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7th Review Meeting of the Contracting Parties to
The Convention on Nuclear Safety

27 March – 7 April 2017
Vienna, Austria

Summary Report

Mr Ramzi Jammal, President
Mr Georg Schwarz, Vice-President
Mr Geoffrey Emi-Reynolds, Vice-President

Vienna, 7 April 2017

A. Introduction

1. The 7th Review Meeting of the Contracting Parties to the Convention on Nuclear Safety (“the Convention”) was held, pursuant to Article 20 of the Convention, at the Headquarters of the International Atomic Energy Agency (IAEA) in Vienna, Austria from 27 March to 7 April 2017. The President of the Review Meeting was Mr. Ramzi Jammal from Canada. The Vice Presidents were Mr Georg Schwarz from Switzerland and Mr Geoffrey Emi-Reynolds from Ghana.

2. This report summarises the key actions taken and challenges faced by Contracting Parties that were identified at this Review Meeting. The observations and conclusions of this report are based on the discussions of Contracting Parties held during Country Group and Plenary Sessions, taking into account the principles of the Vienna Declaration on Nuclear Safety and challenges identified during the 6th Review Meeting following lessons learned from the Fukushima Daiichi nuclear power station accident.

B. Background

3. As of March 2017, 79 States and one regional organisation have become Contracting Parties to the Convention, which entered into force on 24 October 1996. Among the 80 Contracting Parties, 32 Contracting Parties have nuclear power plants (NPPs) in operation; a further 2 have NPPs under construction; while 46 Contracting Parties have no NPPs.

4. The 7th Review Meeting had the highest level of participation by Contracting Parties to date. Seventy seven of the 80 Contracting Parties participated in the Review Meeting, these were: Albania; Argentina; Armenia; Australia; Austria; Bahrain; Bangladesh; Belarus; Belgium; Bosnia and Herzegovina; Brazil; Bulgaria; Canada; Chile; China; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; the former Yugoslav Republic of Macedonia; Germany; Ghana; Greece; Hungary; Iceland; India; Indonesia; Ireland; Italy; Japan; Jordan; Kazakhstan; Republic of Korea; Kuwait; Latvia; Lebanon Libya; Lithuania; Luxembourg; Mali; Malta; Mexico; Montenegro; Myanmar; Netherlands; Niger; Nigeria; Norway; Oman; Pakistan; Peru; Poland; Portugal; Romania; Russian Federation; Saudi Arabia; Senegal; Singapore; Slovakia; Slovenia; South Africa; Spain; Sri Lanka; Sweden; Switzerland; Tunisia; Turkey; Ukraine; United Arab Emirates; United Kingdom; United States of America; Uruguay Viet Nam; and Euratom.

5. Three Contracting Parties, namely Cambodia, Paraguay and the Republic of Moldova did not attend the Review Meeting. Three, Lebanon Libya and Uruguay, did not attend the Country Group sessions. The OECD Nuclear Energy Agency (NEA) requested an invitation to attend the 7th RM as an Observer, as is permitted by Article 24(2) of the Convention. This invitation was extended, but the NEA did not attend.

6. At the Organizational Meeting, held in October 2015, Contracting Parties organized themselves into seven Country Groups. Each group included countries with nuclear power programmes of different sizes, as well as countries not having nuclear power reactors, a number of which have plans or aspirations to develop a nuclear power programme. Seven and a half months before the Review Meeting, Contracting Parties submitted National Reports on steps and

measures taken to implement Convention obligations. In the following months the Contracting Parties reviewed each other's reports, and exchanged written questions, written answers and comments.

7. Even though all Contracting Parties apart from Libya submitted a National Report, a number of these were submitted later than the deadline. Twenty one Contracting Parties did not post any question or comment, namely Albania, Bahrain, Bangladesh, Cambodia, Cyprus, Denmark, Italy, Jordan, Kuwait, Malta, Lebanon, Libya, Mali, Myanmar, Niger¹, Nigeria, Paraguay, Republic of Moldova, Saudi Arabia, Senegal and Uruguay.

8. At the time of the Review Meeting, 21 Contracting Parties had made their National Report publicly available on the IAEA website; several other Contracting Parties also published their National Reports on their national public websites. Similarly, two Contracting Parties had made their questions and answers publicly available on the IAEA website while some published these on their national websites. All National Reports will be posted on the IAEA website 90 days following the adjournment of the Review Meeting unless an objection is received from a Contracting Party in respect of its National Report. The tentative schedule for the 8th Review Meeting in 2020 was agreed at this meeting.

C. Overview of the Review Process

Opening Plenary Session

9. The Review Meeting was opened by Mr. Ramzi Jammal who had been elected at the Organizational Meeting in Vienna, in October 2015, to serve as President of the 7th Review Meeting. The President welcomed the over 900 participants to the Review Meeting, and noted that, for the first time, countries that have signed the Convention but who have not yet adhered to it had been invited to attend the opening plenary; that part of the final plenary where the summary report is adopted; and the press conference. He noted that representatives of the media were invited to the same sessions. These sessions were also to be webcast for the first time.

10. At the opening plenary, the Director General of the IAEA, Mr Yukiya Amano, welcomed the delegates. Mr Amano emphasised that every country that uses nuclear technology has a responsibility to create a robust framework for safety and security and that this is a national responsibility that cannot be outsourced. Effective international cooperation is also essential and he stated that the IAEA has a vital role to play in enabling countries to share experience and best practice. Mr. Amano closed by noting that the Convention on Nuclear Safety is a very important mechanism which has contributed much to strengthening nuclear safety and encouraged all countries which have not already done so to become parties to the Convention.

11. The President of the Review Meeting, Mr. Jammal, then made opening remarks as well as a statement. He highlighted the need to demonstrate the effectiveness of the Convention on Nuclear Safety and reinforced the common goal of Contracting Parties which is to ensure nuclear safety for the protection of the public and the environment. He emphasized the importance of

¹It is noted that for Myanmar and Niger the Convention entered into force shortly before the Review Meeting and after the deadline for posting comments and questions had lapsed.

increasing participation and transparency. Mr. Jammal encouraged country group participants to ask questions and provide open responses. He asked Contracting Parties in their presentations to be clear on improvements made since the last Review Meeting in 2014, and noted that at this Review Meeting Country Groups were now able to identify Areas of Good Performance as well as Good Practices and Challenges and Suggestions which will be followed-up at the next Review Meeting in 2020. Mr. Jammal also encouraged participants to attend the Open-ended Working Group (OEWG) sessions that are intended to revise and further improve the peer review process.

12. Mr. Jammal noted that this is the first opportunity for Contracting Parties to discuss developments since the publication of the IAEA Director General's report on the Fukushima Daiichi nuclear power station accident and its five technical volumes.

13. He also noted the expectation that there would be discussion on how Contracting Parties have addressed the Vienna Declaration on Nuclear Safety (VDNS).

14. Mr. Jammal described the process for the Convention and his expectations for conduct of the 7th Review Meeting, including the appointment of Officers, and reminded Contracting Parties that national statements will be accepted in writing only.

D. Country Group Discussions

15. During the Review Meeting, the Country Groups met for four and one half days and discussed each National Report, with each Contracting Party providing answers to the supplementary questions raised in the discussion. Participants engaged in an open and constructive manner.

Conduct of Country Group Discussions

16. Each Contracting Party that gave a presentation in its country group received questions. The Contracting Parties adopted varying approaches to identifying Good Practices and Challenges; some offered proposals whereas others preferred to wait for the Country Group members to propose them instead. A definition of "Good Practice" had been set out prior to the 6th Review Meeting, and some Contracting Party proposals for Good Practices were not consistent with this definition. Where this occurred the proposals were ruled out within their Country Groups, mainly on the grounds that they were either not unique or did not make a significant contribution to nuclear safety. All candidate Good Practices were subject to robust challenge and discussion, and most were re-categorized as Areas of Good Performance. Following discussion, the Country Groups subsequently finalized and agreed by consensus each Country Review Report.

17. The General Committee (President and Vice President, Chairs of CGs and IAEA Officers) met daily to discuss issues raised in Country Groups; Good Practices suggested and awarded; experience in preparing Country Review Reports; and procedural matters. One recurring issue was the absence of a number of Contracting Parties (including some which had registered to attend), and it was noted that some only attended parts of the Country Group sessions. Nonetheless, in each case a Country Review Report was still prepared, based on the country's National Report, with the exception of Libya which had not submitted one. Another

recurring issue was the absence in some Contracting Party delegations of representatives of the regulatory body and operators, with presentations instead being delivered by a diplomat from the local Mission without sufficient technical support. This is not in conformity with paragraph 21 of INFCIRC 571/Rev.7 and made those question and answer sessions less effective.

Identification of Good Practices, Areas of Good Performance, Challenges & Suggestions

18. As a result of the definition of Good Practice being strictly applied, the Country Groups identified a total of 4 Good Practices. The Country Groups also identified a total of 228 Challenges; 55 Suggestions; and 188 Areas of Good Performance. The Country Groups have been able not only to focus on the challenges faced by the Contracting Parties but also to recognise Areas of Good Performance in many of the national programmes which encourage Contracting Parties to develop their nuclear safety regime in a positive way.

E. Major Common Issues

Challenges from the 6th Review Meeting

19. At the 6th Review Meeting of the Convention on Nuclear Safety in 2014, 5 challenges were identified as a result of learning following the Fukushima Daiichi nuclear power station accident. The Summary Report for the 6th meeting requested Contracting Parties to report on the way that they have addressed these challenges at the 7th Review Meeting. These challenges were:

- How to minimise gaps between Contracting Party safety improvements
- How to achieve harmonised emergency plans and response measures
- How to make better use of operating and regulatory experience and international peer review services
- How to improve regulators' independence, safety culture, transparency and openness
- How to engage all countries to commit and participate in international cooperation

20. Most Contracting Parties with NPPs addressed these challenges explicitly in the summary of their National Report, and the remaining Contracting Parties with NPPs did so implicitly under relevant articles of the Convention. However, only a few Contracting Parties without NPPs addressed the challenges explicitly in the Summary of their National Reports. A number of good initiatives were reported, including enhanced international cooperation; sharing of experience including good practices; strengthening the role of Owners' Groups and regulatory forums; and use of IAEA standards and more extensive use of peer review missions.

21. The Contracting Parties agreed that these challenges no longer need to be reported on as stand-alone items as they are addressed through IAEA peer review services and other instruments, and Contracting Parties are required to report on these matters as appropriate in their National Reports. However, these challenges warrant continued attention by Contracting Parties, including the implementation of IAEA standards and the use of IAEA peer review services and enhanced international cooperation to share and utilise relevant international experience more effectively. Measures to engage embarking countries in these activities are encouraged.

Vienna Declaration on Nuclear Safety

22. In accordance with decision (1) of Contracting Parties contained in the Vienna Declaration on Nuclear Safety, the agenda of the 7th Review Meeting included a “peer review of the incorporation of appropriate technical criteria and standards used by Contracting Parties for addressing the principles of the Vienna Declaration on Nuclear Safety in national requirements and regulations.” Mr. Craig LAVENDER, Special Advisor to the President of the 7th Review Meeting, led a discussion of information provided by Contracting Parties through their National Reports, responses to questions posed during the review process, and national presentations at the 7th Review Meeting. Although the level of detail in reporting varied, a majority of Contracting Parties stated that they currently reflect the principles in their national requirements or will address them when embarking on a nuclear power programme. A majority of Contracting Parties with nuclear power programmes did not face or expect issues in addressing the principles of the VDNS. Few other Contracting Parties reported some technical issues as well as the lack of guidance in addressing the principles of the VDNS to their existing fleet.

23. Contracting parties reaffirmed that the principles contained in the Vienna Declaration on Nuclear Safety should continue to be reflected in the actions of Contracting Parties to strengthen nuclear safety, and in particular when preparing National Reports on the implementation of the CNS, with special focus on Article 18 as well as other relevant articles, such as 6, 14, 17 and 19.

24. Contracting Parties noted that a number of IAEA Safety Requirements had been revised to incorporate lessons-learned from the Fukushima Daiichi nuclear power station accident. The Contracting Parties also noted that the Commission on Safety Standards (CSS) had confirmed that “the technical elements of the Vienna Declaration are already reflected in the relevant Safety Requirements of the IAEA”. The Contracting Parties further noted that the Agency continues to reflect the principles of the CNS in its relevant documents and requested the Secretariat of the Agency to brief about these on the next Organisational Meeting. It was also noted that for some of the Contracting Parties, the topic of the identification of technical criteria and standards for nuclear power plant safety improvements is a key area to be discussed at the 8th CNS Organizational Meeting as a topic that could warrant special attention at the 8th Review Meeting. Contracting Parties seeking additional guidance could explore the possibility to leverage bilateral cooperation agreements and regional organisations of regulators to address their needs.

Major Common Issues Arising from Country Groups Discussions

25. A number of common issues emerged from the Country Group discussions. These were presented for discussion in plenary. The common issues are summarised below together with the principal findings resulting from these discussions. The President recommended that Contracting Parties take these issues into account when preparing their National Reports to the 8th Review Meeting.

Safety Culture

26. A number of Contracting Parties reported progress in developing approaches to oversight of the operator’s safety culture in regulatory body processes. However, the Contracting Parties noted that systematic approaches to oversight of licensee safety culture, and to the embedding of processes to promote and sustain the safety culture of the regulatory body itself, are not widely adopted and further strengthening of the guidance may be needed.. The Contracting Parties encouraged IAEA to continue developing guidance on regulatory body oversight of licensee

safety culture and also, separately, on practices to promote and sustain the regulatory body's own safety culture. Contracting Parties were encouraged to contribute to the development of this guidance and to apply it, drawing on IAEA support to advise and inform the development of Contracting Party processes.

International Peer Reviews

27. One of the responses to the Fukushima Daiichi nuclear power station accident was to increase participation in international peer reviews and exchange of information. The reviews, based on existing peer review mechanisms, have covered regulators, plant operators, designers and other organizations. Contracting Parties noted that these reviews, although of significant benefit, can be resource-intensive and need to be coordinated to ensure that they do not detract from the continuing attention that the regulatory body and operator must give to operational nuclear safety. Although such peer reviews are voluntary and remain outside the Convention, one of the focuses of the 7th Review Meeting has been on National Reports describing the peer review missions held, their findings, the Action Plans created in response and how they are being implemented.

Legal Framework and Independence of Regulatory Body

28. The Contracting Parties noted that establishing a legislative and regulatory framework that meets the obligations of the Convention remains a challenge for some Contracting Parties, especially for embarking and non-NPP countries. At the 6th Review Meeting, the Contracting Parties reinforced the fundamental principle of effective separation between the functions of the regulatory body and those of any other body or organisation concerned with the promotion or utilisation of nuclear energy. Some Contracting Parties reported that progress towards establishing effective separation of these functions remains an issue.

Financial and human resources

29. Several Contracting Parties identified challenges associated with the funding and resourcing of the regulatory body. These included the absence of legislation that makes provision for adequate financial resources to enable the regulatory body to recruit and retain personnel with the necessary competencies to deliver an effective regulatory capability.

Knowledge management

30. Difficulties facing regulatory bodies and operators in finding suitably qualified and experienced persons were also reported, and in some countries these are exacerbated by the demographic challenge, whereby significant numbers of experienced personnel are approaching retirement age. Measures taken to establish a robust knowledge management process which contributes to mitigating the impact of loss of experience were cited by some Contracting Parties.

Supply Chain

31. This is a major common issue both for Contracting Parties which operate NPPs and those which are considering embarking on a nuclear power programme. For those which operate NPPs, one common issue is the availability of components to replace those which are ageing, due to non-availability of identical replacement parts from original manufacturers, obsolescence or

developments in technology. Another common issue is the need to detect non-conforming, counterfeit, suspect or fraudulent items received from suppliers before they are installed in the plant. A further issue is the number of original tests or inspections whose results are now being called into question, raising concerns over the adequacy and reliability of the manufacturing and quality assurance processes. The diminished number of suppliers holding nuclear grade certification is also an issue, as many have allowed their certification to lapse due to lack of business and are not willing to undergo the recertification process. Access to manufacturers who are able demonstrably to meet nuclear standards is an issue that will become more challenging as international NPP build activities increase and Contracting Parties carry out safety improvements to modernize their existing installations.

Managing the Safety of Ageing Nuclear Facilities and Plant Life Extension

32. Several Contracting Parties reported challenges relating to the establishment of ageing management programmes. This includes the identification and implementation of reasonably practicable safety improvements and the definition of technical assessment and regulatory requirements supporting decisions on continued operation. Issues include determining the scope of necessary upgrades (recognising different technologies and situations including strategic factors); maintaining the design and licensing knowledge-base during extended plant lifetimes; and addressing technical challenges specific to the period of extended operation, including performing appropriate research.

Emergency Preparedness

33. Contracting Parties noted that there has been much work since the 6th Review Meeting to learn lessons from the Fukushima Daiichi nuclear power station accident and incorporate improvements into national emergency preparedness and response frameworks. Contracting Parties agreed that an important area warranting continued focus is the development of harmonized approaches for cross-border emergency planning zone definition and management. There was also acknowledgement of the need to further develop emergency preparedness and response measures to take account of multi-unit and external hazard events. A number of Contracting Parties presented their severe accident management measures described in their severe accident management guidelines and procedures. The use of existing IAEA standards and guidance, as well as multi- and bilateral arrangements to coordinate and exercise emergency preparedness and response capabilities, was also advocated.

Stakeholder Consultation & Communication

34. Contracting Parties acknowledged that open and transparent communication with the public can enhance trust in the regulatory body. This can include involvement of the public in development of policy and regulations regarding nuclear safety infrastructure. Outreach activities by operators in the local communities could also enhance public understanding of the nuclear industry. Contracting Parties further noted that communication of understandable, accurate and transparent information to the public and decision-makers during emergency situations needs to be planned and carefully considered at a time where rapid access to social media information, which may be of questionable provenance, is now widely available.

F. Other issue

35. Several Contracting Parties reported with due consideration to enhance safety, on the evaluation and response to other issues such as cyber security threat, while recognising the distinction between nuclear safety and nuclear security.

G. Challenges faced by Non-NPP and Embarking Countries

36. The 6th Review Meeting noted that there had been no improvements in the level of participation of non-NPP and embarking countries in the Convention Review Process. In June 2016, the President of the 7th Review Meeting therefore asked Mr. Geoffrey Emi-Reynolds to lead a special session at the 7th Review Meeting to discuss how to secure improved participation by these Contracting Parties, including the particular challenges faced by non-NPP and embarking countries in complying with the obligations of the Convention.

37. The discussions found that key challenges included limited national government support or commitment due to competing demands for resources and, in some instances, a lack of understanding of the obligations that Contracting Parties have to the Convention review process. The absence of a legal infrastructure that established an independent regulatory body was also identified as a major factor. Related to this, for embarking and non-NPP countries, a shortage of suitably qualified and experienced personnel contributed both to difficulties in preparing the country reports and to capability to comment on national reports from other Contracting Parties.

38. Measures identified to address these issues included enhanced support through IAEA (GNSSN) and Regional Groupings (for example, FNRBA, ANSN, ANNuR, FORO, ENSREG, ETSON, ASEANTOM, WENRA and HERCA). Contracting Parties proposed that these groupings should be encouraged to organize workshops and expert missions, avoiding duplication with other activities, to enhance awareness of the requirements of the Convention and the review process amongst national policy and decision makers. These groupings should also seek to support development of the capabilities of personnel involved in the Review Process. Bilateral arrangements, whereby Contracting Parties with more experience could help non-NPP and embarking Contracting Parties were also advocated. The diversity in the participation level of the non-NPP countries experienced at the 7th Review Meeting gives an opportunity for the non-NPP countries that have participated since the start of the Convention to share their knowledge and experiences. This will help to stimulate full participation to the Convention review process and add value to it.

H. Proposals to improve the processes of the Convention

39. The Open Ended Working Group (OEWG) was established at the opening plenary session and was chaired by Mr. Georg Schwarz. Three proposals were submitted by the Contracting Parties and discussed during the OEWG meetings. The discussions of the OEWG resulted in six recommendations which were presented to Contracting Parties in Plenary session and approved.

40. Mr. Schwarz reminded the OEWG participants that the 7th Review Meeting would be the first Review Meeting where the Contracting Parties are required to report on addressing the Vienna Declaration on Nuclear Safety (VDNS) and the modifications made to the guidance documents of the Convention on Nuclear Safety agreed at the 6th Convention Review Meeting of 2014. The OEWG was therefore encouraged to focus on proposals that added a clear value to the Convention on Nuclear Safety Review Process. Mr. Schwarz requested that the discussions should be effective and constructive. The meetings were well attended and the working methodology of the OEWG sessions included presentation and discussion of the proposals leading to agreement of the wording of recommendations to be submitted for approval by Contracting Parties during the plenary on Wednesday 5 April 2017.

41. The Contracting Parties at the 7th Convention on Nuclear Safety Review Meeting decided to add a new paragraph 3 to the Introduction to INFCIRC 572/Rev.5:

3. The Vienna Declaration on Nuclear Safety on principles for the implementation of the objective of the Convention on Nuclear Safety (CNS) to prevent accidents and mitigate radiological consequences was adopted by the Contracting Parties to the CNS meeting at the Diplomatic Conference to consider a proposal to amend the Convention on Nuclear Safety, which was held in Vienna on 9 February 2015.

42. The Contracting Parties at the 7th Review Meeting request that starting with the 8th Review Meeting, the President issue a survey at each Review Meeting to evaluate the effectiveness of the changes to the review process.

- The survey should be developed by the President, in consultation with the officers.
- Each Contracting Party would be asked to complete a survey (1 per country) prior to the conclusion of the Review Meeting and provide their answers to the Secretariat.
- The President should include a summary of the results of the survey in the President's Report.
- The results could help to identify potential future improvements for consideration by the Contracting Parties that may be discussed at future Review Meetings.

43. The Contracting Parties at the 7th Review Meeting decided that consistent with INFCIRC 571/Rev.7 (Para 12) and INFCIRC 573/Rev.6 (Rule 11), Contracting Parties should continue having topical sessions during future Review Meetings. The Convention timeline should accommodate at most 2 topical plenary sessions. The topical sessions would be plenary meetings open to all Contracting Parties and will not be held in parallel with each other and will not interfere with the Country Group sessions. These sessions will permit the Contracting Parties to focus on knowledge sharing through in-depth discussion of technical and safety issues of mutual interest. In preparation for the Organizational Meeting, interested Contracting Parties should be

invited by the Secretariat to submit their proposals on the themes for topical sessions. Such themes should be directly linked with the objectives of the Convention. The list of proposed topics should be distributed via the Convention secure website prior to the Organizational Meeting to allow sufficient time for the Contracting Parties' review. The sessions will be facilitated by the President or Vice Presidents. The Secretariat will be responsible for drafting a synopsis of these sessions to be included in the President's report.

44. The Contracting Parties at the 7th Review Meeting request, subject to the availability of funds, in accordance with article 28 of the Convention on Nuclear Safety, that the Agency considers coordinating and hosting regional Convention educational workshops for countries with no nuclear power reactors. The objectives of the workshops would be, among other things, to encourage participation and provide assistance and educational information on the process for joining and meeting the obligations of the Convention, including participation in the Review Meetings. The workshop, although focused on non-nuclear power countries, should be open to other interested countries. The workshop should cover the following topics, among others:

- Legal aspects, including adherence
- Challenges to participation
- Human capacity and technical qualifications for supporting a peer review

45. The Contracting Parties request the Agency, in coordination with the Scientific Secretary, to report on the outcome of these workshops and consolidate feedback provided by the countries in attendance and provide that consolidated feedback to the Contracting Parties for consideration at the 8th Convention Organizational Meeting.

46. The Contracting Parties at the 7th Review Meeting request that the Agency conducts a technical study and reviews the possibility of video conferencing certain Country Group sessions using a secure platform as supplemental assistance to facilitate greater participation. The Contracting Parties request that the Agency's Secretariat inform them of its findings, including associated costs and potential implications on Article 27 of the Convention on Nuclear Safety and Rule 20 of INFCIRC 573/Rev.6, for consideration at the 8th Convention Organizational Meeting. The findings will allow the Contracting Parties to evaluate the options and determine if changes to the processes of the Convention should be made in the future.

47. The Contracting Parties at the 7th Review Meeting request that, starting with the 8th Review Meeting, the President continues to web-stream the opening plenary session as well as the part of the final plenary session at which the final version of the Summary Report is adopted, as well as the press conference.

Mr Ramzi Jammal
President
7th Review Meeting of the Contracting Parties to
the Convention on Nuclear Safety