

**Joint Convention on the Safety of Spent Fuel Management
and on the Safety of Radioactive Waste Management**

Fifth Review Meeting of the Contracting Parties

11 to 22 May 2015, Vienna, Austria

FINAL SUMMARY REPORT

Mr David Huizenga, President

Mr Philippe Jamet, Vice-President

Mr Myung Jae Song, Vice-President

Vienna, 22 May 2015

1. Introduction

1. Recognizing the importance of safe management of spent fuel and radioactive waste, the international community agreed upon the necessity of adopting a convention with the objective of achieving and maintaining a high level of safety worldwide in spent fuel and radioactive waste management. This was the origin of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the “Joint Convention,” which was adopted on 5 September 1997 and entered into force on 18 June 2001. To date there are 69 Contracting Parties to the Joint Convention. This report summarises the outcomes of the Fifth Review Meeting of the Joint Convention and recognizing the importance of public outreach is issued as an open document.

2. The objectives of the Joint Convention are, according to its Article 1:

- (i) To achieve and maintain a high level of safety worldwide in spent fuel and radioactive waste management, through the enhancement of national measures and international cooperation, including, where appropriate, safety-related technical cooperation;
- (ii) To ensure that during all stages of spent fuel and radioactive waste management there are effective defences against potential hazards so that individuals, society, and the environment are protected from the harmful effects of ionizing radiation now and in the future, in such a way that the needs and aspirations of the present generation are met without compromising the ability of future generations to meet their needs and aspirations; and
- (iii) To prevent accidents with radiological consequences and to mitigate their consequences should they occur during any stage of spent fuel or radioactive waste management.

3. To achieve these objectives, the Joint Convention adopted a review process. The Joint Convention requires each Contracting Party to:

- (i) Submit in advance to all other Contracting Parties a National Report describing how it implements the obligations of the Joint Convention;
- (ii) Seek clarification on the National Reports of other Contracting Parties through a system of written questions and answers; and
- (iii) Present and discuss its National Report during a Review Meeting comprising Country Group sessions and Plenary Sessions.

The Joint Convention specifies that the interval between Review Meetings should not exceed three years.

4. The Fifth Review Meeting of the Contracting Parties pursuant to Article 30 of the Joint Convention was held at the Headquarters of the International Atomic Energy Agency (IAEA), which is the depositary and Secretariat for the Joint Convention, from 11 to 22 May 2015. Previous Review Meetings have been held as follows:

- Fourth Review Meeting: 14 to 23 May 2012, Vienna;
- Third Review Meeting: 11 to 20 May 2009, Vienna;
- Second Review Meeting: 15 to 24 May 2006, Vienna; and
- First Review Meeting: 3 to 14 November 2003, Vienna.

5. The President of the 5th Review Meeting was Mr David Huizenga, Principal Assistant Deputy Administrator for Defense Nuclear Non-proliferation at the National Nuclear Security Administration

of the United States Department of Energy. The Vice-Presidents were Mr Myung Jae Song, President of the Korean Radioactive Waste Society, Republic of Korea and Mr Philippe Jamet, Commissioner of the Nuclear Safety Authority, France.

6. The General Committee of the Review Meeting comprised the President, the two Vice-Presidents, and the seven Country Group Chairpersons, namely Mr Mark Foy, United Kingdom; Ms Borislava Batandjieva, Euratom; Mr Don Howard, Canada; Mr Mikulas Turner, Slovakia; Mr Thiagan Pather, South Africa; Mr Masahiro Aoki, Japan and Mr Petteri Tiippana, Finland.

7. Sixty-one of sixty-nine Contracting Parties attended the Review Meeting, namely: Albania, Argentina, Armenia, Australia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Euratom, Finland, France, Georgia, Germany, Ghana, Greece, Hungary, Iceland, Indonesia, Ireland, Italy, Japan, Kazakhstan, Korea (Republic of), Latvia, Lithuania, Luxembourg, Malta, Montenegro, Morocco, Netherlands, Nigeria, Norway, Oman, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Saudi Arabia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Ukraine, United Arab Emirates, United Kingdom, United States of America and Viet Nam. Among these, seven Contracting Parties attended for the first time, Armenia, Bosnia and Herzegovina, Chile, Malta, Oman, Saudi Arabia and Viet Nam.

8. Eight Contracting Parties did not attend the Review Meeting, namely Gabon, Kyrgyzstan, Mauritania, Mauritius, Senegal, Tajikistan, Uruguay and Uzbekistan.

9. There were no late ratifiers as defined in Rule 2 of the Rules of Procedure and Financial Rules (INFCIRC/602/Rev.5).

10. The Nuclear Energy Agency of the Organisation for Economic Co-operation and Development was present at plenary sessions as an observer, as agreed at the Organizational Meeting in May 2014.

11. National Reports were provided by 65 out of 69 Contracting Parties. A total of 54 National Reports were posted by the required date and 11 were posted late. No reports were submitted by Gabon, Kyrgyzstan, Senegal and Uzbekistan.

12. Several Contracting Parties informed the 5th Review Meeting that they had made their National Reports publically available on the national websites. Others informed that they were planning to make their National Reports and questions and answers available at the public Joint Convention web page. All Contracting Parties were encouraged to take into account the voluntary practices for making documents public as described in the annex to the guidelines (INFCIRC/604/Rev.3). Documents voluntarily submitted to the Secretariat for the purpose of publication are available at (<http://www-ns.iaea.org/conventions/waste-jointconvention.asp>). A total of 3100 written questions / comments were submitted by 43 Contracting Parties on all of the national reports, and 2988 responses were provided. Mauritania, and Tajikistan did not respond to written questions.

13. The Republic of Moldova provided a presentation, but did not respond to questions on this presentation. Chile provided a presentation in writing, but was not present in the Country Group sessions when their national report was discussed. Presentations were not provided by Mauritania, Mauritius, Tajikistan and Uruguay. The national reports of these Contracting Parties were discussed in Country Group sessions, with the consent of those Contracting Parties. Rapporteurs' reports were produced for these six Contracting Parties, with the aim of providing feedback to these Contracting Parties.

14. Contracting Parties, which are yet to do so, are strongly encouraged to participate fully in the review process, as required by the Joint Convention. The Contracting Parties recognised this and agreed that steps should be taken within the framework of the Joint Convention to ensure full and

active participation in the review process as was discussed at the Open Ended Working Group (see Annex 1).

2. General Observations

15. The Joint Convention process of reporting and peer review continues to highlight progress and remaining challenges (See Section 7). It was evident at the Fifth Review Meeting that participating Contracting Parties are working towards enhancing the level of safety in radioactive waste and spent fuel management.

16. Since the Fourth Review Meeting, various Contracting Parties reported good progress and significant accomplishments in implementing their national programmes. General areas have been identified where major progress has been made in (see also Section 3):

- National policies, strategies and programmes for spent fuel and radioactive waste management;
- Demonstration of efforts to enhance openness, transparency and public involvement process;
- Safety improvements in the storage and regulatory control of disused radioactive sealed sources;
- Construction, and commissioning of storage facilities for spent fuel and radioactive waste and disposal facilities for low and intermediate level waste;
- Safety as well as emergency preparedness and response improvements in light of the Fukushima Daiichi accident;
- Research and development (R&D) activities for spent fuel and radioactive waste management;
- Progress made on remediation of legacy waste sites;
- Expanded use of international co-operation and published peer reviews;
- Recruiting, training and maintaining human resources to address emerging issues and expanding programmes;
- Review of arrangements related to funding of decommissioning activities; and
- Minimisation of radioactive waste.

17. In general, high quality presentations were provided which were followed by active discussions. The peer review process encouraged constructive exchanges and sharing of knowledge in an open and candid manner.

18. IAEA peer review missions were hosted by most Contracting Parties and are regarded as an effective process to strengthen the regulatory infrastructure, radiation safety and nuclear safety.

19. The Contracting Parties welcomed six new Contracting Parties since the previous Review Meeting. There remain many more IAEA Member States that have radioactive waste and spent fuel and are not Contracting Parties to the Joint Convention. Contracting Parties agreed to promote and facilitate increased participation in the Joint Convention (see Annex 1).

20. It had also been decided at the Second Extraordinary Meeting in May 2014 to revise and clarify the meaning of the term 'Good Practice' with respect to the Joint Convention. This new definition was applied for the first time in this Review Meeting and resulted in fewer 'Good Practices' being identified than in prior meetings (see Section 6).

3. Progress since the Fourth Review Meeting

21. The Contracting Parties agreed at the Fourth Review Meeting that National Reports to the next Review Meeting should include the following issues:

- Management of disused sealed sources;
- Safety implications of very long storage periods and delayed disposal of spent fuel and radioactive waste;
- International cooperation in finding solutions for the long term management and disposal of different types of radioactive waste and/or spent fuel; and
- Progress on safety taking into account lessons learned from the Fukushima Daiichi accident.

Subsections 3.1 to 3.3 summarize discussions on the first three issues along with other subjects resulting from the Country Group discussions. Section 4 is solely dedicated to the latter topic (lessons learnt from the Fukushima Daiichi accident).

3.1 Management of Disused Sealed Sources

22. Contracting Parties reported on their national strategies for ensuring the safe management of disused sealed sources, following the guidelines as revised during the Fourth Review Meeting. Several Contracting Parties highlighted the importance of working on the development of disposal solutions for disused sealed sources for which they foresee no further use. Contracting Parties recognize the need for continuing the discussion on the safe management of disused sealed sources during the next review meetings.

23. Progress has been made on recovery programmes for orphan sources, preparing a management plan for such sources, and enhancing regulatory oversight. Contracting Parties are encouraged to further work on the development and implementation of these recovery programmes.

24. Some Contracting Parties have established dedicated funds with contributions from the owners specifically for the long term management of disused sealed sources and they highlighted the importance of identifying at a national level the financial provisions and related responsibilities for the management of disused sealed sources.

3.2 Safety Implications of Very Long Storage Periods

25. Many Contracting Parties are deferring a decision or action on the final disposition of spent fuel and / or radioactive waste. As a consequence very long storage periods will be required and special efforts are necessary to ensure continued safe storage. During this Review Meeting it was recognised that a small number of Contracting Parties are making good progress towards implementing geological disposal in the near future.

3.3 International Cooperation for Finding Solutions for Long Term Management

26. There are many examples of cooperation among Contracting Parties. The scope of such co-operation can vary. Some of them go far beyond 'long term management' and are covering the whole management programme, in particular storage, conditioning, and disposal. Such co-operation typically includes bilateral or multilateral exchanges of information and experience through meetings, workshops, consultancies, and exchange of experts.

27. International organisations also provide a platform for multinational co-operation in accordance with their statute / mandate. This may also include peer reviews of national situations upon request by

a Contracting Party wishing to host such a review. Such peer reviews were frequently requested and compare national approaches to international standards.

3.4 Other Highlights of the Country Group Discussions

28. Progress was reported on diverse subjects. In addition to the Good Practices reported in Section 6, a selection of areas of progress is presented in the following paragraphs.

29. In many Contracting Parties the legal and / or regulatory framework is under development or has been updated. In many cases international recommendations were incorporated into national laws or regulations. These efforts are highly commended.

30. Regional cooperation in Europe is also very important as it harmonises the approaches to managing spent fuel and radioactive waste, including through legally-binding directives in the European Union.

31. There were several examples of the repatriation of research reactor spent fuel being undertaken. The removal of spent fuel from research reactors is a significant safety benefit and a positive step toward decommissioning of the nuclear facilities.

32. Progress in disposal of radioactive waste and spent fuel was reported. This comprised of work on national spent fuel and radioactive waste management programmes, including their expansion to accommodate the construction of new or additional nuclear power plants. It is also encouraging that Contracting Parties are planning for the management of radioactive waste and spent fuel, including funding mechanisms, before new nuclear power plants are being built or operated. Progress was achieved in the construction and operation of new near surface disposal facilities. Continued progress, while slow, was reported for geological disposal facilities, ranging from the site selection process to the opening of geological disposal facilities in the not too far future.

33. The review highlighted that the management of spent fuel, including, but not limited to, removal of spent fuel from out of reactor buildings to specialized off-site storage, as well as the management of defective fuel was being successfully addressed by certain Contracting Parties.

34. A number of Integrated Regulatory Review Service (IRRS) missions or follow up missions were requested by many Contracting Parties and carried out by the IAEA, which resulted in recommendations to improve the legal and regulatory framework of the requesting Contracting Party. It was evident during the Fifth Review Meeting that many recommendations are being implemented. It was also noted that several Contracting Parties that have hosted an IRRS Mission have publically posted their reports, and Contracting Parties that are planning on hosting an IRRS Mission were encouraged to do the same. The voluntary nature of relevant national decisions was underlined.

35. The decommissioning of nuclear facilities is gaining importance as more and more facilities are being permanently shut down. Having the necessary funds available when needed is generally recognised and steps are being taken to ensure this. Another issue is the proper management of the large amounts of decommissioning waste and availability of adequate disposal capacity. Establishing clearance levels for the release of decommissioning waste from nuclear regulatory control is one of the measures being pursued. Some Contracting Parties are also conducting R&D to explore effective and safe decommissioning technologies.

36. Although progress has been achieved by some Contracting Parties in remediation of legacy waste sites, a number are facing problems associated with legacy waste and contaminated sites from relevant past practices. Dealing with such situations is difficult and Contracting Parties with similar issues can benefit by sharing their experiences.

37. Establishing and maintaining technical competence (regulatory as well as operational) remains a challenge, in particular for small or expanding nuclear programmes and Contracting Parties phasing out nuclear power generation. Contracting Parties are exploring different ways in which they can recruit and train suitable staff to meet their needs.

38. Many Contracting Parties reported on enhancements made in openness, transparency, and public involvement related to safety of spent fuel and radioactive waste management. Some examples include public engagement in establishing policies for long term management for spent fuel and radioactive waste management, siting and licensing decisions for storage and disposal facilities.

4. Lessons Learnt from the Fukushima Daiichi Accident and Associated Topical Session

39. During the Review Meeting Contracting Parties confirmed the actions that they had undertaken to re-evaluate safety of radioactive waste and spent fuel management facilities in light of the Fukushima Daiichi accident. Many of the Contracting Parties performed initial assessments covering immediate safety concerns. Some of them conducted in depth 'stress tests' with the aim of further improving the safety of facilities. These tests are generally finished and the respective measures to improve safety are being implemented.

40. Work included a re-assessment of natural hazards, improving wet spent fuel storage facilities, spent fuel transfer to dry storage, a revision of the emergency plans and emergency response plans, and an update of manuals and procedures in order to improve the capability to respond to incidents / accidents. Some Contracting Parties plan further assessments on disposal facilities.

41. Updating emergency plans is a widespread activity to improve safety. It includes preparing information for the public in case of a nuclear or radiation emergency.

42. The Fifth Review Meeting included a Topical Session on 'Progress on Lessons Learnt from the Fukushima Daiichi Accident'. Further information on this Topical Session is included in Annex 2.

5. Measures to Improve Safety

43. Specific plans to improve safety differ among Contracting Parties depending on the extent of their national programme. Some of the initiatives that are being implemented are highlighted below.

44. Contracting Parties intending to embark on a nuclear programme are establishing national legal and regulatory frameworks and the associated infrastructure to manage radioactive waste and spent fuel, including options for final disposition, as well as development and implementation of policies and strategies for spent fuel and radioactive waste management consistent with the timeline for implementing a nuclear programme.

45. Contracting Parties with established nuclear programmes continue to focus on establishing disposal facilities, implementing solutions for the long-term storage, and decommissioning of shut down nuclear facilities, including managing the anticipated large amounts of decommissioning waste.

46. Some Contracting Parties face the specific problem of disposing of their small amounts of spent fuel and radioactive waste. For example, a disposal facility for small amounts of research reactor spent fuel and radioactive waste, in particular if waste is long lived, represents a significant challenge for a single Contracting Party. Consequently, some Contracting Parties are evaluating the feasibility of a regional or multinational disposal facility (See Section 7).

47. The value of IRRS missions and other peer reviews are well accepted. Contracting Parties reported on the implementation of recommendations from such missions, and it was noted that implementing recommendations will take time and may require additional funding and staffing.

48. Many Contracting Parties are supplementing long term wet storage of spent fuel by dry storage where disposal is not foreseen in the near future. In addition, some Contracting Parties plan to expedite the transfer to dry storage because of the merits of passive safety and the reduction of radioactive waste being produced as a result of wet storage.

49. Examples of other measures currently being implemented or planned by some Contracting Parties include greater efforts to minimise radioactive waste volumes, improve radioactive waste processing, storage and disposal facilities, and improve safety of the management of disused sealed sources.

6. Good Practices

50. Contracting Parties at the Second Extraordinary Meeting in May 2014 adopted a new definition of ‘Good Practice’. The results from the review sessions of the Joint Convention demonstrated inconsistencies across the Country Groups with respect to the identification of Good Practices. This issue was discussed by the General Committee, but under the current guidelines no solution was found to harmonize between Country Groups for this Review Meeting.

51. Noting that the Sixth Review Meeting of the Convention on Nuclear Safety came to a similar conclusion the Contracting Parties of the Joint Convention agreed that the concept of ‘Good Practice’ was sound but that the term ‘Good Practice’ associated with the adopted definition should be revisited. Additionally, consideration should be given to developing an approach to ensure consistent application of this definition among Country Groups. Also, the Contracting Parties recognised the importance of acknowledging major achievements. Therefore, it is recommended that consideration be given to amending the guidelines for future Review Meetings to reflect these concerns, including the possibility that the rapporteurs’ written report include a specific slide to recognise major achievements by Contracting Parties.

52. Identified ‘Good Practices’ and other positive highlights / developments are included in the Rapporteurs’ written reports.

53. Some other Good Practices were proposed by Contracting Parties, but weren't adopted by their respective Country Group, being considered by this group as not fitting into the new definition of Good Practices. This issue was raised in the plenary by the Russian Federation and shared by many other Contracting Parties. The Fifth Review Meeting recognised the need for improving the harmonisation between the Country Groups in the identification of Good Practices.

7. Overarching Issues

54. The Country Groups identified overarching issues resulting from cumulative discussions throughout the first week. The Contracting Parties highlighted these areas on Overarching Issues during the closing plenary.

55. **Staffing, staff development, funding, and other human resource areas.** Contracting Parties face challenges in establishing and maintaining qualified regulatory and operator work forces for spent fuel and radioactive waste management. Several points raised by Contracting Parties include:

- New or growing programmes need staff to take on new responsibilities, while more established programmes often need to replace experienced workers as they retire or leave the work force through succession planning;
- The same pool of experts supplies industry and regulators; and
- Knowledge transfer and training are very important and international/regional training opportunities are available;
- Direct funding is important to regulatory independence.

56. Maintaining and increasing public involvement and engagement on waste management, to provide public confidence and acceptance. Consensus exists that public confidence is essential for successful implementation of spent fuel and radioactive waste management activities. The best ways to achieve such confidence can vary significantly among countries and remain a challenge. Several points raised by Contracting Parties include:

- Importance of local community involvement;
- Listening and active engagement in the process to the extent possible;
- Transparency in communication and independence of the regulator;
- Early and continuous engagement over the long term, including spent fuel and waste management discussion in the broader context of energy production;
- Disposal issues require understanding of complex, long-term issues and consideration of novel approaches;
- Importance of building independent stakeholder technical expertise; and
- Retrievability and reversibility for disposal may support public confidence.

57. Contingency plans for management of radioactive waste from a significant nuclear or radiation accident. Accidents can produce unanticipated large quantities of radioactive waste as well as potentially damaged sources and nuclear fuel. Planning for managing waste from significant accidents remains generally underdeveloped and uneven among contracting parties. Several points raised by Contracting Parties include, where appropriate:

- Planning is applicable to all Contracting Parties;
- Planning should include both onsite and offsite;
- The importance of a clear definition of the division of roles and responsibilities;
- Basic, clear planning is recommended – excessive detail is unneeded;
- Storage capacity could be easily overwhelmed, but plan for some storage capability;
- Cleanup criteria should be developed in advance; and
- Consider how the response affects the radioactive waste volume that may be generated in the response.

58. Management of disused sealed sources. Management of disused sealed sources can be a significant challenge for all Contracting Parties. Return of disused sources to the supplier is seen as a useful means of reducing inventory, and several Contracting Parties have been very effective in implementing this approach. When this is not possible for all disused sources, collection and continued storage of disused sealed sources are ongoing issues. Several points raised by Contracting Parties include:

- Return to supplier is not the only answer; long term management, e.g. disposal, must be considered;
- Contracting Parties identified the importance of funding issues and financing;
- International cooperation (including regional cooperation projects) is important, and may result in more interest by Contracting Parties in the Joint Convention; and
- The interface between safety and security was recognized.

59. Management of and funding for decommissioning waste. As more facilities enter into decommissioning, managing the volume, complexity, or character of the waste generated through this process is a challenge. Early planning, preparation, and identification of resources for implementation are important so that these waste streams do not overwhelm existing waste management capabilities. Assuring sufficient funding for decommissioning activities is important for both implementers and regulators. Several points raised by Contracting Parties include:

- Storage or disposal facilities need to be available for decommissioning - lack of disposal is not an excuse for deferred dismantling;
- Disposal planning leads to lower costs and lower worker dose;
- Availability of funding is important at the time of decommissioning; and
- Early closure or operator insolvency causes further complications which the Contracting Party must address.

60. **Feasibility of a regional or multinational disposal facility.** Use of a shared disposal facility may be an appealing solution for some Contracting Parties with limited amounts of radioactive waste or small quantities of spent fuel, for example, from a research reactor. Implementation of a shared facility faces many potential challenges and has been discussed for a long time in many fora. Several points raised by Contracting Parties include:

- Some Contracting Parties consider that a multinational disposal option may have relevance in some situations;
- Many Contracting Parties are very skeptical whether such a solution is implementable; and
- Finding a willing host Contracting Party would be difficult.

61. **Developing and implementing a holistic and sustainable management strategy for radioactive waste and spent fuel at an early stage.** The management of radioactive waste and spent nuclear fuel, from generation through and ultimate disposition, is likely to extend over a long time period. Waste management plans need to be established very early and be sufficiently robust and adaptable to evolving societal expectations and concerns to ensure sustainability. Two points raised by Contracting Parties include:

- Long term planning must be maintained and implemented for repository projects; and
- Very few Contracting Parties that have programmes that have been executed without delay.

62. Several other topics were recognized as overarching issues and briefly discussed at the Plenary Session:

- Availability of reliable funding for the regulatory body;
- Management of legacy waste;
- International cooperation in sharing experience and finding solutions for long-term waste management;
- Long-term preservation of information on storage and disposal of radioactive waste and spent fuel through records and database management;
- Aging management of radioactive waste and spent fuel in long-term storage; and
- Siting of disposal facilities.

63. The Contracting Parties agreed that National Reports for the next Review Meeting should address, as appropriate, the following issues:

- Staffing, staff development, reliability of funding, and other human resource areas;
- Maintaining or increasing public involvement and engagement on waste management, to provide public confidence and acceptance;
- Developing and implementing a holistic and sustainable management strategy for radioactive waste and spent fuel at an early stage; and
- Management of disused sealed sources.

64. Contracting Parties recognized the value of the discussion and recommended continuing the practice for the Sixth Review Meeting.

8. Outcome of the Open Ended Working Group

65. The Open Ended Working Group (OEWG) was established at the opening Plenary session and was chaired by Mr Philippe Jamet.

66. Eight proposals were submitted by the Contracting Parties and discussed during three sessions. The discussions of the Open Ended Working Group resulted in four recommendations which were presented to Contracting Parties in Plenary session and approved after amendments. The Chairman's 'Report of the Open Ended Working Group' is provided as an Annex 1 to this Summary Report.

67. Subject to availability of funds:

- The Contracting Parties request the Joint Convention Secretariat to organize a Topical Meeting dealing with safety challenges and responsibility issues, in the framework of the Joint Convention, related to the disposal of spent fuel or radioactive waste in another country than the one where they were generated.
- The President, with the assistance of the Secretariat and in consultation with Contracting Parties, is requested to define the precise title, scope, agenda of the meeting, as well as possible objectives, consistent with the discussion in the OEWG, taking into account any relevant input to this topic in the framework of the Joint Convention.

68. The Contracting Parties request the Secretariat to consider the process [regarding openness and transparency] adopted by the Convention on Nuclear Safety Contracting Parties, assess whether it is transferable to the Joint Convention and report the results of its consideration to the Contracting Parties, at the next meeting of the Contracting Parties.

69. The Contracting Parties request:

- The President of the Fifth Joint Convention Review Meeting to take appropriate actions to promote adherence¹ to and active participation in the Joint Convention, including consultations with Contracting Parties.
- The President of the Fifth Joint Convention Review Meeting to issue a letter to the IAEA Director General on behalf of the Contracting Parties to recall the importance of further promoting the adherence to the Joint Convention and of providing assistance, as appropriate, to states participating in their first review meeting.
- The President of the Fifth Joint Convention Review Meeting to make a presentation during the annual Code of Conduct meeting to promote adherence to the Joint Convention.
- The President of the Fifth Joint Convention Review Meeting, with the support of the Secretariat, subject to availability of resources:
 - to collect evidence on the concerns of Member States in adhering to, and participating actively in, the Joint Convention, assess them, and to propose any new actions to address these concerns;
 - to report on the actions proposed during a consultancy meeting to be held in 2016 open to Joint Convention Contracting Parties. The consultancy meeting will then

¹ The term "adherence", as used in this report, refers to a State expressing consent to be bound by the Joint Convention, such as by ratification, acceptance, approval or accession (see Article 39 of the Joint Convention).

assess these proposed actions as well as other proposals for improving the review process, in particular for countries without a nuclear power programme;

- The conclusions of the consultancy meeting should be discussed at the next meeting of the Contracting Parties.
- To include in the agenda of the Sixth Review Meeting time for the President of the Fifth Joint Convention Review Meeting and the Secretariat to report on their outreach activity and to discuss possible way forward for increasing the number of Contracting Parties as well as ways to increase the effectiveness of the review process for countries without a nuclear power programme.

70. The Contracting Parties request that the President of the Fifth Joint Convention Review Meeting collect experience from the rapporteurs and coordinators of the present Review Meeting on their roles and responsibilities, and after analysis, provides Contracting Parties with the outcome of that analysis of the roles and responsibilities of the rapporteurs and coordinators at the next meeting of the Contracting Parties.

9. Conclusions

71. The Joint Convention process of reporting and peer review continues to highlight progress and remaining challenges. It was evident at the Fifth Review Meeting that participating Contracting Parties are working towards enhancing the level of safety in radioactive waste and spent fuel management.

72. The number of Contracting Parties increased from 63 to 69 since the Fourth Review Meeting. The number of Contracting Parties to the Joint Convention is still not commensurate with the number of countries having radioactive waste.

73. Constructive discussions and sharing of knowledge took place in a frank and open manner and Contracting Parties recognized the importance of the Joint Convention peer review process. However, the Contracting Parties noted that a robust peer review process requires full and active engagement by all Contracting Parties.

74. Several Contracting Parties did not provide National Reports to the Joint Convention Review Meeting, did not participate in the questions and answers process, and did not attend the Review Meeting.

75. In light of the issues raised in Paragraphs 72, 73, and 74 the Contracting Parties requested the President of the Fifth Review Meeting to take certain steps to encourage adherence to, and active participation in, the Joint Convention and to further explore other possible steps in this regard.

76. Detailed assessments of the national situations after the Fukushima Daiichi accident were carried out by many Contracting Parties. Where relevant, the recommendations arising from these assessments are being implemented in order to improve safety.

77. International peer review missions are being widely used and are regarded as an effective process to strengthen the national framework and infrastructure for nuclear and radiation safety. Contracting Parties acknowledged the importance of hosting such missions on a regular basis and were encouraged to make the results of these missions publically available. The voluntary nature of relevant national decisions was underlined.

78. The Contracting Parties decided by consensus to hold an Extraordinary Meeting prior to the Organisational Meeting of the Sixth Review Meeting. The agenda of this meeting will include, among other items, the discussion of the conclusions of the consultancy meeting mentioned in §69.

79. The Contracting Parties agreed that National Reports for the next Review Meeting should, as appropriate, address the following:

- Staffing, staff development, reliability of funding, and other human resource areas;
- Maintaining or increasing public involvement and engagement on waste management, to provide public confidence and acceptance;
- Developing and implementing a holistic and sustainable management strategy for radioactive waste and spent fuel at an early stage; and
- Management of disused sealed sources.

80. The Contracting Parties agreed to hold the Sixth Review Meeting of the Parties at IAEA Headquarters in Vienna, Austria, on 21 May – 1 June 2018.

JC/RM5/OEWG/01/Rev.1

Annex 1

**Chairman's Report
of the Meeting of the Open-Ended Working Group (OEWG)
of the Fifth Review Meeting of the Joint Convention**

May 12-14, 2015

Introduction

On May 12, 2015 at 18:00, the Joint Convention Vice President Philippe Jamet (France) opened the Open-Ended Working Group (OEWG) session as Chairman. He indicated that 8 proposals had been received and were to be discussed within three days. The Chair reminded the participants of his statements made in the opening plenary session noting that, as the Fifth Review Meeting is the first one implementing the modifications made to the guidance documents of the Joint Convention (JC) agreed at the May 2014 Extraordinary Meeting, the OEWG was therefore encouraged to focus on policy or organizational matters rather than proposals for additional changes to the review process guidelines or rules of procedure.

The agenda was updated daily and approved.

The method of the sessions has been recalled by Mr Jamet:

- Presentation of the proposal
- Discussion by the participants
- Summary of the main outcomes and substance of the recommendations, if a consensus could be reached
- Adoption of recommendation wordings to be proposed for approval during the plenary on Monday 18th May.

The proposals submitted by Contracting Parties are available on the closed JC Web site.

The meeting met formally over three days and discussed the following proposals:

Proposal JC/RM5/OEWG/P01 by United States of America

- Proposal that in future reports to the Convention the Contracting Parties address the potential for multinational approaches in their consideration of, and planning for, the management and disposal of spent fuel

Proposal JC/RM5/OEWG/P06 by United States of America

- Discussion of Potential Topics and Dates for Topical Meetings between the Fifth and Sixth Review Meetings of the Joint Convention.

Proposal JC/RM5/OEWG/P07 by France

- Strengthening the transparency, the openness and the promotion of the JC Review Meeting works

Proposal JC/RM5/OEWG/P03-05 by Euratom and United States of America

- Discussion of encouraging additional countries to become Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Proposal JC/RM5/OEWG/P04 by United States of America

- Clarification of the Role and Responsibilities of the General Committee between Review Meetings.

Proposal JC/RM5/OEWG/P08-10 by France and Canada

- Assessing and enhancing the commitment of Contracting Parties to the peer review process of the Joint Convention in order to promote their effective participation.

Proposal JC/RM5/OEWG/P02 by Sweden

- Combining the roles of coordinators and rapporteurs in the review process

Proposal JC/RM5/OEWG/P09 by Finland

- A template for national presentations to be used in Country Group Session

Conclusion

The OEWG recommends that the Contracting Parties of the Fifth Review Meeting adopt its recommendations as set out in the appendix to this report.

Appendix

Proposal JC/RM5/OEWG/P01 by United States of America

Proposal that in future reports to the Convention the Contracting Parties address the potential for multinational approaches in their consideration of, and planning for, the management and disposal of spent fuel.

Discussion

Dr. Andy Hall, summarized his views on the outcome from the Topical Meeting on comprehensive approach to managing the back end of nuclear fuel cycle he chaired in October 2013.

The OEWG recognized that multi-national disposal for spent fuel and radioactive waste is a complex topic, which has been discussed for many years and continues to be discussed in many fora. A number of Contracting Parties raised several issues relevant to the scope of the Joint Convention such as measures and provisions to be retained to ensure long term safety of such disposal facilities. The discussion particularly showed that safety challenges and responsibility issues associated with the disposal of spent fuel or radioactive waste in another country than the one where they were generated needs further discussion.

Recommendation

See recommendation of Proposal *JC/RM5/OEWG/P06*

Proposal JC/RM5/OEWG/P06 by United States of America

Discussion of Potential Topics and Dates for Topical Meetings between the Fifth and Sixth Review Meetings of the Joint Convention.

Discussion

Given the outcomes of the first proposal, the OEWG discussed the possibility to organize a Topical Meeting on the subject of multi-national disposal for spent fuel and radioactive waste. The OEWG also discussed the organization to put in place to prepare this Topical Meeting. In the discussion it was recognized that this Topical Meeting should take into account existing international instruments and discussions held in other relevant fora e.g. the previous JC Topical Meeting organized in October 2013 and international conferences as the one to be organized in June 2015 related to the integrated approach to the back end of the fuel cycle.

Recommendation

Subject to availability of funds:

The OEWG recommends the organization of a Topical Meeting dealing with safety challenges and responsibility issues, in the framework of the Joint Convention, related to the disposal of spent fuel or radioactive waste in another country than the one where they were generated.

The OEWG recommends requesting the President, with the assistance of the Secretariat and in consultation with Contracting Parties, to define the precise title, scope, agenda of the meeting, as well as possible objectives, consistent with the discussion in the OEWG, taking into account any relevant input to this topic in the framework of the Joint Convention.

Proposal JC/RM5/OEWG/P07 by France

Strengthening the transparency, the openness and the promotion of the JC review meeting works

Discussion

The OEWG discussed the possibility to enhance visibility and transparency of the work performed in the framework of the JC Review Meetings.

It was clearly stated that confidentiality should be preserved. On the other hand up-to-date techniques could be used (e.g. video) to inform in a more attractive and broad manner about the work and public results of the Review Meetings. The CNS Contracting Parties modified their approach and started to implement it during their Sixth review meeting.

Recommendation

The secretariat should consider the process adopted by the CNS Contracting Parties, assess whether it is transferable to the Joint Convention and report the results of its consideration to the Contracting Parties, at the Organizational Meeting of the Sixth Joint Convention Review Meeting.

Proposal JC/RM5/OEWG/P03-05 by Euratom and United States of America

Discussion of encouraging additional countries to become Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Discussion

The representatives from the U.S. and Euratom presented the proposal, reiterating the objectives to increase the number of Member States to become Contracting Parties to the Joint Convention and to increase participation of the existing Contracting Parties.

Preliminary information was given by the Secretariat on the activities of the IAEA regarding promotion of the Joint Convention as well as on the Code of Conduct on the Safety and Security of Radioactive Sources. The ensuing discussion addressed the possible reasons why Member States do not become Contracting Parties to the Joint Convention. Different means of promoting the Joint Convention and stimulation of Member States to become Contracting Parties were also discussed. It was also noted that there was no intention with the proposal and the discussions to merge the Code of Conduct and the Joint Convention. The importance of allocation of extra-budgetary contributions to the IAEA for strengthening its outreach activities to promote the Joint Convention was also recognized.

Recommendations

The Contracting Parties request:

- **The President of the Fifth Joint Convention Review Meeting to take appropriate actions to promote adherence² to and active participation in the Joint Convention, including consultations with Contracting Parties.**

² The term “adherence”, as used in this report, refers to a State expressing consent to be bound by the Joint Convention, such as by ratification, acceptance, approval or accession (see Article 39 of the Joint Convention).

- **The President of the Fifth Joint Convention Review Meeting to issue a letter to the Director General of the IAEA on behalf of the Contracting Parties to recall the importance of further promoting the adherence to the Joint Convention and of providing assistance, as appropriate, to states participating in their first Review Meeting.**
- **The President of the Fifth Joint Convention Review Meeting to make a presentation during the annual Code of Conduct meeting to promote adherence to the Joint Convention.**
- **The President of the Fifth Joint Convention Review Meeting, with the support of the IAEA Secretariat, subject to availability of resources:**
 - **to collect evidence on the concerns of Member States in adhering to, and participating actively in, the Joint Convention, assess them, and to propose any new actions to address these concerns;**
 - **to report on the actions proposed during a consultancy meeting to be held in 2016 open to Joint Convention Contracting Parties. The consultancy meeting will then assess these proposed actions as well as other proposals for improving the review process, in particular for countries without a nuclear power programme;**
 - **The conclusions of the consultancy meeting should be discussed at an extraordinary meeting of the Parties, which could be held prior to the Organisational Meeting of the Sixth Review Meeting.**
- **To include in the agenda of the Sixth Review Meeting time for the President of the Fifth Joint Convention Review Meeting and the IAEA Secretariat to report on their outreach activity and to discuss possible way forward for increasing the number of Contracting Parties as well as ways to increase the effectiveness of the review process for countries without nuclear power programme.**

Proposal JC/RM5/OEWG/P04 by United States of America

Clarification of the Role and Responsibilities of the General Committee between Review Meetings.

Discussion

Proposal was presented by the U.S. representative, and the U.K. representative offered proposed language which was then discussed at length. Diverging views on the topic were expressed during the discussions including on the role of the General Committee and of the President during the Review Meetings and between Review Meetings as well as whether the proposal refers to rule 15 or 16 of the Rules of Procedure and Financial Rules (INFCIRC/602/Rev.5). Chairman noted general support for promoting continuity between Review Meetings. It was also recognized that the actions to be implemented by the General Committee should have been authorized by the Contracting Parties.

Recommendation

No consensus was reached on the proposal.

Proposal JC/RM5/OEWG/P08-10 by France and Canada

Assessing and enhancing the commitment of Contracting Parties to the peer review process of the Joint Convention in order to promote their effective participation.

Discussion

Discussions indicated general support for the intent of the proposal (to promote participation in the review process), but there were several concerns expressed on the mechanisms to do so. Some Contracting Parties insisted on the need:

- To reflect in the summary report the extent to which Contracting Parties have fulfilled their obligations under the JC related to the peer review process
- To send a letter signed by the President of the Fifth Joint Convention Review Meeting to those Contracting Parties who have not fulfilled their obligations under the Joint Convention related to the peer review process;
- For the Secretariat to provide, in coordination with the President of the Fifth Joint Convention Review Meeting of a final overview of the Fifth Review Meeting at the next Joint Convention Organisational Meeting.

Diverging views were expressed during the discussion, and also concerns related for example to the consistency of the proposal with the nature of the Joint Convention or to the need to be cautious when proposing to use performance indicators.

Recommendation

No consensus was reached on the proposal.

Proposal 7: JC/RM5/OEWG/P02 by Sweden

Combining the roles of coordinators and rapporteurs in the review process

Discussion

There was no strong support for the proposal and of combining the roles of the rapporteurs and the coordinators. The Contracting Parties recalled the importance of the two distinct functions. However, there was a common view that there are ways of improving the definition of the roles and responsibilities of the rapporteurs and the coordinators, as well as their interactions.

Recommendation

The OEWG recommends that the President of the Fifth Joint Convention Review Meeting collects experience from the rapporteurs and coordinators of the present review meeting on their roles and responsibilities, and after analysis, to provide Contracting Parties with the outcome of that analysis of the roles and responsibilities of the rapporteurs and coordinators by the next Organisational Meeting.

Proposal 8 JC/RM5/OEWG/P09 by Finland

- A template for national presentations to be used in Country Group Session

Discussion

From the discussion there were diverse opinions on the proposal, particularly because the existing guidance for the presentation given in the Annex 8 of the Organisational Meeting Report of the Fifth Review Meeting is sufficient.

Recommendation

No consensus was reached on the proposal.

Annex 2

Summary of the Topical Sessions

Progress on Lessons Learned from the Fukushima Daiichi Accident

During the second week of the Review Meeting on 18th May a Topical Session was held to report, and demonstrate the progress made, on lessons learned from the Fukushima Daiichi accident (FDA). Mr Myung-Jae Song, Vice-President, was Chairperson for the meeting.

The session focussed on lessons learned in relation to spent fuel and radioactive waste management, but also touched on related issues such as relevance of FDA lessons for non-NPP Contracting Parties, management of large volumes of accident waste, and lessons learned from decontamination following a radiological accident.

Many Contracting Parties reported on actions taken and lessons learned as a result of the FDA in their National Reports and presentations throughout the Fifth Review Meeting. Additionally, all major NPP Contracting Parties reported substantial responses to the FDA lessons learned with regard to spent fuel and radioactive waste facilities, with much greater tangible responses than reported in the Fourth Joint Convention review meeting.

Presentations were given on the current status of the Fukushima Daiichi NPP and recovery activities, the status of the IAEA Nuclear Safety Action Plan (NSAP) and Fukushima Report, and on lessons learned from the Goiania accident involving a disused radioactive source. The session concluded with a panel discussion.

Common themes during the session and panel discussion included:

- Re-assessment of safety of nuclear fuel cycle facilities (management of spent fuel; stress tests);
- Technical improvements to cooling systems, instrumentation and monitoring systems;
- Contaminated water management;
- Contingency planning for large volumes of waste generated during off-site remediation;
- Policy, regulatory and institutional responses;
- Emergency response planning;
- Collocation and interdependencies of facilities; and
- Public information, transparency, stakeholder engagement and communication between relevant authorities.

Panel responses stated that generic remediation plans must allow flexibility to adapt to each unique situation and that impacts of external events on multiple facilities on the one site were widely addressed by Contracting Parties. The IAEA Secretariat stated that all safety standards are under review and are being progressively updated under the NSAP. Improvements could be made in the adoption and implementation of IAEA safety standards by Contracting Parties.

Mr Song concluded that the topical session provided an excellent opportunity for Contracting Parties to share narratives, experience and lessons learned from the FDA. He indicated that the outcomes of the Country Group sessions of this Fifth Review Meeting have demonstrated good progress towards implementing lessons from the FDA to enhance the safety of spent fuel and radioactive waste management.