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Progress in the Implementation of the IAEA Action Plan on Nuclear Safety

Report by the Director General

Summary

The IAEA Action Plan on Nuclear Safety (the Action Plan), adopted by the Board of Governors in September 2011 and endorsed by all Member States at the 55th regular session of the Agency's General Conference in September 2011, requests the Director General to report on the progress in its implementation to the Board of Governors and General Conference in September 2012, and subsequently on an annual basis as may be necessary. The first and second annual reports by the Director General on the progress in the implementation of the Action Plan were submitted to the Board of Governors and General Conference in September 2012¹ and 2013² respectively. This is the third annual progress report in response to that request.

This report focuses on the key areas of progress in the implementation of the Action Plan since the submission of the previous annual report to the Board of Governors and General Conference in September 2013. Important activities continue to be carried out in all areas under the Action Plan; in particular during the period of this report further new projects relevant for the Action Plan were initiated. Their full and effective implementation requires continued joint efforts and full commitment from the Secretariat, Member States and other stakeholders.

This report is accompanied by supplementary information³ that provides further details on progress, assessment and next steps of the implementation of the Action Plan.

¹ GOV/INF/2012/11 - GC(56)/INF/5.

² GOV/INF/2013/8 - GC(57)/INF/5.

³ *Progress in the Implementation of the IAEA Action Plan on Nuclear Safety: Supplementary Information.*

Progress in the Implementation of the IAEA Action Plan on Nuclear Safety

Report by the Director General

A. Introduction

1. Following the accident at TEPCO's Fukushima Daiichi nuclear power plant (the Fukushima Daiichi accident), the draft IAEA Action Plan on Nuclear Safety (the Action Plan) was adopted by the Board of Governors in September 2011 and was unanimously endorsed by Member States at the 55th regular session of the Agency's General Conference in September 2011. The purpose of the Action Plan is to define a programme of work to strengthen the global nuclear safety framework. The Action Plan covers 12 overarching areas. The success of its implementation requires the full cooperation and commitment of Member States, the Secretariat and other relevant stakeholders. The Action Plan requests the Director General to report on the progress in its implementation to the Board of Governors and General Conference in 2012⁴, and subsequently on an annual basis as may be necessary.

2. This is the third annual report by the Director General in response to that request. The report includes an assessment of achievements since the previous report submitted to the Board of Governors and the General Conference in September 2013⁵ and identifies areas where further work needs to be done to achieve the goals of the Action Plan.

3. During the period covered by this report, around 10 new projects from extrabudgetary contributions have been initiated by the Secretariat. These projects are related to key areas of the Action Plan. Further information on expenditures of the extrabudgetary contributions as well as the Regular Budget is provided in Annex II to the supplementary information to this report.

4. The key areas of the Action Plan highlighted in this report are:

- Safety assessment of nuclear power plants (NPPs);
- Agency peer reviews;
- Emergency preparedness and response;
- Agency safety standards;

⁴ GOV/INF/2012/11-GC(56)/INF/5 (9 August 2012).

⁵ GOV/INF/2013/8-GC(57)/INF/5 (5 August 2013)

- Member States planning to embark on a nuclear power programme and capacity building; and
- Protection of people and the environment from ionizing radiation.

Supplementary information to this report containing, inter alia, further details on progress made, achievements of the Secretariat in the reporting period, and next steps in the implementation of the Action Plan in all the 12 areas covered can also be found on the GovAtom website.

5. Since the 2013 session of the General Conference, the Director General has submitted one report on progress in the implementation of the Action Plan to the Board of Governors⁶ and two other related reports: *IAEA's Assessment and Prognosis in Response to an Emergency at a Nuclear Power Plant*⁷ and *ConvEx-3 (2013) International Emergency Response Exercise*⁸.

6. The Secretariat continued to share and disseminate the lessons learned from the Fukushima Daiichi accident by analysing the relevant technical aspects. The Secretariat prepared the reports of two international experts' meetings (IEMs) held in 2013 and organized two further IEMs in 2014.

7. The review of the Agency's safety standards relating to the design and operation of NPPs, protection of NPPs against severe accidents, and emergency preparedness and response is nearing completion. The proposed revisions to these and other relevant publications are planned to be submitted to the Commission on Safety Standards (CSS) later in 2014 and, if approved by the CSS, to the Board of Governors for final establishment as safety standards.

8. Significant progress has been made with the preparation of the IAEA Fukushima Report. In this reporting period, the Secretariat organized four additional meetings of all the Working Groups resulting in the completion of the first stage of the drafting process. The second stage of review and revision of the draft report has started and will continue with a view to its finalization in December 2014. The report will be published in 2015.

9. The significant progress in the implementation of the Action Plan since the previous annual report is summarized in the following sections of this report, including: assessment of the safety vulnerabilities of NPPs, strengthening the Agency's peer review services, improvements in emergency preparedness and response capabilities, strengthening and maintaining capacity building, and protecting people and the environment from ionizing radiation. Progress in these and other areas has contributed to the enhancement of the global nuclear safety framework.

B. Safety Assessments in the Light of the Accident at TEPCO's Fukushima Daiichi Nuclear Power Plant

10. The Secretariat and the Organisation for Economic Co-operation and Development's Nuclear Energy Agency (OECD/NEA) jointly organized an International Conference on Topical Issues in Nuclear Installation Safety: Defence in Depth — Advances and Challenges for Nuclear Installation Safety (International Conference on DiD) in Vienna in October 2013 and the International Experts'

⁶ GOV/INF/2014/2 (29 January 2014) and GOV/INF/2014/2/Corr.1 (24 February 2014).

⁷ GOV/INF/2013/13 (4 November 2013).

⁸ GOV/INF/2014/7 (28 April 2014).

Meeting on Severe Accident Management in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant, the seventh in the series of IEMs, which took place in March 2014. These events further developed the lessons learned and conclusions of the first IEM, the International Experts' Meeting on Reactor and Spent Fuel Safety in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant, supported by the deliberations at the Fukushima Ministerial Conference on Nuclear Safety held in December 2012.

11. The experts at the International Conference on DiD emphasized that the application of this concept should be periodically re-examined over the entire life of an NPP. In this connection, the experts highlighted the need for extreme external hazards to be addressed during periodic safety reviews because such hazards can result in common cause failures that may simultaneously jeopardize several levels of DiD. The experts also emphasized the importance of taking full advantage of the Agency's peer review services, especially those related to siting, design and emergency preparedness and response (EPR).

12. The experts described the significant efforts that are being undertaken by Member States and relevant international organizations to further increase the safety and robustness of NPPs, taking into account the lessons learned to date from the Fukushima Daiichi accident. These efforts included, for example, provisions to ensure the fundamental safety functions for beyond design basis external hazards such as maintaining fuel cooling and maintaining the integrity of the containment. However, the experts also identified the need for further work on issues such as the criteria for choosing between fixed and mobile equipment and the design and installation of equipment to ensure fulfilment of safety functions even under extreme accident conditions.

13. During the IEM on severe accident management, the experts exchanged views and ideas on strengthening mitigation capabilities to deal with severe accidents and considered the lessons learned and further actions to be taken to strengthen severe accident management arrangements as well as to identify best practices. The experts discussed the approaches to severe accident management at NPPs taken by the operating organizations, the regulatory bodies and other organizations that could potentially be involved in responding to a severe accident. The key themes to these discussions included regulation, training, equipment, improving guidance and strengthening the links between on-site and off-site response organizations.

14. The experts emphasized the importance of regulatory oversight of severe accident management programmes and the need for regulatory requirements in this area. The basis for the development of severe accident management guidelines (SAMGs) by operating organizations should be strengthened and their scope extended to include spent fuel pools and NPP operation at low power and under shutdown conditions. The experts recognized that the effective implementation of SAMGs requires appropriate levels of suitably trained staff and specific instrumentation and equipment to be available when called upon for each unit of a multi-unit site. The linkages between on-site and off-site response plans during a severe nuclear accident were also discussed along with the need for flexibility in the response strategies and the resilience of response teams to be able to adapt to the potential key losses in human and/or other resources.

C. Agency Peer Reviews

15. The Secretariat organized and conducted the first corporate Operational Safety Assessment Review Team (OSART) mission to the Czech Republic. Corporate OSART missions review those centralized functions of the corporate organization that affect all the operational safety aspects of an

NPP. A Corporate OSART mission can be tailored to the particular needs of a corporate organization and reviews corporate management, independent oversight, human resources and communication. The mission visited the Czech utility ČEZ in September–October 2013 to address the corporate aspects necessary to ensure the safe operation of the Dukovany and Temelin NPPs.

16. The Secretariat continued to undertake activities to further strengthen its comprehensive peer review services, in particular, the OSART service, the Integrated Regulatory Review Service (IRRS), the Emergency Preparedness Review (EPREV) service and the Design and Safety Assessment Review Service (DSARS).

17. To continue supporting the strengthening of safe operations at NPPs, the Secretariat published the *SALTO Peer Review Guidelines: Guidelines for Peer Review of Safety Aspects of Long Term Operation of Nuclear Power Plants*.

18. The Secretariat has updated a number of components of the EPREV service, including the terms of reference, the guidelines, the self-assessment questionnaire and the EPREV report template. In particular, the revised terms of reference for EPREV missions now include a statement that, unless otherwise requested in writing by the Member State concerned, EPREV mission reports will be automatically declassified after 90 days. In addition, Member States requesting EPREV missions are actively encouraged to hold a post-mission press conference and make the mission findings publicly available.

19. The Secretariat has also revised the EPR module within the IRRS. To enlarge the pool of experts available to conduct IRRS missions, the Secretariat successfully organized the first basic IRRS training course in Vienna in November 2013. The Secretariat plans to conduct the second training course in October 2014 and thereafter on a regular basis.

20. The Secretariat enhanced a number of modules relating to the review and assessment of NPP design safety of the DSARS and developed new modules. Two new modules, one to support the review of Member States' regulatory requirements for safety assessment to meet the Agency's safety standards and another to help embarking countries assess their competence needs in the area of safety assessment, were developed.

21. Requests from Member States for Agency peer review services have continued to increase during this reporting period with six IRRS, six OSART, three EPREV and three Integrated Nuclear Infrastructure Review (INIR) missions currently planned and under preparation for 2014. Since the submission of the second annual report in September 2013, the Secretariat organized and conducted:

- 2 EPREV missions to South Africa and Tajikistan;
- 4 IRRS missions to Belgium, the Czech Republic, Jordan and Pakistan;
- 3 IRRS follow-up missions to the Russian Federation, the United Kingdom and the United States of America ;
- 1 Corporate OSART mission to the Czech Republic (ČEZ) ;
- 6 OSART follow-up missions to Brazil (Angra 1), Bulgaria (Kozloduy), China (Hongyanhe 2), France (Gravelines), India (Rajasthan) and Switzerland (Mühleberg).
- 1 INIR mission to Turkey; and
- 3 Site and External Events Design (SEED) review missions to the Islamic Republic of Iran, Jordan and Romania.

D. Emergency Preparedness and Response

22. The Secretariat continued to undertake activities to support Member States' EPR arrangements at the interregional, regional and national levels. During the reporting period, the Secretariat organized and conducted 39 training events on various EPR topics such as communication with the public and the medical response to a radiation emergency. In addition, the Secretariat is also evaluating the potential interest of Member States in establishing regional EPR Capacity Building Centres, each focusing on a specific area (or areas) of specialization in EPR.

23. The Secretariat coordinated the preparation, conduct and evaluation of the ConvEx-3 (2013) exercise held in November 2013 and hosted by Morocco. The exercise was designed to allow Member States and international organizations to evaluate their response to a severe radiological emergency triggered by a nuclear security event and to identify EPR areas requiring improvement. Fifty-nine Member States, including Morocco, and ten international organizations, including the Agency, participated in the exercise.

24. The Emergency Preparedness and Response Expert Group (EPREG), established to provide advice on strategies to strengthen international preparedness for nuclear and radiological emergencies, held its second and third meetings during this reporting period. The focus of the meetings were to discuss cross-cutting emergency preparedness and response issues, nuclear safety and nuclear security integration in an emergency response, and issues and challenges associated with the Secretariat's assessment and prognosis process.

25. The Secretariat continued to encourage Member States to register their assistance capabilities in the Agency's Response and Assistance Network (RANET), including the new functional area developed to address on-site assistance and advice following emergencies at nuclear installations⁹. The process to review the National Assistance Capabilities registered under RANET has also been elaborated and expanded to include the performance and participation in exercises, provision of assistance and the conduct of review missions. The Secretariat has initiated the preparation of RANET review missions and requested all RANET National Assistance Coordinators to identify their availability to host RANET review missions in their countries. The Secretariat continues to encourage Member States to host such missions.

26. The Action Plan expanded the Agency's Secretariat's response role in an emergency at an NPP to cover the need to provide Member States, international organizations and the general public with timely, clear, factually correct, objective and easily understandable information during a nuclear emergency on its potential consequences, including analysis of available information and prognosis of possible scenarios based on evidence, scientific knowledge and the capabilities of Member States. In 2013, a process for assessment and prognosis in response to an emergency at a nuclear power plant was developed and reported to the Board of Governors¹⁰. During the reporting period, the Secretariat organized and conducted a series of consultancy meetings to consider the requirements for the assessment and prognosis process and how Member States can support this process through RANET.

⁹ IAEA Response and Assistance Network, EPR-RANET 2013.

¹⁰ GOV/INF/2013/13 (4 November 2013)

E. Agency Safety Standards

27. Progress has been made in the systematic review of the Agency's safety standards to take account of the lessons learned from the Fukushima Daiichi accident. These revisions are being effected through addenda to the Safety Requirements relating to the safety of NPPs and the storage of spent nuclear fuel, namely:

- *Governmental, Legal and Regulatory Framework for Safety* (IAEA Safety Standards Series No. GSR Part 1, Vienna, 2010);
- *Site Evaluation for Nuclear Installations* (IAEA Safety Standards Series No. NS-R-3, Vienna, 2003);
- *Safety of Nuclear Power Plants: Design* (IAEA Safety Standards Series No. SSR-2/1, Vienna, 2012);
- *Safety of Nuclear Power Plants: Commissioning and Operation* (IAEA Safety Standards Series No. SSR-2/2, Vienna, 2011); and
- *Safety Assessment for Facilities and Activities* (IAEA Safety Standards Series No. GSR Part 4, Vienna, 2009).

28. The proposed revisions to the following Agency safety standards have also been submitted to the Safety Standards Committees for their approval:

- *Preparedness and Response for a Nuclear or Radiological Emergency* (IAEA Safety Standards Series No. GS-R-2 Vienna, 2002); and
- *The Management System for Facilities and Activities* (IAEA Safety Standards Series No. GS-R-3, Vienna, 2006).

29. In March 2014, the Board of Governors approved the draft Safety Requirements *Decommissioning of Facilities* that will be issued as IAEA Safety Standards Series No. GSR Part 6 and will supersede IAEA Safety Standards Series No. WS-R-5, *Decommissioning of Facilities Using Radioactive Material*, issued in 2006.

F. Member States Planning to Embark on a Nuclear Power Programme and Capacity Building

30. The Secretariat continued to support Member States embarking and planning to embark on a nuclear power programme to develop the capabilities of operating organizations, regulatory bodies and other relevant organizations. The Secretariat organized and conducted the Technical Meeting on Topical Issues in the Development of Nuclear Power Infrastructure in February 2014 to share good practices among Member States and consider the lessons learned in establishing the required infrastructure for a safe and successful nuclear power programme. One key observation made during the meeting was the similarity of the challenges faced by Member States building their first NPP with those faced by Member States expanding their existing nuclear power programmes.

31. The Secretariat organized and conducted an International Conference on Human Resource Development for Nuclear Power Programmes: Building and Sustaining Capacity in May 2014 in Vienna. The conference focused on the global challenges of capacity building at the national and organizational levels and the role of nuclear knowledge management for knowledge transfer and human resource development. The conference participants recognized that networks are a key mechanism to support knowledge sharing and capacity building among Member States and can foster harmonization and cooperation. The participants also recognized the support of the Secretariat for capacity building through documenting good practices and developing tools and guidance and providing services and assistance and for facilitating international coordination and cooperation.

32. The Secretariat continued to promote the knowledge safety networks under the Global Nuclear Safety and Security Network (GNSSN) and other regional networks as effective tools for sharing the findings and lessons learned from the peer review services and other relevant activities. The Secretariat continued to assist in the development of the National Nuclear Regulatory Portals (NNRPs) by conducting regional workshops in Africa and Europe on knowledge safety networks.

33. The Secretariat continued its efforts to strengthen the competence and knowledge management activities of national regulatory bodies. The Secretariat organized and conducted a Technical Workshop on Safety Review and Assessment in Vienna in April 2014. The purpose of the workshop was to assist Member States embarking on nuclear power programme to develop the necessary infrastructures and capabilities of their national regulatory bodies. The Secretariat also organized and conducted the first Regional Workshop — School for Drafting Regulations on Nuclear Safety in November–December 2013 in Vienna for countries in Europe in order to support the elaboration of national safety regulations.

34. In September 2013, the Secretariat launched a comprehensive catalogue of its services designed to support nuclear infrastructure development in Member States. The catalogue helps Member States to identify their needs for assistance during the different stages in the development or expansion of a nuclear power programme. The catalogue was updated in April 2014 and is structured to meet the needs of Member States in accordance with the three phases of the Agency's Milestones¹¹ approach to infrastructure development. The catalogue is available on the Agency's website¹².

35. The Secretariat organized and conducted a Technical Meeting on Milestones in the Development of a National Infrastructure for Nuclear Power in Vienna in May 2014. The objective of the meeting was to discuss the draft new Milestones document and take into account the views of Member States before its finalization. The meeting highlighted the importance of the early establishment of a licensing system and an independent regulatory body in order to define the siting requirements and determine the criteria for approving the construction of an NPP. In addition, it was emphasized that the staff of the regulatory body need to be well trained in order to be able to perform assessment of NPP design, and it was suggested that this training could be provided by the regulatory bodies of NPP vendor countries.

36. The Secretariat has developed and made available to Member States a new set of e-learning modules aimed at improving newcomers' understanding of the infrastructure requirements for a nuclear power programme. The modules are also based on the Agency's Milestones approach and other relevant publications and are available on the Agency's website¹³.

¹¹ Milestones in the Development of a National Infrastructure for Nuclear Power IAEA Nuclear Energy Series No. NG-G-3.1

¹² <http://www.iaea.org/NuclearPower/Infrastructure/catalogue.html>

¹³ <http://www.iaea.org/NuclearPower/Infrastructure/elearning/>

G. Protection of People and the Environment from Ionizing Radiation

37. The Secretariat organized and conducted the second international peer review mission on the Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station Units 1-4, in November–December 2013. The review concluded that since the first Agency peer review performed in April 2013, the Government of Japan and TEPCO had adopted a more proactive attitude and approach towards addressing the many challenges for decommissioning. However, it was noted that the situation remains complex and there are a number of challenging issues that must be resolved to achieve the plant's long-term stability. Good progress has been made in improving the decommissioning strategy and associated plans, as well as in allocating the necessary resources for the safe decommissioning of TEPCO's Fukushima Daiichi NPP. A report of this peer review was prepared that included a set of 19 acknowledgements and 19 advisory points for Japan's consideration. The report was presented to the Government of Japan in February 2014 and is available on the Agency's website¹⁴.

38. The Secretariat organized and conducted a Follow-up International Mission on Remediation of Large Contaminated Areas Off-site the Fukushima Daiichi Nuclear Power Plant in October 2013. This mission highlighted the important progress made since the first mission in October 2011. The mission team provided advice on several points where current practices in Japan could be further improved, taking into account both the Agency's safety standards and the experience of remediation programmes in other Member States. The mission team recognized the huge effort and enormous resources being devoted to remediation strategies and the activities aimed at improving living conditions for people affected by the nuclear accident. Good progress has been made in the remediation activities and in the coordination of remediation activities with reconstruction and revitalization efforts.

39. The remediation mission team encouraged the Government of Japan to strengthen its efforts to explain to the public that reducing additional individual radiation dose levels to 1 millisievert per year (mSv/y) cannot be achieved in a short time solely by decontamination work and advised that in remediation situations, with appropriate consideration of the prevailing circumstances, "any level of individual radiation dose in the range of 1 to 20 mSv/y is acceptable and in line with international standards and the recommendations of the relevant international organisations." The final report highlighted 13 areas of progress and eight advisory points on further strengthening the remediation programme for Japan's consideration and was presented to the Government of Japan in January 2014 and also made available on the Agency's website¹⁵.

40. In February 2014, the Secretariat organized and conducted the International Experts' Meeting on Radiation Protection after the Fukushima Daiichi Accident: Promoting Confidence and Understanding. The experts discussed a wide spectrum of relevant safety issues, many of which are interlinked, including the release of radioactive material to the environment as a result of the Fukushima Daiichi accident, managing the impact of these releases, the international standards for radiation protection and issues associated with communication.

¹⁴ IAEA International Peer Review Mission on Mid-and-Long-Term Roadmap Towards the Decommissioning of TEPCO'S Fukushima Daiichi Nuclear Power Station Units 1-4 (Second Mission), Tokyo and Fukushima Prefecture, Japan, 25 November–4 December 2013. http://www.iaea.org/newscenter/focus/fukushima/final_report120214.pdf

¹⁵ The Follow-up IAEA International Mission on Remediation of Large Contaminated Areas Off-Site the Fukushima Daiichi Nuclear Power Plant, Tokyo and Fukushima Prefecture, Japan, 14–21 October 2013. http://www.iaea.org/newscenter/focus/fukushima/final_report230114.pdf

41. The experts at the IEM observed and expressed the view that while the international system of radiation protection is fit for purpose, its implementation has become overly complex and difficult to understand, in particular for the public. A system that is better understood and easier to implement would be more effective. In addition, decision-makers and the general public need to be adequately informed about radiation, radiation risks and the underlying philosophy and ethics of the international system of radiation protection. The experts also discussed the need for relevant international organizations to develop a harmonized approach to the control of foodstuffs and drinking water contaminated as a result of a nuclear or radiological accident. The Secretariat is working with other relevant organizations to develop such a harmonized approach.

42. The Secretariat is supporting the marine monitoring programme in Japan. This support will include the coordination of laboratory intercomparison exercises by analysing marine samples in laboratories in Japan and possibly by including international partners. Such activities could help improve the credibility of the results produced by the institutions involved and will also help to enhance the transparency of the monitoring activities.

H. Other Areas

43. The Agency is progressing with the preparation of the IAEA Report on the Fukushima Daiichi Nuclear Power Plant Accident, which will be finalized in 2014 and published in 2015. The report is intended to be an authoritative, factual and balanced assessment addressing the causes and consequences of the accident as well as the lessons learned. This report is intended to serve as a key technical reference document on the accident for years to come. Five working groups composed of approximately 180 internationally recognized experts from 42 Member States and several international bodies have been working on the preparation of the five chapters of the Report. The Report will provide a description of the accident and its context and will address nuclear safety and emergency preparedness and response issues, the consequences of the accident and post-accident recovery.

44. During this reporting period the Secretariat published *Managing Regulatory Body Competence* (Safety Reports Series No. 79) and *Development of a Regulatory Inspection Programme for a New Nuclear Power Plant Project* (Safety Reports Series No. 81).

45. The Secretariat continues to disseminate information and lessons learned from the Fukushima Daiichi accident. The Secretariat made available the reports of the two IEMs held in 2013, namely:

- *IAEA Report on Decommissioning and Remediation after a Nuclear Accident*
- *IAEA Report on Human and Organizational Factors in Nuclear Safety in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant.*

These reports are available on the Agency's website¹⁶.

46. The Secretariat provided support to the Sixth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety (CNS), which was held from 24 March to 4 April 2014, as well as to the Second Extraordinary Meeting of the Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, which was held from 12 to 13 May 2014 following a request by the United States.

¹⁶ <http://www.iaea.org/newscenter/focus/actionplan/>

47. As regards the Sixth Review Meeting of the Contracting Parties to the CNS, the Contracting Parties agreed by consensus on proposed amendments to the CNS guidance documents, namely the Guidelines regarding the Review Process under the Convention on Nuclear Safety (INFCIRC/571/Rev.6), the Guidelines regarding National Reports under the Convention on Nuclear Safety (INFCIRC/ 572/Rev.4), and the Rules of Procedure and Financial Rules (INFCIRC/573/Rev.5), based on a Report of the Working Group on Effectiveness and Transparency that was established during the Second Extraordinary Meeting held in August 2012, as well as on the recommendations for action to other bodies that were submitted by a group of Contracting Parties for consideration at the Review Meeting. The amendments to the guidance documents and the recommendations for action provide clearer guidance on actions to be taken by the Contracting Parties to meet the objectives of the Convention and enhance the preparation of National Reports. They also provide improvements to the review process, enhancement of international cooperation and more transparency vis-à-vis the public.

48. At the Sixth Review Meeting, the CNS Contracting Parties also decided, by a two-thirds majority, to submit a proposal by Switzerland to amend Article 18 of the Convention to a Diplomatic Conference to be convened within one year following the decision. The proposed amendment addresses the design and construction of both existing and new NPPs. The Contracting Parties also requested the Director General, as Depositary, to prepare a set of rules and procedures for organizing the Diplomatic Conference and to organize, at least 90 days prior to the first day of the Diplomatic Conference, a consultation meeting open to all Contracting Parties to exchange views and prepare for the adoption of the rules of procedure.

49. A special session of the Review Meeting was held to report on actions carried out in the light of the Fukushima Daiichi accident. The CNS Contracting Parties agreed to continue to report in their National Reports on actions taken with regard to lessons learned from the accident, to be discussed at the next Review Meeting in 2017.

50. In the area of civil liability for nuclear damage, the Secretariat organized the Third Workshop on Civil Liability for Nuclear Damage in Vienna on 19 May 2014. The workshop provided diplomats and experts from Member States with an introduction to the subject, and was attended by 54 participants from 39 Member States.

51. The 14th Meeting of the International Expert Group on Nuclear Liability (INLEX) took place in Vienna, from 20 to 22 May 2014. The Group discussed, inter alia, the revision of the Board decision to exclude small quantities of nuclear material from the scope of the nuclear liability conventions following the adoption of the 2012 edition of the Agency's *Regulations for the Safe Transport of Radioactive Material*; liability issues in the context of the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency; whether there is a need to establish a special liability regime covering radioactive sources; the scope of application of the Agency's liability conventions as regards shutdown reactors or reactors being decommissioned; the possible revision of the model provisions on nuclear liability in the *Handbook on Nuclear Law: Implementing Legislation*; and outreach activities.

52. The Secretariat continues the preparations for the International Conference on Challenges Faced by Technical and Scientific Support Organizations (TSOs) in Enhancing Nuclear Safety and Security: Strengthening Cooperation and Improving Capabilities to be held in October 2014 in Beijing, China. In addition, the Secretariat has started preparations to hold an IEM on Strengthening Research and Development Effectiveness in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant in February 2015.

I. Conclusions

53. The Secretariat and Member States have made considerable progress in the implementation of the Action Plan since September 2013. This conclusion is supported by the assessment provided in this report, its supplementary information¹⁷, and feedback from the IEMs and other meetings, such as the 6th Review Meeting of the Contracting Parties to the Convention on Nuclear Safety. As a result of these activities, there is a consensus that more work still needs to be done to strengthen nuclear safety worldwide.

54. All Contracting Parties to the CNS with operating NPPs have undertaken comprehensive safety reassessments ('stress tests') with the aim of evaluating the design and safety aspects of the robustness of NPPs to withstand extreme events, including defence in depth, safety margins, cliff edge effects, multiple failures, and the prolonged loss of support systems. Many of these safety reassessments have been subject to peer review and are now publicly available. Contracting Parties reported that, in general, nuclear safety had improved as a result of these reassessments. Additional safety measures are being introduced to prevent an accident occurring and to mitigate the consequences should an accident occur. The IEM on severe accident management identified that there is still a need for further actions to strengthen severe accident management by operators and regulators and other organizations that could potentially be involved.

55. The Agency's peer reviews continue to be strengthened and Member States' interest in the peer review services has increased. However, a number of Member States have yet to respond to the Action Plan's encouragement to voluntarily host Agency peer reviews. In particular, a number of Member States have yet to voluntarily host an OSART mission in the three years since the adoption of the Action Plan and others have yet to request such reviews focused on their older NPPs.

56. The Agency's safety standards relevant to NPP safety are being strengthened with the review and approval by the CSS expected in November 2014, before submission to the Board of Governors in March 2015 for final establishment as safety standards. Capacity building programmes in Member States have been established or improved, and EPR programmes have also been reviewed and strengthened.

57. During the reporting period, the Secretariat continued to share lessons learned from the Fukushima Daiichi accident with the nuclear community by organizing and conducting IEMs, by carrying out international missions and publishing the relevant reports, as well as by organizing other relevant conferences and meetings.

58. Progress has been made by the Secretariat and Member States in improving public information and enhancing transparency and communication during emergency situations. The Secretariat has also taken steps to strengthen its capability to provide assessment and prognosis during a nuclear emergency. However, as highlighted by the experts at the IEM on radiation protection, further work needs to be undertaken to strengthen communication with the public and all stakeholders on nuclear and radiological safety issues.

59. Work to maintain and improve nuclear safety is a continuous process and requires ongoing attention. Activities associated with the implementation of the Action Plan projects will continue during the 2014–2015 biennium. Dedicated projects under the Action Plan that are to continue beyond 2015, in particular the lessons learned from the IAEA Fukushima Report and the IEMs, as well as the results from the completed Action Plan projects, will continue to be implemented by the respective

¹⁷ *Progress in the Implementation of the IAEA Action Plan on Nuclear Safety: Supplementary Information*

Departments/Divisions. The Department of Nuclear Safety and Security will be the focal point for supporting these cross-Departmental activities aimed at strengthening nuclear safety.