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Strengthening the effectiveness and improving the efficiency of the safeguards system and application of the Model Additional Protocol

Report by the Director General

A. Introduction

1. The General Conference, in resolution GC(53)/RES/14, Strengthening the effectiveness and improving the efficiency of the safeguards system and application of the Model Additional Protocol, requested the Director General to report to the fifty-fourth regular session on the implementation of the resolution. This report responds to that request and updates the information in last year's report to the General Conference (document GC(53)/9) under this agenda item.

B. The Conclusion and Entry into Force of Safeguards Agreements and Additional Protocols

2. Between 1 July 2009 and 30 June 2010, comprehensive safeguards agreements (CSAs) in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) entered into force for eight States¹ and additional protocols (APs), based on the Model Additional Protocol², for ten States³.

¹ Angola, Central African Republic, Chad, Gabon, Kenya, Mauritania, Rwanda, Sierra Leone.

² The text of the Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards is contained in document INFCIRC/540 (Corr.).

³ Angola, Central African Republic, Chad, Dominican Republic, Gabon, Kenya, Lesotho, Mauritania, Philippines, Rwanda.

One State⁴ notified the Agency that it will apply its AP provisionally pending its entry into force. Two States acceded to the safeguards agreement, and to the additional protocol thereto, between the Agency, EURATOM and the non-nuclear-weapon States of EURATOM⁵. During the same period, eight States signed CSAs⁶ and ten States signed APs⁷. Four States agreed to amend their respective small quantities protocols (SQPs)⁸ in keeping with the Board of Governors' decision of 20 September 2005 regarding such protocols. By the end of June 2010, of the 89 States with operative SQPs⁹, 35 had brought the modified SQP into force.

3. As of 30 June 2010, 175 States had safeguards agreements in force with the Agency, 101 of which (including 96 States with CSAs) also had APs in force. While the milestone of 100 States with APs in force was reached in May 2010, 74 States (including 18 States with significant nuclear activities¹⁰) have not yet brought into force APs to their safeguards agreements, thirteen years after the Board of Governors approved the Model Additional Protocol¹¹. With regard to the 72 States which have significant nuclear activities, 63 such States have signed APs, 54 of which have brought them into force.

4. Eighteen non-nuclear-weapon States party to the NPT have not yet brought CSAs into force¹². The latest update of the status of safeguards agreements and APs is published on the IAEA website¹³.

B.1. Action to Promote the Conclusion of Safeguards Agreements and Additional Protocols

5. In operative paragraph 25 of resolution GC(53)/RES/14, the General Conference “notes the commendable efforts of some Member States, notably Japan, and the Agency Secretariat in implementing elements of the plan of action outlined in resolution GC(44)/RES/19 and the Agency's updated plan of action (September 2009), and encourages them to continue these efforts, as appropriate and subject to the availability of resources, and review the progress in this regard, and recommends that the other Member States consider implementing elements of that plan of action, as appropriate, with the aim of facilitating the entry into force of comprehensive safeguards agreements and additional protocols, and the amendment of operative SQPs”. Among the elements of the plan of action proposed in GC(44)/RES/19 are:

- Intensified efforts by the Director General to conclude safeguards agreements and APs, especially with those States which have significant nuclear activities;

⁴ Iraq.

⁵ As a result of the accession by the Czech Republic and by Romania to INFCIRC/193 and INFCIRC/193/Add.8, the implementation of safeguards under their respective bilateral CSAs and APs was suspended.

⁶ Angola, Central African Republic, Chad, Congo (Republic of the), Djibouti, Kenya, Rwanda, Timor-Leste.

⁷ Angola, Central African Republic, Chad, Congo (Republic of the), Djibouti, Kenya, Lesotho, Rwanda, Serbia, Timor-Leste.

⁸ Iceland, Lesotho, Senegal, The Former Yugoslav Republic of Macedonia.

⁹ Excluding SQPs to safeguards agreements concluded pursuant to protocols to the Tlatelolco Treaty.

¹⁰ Algeria, Argentina, Belarus, Brazil, DPRK, Egypt, India, Islamic Republic of Iran, Israel, Malaysia, Mexico, Morocco, Pakistan, Serbia, Syrian Arab Republic, Thailand, Venezuela, Vietnam.

¹¹ In May 1997.

¹² Andorra, Benin, Cape Verde, Congo (Republic of the), Djibouti, Eritrea, Equatorial Guinea, Guinea, Guinea Bissau, Liberia, Micronesia, Montenegro, Mozambique, São Tomé & Príncipe, Somalia, Timor-Leste, Togo and Vanuatu.

¹³ <http://www.iaea.org/OurWork/SV/index.html>.

- Assistance by the Agency and Member States to other States on how to conclude and implement safeguards agreements and APs; and
- Reinforced coordination between Member States and the Secretariat in their efforts to promote the conclusion of safeguards agreements and APs.

6. Guided by the relevant resolutions of the General Conference and decisions of the Board of Governors, the Agency's updated Plan of Action¹⁴ and the Agency's Medium Term Strategy¹⁵, the Secretariat has continued to encourage and facilitate wider adherence to the strengthened safeguards system, with the assistance primarily of extrabudgetary funds.

7. In order to facilitate the conclusion and implementation of CSAs and APs, and the implementation of the Board's decision on SQPs, the Secretariat convened three outreach events during the past year: an interregional seminar on IAEA safeguards for States with limited nuclear material and activities (Arusha, November 2009); a briefing on IAEA verification pursuant to the NPT in the margins of the 2010 Review Conference of the Parties to the NPT (New York, May 2010); and an interregional seminar for Portuguese-speaking States with limited nuclear material and activities (Lisbon, June 2010). In addition, consultations were held throughout the year with representatives from Member and non-Member States in Berlin, New York and Vienna. In total, the Secretariat held bilateral consultations with over 75 States on the conclusion of CSAs and APs, and on the amendment of SQPs.

C. Implementation and Further Development of Safeguards Strengthening and Efficiency Measures

C.1. Enhancing Capabilities of the Safeguards Analytical Services (ECAS)

8. The Agency's Safeguards Analytical Laboratories (SAL) in Seibersdorf, which consist of a Nuclear Material Laboratory (NML) and an Environmental Sample Laboratory (ESL), are essential to nuclear material verification and environmental sample analysis. The Secretariat established the ECAS project to implement a two-phase plan to strengthen the Agency's capabilities to provide independent and timely analysis of nuclear material and environmental samples. Phase 1 addresses the sustainability and enhancement of the Agency's particle analysis capabilities for environmental samples, and Phase 2 addresses the construction of a new NML for the analysis of nuclear material samples. A report on the progress of the project was presented to the Board in March 2010 (GOV/INF/2010/7).

9. As part of Phase 1, a contract was placed for the acquisition and installation of a large geometry secondary ion mass spectrometer (LG-SIMS) for the ESL, and another for the design and construction of an extension to the Clean Laboratory, which is part of the ESL, to accommodate the LG-SIMS. The contract for purchasing the LG-SIMS was signed in November 2009. In December 2009, a contract for design and construction of the Clean Laboratory Extension (CLE) was concluded and the conceptual design approved in May 2010. Construction began in June 2010 and is planned to be completed in February 2011 with commissioning of the new analysis equipment expected in April 2011.

¹⁴ The Plan of Action is published on the IAEA website: http://www.iaea.org/OurWork/SV/Safeguards/sg_actionplan.pdf.

¹⁵ Contained in document GOV/2005/8.

10. With regard to Phase 2, planning for the new NML is proceeding. The contract for the conceptual design was signed in February 2010. User requirements and the preliminary design are expected to be completed in mid-2010, followed by the issuing of a tender for the detailed architectural and engineering design. With the adoption of a 'build to budget' process, and subject to the availability of funds, current plans envisage construction of the new NML to start in mid-2011 with its completion for use in 2014.

11. To date, the construction of the CLE has been funded by the regular budget and the LG-SIMS by extra-budgetary contributions. Funding for the NML has been discussed by the Board of Governors. In June 2010, the Board approved €3.4 million of the 2011 regular budget for the NML. The Secretariat is developing strategies and options for securing extra-budgetary contributions from Member States under the 'build to budget' process.

C.2. Drawing Safeguards Conclusions: Further Development of the State Evaluation Process

12. Key to the process by which safeguards conclusions are drawn is the State evaluation process. The Secretariat's safeguards conclusions are based upon an evaluation of all the information available to the Agency in exercising its rights and fulfilling its obligations under safeguards agreements. In GC(53)/RES/14, the General Conference acknowledged that Agency safeguards can achieve further effectiveness and efficiency when a State-level perspective is used. The Secretariat has continued to develop the State-level concept for the planning, implementation and evaluation of safeguards. The State-level concept is a holistic approach to safeguards implementation applicable to all States and based on a comprehensive State evaluation and a State-level approach, including specific safeguards measures for an individual State, implemented through an annual implementation plan. The concept of considering the State as a whole enables State-specific factors to be taken into consideration at all stages of safeguards implementation. The State evaluation process is a dynamic, iterative process in which evaluation results constitute the basis for planning safeguards activities, assessing their results and identifying any follow-up actions (e.g. additional information or verification) required for soundly-based safeguards conclusions. Safeguards implementation at the State level thus is 'information driven'. This process serves to focus the Agency's verification activities in the field and at Headquarters. The State-level approach to safeguards is responsive to changes in the analysis, thereby ensuring that the assurances provided to the international community remain credible and up-to-date.

13. A State-level integrated safeguards approach is designed and implemented on a non-discriminatory basis for each State for which the conclusion has been drawn that all nuclear material in that State remained in peaceful activities. As of June 2010, State-level integrated safeguards approaches were being implemented for 48 States¹⁶.

14. In 2009, the Agency, with the assistance of external experts, evaluated progress made in the implementation of integrated safeguards and the State evaluation process. The integrated safeguards evaluation concluded that substantial progress had been made in the implementation of integrated safeguards and that implementation was consistent with the conceptual framework approved by the Board in 2002. The assessment of the State evaluation process concluded that substantial progress had been made in the establishment and implementation of a process for the evaluation of activities at the State level and the drawing of safeguards conclusions. The evaluation also concluded that State evaluation reports (SERs) were thorough and recommendations contained in the SERs were receiving

¹⁶ See paragraph 40.

the necessary level of review, attention and follow-up. Specific recommendations from both evaluations are now being implemented.

15. The safeguards conclusions for 2009 were reported in the Safeguards Statement of the Safeguards Implementation Report (SIR) for 2009 (GOV/2010/25)¹⁷. As indicated in the SIR, in 2009 safeguards were applied for 170 States¹⁸ with safeguards agreements in force with the Agency. In response to the requests of some Member States, the Secretariat provided in the SIR for 2009 additional details on the results of safeguards activities, as well as more State-specific information, including the number of facilities and locations outside facilities (LOFs), amounts of nuclear material under safeguards, safeguards activities conducted and the cost of safeguards implementation. Member States expressed their views on the content of the 2009 SIR at the June Board meeting, commending the Secretariat for its efforts to improve the format and content of the report. The Board took note of the SIR for 2009 and authorized the release of the Safeguards Statement for 2009 and of the Background to the Safeguards Statement.

C.3. Development and Implementation of Safeguards Approaches, Procedures and Techniques

16. Research and development (R&D) in safeguards approaches, procedures and techniques, carried out with the assistance of Member State Support Programmes (MSSPs), is essential to meeting the safeguards challenges of the future. The needs of the Agency are communicated to the MSSPs through a biennial R&D Programme for Nuclear Verification. The R&D Programme for Nuclear Verification 2010–2011, issued in early 2010, contains 24 projects reflecting high priority needs for the further enhancement of efficient and effective safeguards activities. As of 30 June 2010, 21 MSSPs¹⁹ were supporting over 300 individual tasks within these projects valued at over € 20 million per annum. The tasks related to such issues as safeguards concepts and approaches; verification techniques and instruments; information collection, processing and analysis; quality management; and training.

C.3.1. Safeguards Approaches for Current and Future Facilities

17. The Secretariat has continued to develop and implement more efficient approaches for the verification of spent fuel transfers, approaches involving unattended monitoring and surveillance systems, and approaches based on short notice and unannounced inspections. Remote monitoring has become an integral part of many safeguards approaches and has resulted in enhanced effectiveness and efficiency of safeguards implementation. It is estimated that, in 2009, approximately 230 person days of inspection effort (PDIs) were saved due to the use of remote monitoring.

18. At Chernobyl, the new spent fuel conditioning plant and new shelter over the damaged Reactor Unit 4 are expected to be in operation in 2013. The Agency is directly involved in the early planning of the new construction with the aim of integrating the safeguards systems and developing safeguards approaches during the design stage. In 2009, the Agency performed tests of surveillance systems inside the reactor hall of Unit 4. The mobile monitoring system for spent fuel transfers was partially upgraded and the integration of site data was completed.

¹⁷ The Safeguards Statement for 2009 and the Background to the Safeguards Statement and Summary of the Safeguards Implementation Report for 2009 are published on the IAEA website at <http://www.iaea.org/OurWork/SV/Safeguards/es2009.html>.

¹⁸ And Taiwan, China.

¹⁹ Argentina, Australia, Belgium, Brazil, Canada, China, Czech Republic, European Commission, Finland, France, Germany, Hungary, Japan, Netherlands, Republic of Korea, Russian Federation, South Africa, Spain, Sweden, United Kingdom and the United States of America.

19. A safeguards approach based primarily on the use of random interim inspections supported by unattended non-destructive assay (NDA) and containment and surveillance (C/S) measures has been developed for the Japan mixed oxide (JMOX) plant in Japan. Detailed design studies for NDA equipment have been initiated based on conceptual studies that were completed in 2009. Extensive examination of design information is underway in order to confirm the validity of the safeguards approach and to prepare a design information verification (DIV) plan. Construction of the JMOX facility has yet to begin.

20. The Agency is preparing to safeguard new types of facilities in the future (e.g. pebble bed modular reactor, spent fuel pyroprocessing and laser enrichment). The activities have included evaluating safeguards approaches for specific facility types, assessing the proliferation resistance of nuclear energy systems and considering safeguards measures in the early design stages of a facility. For the effective and efficient implementation of safeguards at a new facility, safeguards concepts need to be considered in the initial planning stages of a facility, not only to improve its 'safeguardability' and proliferation resistance, but also to facilitate design changes when the costs of such changes are still reasonably low. A document is being prepared on the principles of 'safeguards by design' to provide the basis for facility-specific guidance to identify design features and operating practices that will ensure effective and cost-efficient safeguards implementation for facility designers and operators as well as for the Agency.

C.3.2. Information Technology and Analysis

21. The Agency has continued to work on the IAEA Safeguards Information System (ISIS) Re-engineering Project (IRP). The objective of the IRP is to increase the effectiveness and efficiency of information processing by replacing the current information system with a modern, integrated one. As reported previously, Phase I (Solution Design) and Phase II (Foundation) have been completed. Progress has continued to be made with regard to the 16 projects to implement the re-engineered and custom developed applications of Phase III (Implementation). A major effort has been made to analyse and review the business processes of the Department of Safeguards before developing the new system, and to demonstrate how information security in such an environment would be maintained. The year 2009 was dedicated to the conclusion of the remaining procurement contracts and preparations for the technical implementation of the IRP. Three major projects have been awarded to a new contractor in relation to the implementation of information technology solutions for reference data management, handling State-supplied data, and the evaluation and reporting of safeguards verification results. Also, the new safeguards portal, a central point of access to all safeguards information and part of the IRP infrastructure, began to operate in February 2010. The final goal is to complete the whole IRP project in 2011.

22. The Secretariat continued to utilize high resolution commercial satellite-based sensors to improve its ability to monitor nuclear sites and facilities worldwide. Imagery was acquired using 26 different earth observation satellites owned by 16 imagery providers in 11 States. Contracts were established with new imagery providers to further diversify sources and ensure integrity and authenticity of satellite imagery. During the past year, 423 commercial high resolution satellite images were acquired, including 19 high resolution radar scenes used to provide day/night and all-weather monitoring opportunities. The Secretariat prepared 148 analytical products (which included imagery and geospatial analysis reports and site maps), an increase of some 50% compared to the previous year.

23. In GC(53)/RES/14, the General Conference welcomed efforts to strengthen safeguards, and in this context, took note of the Secretariat's activities in verifying and analysing information provided by Member States on nuclear supply and procurement in accordance with the Statute and relevant State safeguards agreements, taking into account the need for efficiency, and invited all States to cooperate with the Agency in this regard. The Secretariat has continued its endeavours to develop and

diversify sources of safeguards relevant information on covert nuclear-related trade. Several States are now either voluntarily providing information on certain procurement enquiries and export denials relating to nuclear technology, or have stated that they are actively considering doing so. The analysis of such information augments the Secretariat's existing knowledge of covert trade activities and can provide an early indication of possible undeclared nuclear activities. This analysis complements other safeguards information and is used to support the Agency's verification activities and the State evaluation process.

C.3.3. Safeguards Equipment

24. To ensure the reliability of the Agency's standard equipment systems, significant financial and human resources continued to be spent in preventive maintenance and equipment upgrades. The reliability of digital surveillance systems, unattended monitoring systems and electronic seals has exceeded the target reliability of 150 months for the mean time between failures.

25. At the end of June 2010, the Agency had 1180 cameras connected to 625 systems operating at 243 facilities in 32 States²⁰. There were 137 unattended monitoring systems in 52 facilities in 21 States. In addition, remote monitoring systems continued to be installed or upgraded: 193 surveillance or radiation monitoring systems with remote transmission capabilities were authorized for inspection use in 17 States²¹ (114 surveillance systems with 478 cameras and 79 unattended radiation monitoring systems). All these systems were capable of transmitting all data required for safeguards purposes.

26. Since last year's report (GC(53)/9), the development of new safeguards verification systems has continued, including: cost-effective and less intrusive verification measurement systems for spent fuel before its storage under difficult-to-access conditions (underwater systems); the next generation surveillance system; more tamper-resistant ultrasonic sealing systems; a laser mapping system for containment verification; as well as the prototype electronics for the Universal NDA Data Acquisition Platform.

27. The Secretariat has continued its efforts to identify and develop effective advanced technologies for the detection of undeclared nuclear material and activities. A workshop was held in September 2009 to evaluate the suitability of laser-based stand-off detection techniques for possible safeguards detection measurement and analytical applications. A handheld laser-induced breakdown spectrometry (LIBS) prototype instrument for in-field determination of unknown materials was delivered in December 2009 for evaluation and field-testing.

C.3.4. Sample Analysis

28. The collection and analysis of nuclear material and environmental samples are essential safeguards measures for detecting the diversion of declared nuclear material and the presence of undeclared nuclear material and activities. Sample analysis is performed in the Agency's Network of Analytical Laboratories (NWAL), which includes SAL and a number of qualified laboratories in Member States.

29. In 2009, Agency inspectors collected 539 nuclear material samples and 27 heavy water samples. All samples taken for material accountancy verification purposes, except the heavy water samples, were analysed by SAL. In addition, the jointly operated IAEA-Japan on-site laboratory at the Rokkasho Reprocessing Plant analyzed some 90 nuclear material samples. IAEA inspectors also

²⁰ See footnote 18.

²¹ See footnote 18.

collected almost 500 environmental samples. This resulted in the dispatch of about 800 samples to the NWAL (of which 78 were analysed at SAL) for bulk/particle analysis for uranium and plutonium isotopes. Additionally, in order to monitor the quality of sampling and laboratory performance, approximately 90 control samples were submitted for analysis.

30. During 2009, improvements continued to be made in the collection, distribution, analysis and evaluation of environmental samples. However, because of a significant number of high priority samples involving complex analysis and evaluation, the average processing time for other routine samples increased. Typically, the collection and distribution of samples to the NWAL were made within one month. For routine samples, the NWAL took approximately three months to complete the analyses. The training of recently recruited analysts resulted in the reduction of the time taken to conduct evaluations to less than two months. By the end of 2009, the average overall processing time for routine samples was about six months. Work continues to achieve further reductions in the time needed for sample distribution, analysis and evaluation.

31. In order to further improve performance, the NWAL is being expanded for both nuclear material and environmental sample analysis. The NWAL currently consists of 19 laboratories (including SAL) in eight Member States, the European Commission, and the IAEA. To ensure adequate backup for the analysis of nuclear material samples, the Secretariat already has a contract with one qualified laboratory (the European Commission's Institute for Transuranium Elements, in Germany) and laboratories in Belgium, France and the United States of America are undergoing qualification. With respect to environmental sample analysis, the Agency qualified the expanded capability for uranium particle analysis at a laboratory in Japan, and a laboratory in Brazil is in the final stages of the Agency's qualification process for bulk environmental sample analysis. Additional laboratories in Australia, China, Hungary and the Republic of Korea have started the qualification process for environmental sample analysis.

C.4. Cooperation with State and Regional Systems of Accounting for and Control of Nuclear Material

32. States' systems of accounting for and control of nuclear material (SSACs) are fundamental to effective and efficient safeguards implementation. All States with a CSA in force are required to establish and maintain an SSAC, the effective operation of which requires a legislative and regulatory framework authorizing, and enabling, it to exercise the necessary regulatory and control functions. The IAEA SSAC Advisory Service (ISSAS) was initiated in 2005 to provide States with advice and recommendations on the establishment and strengthening of SSACs. As of the end of June 2010, 13 ISSAS missions had been conducted at the request of the Governments concerned. Since last year's report to the General Conference, ISSAS missions were conducted in Azerbaijan, Saudi Arabia and Turkey. The progressive implementation of associated follow-up action plans has already produced significant improvement in a number of States.

33. Since July 2009, the Agency has conducted nine regional and national training courses for States to assist them in fulfilling their obligations under safeguards agreements and APs. These courses included four regional SSAC courses (in Brazil, Japan, Jordan and Ukraine) and a regional SSAC facility level workshop in China. To meet more specific national needs, the Secretariat organized two national training courses on AP implementation, one in the Philippines (in cooperation with Australia and the United States of America) and one for Iraq (in Jordan), and two additional courses, one in Russia (for the International Uranium Enrichment Centre - Angarsk) and another in Azerbaijan.

34. Cooperation between the Agency, the European Commission and the European Union States continued during the year. The New Partnership Approach (NPA), which has been the underlying basis for safeguards cooperation between the two organizations since 1992, has been enhanced by the

agreement reached for partnership arrangements on all facility types, enabling integrated safeguards to be applied at all facilities within the non-nuclear-weapon States of the EU. Good technical cooperation between the Agency and the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) continued. Discussions are still ongoing with ABACC on how to implement some safeguards strengthening measures and revised policies relating to conversion, enrichment and design information verification. Arrangements are in place with both the European Commission and ABACC for the sharing of costs associated with the purchase and installation of safeguards equipment used jointly by the Agency and the respective regional authority.

C.5. Training for Agency Staff

35. Since last year's report to the General Conference, 75 major training courses were conducted for Agency safeguards staff, covering basic, refresher and advanced training. Basic training included the Introductory Course on Agency Safeguards for thirteen newly recruited inspectors; comprehensive inspection exercises at light water reactors and bulk handling facilities; and courses on NDA techniques, enhanced observational skills, and enhanced communication skills. Advanced training included complementary access principles and practices; pyroprocessing; enrichment; satellite imagery; proliferation indicators of different types of nuclear fuel cycle facilities; analytical skills and tools; spent fuel verification; plutonium verification techniques; tank calibration; and laser finder system for DIV. AP exercises were held in Finland, Hungary, Italy and the United States of America. One scientific visit to uranium mines was conducted in the Czech Republic. A special training course on safeguards for staff other than inspectors was held twice, and included facility visits in Slovakia. SAL and facilities made available by Member States are key assets for the implementation of the safeguards training programme.

C.6. Quality Management

36. During the past year, the Department of Safeguards continued to implement its quality management system (QMS), the performance of which was reviewed by senior management on a regular basis. An updated document control system with improved search capability was developed which also enables inspectors to download unclassified documents onto their laptops for field use. The internal quality audit programme on departmental processes was operated successfully and non-conformities identified during these audits were entered into the corrective action system for resolution. Staff training continued to be provided to raise awareness of quality management, to increase the use of the corrective action system, to support continual process improvement and to increase the use of the document control system. The Department also moved forward with the development of a safeguards cost calculation methodology. It began implementing a formal knowledge management programme and commenced the development of a methodology for analysing departmental processes with the aim of embedding knowledge sharing concepts and principles in those processes.

C.7. Other Activities

37. The Secretariat continued to implement a long-range strategic planning methodology, approved by the Department of Safeguards in 2008. This is to strengthen the existing biennial and medium-term planning processes by supplementing them with a longer range strategic planning framework to further enhance the Agency's ability to conduct its safeguards verification activities effectively and efficiently and to prepare for future challenges. The aim of this process is to develop a long-term strategic plan (2012–2023) for the Department of Safeguards.

D. Additional Protocol Implementation and Integrated Safeguards

D.1. Additional Protocol Implementation

38. APs based on the Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards (INFCIRC/540 (Corr.)) are central to the Agency's ability to detect possible undeclared nuclear material and activities and to draw soundly-based safeguards conclusions with regard to their absence in States with CSAs in force. An AP requires a State with a CSA in force to provide the Agency with a wide range of information about its nuclear material, activities and plans, and to provide the Agency with complementary access (CA) to locations in the State. The Secretariat has continued its efforts to implement APs and has invested considerable resources in the analysis, evaluation and follow-up of declarations made under APs. In 2009, 1702 declarations were received from 76 States²² with APs in force and the European Commission, and 138 CAs were performed in 40 States²³.

D.2. Integrated Safeguards

39. The implementation of integrated safeguards offers the best opportunity for increased effectiveness and enhanced efficiency of safeguards. Particularly noteworthy in this regard, yielding both greater effectiveness and cost-savings, are random inspections (conducted either with short notice or without advance notice to the State), making broader use of appropriate statistical optimization techniques. In GC(53)/RES/14, the General Conference requested the Secretariat to continue to ensure that the transition to integrated safeguards is given high priority. As indicated in paragraph 12 above, the Secretariat has continued to develop further the State-level concept for the implementation and evaluation of safeguards, and to prepare annual implementation plans for those States for which the broader conclusion has been drawn.

40. In 2009, integrated safeguards were implemented during the whole year in 36 States²⁴ - an increase of 11 States compared to 2008: Australia, Austria, Bangladesh, Bulgaria, Canada, Chile, Croatia, Cuba, the Czech Republic, Ecuador, Finland, Ghana, Greece, the Holy See, Hungary, Indonesia, Ireland, Italy, Jamaica, Japan, Latvia, Lithuania, Luxembourg, Mali, Malta, Monaco, Norway, Palau, Peru, Poland, Portugal, the Republic of Korea, Romania, Slovenia, Uruguay and Uzbekistan. Integrated safeguards implementation has also been initiated for Armenia, Belgium, Burkina Faso, Denmark, Estonia, Germany, Madagascar, the Netherlands, Seychelles, Spain, Sweden and Slovakia. The Secretariat estimates that the implementation of integrated safeguards in the 36 States²⁵ where it was implemented during the entire calendar year (excluding the verification effort at the Rokkasho Reprocessing Plant) resulted in savings of approximately 1000 person-days of inspection effort in 2009 – a 25% increase in savings compared to 2008.

41. While the figures above show a reduction of inspection effort in the field, activities at Headquarters related to the introduction of new facilities under safeguards, evaluation of AP declarations, information analysis and State evaluations have substantially increased. This reflects the shift in the focus of safeguards implementation to an information-driven system that aims at

²² See footnote 18.

²³ See footnote 18.

²⁴ See footnote 18.

²⁵ See footnote 18.

understanding and assessing the completeness and consistency of information on a State's nuclear programme as a whole in order to implement safeguards activities in the field and at Headquarters in the most effective and efficient manner.