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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(58)/RES/14 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 fifty-ninth (2015) regular session. This report responds to that request and updates the information in last year’s report to the General Conference (document GC(58)/16).

B. Safeguards Agreements and Additional Protocols

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

2. Between 1 July 2014 and 30 June 2015, a comprehensive safeguards agreement (CSA) in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) together with a small quantities protocol (SQP) entered into force for one State,¹ and additional protocols (APs) based on the Model Additional Protocol² entered into force for 3 States.³ During the same period, one State⁴ signed a CSA with an SQP, and one further State⁵ signed an AP. In addition, an SQP was amended for one

¹ Djibouti.

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 Cambodia, Djibouti and India.

⁴ Federated States of Micronesia.

⁵ Lao People's Democratic Republic.

State⁶ and rescinded by another State,⁷ in keeping with the Board of Governors' decision of 20 September 2005 regarding such protocols. By the end of June 2015, of the 95 States with operative SQPs,⁸ 54 were based on the revised SQP standard text.

3. As of 30 June 2015, 182 States⁹ had safeguards agreements in force with the Agency, 126 of which (including 120 States with CSAs) also had APs in force. As of that date, 55 States had yet to bring into force APs to their safeguards agreements.

4. Twelve parties to the NPT have yet to bring CSAs into force.

5. The latest update of the status of safeguards agreements and APs is published on the Agency's website.¹⁰

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*.¹¹ 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 which have significant nuclear activities;
- 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.

7. Guided by the relevant resolutions and decision¹² of the General Conference and decisions of the Board of Governors, and the Agency's updated Plan of Action and *Medium Term Strategy 2012-2017*,¹³ the Agency has continued to encourage and facilitate wider adherence to safeguards agreements and APs, using primarily extrabudgetary funds. The Agency organized regional and sub-regional events for States in Africa (Vienna, Austria; 27-28 January 2015), for States in Southeast Asia (Singapore; 23-25 June 2015) and for States in the Caribbean region (Panama City, Panama; 26 June 2015), and a briefing for a number of Permanent Missions (Geneva, Switzerland; 11 February 2015), at which the Agency encouraged the participating States to conclude CSAs and APs, and to amend their SQPs. National workshops on safeguards were also organized for Myanmar, in Nay Pyi Taw, in December 2014, and for Mongolia, in Ulaanbaatar, in June 2015. In addition, the Agency held consultations with representatives from a number of Member and non-Member States in Geneva, New York and Vienna at various times throughout the year.

⁶ Cambodia.

⁷ Jordan.

⁸ Excluding SQPs to safeguards agreements concluded pursuant to Additional Protocol I to the Tlatelolco Treaty.

⁹ And Taiwan, China.

¹⁰ See: https://www.iaea.org/sites/default/files/sg_agreements-status-list-20-july-2015.pdf.

¹¹ The Plan of Action is available on the Agency's website:
https://www.iaea.org/sites/default/files/final_action_plan_1_july_2013_to_30_june_2014.pdf.

¹² GC/(58)/RES/14.

¹³ The *Medium Term Strategy 2012–2017* is available at: <http://www.iaea.org/about/mts>.

B.3. Implementation and Further Development of Safeguards

B.3.1. Safeguards Implementation at the State Level

8. In August 2014, the Director General submitted a report to the Board of Governors entitled *Supplementary Document to the Report on The Conceptualization and Development of Safeguards Implementation at the State Level (GOV/2013/38)*. The supplementary document (GOV/2014/41 and Corr.1) was prepared in response to Member States' requests at the September 2013 meetings of the Board of Governors. It provided clarification and additional information to GOV/2013/38, and also described how the State-level concept is applicable to States with item-specific safeguards agreements and to States with voluntary offer agreements.

9. The Board of Governors took note of the clarification and additional information provided in the supplementary document and of the Director General's intention to keep the Board of Governors informed on the matter. General Conference resolution GC(58)/RES/14, *inter alia*, welcomed the clarifications and additional information provided in the supplementary document. It also welcomed the important assurances contained in the supplementary document and its corrigendum and in the statements by the Director General and the Secretariat as noted by the Board of Governors at its September 2014 meetings.

10. To ensure consistency and non-discrimination in the implementation of safeguards, the Department of Safeguards has continued to improve internal work practices, and further develop and test internal procedures and guidance, including on conducting acquisition path analysis and developing State-level safeguards approaches (SLAs) for States with CSAs. The safeguards training programme has also been adjusted to reflect updated guidance and practices. The Department of Safeguards continues to refine its key internal processes supporting safeguards implementation and to strengthen the departmental oversight mechanisms relevant to the consistent implementation of these processes.

11. Following the last General Conference, the Department of Safeguards began to update the existing 53 SLAs for States⁹ under integrated safeguards. It also plans for the progressive development of SLAs for other States in the future. As of the end of June 2015, two SLAs for States under integrated safeguards had been updated, reviewed within the departmental oversight process, and approved for implementation by the Deputy Director General, Head of the Department of Safeguards. Several other SLAs are in various stages of review, with approval for implementation expected in the months ahead.

B.3.2. Consultation and Coordination with States and Regional Authorities on SLAs

12. In the course of updating or developing an SLA, the Secretariat consults with the State concerned,¹⁴ particularly with regard to the implementation of safeguards measures in the field. Such consultations take the form of, for example, bilateral meetings, email exchanges, letters and discussions held during in-field verification activities. Consultations began in late 2014 with States and one regional authority, and have continued in 2015.

B.4. Dialogue with States on Safeguards Matters

13. Since the last report to the General Conference, the Secretariat has continued to engage in open and active dialogue with States on safeguards matters. In October 2014, the Agency held its twelfth Symposium on International Safeguards in Vienna, entitled *Linking Strategy, Implementation and*

¹⁴ And/or regional authority, when appropriate.

People. More than 600 registered participants from 54 States and 11 international organizations attended the event. The objective of the 2014 Symposium was to foster dialogue, exchange information and promote cooperation between the Secretariat, Member States, the nuclear industry and members of the broader safeguards and nuclear non-proliferation community. During the Symposium, the Secretariat and other participants presented over 300 papers addressing a wide range of activities aimed to support Agency safeguards. The Agency's safeguards priorities were examined with key session themes addressing forthcoming challenges in the areas of advancing cooperation between the Agency and States; strengthening the Agency's technical capabilities (safeguards approaches, technologies and infrastructure); bolstering its State evaluation capabilities (e.g. information collection and evaluation); and managing the safeguards workforce and knowledge. The symposium was supported by an exhibition with 35 exhibitors demonstrating a broad range of services and technologies.

14. On 28 January 2015, the Agency held a Technical Meeting on Safeguards Implementation addressing safeguards implementation in States with SQPs to their CSAs. The Secretariat made presentations on safeguards obligations of States with SQPs, safeguards implementation for those States, and resources and assistance available to States on safeguards implementation. The meeting was attended by more than 80 participants from 53 Member States (12 of which were States with SQPs) and EURATOM. At this meeting, the Secretariat also provided a briefing on progress made in developing and updating SLAs. Preparations were underway for a second Technical Meeting to be held on 3 July 2015.

15. The Secretariat held its annual one-day Seminar on IAEA Safeguards in March 2015, which was attended by 55 participants from 40 Member States. The seminar featured opening remarks by the Deputy Director General, Head of the Department of Safeguards, followed by presentations by the Secretariat on safeguards implementation, the associated legal framework, and the resources and assistance available to States for capacity building in safeguards. The event concluded with tours of the safeguards technology laboratories and a demonstration of the uses of satellite imagery.

B.5. Safeguards Approaches and Technology

B.5.1. Safeguards Approaches

16. Since last year's report, the Agency has improved the effectiveness and efficiency of safeguards implementation at several facilities, including, for example, through the introduction of remote monitoring at four facilities (one in Finland, two in Germany and one in Switzerland). Following consultations with the State authority on the updating of the SLA for the Republic of Korea, a series of field trials were held and practical arrangements were established to facilitate implementation of unannounced routine inspections at light water reactors in the State. An improved safeguards approach for the spent fuel ponds at the La Hague reprocessing facility in France was implemented to better focus Agency safeguards effort and activities at that facility. In Japan, as part of the safeguards approach at the Fukushima Daiichi site, surveillance and neutron-gamma outdoor monitoring systems were installed to monitor nuclear material inaccessible for verification which remains in damaged reactors (Units 1-3). An additional facility in India was brought under safeguards in December 2014, and most of the safeguards equipment was installed at that facility. Since last year's report, two additional facilities were brought under safeguards in Pakistan and safeguards equipment is being installed at these facilities. Safeguards approaches were developed or updated for an enrichment facility in Argentina and an enrichment facility in Brazil.

17. The Agency has continued to consult with the State authorities in Ukraine throughout the design stage for the facilities under construction at the site of the Chernobyl nuclear power plant (the spent

fuel storage facility for Chernobyl fuel and the centralized spent fuel storage for other nuclear power plants in Ukraine) with a view to advising on the incorporation of safeguards instrumentation into the design of the facilities. The development activities associated with the implementation of safeguards at the Japan Mixed Oxide Fuel Fabrication Plant continued to be limited due to construction delays.

18. The Agency has continued to prepare for implementing safeguards at new types of facility, such as encapsulation plants, geological repositories, pyroprocessing plants and laser enrichment facilities. For example, the Agency, Finland, Sweden and the European Commission (EC) continue to coordinate and cooperate closely in the planning of safeguards implementation at encapsulation plants and geological repositories in Finland and Sweden. In particular, significant progress has been made in identifying possible safeguards measures to be applied at the encapsulation plant in Finland and a set of technical needs for installation of safeguards equipment at the plant during its construction. Baseline 3D laser scanning of the excavated area of the geological repository in Finland was successfully performed in November 2014 as part of design information verification. The Application of Safeguards to Geological Repositories (ASTOR) expert group, which was established by the Agency, continued to identify prospective safeguards technologies and equipment and share its results with Member States and the Secretariat. Early in 2015, the Agency and the Republic of Korea finalized procedures for the implementation of safeguards measures at all pyroprocessing-related facilities in the State. In addition, the Agency and Spain have discussed the early introduction of safeguards features in the design of a future centralized spent fuel storage and waste handling facility that the State plans to construct.

19. To encourage the consideration of safeguards in the design and construction of nuclear facilities, the Agency is developing guidance documents aimed at enhancing the understanding of nuclear facility vendors and designers regarding safeguards needs. The first of a series of six facility-specific guides, *International Safeguards in the Design of Nuclear Reactors* (NP-T-2.9), was issued in August 2014 in the Agency's Nuclear Energy Series. Through the International Project on Innovative Nuclear Reactors and Fuel Cycles and the Generation IV International Forum, the Agency has continued to develop tools to simplify and enhance assessments of proliferation resistance, and provided information about the consideration of safeguards in the design and construction of nuclear facilities to States that are interested in beginning nuclear power programmes.

B.5.2. Information Technology

20. Information technology (IT) plays an important role in the implementation of Agency safeguards. Since last year's report, the Agency has made great progress in enhancing its current safeguards IT to mitigate operational and security risks, including improvements to the overall performance and security of its safeguards information system. Activities to enhance the Agency's capability to protect sensitive safeguards information also continued, with improvements made to security monitoring, digital forensics and the highly secure internal network of the Department of Safeguards. Safeguards data continued to be transferred to electronic State files on this network.

21. To address the Agency's continued safeguards IT modernization needs and to bring these efforts under a comprehensive management approach, the Agency established the Modernization of Safeguards Information Technology (MOSAIC) project together with a new project governance framework. After three decades of reliance on mainframe computer-based technology, the migration of core safeguards information and applications to the Department's highly secure internal network was accomplished on 15 May 2015. This followed user acceptance testing of the applications and a transition period during which the old and new systems were run in parallel to ensure that the new system worked properly before the old system was decommissioned. This migration effort, which involved the transfer of some 60 million records, included replacing the computer hardware and

software, modernizing some of the processes, and training the users about the new system. This key milestone was achieved on time and within budget.

22. Continued developments under the MOSAIC project will benefit from lessons learned in the first phase, including (1) the Deputy Director General's personal stewardship of the project; (2) the orientation of the project toward the business needs and perspectives of the Department; and (3) the strong commitment of, and interactions among, the users (demonstrated by their participation in the mainframe migration user acceptance tests and parallel run activities, which allowed for extensive testing and immediate feedback). These interactions facilitated dialogue between users and developers and built user confidence in the new system.

B.5.3. Information Analysis

23. In order to draw soundly based safeguards conclusions, the Agency evaluates declarations and reports submitted by States, data generated from Agency verification activities in the field and at Headquarters and other safeguards relevant information available to the Agency. Throughout the reporting period, the Agency enhanced its capabilities to acquire and process data, analyse and evaluate information, and securely distribute information internally, as an essential contribution to the State evaluation process and the drawing of safeguards conclusions. It also continued to investigate new tools and methodologies to streamline and prioritize workflows and processes. To improve the quality of nuclear material accounting information, the Agency monitored laboratory and measurement systems' performance and organized international technical meetings, training courses and workshops for various States on nuclear material accounting, including measurement data analysis, statistical methodologies and material balance evaluation concepts. Starting in 2015, India began providing its nuclear material accountancy reports in an improved standardized format, thereby increasing the efficiency of Agency analysis and evaluation of such reports.

24. Since last year's report, the Agency has continued to perform material balance evaluations as part of the process for drawing conclusions on the non-diversion of declared nuclear material. In support of this process, the Agency relies on data from verification activities performed in the field and at Headquarters, including the results of destructive analysis (DA) and non-destructive assay (NDA) measurements of nuclear material. The evaluation of analytical results from environmental and nuclear material samples continued to play an essential role in assessing the absence of undeclared nuclear material and activities. In 2014, the Agency received and reviewed over 900 000 lines of inventory changes, and more than 2000 additional protocol declarations provided by States; prepared 205 nuclear material balance evaluation reports; and integrated and interpreted the results from 416 environmental samples taken in 34 States.⁹ Approximately 820 summaries of safeguards relevant information were prepared in support of State evaluations for 181 States.^{9, 15}

¹⁵ Including the Democratic People's Republic of Korea.

25. The Agency has continued to utilize high resolution commercial satellite imagery to improve its ability to monitor nuclear facilities and sites worldwide. Since last year's report, the Agency has acquired 407 commercial satellite images from 16 different satellites. During this same period, the Agency produced 127 internal imagery analysis reports, including several imagery-derived and geographical information system products. Imagery analysis continued to provide great benefits for planning in-field verification activities. It is also a critical tool to monitor nuclear facilities and sites in States where the Agency has limited or no access. The Department of Safeguards' Geospatial Exploitation System provided authorized staff across the Department with access to commercial satellite imagery and imagery analysis reports.

26. Since last year's report, open source and trade information continued to be routinely used by the Agency to support analysis of nuclear related trade. A number of Member States voluntarily provided the Agency with information concerning 115 unfulfilled procurement enquiries for nuclear-related products. This information was used to assess the consistency of nuclear activities declared by States to the Agency. From this and other data, 67 trade analysis reports were produced for State evaluation purposes.

B.5.4. Safeguards Analytical Services

27. 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, which consist of the Nuclear Material Laboratory (NML) and the Environmental Sample Laboratory. Analyses are also performed at the other laboratories of the Agency's Network of Analytical Laboratories (NWAL) (see paragraph 29 below). In 2014, the Agency collected 488 nuclear material samples and nine heavy water samples. It also collected 416 environmental samples, including 308 swipe samples and 108 other samples.

28. Under the Enhancing Capabilities of the Safeguards Analytical Services (ECAS) project, the construction of the NML building's final wing, comprising office and training space, has begun with completion expected by the end of 2015. The transition of laboratory functions and facilities management to the NML is underway, with active testing of the uranium laboratory having started in April 2015. Other remaining tasks include the implementation of security guard services to meet Agency nuclear security recommendations on the physical protection of nuclear material and nuclear facilities (contained in document INFCIRC/225/Revision 5) and the design and installation of certain analytical instruments and equipment for use in the new NML.

29. The NWAL currently consists of the Agency's SAL in Seibersdorf and 20 other qualified laboratories in nine Member States and the EC. NWAL expansion continues for both nuclear material analysis and environmental sample analysis. In order to ensure adequate backup for the analysis of nuclear material samples currently being performed only at SAL, the Agency recently qualified and contracted the French Atomic Energy and Alternative Energies Commission's Laboratory for the Development of Nuclear Isotopic and Elemental Analysis. Laboratories in Belgium, Canada, Germany, the Netherlands and the United States of America are undergoing qualification for nuclear material analysis. In the area of environmental sample analysis, the Korean Atomic Energy Research Institute has officially been qualified for both particle and bulk analysis techniques. Laboratories in China, the Czech Republic and Hungary are undergoing qualification for environmental sample analysis. In addition, a laboratory in Argentina is undergoing qualification for heavy water analysis.

B.5.5. Safeguards Equipment

30. Since last year's report, verification activities continued to rely upon the use of safeguards instruments including both installed systems and portable equipment used by inspectors in the field. At the end of June 2015, 280 installed systems in 23 States⁹ were remotely connected to Agency

Headquarters. Additionally, the Agency had 1404 surveillance cameras connected to 839 systems operating at 265 facilities in 35 States⁹. There were also 157 unattended monitoring systems operating in 22 States. More than 900 portable and resident NDA systems were prepared and delivered to the field for use during inspections. Since last year's report, significant financial and human resources were dedicated to preventive maintenance and performance monitoring to ensure the reliability of the Agency's standard equipment systems. The reliability of digital surveillance systems, unattended monitoring systems and electronic seals exceeded the target reliability goal of 99% (i.e. systems were available for operation more than 99% of the time). High reliability at the system level was achieved through redundancy to mitigate potential single component failures. More than 8000 pieces of verification equipment were dispatched to support verification activities in the field over the reporting period.

31. Technology foresight activities aim to identify new developments and apply scientific and technological innovations to meet verification needs. A prototype of an autonomous navigation system based on inertial sensors has been tested in the field in combination with instruments such as back-pack and hand-held radiation monitoring devices. Hand-held chemical identification instruments have been evaluated in an Agency technical workshop. Several instruments are in various stages of evaluation for possible use during complementary access.

B.6. Cooperation with, and Assistance to, State and Regional Authorities

32. 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.

33. 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. In some States, SSACs have yet to be established, and not all SRAs have the necessary authority, resources or technical capabilities to implement the requirements of safeguards agreements and APs. In particular, some SRAs do not provide sufficient oversight of nuclear material accounting and control systems at nuclear facilities and at locations outside facilities (LOFs) where nuclear material is customarily used, to ensure adequate quality and timeliness of the data being transmitted to the Agency.

34. The effectiveness and efficiency of Agency safeguards have continued to be enhanced through the actions undertaken by a number of States in 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 measures for emerging new nuclear fuel cycle technologies; performing national inspections at facilities and 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 of Agency staff; and providing experts to contribute to the development of guidance documents on safeguards implementation and consideration of safeguards in the design and construction of nuclear facilities.

35. In December 2014, to assist States in building capacity for complying with their safeguards obligations, the Agency published the *Safeguards Implementation Practices Guide on Facilitating IAEA Verification Activities* (IAEA Services Series No. 30). In February 2015, the *Safeguards Implementation Practices Guide on Establishing and Maintaining State Safeguards Infrastructure* (IAEA Services Series 31) was published. The Agency further enhanced the safeguards pages of its website¹⁶ providing SRAs and others with access to these new publications as well as safeguards-related videos, photos, guidance and reference documents, forms and templates.

36. The IAEA SSAC Advisory Service (ISSAS) provides States, at their request, with advice and recommendations on the establishment and strengthening of SSACs. Since last year's report, the Agency conducted an ISSAS mission in Uzbekistan. As of the end of June 2015, 21 ISSAS missions had been conducted since the service's inception in 2004.

37. The Agency also provides training to personnel of SRAs as well as facility operators. Since last year's report, the Agency has conducted 15 training courses at international, regional and national levels. Two international SSAC courses were conducted – one in Japan and one in the United States of America. More specific training included a national training course in Iran on Nuclear Material Accounting and Reporting; an interregional training course in Finland on Regulator-Operator Interfaces; a regional training course in Republic of Korea on SSACs for Newcomer Countries; a national workshop in Oman on Safeguards and Security Aspects of Export Control in Oman; national workshops on safeguards in Thailand and Myanmar; a workshop in Saudi Arabia on National Systems for Effective Safeguards Implementation; a workshop in Jordan on Safeguards by Design Considerations for Reactors; a national training course in Belarus on Safeguards Implementation in States Developing Nuclear Power Programmes; and a regional training course in Turkey on Safeguards and Security Aspects of Nuclear Material Accounting and Control at Facilities.

38. The Agency also provided lecturers to support topical training courses on safeguards implementation organized by the United States of America and held in Egypt and Indonesia. Since last year's report, safeguards-related issues were discussed with officials from Nigeria during an Agency-led Integrated Nuclear Infrastructure Review (INIR) mission. Department of Safeguards' staff also contributed their expertise to the preparation of integrated work plans for States where INIR missions had already been conducted and participated in bilateral meetings with newcomer States.

B.7. Safeguards Workforce

39. Since last year's report, 25 new inspectors have completed the Introductory Course on Agency Safeguards (ICAS). Training for new inspectors included courses on NDA techniques, radiation protection, enhanced observational skills, design information verification, negotiation skills and enhanced communication skills. The ICAS course concluded with the inspectors demonstrating their acquired skills during one of three comprehensive inspection exercises at a light water reactor.

40. Internal training on safeguards activities at facilities and Agency Headquarters was complemented by the following additional courses: new workshops held at SAL on the prevention of UF₆ hazards; emergency first aid measures and incident reporting; a basic NDA refresher course; and a course on the basics of laser isotope separation techniques.

41. The 2014 Safeguards Traineeship Programme, involving six participants from Cambodia, Ghana, Myanmar, Nepal, Tajikistan and Tunisia, concluded in November 2014 with the trainees presenting the results of their projects and receiving their certificates. Preparations are underway for the 2016 Traineeship Programme.

¹⁶ See: <https://www.iaea.org/safeguards/assistance-for-states>.

B.8. Quality Management

42. The Department of Safeguards continued to implement and improve its quality management system. In 2014, the Department continued its initiative to identify and select key performance indicators for pilot testing, to assess Departmental activities and outcomes in the context of a broader performance management system under development. Since last year's report, internal quality audits were conducted and reports issued in three areas: a preparatory audit for re-certification of the Department of Safeguards Office of Safeguards Analytical Services against the ISO 9001:2008 standard; an audit of the current arrangements for the management and administration of the Member State Support Programme; and an audit of all aspects of equipment management processes used in the Division of Technical and Scientific Services (SGTS). In addition, more than 230 quality control reviews were performed on randomly selected safeguards activities. For those where potential deficiencies were observed, the findings were further assessed and, as appropriate, a 'condition report' was initiated. During that same time period, 98 condition reports related to safeguards processes were initiated as a result of quality audits, health and safety reviews and other activities. Root causes and actions to prevent recurrence were identified for each of these reports. In late 2014, a new 'Condition Report Work Flow and Tracking System' software application was released for use throughout the Department.

43. The Department of Safeguards' cost calculation methodology, which is used to estimate the cost of safeguards activities, was updated and is undergoing further refinement to reflect experience gained during its implementation. Since last year's report, knowledge management efforts were enhanced to support supervisors in identifying the retention of critical job-related knowledge from 29 staff members retiring or separating from the Department of Safeguards. Internal safeguards documents, forms, templates and working papers related to verification activities in the field were reviewed and redesigned to meet quality standards and updated to more accurately reflect the needs of the Department. Staff training continued on the quality management system, including managing and controlling safeguards documents, the use of the condition report system, and the principles of continual process improvement.

B.9. Information Security

44. The information security environment is constantly changing and threats and cyber-attacks are becoming more frequent, diverse and sophisticated. In this context, the Agency continues to review its policies, procedures, and practices to ensure robust information security. Classification and handling procedures for safeguards information have been updated and implemented across the Department and specific training has been and will continue to be provided to all staff. The new procedures enhance information security while ensuring access to safeguards information to those staff members who need to use such information when carrying out their official duties.

45. Security awareness continues to be a major priority and awareness campaigns and enhancements to the information security e-learning programme have continued since last year's report. Specialized briefings for inspectors and other safeguards staff continue, with information security included as a module in ICAS. This module is also being made available to all new staff of the Department.

46. The Agency continued to improve the physical security of offices through an extension of the access control systems and better integration into the UN Safety and Security Service physical security management system. The Secretariat ensured that data security was preserved throughout the decommissioning process for the mainframe computer (referred to above). All Agency servers, disk storage and network equipment continue to be housed in a highly secure data centre. Information security is being improved through, for example, the systematic application of security patches and upgrades to servers, switches, and laptop and desktop computers; better encryption; internal and

external vulnerability reviews; the development of in-house capabilities to combat information technology threats; and the enhancement of disaster recovery and business continuity capabilities.

B.10. Safeguards Reporting

47. The safeguards conclusions for 2014 were reported in *The Safeguards Implementation Report for 2014*,¹⁷ which also provided information on the implementation and evaluation of safeguards activities, as well as data on the number of facilities and LOFs under safeguards, and the inspection effort and related cost of safeguards implementation. At its June 2015 meeting, the Board of Governors took note of the report and authorized the release of the Safeguards Statement for 2014 and of the Background to the Safeguards Statement and Summary.

B.11. Strategic Planning

48. The Secretariat carries out long-range planning to ensure that safeguards implementation will continue to be both effective and efficient in the future. The long term strategic planning process of the Department of Safeguards addresses the framework for safeguards implementation, legal authority, technical capabilities (expertise, equipment and infrastructure) and also human and financial resources necessary for Agency verification activities. It also considers communication, cooperation and partnerships with the Agency's stakeholders. Medium-term planning is guided by the *Medium Term Strategy 2012–2017*, which the Agency has continued to implement since last year's report.

49. Research and development (R&D) are essential to meet future anticipated safeguards needs. The *Biennial Report on the Development and Implementation Support Programme for Nuclear Verification 2012–2013*, published in December 2014, describes the results of projects undertaken by the Department, and links existing activities with the priorities of the Department, as described in *IAEA Department of Safeguards Long-Term R&D Plan, 2012–2023*, which was published in January 2013.

50. The Agency continued to rely on Member State Support Programmes in addressing its safeguards research, development and implementation support needs. At the end of June 2015, 20 Member States and the EC had formal support programmes in place with the Agency involving more than 340 tasks.

¹⁷ The Safeguards Statement for 2014 and the Background to the Safeguards Statement and Summary of *The Safeguards Implementation Report for 2014* are published on the Agency's website at:
https://www.iaea.org/sites/default/files/sir_2014_statement.pdf.