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Strengthening the Effectiveness and Improving the Efficiency of Agency Safeguards

Report by the Director General

A. Introduction

1. The General Conference, in resolution GC(61)/RES/12 entitled ‘Strengthening the Effectiveness and Improving the Efficiency of Agency Safeguards’, requested the Director General to report on the implementation of the resolution to the General Conference at its sixty-second (2018) regular session. This report responds to that request and updates the information in last year’s report to the General Conference (document GC(61)/16).¹

B. Safeguards Agreements and Additional Protocols

B.1. Conclusion and Entry into Force of Safeguards Agreements and Additional Protocols

1. Additional protocols (APs) based on the Model Additional Protocol² entered into force for three States³. A small quantities protocol (SQP) was amended for one State⁴, in keeping with the Board of

¹ This report covers the period between 1 July 2017 and 30 June 2018.

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 (Corrected).

³ Honduras, Senegal and Thailand.

⁴ Tonga.

Governors' decision of 20 September 2005 regarding such protocols. As of 30 June 2018, 56 States had an operative SQP in force based on the revised standard text, and 36 States had an operative SQP that had yet to be amended.

2. Between 1 July 2017 and 30 June 2018, a comprehensive safeguards agreement (CSA) with an SQP based on the revised standard text and an AP thereto, was signed by one State⁵. One further State signed an AP⁶. In addition, one State signed a voluntary offer agreement (VOA) and an AP thereto⁷.

3. As of 30 June 2018, 182 States⁸ had safeguards agreements in force with the Agency, 132 of which (including 126 States with CSAs) also had an AP in force. An AP has been applied provisionally since January 2016 for one State⁹ pending its entry into force. As of 30 June 2018, 50 States had yet to bring into force APs to their safeguards agreements.

4. Twelve States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)^{10,11} have yet to bring CSAs into force pursuant to Article III of the Treaty.

5. The latest update of the status of safeguards agreements and APs is published on the Agency's website¹².

B.2. Promotion and Assistance in the Conclusion of Safeguards Agreements and Additional Protocols

6. The Agency has continued to implement elements of the plan of action outlined in resolution GC(44)/RES/19 and in the Agency's updated *Plan of Action to Promote the Conclusion of Safeguards Agreements and Additional Protocols*.¹³ Among the elements of the plan of action proposed in resolution GC(44)/RES/19 are:

- Intensified efforts by the Director General to conclude safeguards agreements and APs, especially with those States having substantial nuclear activities under their jurisdiction;
- Assistance by the Agency and Member States to other States by providing their knowledge and the technical expertise necessary 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.

7. Following the guidance of the policy-making organs and the Agency's updated plan of action, the Agency has continued to encourage and facilitate wider adherence to safeguards agreements and APs,

⁵ Liberia.

⁶ Algeria.

⁷ United Kingdom of Great Britain and Northern Ireland.

⁸ And Taiwan, China.

⁹ Islamic Republic of Iran.

¹⁰ The designations employed and the presentation of material in this section, including the numbers cited, do not imply the expression of any opinion whatsoever on the part of the Agency or its Member States concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.

¹¹ The referenced number of States Parties to the NPT is based on the number of instruments of ratification, accession or succession that have been deposited.

¹² <https://www.iaea.org/sites/default/files/status-sg-agreements-comprehensive.pdf>.

¹³ The plan of action is available on the Agency's website:
<https://www.iaea.org/sites/default/files/sg-plan-of-action-2016-2017.pdf>.

primarily using extrabudgetary funds. The Agency organized a regional seminar for Sub-Saharan African States (Lusaka, Zambia, 14 August 2017), an outreach workshop for diplomats from Permanent Missions and Embassies in Berlin, Brussels, Geneva and London (Vienna, Austria, 11–12 June 2018), and country visits to São Tomé and Príncipe (18–19 June 2018) and Cabo Verde (21–22 June 2018), at which the Agency encouraged these States to conclude CSAs and APs and/or to amend their SQPs. In addition, the Agency held consultations with representatives from a number of Member and non-Member States in Geneva, Lisbon, New York and Vienna during the reporting period.

C. Implementation of Safeguards

C.1. Developing and Implementing State-Level Safeguards Approaches

8. General Conference resolution GC(61)/RES/12, *inter alia*, welcomed the clarifications and additional information provided in the *Supplementary Document to the Report on The Conceptualization and Development of Safeguards Implementation at the State Level (GOV/2013/38)* (GOV/2014/41, and Corr.1), and noted the Secretariat's intention to keep the Board of Governors informed of progress made in the development and implementation of safeguards in the context of the State-level concept.

9. As of 30 June 2018, State-level safeguards approaches (SLAs) had been developed and approved for implementation for 67 States^{14,15} with a CSA and an AP in force, and a broader conclusion; 34 States with a CSA and an AP in force but without a broader conclusion; 29 States with a CSA but no AP in force (of which 28 have SQPs); and one State with a VOA and an AP in force. The SLAs have been developed and implemented for the above States within the scope of their respective safeguards agreements. The Department of Safeguards continues to develop SLAs for all other States with safeguards agreements in force as described in GOV/2014/41 and Corr.1. In the course of developing an SLA, the Secretariat consults the relevant State and/or regional authority, particularly on the implementation of in-field safeguards measures.

10. In response to General Conference resolutions GC(60)/RES/13 and GC(61)/RES/12, the Director General has prepared a report to the Board of Governors on the experience gained and lessons learned in the updating and implementation of SLAs for States under integrated safeguards.

C.2. Dialogue with States on Safeguards Matters

11. The Secretariat has continued to engage in open and active dialogue with States on safeguards matters.

12. On 28 August 2017, the Secretariat held a technical meeting on safeguards implementation, at which information on recent progress made in developing SLAs was presented to Member States. In addition, the Secretariat also provided an overview of the role of State systems of accounting for and control of nuclear material (SSACs) in the implementation of safeguards agreements. This overview also considered how to ensure effective cooperation between the Agency and State authorities.

13. On 17 November 2017, an informal briefing was held, where the Secretariat described to Member States the initial lessons learned and experience gained in updating SLAs for States under integrated safeguards, in preparation of the aforementioned report to the Board of Governors.

¹⁴ Fifty-three updated SLAs and 14 newly developed SLAs.

¹⁵ And Taiwan, China.

14. On 27 March 2018, the Secretariat held a technical meeting on safeguards implementation, at which it provided to Member States a general summary of processes for updating and developing SLAs and planning and conducting safeguards activities. The meeting was in preparation for another technical meeting on safeguards implementation, held on 13 April 2018, where the Secretariat further described to Member States the lessons learned and experience gained in the implementation of SLAs for States under integrated safeguards, prior to the release of the report on this matter by the Director General.

15. The Secretariat held a seminar in January 2018 to familiarize new Vienna-based diplomats with Agency safeguards, at which it provided an overview of the safeguards legal framework, the core safeguards processes and activities, and the assistance available to States in safeguards implementation.

C.3. Strengthening Safeguards Implementation in the Field

16. The Agency has continued to seek improvements to the effectiveness and efficiency of safeguards implementation in the field. For example, the Agency continued to test and is now evaluating a laser mapping technique for containment verification at spent fuel dry storage facilities in Argentina and Canada, and is finalizing a safeguards approach using a neutron portal monitor at a Canadian waste storage facility. This is the first time such a portal monitor, developed by the Agency, will be used for safeguards purposes. The Agency and the European Commission (EC) partnership approaches were implemented for light water reactors (LWRs), research reactors and critical assemblies in the non-nuclear weapon States of EURATOM.

17. The Agency has continued to develop and improve safeguards approaches, including the application of dual containment and surveillance systems on spent fuel items that are difficult to access for verification at spent fuel dry storages in Germany and Lithuania. The Agency continues to use remote data transmission at such storages in Germany. Remote data transmission was also used for verification of spent fuel transfers at a nuclear power plant (NPP) site in Lithuania, and installation and testing of associated equipment was carried out at the IAEA low enriched uranium (LEU) Bank in Kazakhstan. A safeguards approach for verifying transfers of spent fuel to dry storage in Mexico is being finalized, which will allow a reduction in inspector presence during the transfers without compromising safeguards implementation effectiveness. A similar safeguards approach for verifying spent fuel transfers in Pakistan has been developed. A shared remote data transmission server was installed in the Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) Headquarters, as a result of a cooperative effort with ABACC. Information on the state-of-health of equipment installed at two facilities in Argentina and Brazil was remotely transmitted to Agency Headquarters through this shared server.

18. For the first time, short notice inspections were conducted at research reactors in Kazakhstan, and unannounced inspections were carried out at selected facilities in Ukraine. Site or facility specific safeguards approaches and procedures were developed or improved for the use of a short notice random inspection scheme at a conversion plant in Argentina and for the verification of low burn-up spent fuel at an NPP in Brazil. The Agency has revised the short notice random inspection procedures at conversion and fuel fabrication facilities in Canada.

19. The Agency finalized the safeguards approach to verify the transfer of spent fuel from wet storage to interim dry storage after conditioning at the site of the Chernobyl NPP. Installation of safeguards equipment was completed during the first half of 2018 and is now operating in ‘test’ mode. The Agency continues to develop an effective and efficient approach for safeguarding the nuclear material of the damaged reactor unit 4. This nuclear material is to be contained in the new safe confinement of the Chernobyl NPP which is currently under commissioning. Finally, the Agency has continued to develop an approach for the verification of spent fuel transferred from Ukrainian NPPs to the centralized spent fuel storage facility, currently under construction in the Chernobyl exclusion zone.

20. Nuclear material inaccessible for verification remains in damaged Reactor Units 1–3 at the Fukushima Daiichi site in Japan. Surveillance and neutron-gamma monitoring systems have been installed at the site to ensure that nuclear material cannot be removed from the damaged reactors without the Agency’s knowledge. The data from these systems are also being transmitted remotely to the Agency’s regional office in Tokyo, thereby increasing the efficiency of Agency monitoring activities. The Agency also conducted short notice inspections at the site to confirm the absence of any undeclared movements of nuclear material.

21. The Agency continued to prepare for the future application of safeguards to new types of facility (e.g. geological repositories, spent fuel encapsulation plants, pyroprocessing facilities, small modular reactors and pebble bed reactors). The Agency, Finland, Sweden and the EC have continued to cooperate closely in the planning of safeguards implementation at encapsulation plants and geological repositories (EPGRs) in Finland and Sweden. The Agency’s EPGR project board coordinates the development of specific safeguards approaches for EPGRs, assesses verification methods and identifies the needs for new safeguards equipment and techniques necessary for safeguarding these facilities to optimise safeguards measures at the time these facilities become operational. Following ‘ground breaking’ for the encapsulation plant in Finland in 2016, construction works for the facility started in 2017. The Agency, in cooperation with the EC, is updating the technical requirements for the installation of safeguards equipment at the EPGR in Finland. In 2017, the expert group on the Application of Safeguards to Geological Repositories (ASTOR), coordinated by the Agency, published its final report summarizing its findings spanning 2011–2016 on *Technologies Potentially Useful for Safeguarding Geological Repositories* (STR-384).

22. The Agency and the Republic of Korea (ROK) have continued close cooperation on planning for safeguards implementation at future pyroprocessing plants, including in the early design stages of the plants. The Agency is working with China to develop safeguards approaches for the high temperature, gas-cooled pebble bed reactor, currently under construction, that was designated for the application of safeguards under China’s VOA. In parallel, the Agency has initiated collaboration with China under its support programme that could facilitate the application of safeguards by design for pebble bed reactors.

23. During 2017, the Agency contributed to assessments of the proliferation resistance of nuclear facilities through participation in the Agency’s International Project on Innovative Reactors and Fuel Cycle (INPRO) and the Generation IV International Forum (GIF). In addition, the Agency participated in the Safeguards and Security Working Group (SSWG) under the ROK and the United States of America Joint Fuel Cycle Study. The Agency is developing guidance documents aimed at enhancing the understanding of nuclear facility vendors and designers regarding safeguards needs, and encouraging the consideration of safeguards measures in the design and construction of nuclear facilities. To this end, in 2017 the Agency published two further volumes in its series of Member State guidance documents entitled: *International Safeguards in the Design of Fuel Fabrication Plants* (NF-T-4.7), and *International Safeguards in the Design of Conversion Plants* (NF-T-4.8), and in April 2018, *International Safeguards in the Design of Long Term Spent Fuel Management* (NF-T-3.1).

24. Since the last report, the Agency has continued to hold expert meetings on the updating of its ‘physical model’, which characterizes all elements of the nuclear fuel cycle (NFC) and is used for safeguards planning, implementation and acquisition path analysis. Six meetings were held, covering four separate elements of the NFC (uranium mining and ore processing, reactors including neutron sources, radioactive waste management and activities with hot cells).

C.4. Information Technology

25. Since last year’s report, the Agency has completed the Modernization of Safeguards Information Technology (MOSAIC) project which enhanced existing tools and software applications, introduced

new tools and software applications, and strengthened information security. All activities under the MOSAIC project were completed on schedule, according to scope, and within budget.

26. Some of the initial benefits from MOSAIC include: enhanced accessibility of authorized staff to safeguards data; easier and more secure archiving and retrieval of departmental knowledge, including the digitalization of paper-based processes; improved communication between the Agency, States, and regional authorities; and enhanced protection of the Agency's information technology (IT) system against cyberattacks and other information security threats.

C.5. Information Analysis

27. In order to draw soundly-based safeguards conclusions, the Agency evaluates all safeguards-relevant information, including declarations and reports submitted by States, data generated from its own verification activities in the field and at Headquarters, and other safeguards-relevant information available to it. Throughout the reporting period, the Agency enhanced its capabilities to acquire and process data, and to analyse and evaluate information in support of the preparation of in-field verification activities and the State evaluation process. The Agency continued to make improvements to the overall performance of its information system by enhancing associated applications and facilitating appropriate access of staff to data.

28. The Agency has continued to improve the effectiveness and efficiency of the environmental sampling evaluation process during the reporting period through the implementation of new modelling tools and the automation of reporting features.

29. The Agency has continued to utilize high resolution commercial satellite imagery to improve its ability to monitor nuclear facilities and sites in support of its safeguards activities, introducing imagery obtained from new commercially available sensors, and upgrading its dedicated environment (Geospatial Exploitation System). A number of Member States voluntarily provided the Agency with information concerning procurement enquiries for nuclear-related products that were denied, which was used as an input in assessing the consistency of nuclear activities declared by States to the Agency.

C.6. Analytical Services

30. The collection and analysis of nuclear material and environmental samples are essential safeguards activities. The analysis of such samples is performed at the Agency's Safeguards Analytical Laboratories (SAL) in Seibersdorf, comprising the Nuclear Material Laboratory (NML) and the Environmental Sample Laboratory (ESL). Analyses are also performed at the other laboratories of the Agency's Network of Analytical Laboratories (NWAL).

31. The NWAL currently consists of the Agency's SAL in Seibersdorf and 22 other qualified laboratories in ten Member States plus the EC. NWAL expansion continues for both nuclear material analysis and environmental sample analysis. Laboratories in the following countries are undergoing qualification for NWAL membership: Belgium, Canada and the Netherlands, for nuclear material analysis; Hungary, for environmental sample analysis; Argentina, for heavy water analysis; and Germany, for reference material production.

32. The Agency's safeguards laboratories continued to enhance their analytical capabilities in cooperation with partner laboratories in the Member States, through conducting technical meetings, inter-laboratory comparisons, and initiating subject-specific Member State Support Programme (MSSP) activities. The timeliness of environmental sample processing also continued to improve, with further

reductions in the time required for sample screening, distribution to the NWAL, analysis by the NWAL and evaluation.

C.7. Equipment and Technology

33. Verification activities rely heavily on the use of equipment, including both equipment installed at facilities and portable equipment. Remote data transmission continued to enhance efficiency by eliminating the need for data retrieval by inspectors at facilities and enabled early detection of any deterioration in their performance. Significant efforts continue to be dedicated to preventive maintenance and performance monitoring to ensure the reliability of Agency equipment. During the reporting period, the digital surveillance, non-destructive assay and unattended monitoring systems and active seals exceeded the target goal of 99% reliability. This level of reliability was achieved through the implementation of effective preventive maintenance policies and through redundancy designed into such systems and their components. The Agency continued to develop data automation and inspector review tools to help streamline equipment data collection and review processes. For example, an application that displays the real-time status of the systems in remote data transmission mode was developed and released for use by Agency inspectors and technical staff, and a data review and analysis package developed in cooperation with the EC integrates multiple data streams from unattended monitoring systems at authorized facilities.

34. The Agency continued to conduct acceptance testing, installation, training and maintenance of safeguards equipment, including that authorized for joint use, in cooperation with State and/or regional authorities. Such cooperation also supported the field testing of new safeguards equipment, which is an important step in the process of authorizing such equipment for safeguards use. For example, the prototype passive gamma emission tomography system, which can be used to detect missing or replaced fuel rods in fuel assemblies, was authorized at the end of 2017 for safeguards use for in-field measurement campaigns. Several systems for quantitative spent fuel and radioactive waste assay were upgraded or developed to address verification needs. Within the framework of the sealing and containment modernization programme, the Agency continued to pursue implementation of new sealing technologies and to enhance their overall security.

35. Technology foresight activities aim to identify and evaluate the potential application of emerging technologies for use in verification. Since the last report, the Agency has conducted evaluation and testing of several technologies that could support Agency safeguards implementation. For example, several prototypes of the next generation Cerenkov viewing device were deployed for field testing.

C.8. Cooperation with, and Assistance to, State and Regional Authorities

36. The effectiveness and efficiency of Agency safeguards depend, to a large extent, on the effectiveness of State and regional systems of accounting for and control of nuclear material (SSACs/RSACs) and on the level of cooperation between the State or regional authorities responsible for safeguards implementation (SRAs) and the Agency.

37. SRAs need legislative and regulatory systems to be able to exercise the necessary oversight and control functions, as well as resources and technical capabilities commensurate with the size and complexity of the State's nuclear fuel cycle. Recognizing the challenges faced by some States in establishing an effective SSAC, the Agency continued to provide assistance to strengthen their technical capabilities to implement the requirements of their safeguards agreements and APs.

38. A number of States have taken actions to enhance safeguards implementation. Examples of such actions include: hosting regional workshops to raise awareness of Agency safeguards; providing the Agency with early design concepts to assist in developing safeguards approaches for emerging new nuclear fuel cycle technologies; performing national inspections at facilities and locations outside

facilities (LOFs); validating operator data and assuring the quality of records, reports and declarations prior to submitting information to the Agency; making facilities available for training Agency staff; and providing experts to facilitate and lecture at workshops and training courses.

39. The Agency continued to enhance the safeguards pages of its website, providing SRAs and others with access to publications as well as safeguards-related videos, guidance and reference documents, forms and templates.

40. As a result of the launch of ‘Protocol Reporter’ version 3 (PR3) software in September 2016, and the ‘State Declarations Portal’ (SDP) in May 2017, the Agency has established an improved environment for States to prepare and submit reports and declarations to the Agency. The SDP substantially increased productivity by saving time and effort in communicating with States on matters relating to the implementation of safeguards and reducing manual data entry and transcription errors.

41. The IAEA International SSAC Advisory Service (ISSAS) provides States, at their request, with advice and recommendations on the establishment and strengthening of their SSACs, based on an in-depth evaluation with respect to safeguards obligations, guidance and good practices. ISSAS missions provide constructive recommendations for improving the regulatory, administrative and technical elements of the SSAC, and enhance cooperation with the IAEA. Since last year’s report, the Agency has conducted an ISSAS preparatory mission in Mexico. A follow-up meeting to the ISSAS mission conducted in Uzbekistan in 2014 was held at IAEA Headquarters in May 2018.

42. The Agency has continued to provide training to personnel of SRAs as well as operators of facilities and LOFs. Inspectors from the Agency and from EURATOM participated in joint safeguards training in Vienna in October 2017. Over the past year, the Agency has conducted ten training courses at international, regional and national levels.

43. Two international SSAC courses were conducted: one in the ROK (for States embarking on a nuclear power programme and States expanding existing ones) and one in Japan for States with SQPs. Three regional SSAC courses were conducted: one in Mexico and one in Kazakhstan both focusing on the AP, and one in Jamaica for States with SQPs.

44. Upon the request of Member States, five training courses were organized at the national level. These included National Training Courses on: SSAC for Iran, conducted in Japan; safeguards implementation for Tajikistan; SSAC for Turkey; safeguards implementation in Iraq, conducted in Vienna; and safeguards implementation for South Africa.

45. The Safeguards Traineeship Programme for Young Graduates and Junior Professionals commenced on 5 February 2018. Six trainees, out of which four are female, from Cameroon, Jordan, Kenya, Thailand, Turkey and Viet Nam, were accepted to participate in the programme, which concludes on 30 November 2018.

46. The Agency provided lecturers and conducted table-top exercises to support training courses organized by Member States and the EC. The IAEA participated in one Regional Workshop in Tunisia on nuclear material in non-nuclear fuel cycle applications organized by the Government of the United States through the International Nuclear Safeguards and Engagement Program (INSEP) and in one international SSAC training course organized by the Government of Japan. The IAEA also participated in a national workshop on the AP in Nepal and a national workshop on nuclear safeguards implementation in Liberia, organized by the Government of the United States through INSEP. Since the previous report, safeguards-related issues have been discussed with officials in Niger during the Agency-led Integrated Nuclear Infrastructure Review (INIR) mission. Department of Safeguards staff participated in the plenary meeting of the Asia Pacific Safeguards Network, held in Busan, ROK, on 30 October–2 November 2017.

C.9. Safeguards Workforce

47. Since last year's report, sixteen new inspectors have completed the Introductory Course on Agency Safeguards (ICAS), which includes modules on the legal framework for Agency safeguards; safeguards implementation and verification techniques, including non-destructive assay methods and containment and surveillance; radiation protection; IAEA and State reporting; and negotiation and communication skills. The ICAS course concluded with an inspection exercise at a LWR and the presentation of a case study.

48. Courses for safeguards staff continued to be offered on the full range of safeguards activities conducted in the field and Agency Headquarters, to develop the technical and behavioural skills required for safeguards implementation. The training programme was implemented as planned and additional training was provided at short notice to support verification in Iran and to address other training needs across the Department, in response to States' needs.

49. The Agency continues to provide training on radiation protection for staff in the Department of Safeguards which is supported by a new on-line Radiation Protection Course.

C.10. Quality Management

50. The Department of Safeguards continued to implement and improve its quality management system (QMS). A comprehensive self-assessment of the safeguards QMS was performed to assess the maturity level of the system and to identify gaps and opportunities for improvement. The resulting improvement plan is being implemented. Analysis and improvement activities were conducted to strengthen the functional alignment between applications developed under MOSAIC and the safeguards processes they support.

51. Staff training continued to raise awareness of quality management, including managing and controlling documents and using the condition report system. An internal quality audit was conducted on the conformance of the SAL to ISO 9001 requirements. The Department of Safeguards continued to use its condition report system to identify and prevent recurrence of non-conformities and radiological and industrial safety events.

C.11. Information Security

52. In 2017, the Department continued to improve information security through increased governance, additional training and communication, and by means of the MOSAIC project, which introduced a highly-secured mechanism for managing classified electronic information throughout many safeguards processes. The Department created a new security event management platform that significantly increased the ability to review data related to information security events. The authorization system, which implements the Department's information access authorization and management policies became operational and is now used to manage staff access to information.

53. The Department conducted a security awareness campaign related to controlled and monitored phishing attacks within the Department. The campaign included awareness raising, training, testing and communications. The testing aspect of the campaign measured the effectiveness of such awareness efforts and resulted in the Department exceeding its target benchmarks for security awareness related to phishing attacks. Mandatory refresher security and classification e-learning courses were launched, and procedures were implemented to strengthen the security, protection and handling of information and equipment in the field.

C.12. Safeguards Reporting

54. The Secretariat reported the safeguards conclusions for 2017 in *The Safeguards Implementation Report for 2017* (GOV/2018/19)¹⁶, which also provided data on the number of facilities and LOFs under safeguards, and the inspection effort and related cost of safeguards implementation. At its June 2018 meeting, the Board of Governors took note of the report and authorized the release of the Safeguards Statement for 2017 and of the Background to the Safeguards Statement and Summary.

C.13. Strategic Planning

55. The Secretariat carries out strategic planning to ensure that safeguards implementation will continue to be both effective and efficient. To this end, the Department of Safeguards conducts long-, medium-, and short-term planning to ensure that its processes and technical capabilities (e.g. equipment and infrastructure) remain fit-for-purpose and its human and financial resources are sufficient to carry out its work. Such planning also facilitates cooperation with Member States. In this reporting period, the Department of Safeguards continued to implement its adapted strategic planning processes with emphasis on being more responsive to changes in the operating environment and enhancing strategy execution.

56. The Agency updated and released its *Research and Development (R&D) Plan — Enhancing Capabilities for Nuclear Verification* (STR-385), which outlines the capabilities the Secretariat wishes to develop and for which Member State R&D support is required. The Agency also published the *Development and Implementation Support Programme for Nuclear Verification, 2018–2019* (STR-386). The Agency presented both documents at the biennial MSSP coordinators meeting, held in February 2018. Fifty-three participants representing 19 out of 21 MSSPs attended this meeting, where presentations were given on current and future safeguards challenges. The meeting format encouraged dialogue and information exchange among the internal and external participants. The Department continued to rely on MSSPs to address near-term development objectives.

¹⁶ The Safeguards Statement for 2017 and the Background to the Safeguards Statement and Summary of *The Safeguards Implementation Report for 2017* are published on the Agency's website at:
<https://www.iaea.org/sites/default/files/18/06/statement-sir-2017.pdf>