned to the Agency.

C. Major Meetings and Coordination

Major Meetings

9. From 30 May–1 June 2011, the Agency convened an *Open-ended Meeting of Technical and Legal Experts on the Code of Conduct on the Safety and Security of Radioactive Sources: Review and Revision of the Guidance on the Import and Export of Radioactive Sources*. The meeting, attended by

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[2] http://www.iaea.org/Publications/Documents/Conventions/cppnm_amend_status.pdf

[3] http://www.iaea.org/Publications/Documents/Treaties/codeconduct_status.pdf

[4] http://treaties.un.org/Pages/ViewDetailsIII.aspx?&src=TREATY&mtdsg_no=XVIII~15&chapter=18&Temp=mtdsg3&lang=en

[5] http://www-pub.iaea.org/MTCD/publications/PDF/Pub1456_web.pdf

[6] http://www-pub.iaea.org/MTCD/publications/PDF/Pub1160_web.pdf

a range of legal and technical experts from Member States, considered the results of a process to review the Guidance. The conclusions of the meeting have been reported separately to the Board[7].

Cooperation and Coordination

10. In the period of this report, the Agency continued to cooperate with relevant United Nations bodies such as the Counter Terrorism Implementation Task Force (CTITF) and the Committee of the Security Council established pursuant to Security Council resolution 1540 (1540 Committee). During the reporting period, the Agency contributed actively to the work of the CTITF Working Group on Preventing and Responding to Weapons of Mass Destruction Attacks, in particular, to its report launched in September 2010 entitled *Interagency Coordination in the Event of a Nuclear or Radiological Terrorist Attack: Current Status, Future Prospects*.

11. Adopted under Chapter VII of the United Nations Charter, Security Council resolution 1540 (2004) has been recognized by the Board of Governors as being an integral part of the international legal framework for nuclear security. In April 2011, the mandate of the 1540 Committee was extended by ten years. The Agency continued to cooperate with the 1540 Committee for example by sending experts to participate in the Workshop on Implementing Security Council Resolution 1540 for South-East Asian States, conducted in Vietnam from 28 September–1 October 2010, and in the Workshop on Implementation of Security Council resolution 1540, which took place in Peru from 9–11 November 2010. The Agency also participated in a December 2010 Meeting of International, Regional and Subregional Organisations on Cooperation in Promoting the Implementation of Security Council Resolution 1540, conducted in Vienna and a January 2011 Workshop on Facilitation of Implementation of Security Council resolution 1540, which was convened by the OSCE.

12. Pursuant to operative paragraph 8 of GC(54)/RES/8 (2010), and to paragraph 29 of the Nuclear Security Plan 2010–2013[8], the Agency continued to arrange meetings to foster information exchange on bilateral nuclear security related activities. In addition, the Agency has promoted cooperation and information exchange with the above mentioned organizations and other initiatives, for instance through the holding of an Information Exchange Meeting in May 2011. This meeting was attended by 21 representatives of eight international organizations and initiatives. The purpose of the meeting was to exchange information at working level. It was also recognized at the meeting that further coordination will be particularly important to avoid duplication between Agency programmes and those under consideration by other entities, thus ensuring continued effectiveness of the Agency's nuclear security programme. A follow up meeting is expected to be held in the first quarter of 2012.

13. Cooperation and coordination has similarly been undertaken with other multilateral and bilateral nuclear security related initiatives as well as with non-governmental organisations, in particular the World Institute of Nuclear Security (WINS). The Agency and WINS, with the support of a Member State, are jointly developing a training course for facility managers.

14. On 30 June 2011, an Agency representative took part, in its capacity as an official observer, in the Global Initiative to Combat Nuclear Terrorism (GICNT) Plenary meeting, in Daejeon, Republic of Korea; the meeting coincided with the fifth anniversary of the GICNT. The Agency participated in other GICNT events during the period covered by this report such as the GICNT nuclear forensics seminar and scenario-based exercise in Karlsruhe, Germany in May 2011; the international exercise 'Rabat 2011', which took place in Morocco in March 2011; and the Nuclear Forensics Working Group

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[7] GOV/2011/44-GC(55)/11

[8] GOV/2009/54-GC(53)/18

of the GICNT Implementation and Assessment Group at its 28 February–3 March 2011 meeting in Cordoba, Spain.

15. Through cooperation with, and participation in, other nuclear security-related initiatives, the Agency reaches a significant number of Agency Member States and non-Member States, and is able to inform them about its programmes and the comprehensive nuclear security assistance that is available through the Agency. Such interaction also enables the Agency to improve knowledge among international organizations of its activities, mandates and functions as well as existing cooperation and coordination mechanism under various international instruments in the nuclear security field. These activities help to avoid duplication between Agency programmes and those under consideration by other entities, thus ensuring continued effectiveness of the Agency's nuclear security programme.

16. That said, there is not always clarity about the role and function of some international nuclear security related initiatives. The risk of duplication with Agency activities is a continuing concern. This has particular relevance in the area of producing nuclear security guidance documents where competing, or contradictory guidance would likely result in confusion and have a negative effect in the assistance being provided to States for the establishment of efficient and effective national nuclear security systems. The international community would best be served by relying on and using the guidance documents developed and adopted by the Agency which, with its mandate, technical competence and broad membership, is uniquely placed to provide States with state of the art guidance.

D. Major Achievements

17. This progress report relates to the Nuclear Security Plan 2010–2013. A summary of major achievements for each element of the Plan is reflected below.

D.1. Needs Assessment, Information Collation and Analysis

D.1.1. Illicit Trafficking Database Programme

18. The number of States participating in the Agency's Illicit Trafficking Database (ITDB) programme continued to expand. Since 1 July 2010, two new States have joined the ITDB programme, bringing the total number of participants to 112 as of 30 June 2011.

19. From 1 July 2010 to 30 June 2011, States reported 172 incidents to the ITDB; 93 of these were reported to have occurred during this period and the remaining 79 were reports relating to prior years. Fourteen of the incidents reported involved such activities as unauthorized possession and/or attempts to sell or smuggle nuclear material or radioactive sources; 32 additional incidents involved the theft or loss of nuclear or other radioactive material; in nearly one-third of those incidents, the material has not been reported as recovered.

20. Out of the 172 incidents, 126 involved unauthorized activities without apparent relation to criminal activity. These included the detection of nuclear material or radioactive sources disposed of in unauthorized ways, the detection of radioactively contaminated material, the recovery of radioactive material outside of regulatory control and the discovery of nuclear material or radioactive sources in unauthorized or undeclared storage.

21. Nuclear material was present in 16 of the 172 incidents and, in five incidents, the nuclear material was high enriched uranium. One incident involved the attempted sale of high enriched uranium. Another incident involved a State's recovery of a quantity of natural uranium from persons

attempting to traffic it for economic gain. Incidents of this nature illustrate that illicit trafficking remains of real and current concern. They also indicate that criminals, and potentially associated networks, are aware of the financial value of such material.

D.1.2. Illicit Trafficking Information Outreach

22. The Agency continued, over the period covered by this report, to conduct Nuclear Security Information Management and Coordination Meetings in order to improve States' awareness of and participation in the Illicit Trafficking Database programme as well as to promote regional dialogue and the sharing of information and lessons learned on issues related to combating illicit nuclear trafficking. The Agency conducted three such meetings for sub-regional audiences during the reporting period for representatives of more than 30 countries. Among these were participants from five IAEA non-Member States, with which the Secretariat had thereto had minimal or no contact on illicit trafficking issues. In total, representatives of more than 120 States have taken part in Illicit Trafficking Information Management and Coordination Meetings since the pilot event was held in 2007.

D.1.3. Information Tools

23. In support of the Nuclear Security Plan's objective of establishing a comprehensive platform for nuclear security information, the Agency undertook a process of investigating the suitability of advanced software tools to enhance the Secretariat's analytical capacities. The selected tools will be employed in improving the processing and analysis of continually increasing volumes of nuclear security information, including that derived from open sources. Such software will also foster practical collaboration among the Agency's analysts and assist them in visualizing complex sets of information.

D.1.4. Integrated Nuclear Security Support Plans

24. The value of Integrated Nuclear Security Support Plans (INSSPs) has been recognized in past General Conference resolutions. Based on international instruments related to nuclear security and on Nuclear Security Series documents, INSSPs consolidate the nuclear security needs of an individual State into an integrated document that identifies the necessary nuclear security improvements. An INSSP provides a customized framework for a State's nuclear security efforts and enable the Agency, the State concerned and potential donors that could help finance the nuclear security projects, to coordinate their activities, optimize the use of resources and avoid duplication. The Agency shares an INSSP with third parties only with the express permission of the State concerned. To date, more than 60 INSSPs have been developed and are in various stages of finalization. Feedback from States with INSSPs has been positive, but experience gained in their implementation indicates that the availability of resources, both internal and external, is fundamental for achieving the projected results.

D.1.5. Nuclear Security Information Portal

25. In late 2010, the Agency enabled access to the Nuclear Security Information Portal (NUSEC) for all Member States and selected international institutions. NUSEC supports nuclear security efforts worldwide by providing an interactive knowledge-based environment to enhance nuclear security cooperation, facilitate implementation of joint activities and share relevant information. NUSEC provides up to date information on the Agency's activities related to nuclear security as well as current information on relevant multilateral and national activities, including conferences and workshops and the development of nuclear security training and education programmes. The portal operates on a secure web based platform and, as of 30 June 2011, had over 300 registered users from nearly 70 States and six international institutions.

D.1.6. Cooperation with other International Organizations

26. During the reporting period, the Agency continued to strengthen its cooperative relationships with other international organizations with regard to the coordination and exchange of nuclear security information. In this area, the Agency engaged several United Nations bodies, the International Criminal Police Organization (INTERPOL) including the May 2011 Plenary Session Launching the INTERPOL Radiological and Nuclear Terrorism Prevention Unit, the Police Community of the Americas (AMERIPOL), the OSCE and the World Customs Organization.

D.2. Enhancing the Global Nuclear Security Framework

D.2.1. IAEA Nuclear Security Series

27. Four high level publications in the Agency's Nuclear Security Series of documents (NSS) were completed in the course of the year. Member States were asked to make final comments on the top level publication, entitled *Fundamentals of a State's Nuclear Security Regime: Objectives and Essential Elements*, by 15 February 2011. It contains objectives, concepts and principles of nuclear security and provides the basis for recommendations on nuclear security. The document will also be issued as a GOVINF in 2011. Three second-level publications — NSS 13 *Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Revision 5)*[9], NSS14 *Nuclear Security Recommendations on Radioactive Material and Associated Facilities*[10] and NSS 15 *Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control*[11] — were published in 2011 and are in the process of being translated into all official languages. These three NSS publications present best practices and States are encouraged to voluntarily apply them.

28. Development of some 30 'lower tier' documents in the Nuclear Security Series continues. In parallel with the review of the document production process currently being undertaken by the AdSec/CSS Joint Task Force (see paragraph 33) the Office of Nuclear Security has carried out a gap analysis and review of document production priorities to enable the better planning of future document production.

D.2.2. Research and Development to Support Effective Nuclear Security

29. The Agency undertakes research and development through Coordinated Research Projects (CRPs) involving institutions from Member States in order to underpin the technical standards of the guidance provided in the Nuclear Security Series. Three nuclear security CRPs were underway during the period covered by this report.

30. The CRP on Development and Implementation of Instruments and Methods for Detection of Unauthorized Acts Involving Nuclear and other Radioactive Material began in 2008 and will run through December 2011. This CRP's Research Coordination Meeting, held in December 2010, reviewed achievements thereto and the priorities for the remainder of the project's duration. Major outcomes to date include: the development of the Integrated Nuclear Security Network software for equipment status of health monitoring; the formalization of the methodology for testing the performance of radionuclide identification instruments; and the redrafting of the Nuclear Security

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[9] http://www-pub.iaea.org/MTCD/publications/PDF/Pub1481_web.pdf

[10] http://www-pub.iaea.org/MTCD/publications/PDF/Pub1487_web.pdf

[11] http://www-pub.iaea.org/MTCD/publications/PDF/Pub1488_web.pdf

Series document on NSS 1: *Technical and Functional Specifications for Border Monitoring Equipment*.

31. The CRP on the Development of Methodology for Risk Assessment and State Management of Nuclear Security Regime has been underway since 2009. Two Research Coordination Meetings for this CRP were held during the reporting period. Accomplishments under the CRP so far include the development of a new method for quantitative evaluation of risks, the establishment of a first version of software to be used in the quantitative evaluation of threat scenarios and the development of a methodology for evaluating the effectiveness of a State's national nuclear security infrastructure. Ten research groups from seven Member States have participated in the CRP, which will conclude in 2012.

32. The CRP on Application of Nuclear Forensics in Illicit Trafficking of Nuclear and other Radioactive Material, which started in 2008, concluded in May 2011. The outcomes of the project, which benefited from the involvement of research institutes in six States and the European Commission, elucidated the incorporation and persistence of nuclear forensics signatures across the global nuclear fuel cycle. It is anticipated that a new CRP, to begin in 2012, will focus upon prioritizing signatures and closing data gaps to facilitate the development of national nuclear forensics libraries.

D.2.3. Nuclear Security Guidance Committee

33. In the Nuclear Security Report 2009 (GOV/2009/53-GC(53)/16), the establishment of a Nuclear Security Series Committee to further enhance Member State involvement in the production of the IAEA Nuclear Security Series was taken up positively. Since that report was produced, the Advisory Group on Nuclear Security (AdSec) and the Commission on Safety Standards (CSS) have established a Joint Task Force and initiated discussions on short-term measures to enhance interaction with Member States' representatives in the development of the Nuclear Security Series guidance documents and the long-term objective of the feasibility of establishing a single series of Agency standards covering both safety and security, while respecting the specific character of each. At its meeting in May 2011 the Joint Task Force proposed that the Director General should establish a Nuclear Security Guidance Committee as part of short term measures that would further involve all Member States and enhance their interaction with the Secretariat in establishing Nuclear Security Series documents. The Joint Task Force will prepare a report on the outcome of their deliberations for the Director General in due course.

D.3. Nuclear Security Services

D.3.1. Design Basis Threat

34. The need for a high level of confidence in the effectiveness of the physical protection of nuclear and other radioactive material, and associated facilities and transport, requires a close correlation between protective measures and the threat. A formal threat assessment and an established Design Basis Threat (DBT) are essential to the design and evaluation of nuclear security systems. To help States strengthen their capacities in this area, seven national workshops on Development, Use and Maintenance of the DBT were implemented between July 2010 and June 2011, bringing to 45 the total number of workshops that had been conducted as of 30 June 2011.

D.3.2. Nuclear Security Evaluation Missions

35. Upon request, the Agency offers services to evaluate the effectiveness of nuclear security systems in States in team missions, comprised of experts from Member States. Six evaluation and advisory nuclear security missions were carried out between 1 July 2010 and 30 June 2011 using funding from the Nuclear Security Fund: two International Nuclear Security Advisory Service

(INSServ) missions, one of which was the Agency's first INSServ follow-up mission; two International Physical Protection Advisory Service (IPPAS) missions; one International Team of Experts mission on promoting support for and adherence to international instruments relating to nuclear security; and one advisory mission on the national regulatory infrastructure for the control of radiation sources.

36. As requested by the respective Governments, in the second half of 2011, the Agency will carry out IPPAS Missions in France, the Netherlands and the United Kingdom. Requests from States having large nuclear programmes point the way to such missions becoming widely used as an important tool to build confidence both within the international community and the general public with regard to the effectiveness of national nuclear security systems.

D.3.3. Nuclear Security Training

37. In the period covered by the report, the Agency provided nuclear security training to more than 1650 people from over 110 States. Of the 67 nuclear security training courses and workshops that took place, 40 were in the area of prevention and 27 in the area of detection and response. Hosted by 35 different countries, six of these events were conducted for international audiences, 30 for regional audiences and 31 for national audiences. Four training events in the area of prevention, all for regional audiences, covered material on State Systems of Accounting for and Control of Nuclear Material.

38. The Agency delivered five hands-on training courses using the new training facilities available at the ROSATOM Interdepartmental Special Training Centre (ISTC) in Obninsk, Russian Federation. These facilities had been comprehensively upgraded over recent years with the Agency's technical and financial assistance. Courses for specialists on the practical operation/inspection of physical protection systems were conducted for one national audience, two regional audiences and one international audience. In addition, in October 2010, a pre-diploma practical training course on physical protection was conducted for university students specializing in nuclear security. In total, 126 participants from 29 Member States participated in the Agency's training events at ISTC during the period covered by this report.

39. Published in July 2010, the Agency's interactive eLearning programme on the use of radiation detection equipment is available in Arabic, Chinese, English, French, Russian and Spanish on the IAEA website and as a CD ROM. For an audience of such equipment's users — including front-line officers, border guards, customs officials and law enforcement officers — the programme aims both to increase knowledge about the basic functions of radiation detection instruments and to improve skills in the operation of such instruments, with the greater goal of increasing the effectiveness of States' abilities to detect and respond to incidents involving the presence of radioactive material outside of regulatory control.

D.3.4. Nuclear Security Education

40. At the request of the Naif Arab University of Security Sciences, the Agency contributed to the development of that institution's nuclear security teaching material and provided technical advice on the equipment to be employed in the delivery of the University's two-semester nuclear security diploma programme, which will be launched in September 2011. The Agency cooperated with the Tomsk Polytechnic University in the Russian Federation in the development of two foundation textbooks about nuclear security issues for students and faculty members. The Agency also reviewed nuclear security training material which the University of Florence in Italy had developed on the Agency's own guidance and provided assistance to the University of Pisa, also in Italy, in developing a Master's Programme on Nuclear Safety and Security, which is planned to be launched in spring 2012.

41. In April 2011, the Agency collaborated with Abdus Salam International Centre for Theoretical Physics in Trieste, Italy, and the Italian Ministry of Foreign Affairs to conduct an International School on Nuclear Security. The objective of the School, which was established following the announcement made by the Italian Prime Minister at the April 2010 Nuclear Security Summit in Washington, was to provide young professionals from developing countries with the fundamental knowledge of nuclear security necessary to understand the international requirements in this area and the measures to be taken for States to meet their obligations under the international nuclear security legal framework. Forty-five participants from 43 Member States attended the two-week pilot School. Following the School's success, the Government of Italy has indicated it will support similar events in 2012 and 2013.

42. In mid-2011, 14 Ukrainian engineers specializing in nuclear security graduated from the Agency supported education programme at the Sevastopol National University of Nuclear Energy and Technology (SNUNEI) in Ukraine, which was the Agency's earliest partner in establishing nuclear security education. An additional nine students received the lower-level bachelor's degrees. In late 2010, the Agency agreed with the University's management upon conceptual arrangements for establishment of the Access Control Laboratory (ACL) for SNUNEI students. The ACL will be the fourth nuclear security training laboratory established at SNUNEI with the Agency's support and will enable students also to gain advanced skills in using instrumentation for detecting various attempts of illegal entry to the protected areas and identifying authorized facility personnel. The procurement and installation of equipment started in 2011 and is expected to be completed by the end of the year.

D.3.5. Legal and Legislative Assistance

43. The Agency continued to intensify its legislative assistance activities, including the establishment of adequate legal and regulatory frameworks in the field of nuclear security. In particular, it organized four international and regional workshops. Further, the Agency provided country specific bilateral legislative assistance — essentially by means of written comments and advice in drafting national nuclear legislation — to 20 Member States. At the request of Member States, individual training was also provided to several persons, notably through short-term scientific visits organized at Agency Headquarters, as well as longer term fellowships, allowing individuals to gain further practical experience in nuclear law.

D.4. Risk Reduction

D.4.1. Physical Protection Upgrades

44. Between 1 July 2010 and 30 June 2011, the Agency completed upgrades to two nuclear facilities in one State and to 15 facilities housing other radioactive material in five States. During the same period, upgrades to address identified risks were underway at another nuclear facility and at 12 other sites housing high activity sources in eight States.

D.4.2. Remote Monitoring

45. States' use of remote monitoring systems at facilities housing nuclear or other radioactive material enables the early detection of violations of such sites' physical protection and timely off-site response measures. To help States employ technical solutions to this end, the Agency provided two African States with remote monitoring systems for use at their national radioactive waste storage facilities. The installation of a remote monitoring system at a nuclear facility, also in Africa, was on-going.

46. Based on experience gained since its deployment of the first nuclear security remote monitoring system in 2008, the Agency has begun the process of systemizing measures to ensure the sustainability

of remote monitoring systems following their installation. Needs in this regard will be met by increasing the training for the systems' operators; advising on the preparation of standard operating procedures; providing, upon request, on-going advisory support; and conducting of periodic follow-up visits to ensure the systems' functionality and effectiveness.

D.4.3. Securing Radioactive Sources

47. The Agency continued to place high priority on increasing the physical security of radioactive sources in order to prevent illicit movement and other unauthorized activity, including malicious acts, involving radioactive material. Between July 2010 and June 2011, the Agency secured 130 radioactive sources from two States. Of these, one source was of Category 1, five sources of Category 3, 122 of Category 4, and two sources of Category 5[12]. One hundred and twenty-four sources were secured through movement to appropriate storage within the country; the remaining six were exported to another State for recycling and reuse.

48. The Agency began its first project in the area of upgrading the security of national systems for the transport of radioactive material. In partnership with Australia and the United States of America, a standard assessment mission for identifying a State's needs in this area was developed; following the recommendations obtained from such a mission in 2010, the Agency procured three custom-built Secure Transportation Operation Boxes to be used in that State's domestic movement of high-activity radioactive sources. In cooperation with the United States, a national training course directed toward carriers was delivered in January 2011; the course was tailored to meet the specific needs of the State.

D.4.4. HEU Repatriation

49. During the period covered by this report, at the request of Member States, the Agency continued to be involved in operations to repatriate high enriched uranium (HEU) research reactor fuel. Under the auspices of the Russian Research Reactor Fuel Return Program, the Agency assisted in the repatriation to the Russian Federation of nearly 100 kg of fresh HEU fuel from Belarus and Ukraine and of approximately 90 kg of HEU spent fuel from Poland and Serbia. The work in Ukraine occurred in the context of the Government's announcement, in April 2010, that it would remove half of the HEU from the country by the end of 2010 and the remainder by the end of 2012. The operation in Belarus — the first in the country with which the Agency was involved — substantiated that Government's commitment to eliminate its HEU stocks by the time of the April 2012 Nuclear Security Summit.

50. On 22 November 2010, a six year Agency project culminated in the repatriation shipment of HEU and low enriched uranium (LEU) spent fuel elements from the RA research reactor at Serbia's Vinča Institute of Nuclear Sciences to the Mayak Fissile Material Storage Facility in the Russian Federation. Because the material had degraded significantly during several decades of storage, it was necessary to repackage all of the 8030 fuel elements using custom designed equipment prior to shipment, which contributed substantially to the complexity and duration of the project. Extensive physical protection upgrades were implemented to protect the material while the preparations for shipment were made. Nearly 400 Serbian and international experts, including 76 Agency staff members, participated in the work, which was the largest fuel repatriation project in the Agency's history.

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[12] See IAEA Safety Guide No. RS-G-1.9

D.4.5. Establishing Effective Border Control

51. The provision of radiation detection equipment for use at national points of entry, as well as for a range of internal activities, continued to be an essential component of the Agency's assistance to States, upon request, for detecting and responding to the illicit trafficking of nuclear and other radioactive material, as well as the unauthorized movement of such material out of regulatory control. Between July 2010 and June 2011, the Agency donated approximately 280 instruments to 15 States for use in such activities. Donations were made throughout the world. The donated equipment consisted principally of hand-held detection instruments, portable radiation scanner backpacks, and fixed systems such as radiation portal monitors. Information technology items to support the instruments' use and maintenance were deployed in conjunction with the fixed systems, including the newly developed Integrated Nuclear Security Network software, which transmits data to a central Data Analysis Centre within the State concerned to enable oversight and coordinated response.

52. The Border Monitoring Working Group (BMWG), established by the Agency, has met regularly since 2006 for coordinating the activities of the Agency, the United States of America and the European Union in the area of rendering financial support, technical assistance and human resource development for improving radiation detection at national borders. During the reporting period, the BMWG continued to extend its coordination efforts to other donor countries and organisations to better ensure complementarity of approaches of activities in this area; these parties included the Government of Canada and the European Commission's Directorate-General for Development and Directorate-General for Taxation and Customs Union. BMWG joint training activities in the reporting period included a March 2011 workshop on 'Moving Toward Long-Term Sustainability and Enhancing Cooperation on Maritime Security', hosted by Portugal, and a June 2011 workshop on 'Training of Trainers on Radiation Detection Techniques for Francophone African States', hosted by the Institute for Transuranium Elements in Ispra, Italy. In addition, joint assessment missions were conducted in an African State and in several countries in South-East Asia.

D.4.6. Major Public Events

53. In response to requests by the Governments of Poland and Ukraine, the Agency has, since late 2009, rendered extensive nuclear security assistance for strengthening the countries' respective preparations for the major public events associated with the UEFA European Football Championship, to take place in June 2012. Between 1 July 2010 and 30 June 2011, each State received a technical mission and several nuclear security training events; in the year remaining until the Championship takes place, each State will receive further training, a field exercise and the loan of radiation detection equipment.

54. At the request of the Government of Mexico, the Agency has, since early 2010, been implementing a project for helping to ensure the nuclear security of the major public events associated with the October 2011 XVI Pan American Games to be held in Guadalajara in the state of Jalisco, Mexico. The assistance has consisted of an assessment mission and seven training courses, with an eighth training course and a field exercise to take place in September 2011. The Agency has loaned radiation detection equipment to Mexico and has provided relevant information about illicit trafficking to the State.

55. In January–February 2012, Gabon and Equatorial Guinea will jointly host the African Cup of Nations. At the request of the Government of Gabon, the Agency began a programme of nuclear security support for this major public event. The majority of the assistance will be delivered over the second half of 2011 and will include a technical assessment mission, to be followed by training and the loan of radiation detection equipment.

56. In late June 2011, the Agency was in the latter stages of rendering assistance to the Government of Colombia in its activities to ensure the nuclear security of the FIFA U-20 World Cup, to be held in eight Colombian cities in July–August 2011. Consisting only of the loan of radiation detection equipment, the project's limited scope was due to Colombia having already developed a strong capacity for work in this area during a nuclear security project it conducted with the Agency in connection with the 2010 IX South American Games in Medellín.

D.4.7. Nuclear Forensics

57. Nuclear forensics is a key enabling capability for Member States to establish an effective nuclear security regime and, accordingly, the Agency continued to prioritize activities in this area. The Secretariat convened consultancy meetings in 2010 and 2011 to develop the technical structure of national nuclear forensics materials libraries as well as an international directory to aid in nuclear forensics interpretation. With respect to nuclear forensics training and education, the Agency conducted an international workshop in October 2010 on *'Introduction to Radiological Crime Scenes and Nuclear Forensics'* and, in December 2010, convened a consultancy meeting to incorporate the latest advancements in nuclear forensic science within the Agency's training curriculum. The Agency also served as an observer to several meetings focused on awareness and international cooperation in nuclear forensics, including a scenario-based exercise, under the auspices of the GICNT.

D.4.8. Nuclear Security Support Centres

58. The Agency continued to support States in developing the sustainable competencies necessary to establish and maintain national Nuclear Security Support Centres (NSSCs). To this end, the Agency provided, during the period covered by this report, two regional and three national-level 'train the trainers' courses on radiation detection equipment and techniques. In December 2010, a pilot national 'train the trainers' course on the security of radioactive sources took place in Malaysia. During the year, more than 70 potential instructors were trained in the areas of radiation detection and security of radioactive sources; these trainees are expected to support the implementation of national-level nuclear security training programmes in their home countries, including in establishing and sustaining NSSCs. In addition, two experts received 'on the job' training on maintenance of hand-held radiation detection equipment, which they will apply in rendering technical support services for lifecycle equipment management by the NSSC in their home country.

59. The Agency supported the Government of Colombia in establishing an NSSC at the Bogotá premises of the Dirección de Investigación Criminal e Interpol, which is a part of the Policía Nacional de Colombia. The NSSC was officially inaugurated in October 2010 and has since been the site of two training courses for audiences from Member States of the American Police Community (AMERIPOL), which is headquartered in Bogotá.

E. Management Issues

E.1. Funding

60. Details of disbursements and expenditures from the Nuclear Security Fund are set out in the table below.

Nuclear Security Fund Disbursements and Expenditures		
2002–2003	Disbursements	US $5.7 million
2004	Disbursements	US $7.7 million
2005	Disbursements	US $8.8 million
2006	Disbursements	US $15.5 million
2007	Disbursements	US $15.7 million
2008	Disbursements	US $19.2 million
2009	Disbursements	US $22.7 million
2010	Disbursements	US $22.1 million
2011	Expenditure (Disbursements plus unliquidated obligations) as of 21 July 2011	US $12.3 million

61. In the course of the year, new contributions were made to the Nuclear Security Fund by Belgium, Denmark, Estonia, Germany, Finland, France, Italy, Japan, the Netherlands, New Zealand, Norway, the Republic of Korea, the Russian Federation, Spain, Sweden, the United Kingdom, the United States of America and the European Union,. The Agreements with Germany, Norway, the Netherlands, the Russian Federation and the European Union contain the provision for contributions to be made over a number of years.

62. The 2011 regular budget for nuclear security was increased to €4,043,439 (at 2011 prices). By 30 June 2011, expenditure from the regular budget amounted to €2,002,726, 49.97% of the annual budget. Expenditure from the regular budget was made in accordance with the priorities set out in *The Agency's Programme and Budget for 2010–2011*[13].

63. The Electronic Programme Support System, which had been used to manage the activities and funding of the nuclear security programme, was retired at the end of 2010 and replaced by the Agency-wide Information System for Programme Support (AIPS). The Office of Nuclear Security is working closely with the Department of Management in order to improve project management and reporting capabilities in AIPS.

64. Operative paragraph 18 of General Conference resolution GC(54)/RES/8 requested the Secretariat to report as appropriate to the Board of Governors on the status of the implementation of the confidentiality measures. In this regard, Note 2010/60 provided details of Agency Information Security measures.

E.2. AdSec

65. The Advisory Group on Nuclear Security (AdSec) continued to provide advice to the Director General. The composition of the Group changed in the period of the report with the appointment of a new Chair and the retirement of a further two members. AdSec has met twice a year since 2002 and provides advice on a wide range of nuclear security matters. As mentioned in paragraph 33 above, AdSec and the Commission on Safety Standards have been engaged, through a joint task force, in

[13] See GC(53)/5

discussions on short-term measures to enhance interaction with Member States' representatives in the development of the Nuclear Security Series guidance documents and the long-term objective of the feasibility of establishing a one series of Agency standards covering both safety and security, while respecting the specific character of each.

F. Goals and Priorities for 2011/2012

66. The March 2012 Board will mark the tenth anniversary of enhanced Agency activities in nuclear security. The Secretariat intends to use this point to start a review of the existing Nuclear Security Plan in preparation for the development of the next Plan, to cover the period 2014–2017.

67. Since the establishment of the first Nuclear Security Plan, a number of other nuclear security related initiatives have been established. Any initiative that contributes to improving nuclear security is to be welcomed and these initiatives are clearly supported by many Member States. The Agency will strive to better interact and coordinate work with the other initiatives in accordance with General Conference resolutions and the directions of the Board of Governors to ensure compatibility of output and promote a single set of globally recognized and used international nuclear security guidance.

68. In advance of the review that will take place in 2012, it is already clear that the Agency does not have the resources to meet all requests for assistance. The Agency will therefore focus on areas where it has a clear comparative advantage. This means giving priority to the establishment of internationally agreed guidance in the Nuclear Security Series, the provision of peer reviews and advisory services, human resource development programmes delivered through national or regional support centres, technical support through Coordinated Research Projects and a focus on coordination. Specifically, the Agency will:

- Establish and promote self-assessment methodologies and approaches based on universally applicable guidance within the Nuclear Security Series with a view to ensuring effective and sustainable national nuclear security infrastructure.
- Review, update and complete the modularisation of existing training programmes to ensure that they are consistent with the latest documents in the Nuclear Security Series, in particular the Fundamentals and Recommendations documents, and to ensure that future training courses are produced in a modular and user-friendly fashion.
- Establish and promote a collaborative network with national Nuclear Security Support Centres or Centres of Excellence and seek agreement with such centres for the delivery of Agency training courses and other support services.
- Work with Member States to establish a Radioactive Sources Working Group, which will seek to coordinate assistance provided under bilateral programmes and other initiatives with Agency activities under the Nuclear Security Plan.
- Accelerate the development of forensics support for nuclear security purposes through the production of guidance documents in the Nuclear Security Series, the establishment of a collaborative network and the development of Coordinated Research Projects. In addition, the Agency will establish a clear timetable for document production to enable more predictable participation by States.
- Improve programme planning and prioritization to better link available resources and activities.

- Accelerate the development of Integrated Nuclear Security Support Plans (INSSPs) with States in order to improve and facilitate the coordinated delivery of assistance to the States.
- In order to better understand the needs of States, the Secretariat will establish a collaborative database to which access will be shared with the State concerned. This database will reside on a secure platform and will facilitate the interaction and cooperation with the State. It will supplement but not replace the INSSP, upon which it will be based, and will provide real-time information on how issues identified in the INSSP are being addressed.