

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

Sixth Review Meeting of the Contracting Parties

21 May to 01 June 2018, Vienna, Austria

FINAL SUMMARY REPORT

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## 1. Introduction

1. The international community increasingly recognized the importance of safely managing spent fuel and radioactive waste in the 1990s and agreed upon the benefits of adopting a convention with the objective of achieving and maintaining a high level of safety worldwide in their 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.
2. The convention was adopted bearing in mind the importance of ensuring sound practices for the safety of spent fuel and radioactive waste management and desiring to promote an effective nuclear safety culture worldwide. The importance of international co-operation in enhancing safety through bilateral and multilateral mechanisms through the Convention was affirmed and the importance of informing the public on safety related issues regarding the safety of spent fuel and radioactive waste management was recognized. The importance of the safety principles underlying the international standards on radiation safety, waste management safety and transport safety was recognised. In developing the convention, the United Nations Conference on Environment and Development, which reaffirms the paramount importance of the safe and environmentally sound management of radioactive waste, was taken into consideration and the desirability of strengthening the international control system applying specifically to radioactive materials as referred to in the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal was recognised.
3. The stated objectives of the Joint Convention as per Article 1 are:
  - (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.
4. To achieve these objectives, the Joint Convention adopted a review process that requires each Contracting Party at intervals not exceeding three years 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.
5. Article 34 of the Joint Convention requires the Contracting Parties to adopt, by consensus, and make available to the public a document addressing issues discussed and conclusions reached during meetings of the Contracting Parties. The objective of this summary report is to summarize the outcomes of the Sixth Review Meeting of the Joint Convention in fulfillment of this obligation.
  6. To date, there are 78 Contracting Parties to the Joint Convention. The Sixth Review Meeting of the Contracting Parties pursuant to Article 30 of the Joint Convention was held from 21 May to 01 June 2018 at the Headquarters of the International Atomic Energy Agency (IAEA), which is the depositary and Secretariat for the Joint Convention. Previous Review Meetings have been held as follows:
    - (i) Fifth Review Meeting: 11 to 22 May 2015, Vienna;
    - (ii) Fourth Review Meeting: 14 to 23 May 2012, Vienna;
    - (iii) Third Review Meeting: 11 to 20 May 2009, Vienna;
    - (iv) Second Review Meeting: 15 to 24 May 2006, Vienna; and
    - (v) First Review Meeting: 03 to 14 November 2003, Vienna
  7. The President of the 6th Review Meeting was Mr Bismark Tyobeka, Chief Executive Officer, National Nuclear Regulator, South Africa. The Vice-Presidents were Mr Geoff Williams, Director Radioactive Waste Safety, ARPANSA, Australia and Mr Douglas Tonkay, Director at the Office of Waste Disposal in the Office of Environmental Management, U.S. Department of Energy, United States of America.
  8. The General Committee of the Review Meeting comprised the President, the two Vice-Presidents, and the eight Country Group Chairpersons, namely Mr Evgenij Kudrjavitsev (Russian Federation), Mr Johan Anderberg (Sweden), Mr Francois Besnus (France), Mr Paul McClelland (Canada), Mr Manuel Martin Ramos (EURATOM), Mr Jussi Heinonen (Finland), Mr Mikulas Turner (Slovakia) and Ms Mina Golshan (United Kingdom).
  9. Sixty nine of seventy eight Contracting Parties attended the Review Meeting, namely: Albania, Argentina, Armenia, Australia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Canada, Chile, China, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Estonia, EURATOM, Finland, France, Georgia, Germany, Ghana, Greece, Hungary, Iceland, Indonesia, Ireland, Italy, Japan, Jordan, Kazakhstan, Korea (Republic of), Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Mexico, Montenegro, Morocco, Netherlands, Nigeria, Norway, Oman, Peru, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Saudi Arabia, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uzbekistan and Viet Nam. Among these, eight Contracting Parties attended for the first time, namely Botswana, Cuba, Jordan, Kyrgyzstan, Mexico, Peru, Serbia and Uzbekistan.

10. Nine Contracting Parties did not attend the Review Meeting, namely Gabon, Lesotho, Madagascar, Mauritania, Mauritius, Niger, Senegal, Tajikistan and Uruguay.
11. There were no late ratifiers as defined in Rule 2 of the Rules of Procedure and Financial Rules (INFCIRC/602/Rev.5).
12. 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 2017.
13. In addition, two Signatory States of the Joint Convention, Lebanon and the Philippines, as well as the Islamic Republic of Iran were invited to attend, as observers, the opening plenary session and the part of the closing plenary session, where the summary report would be adopted.
14. National Reports were provided by 75 out of 78 Contracting Parties. A total of 64 National Reports were posted by the required date and 11 were posted late. No National Reports were submitted by Gabon and Niger. In addition, in light of the fact that the Joint Convention entered into force for Mexico on 17 May 2018, no national report was submitted by Mexico, but a presentation was made.
15. Several Contracting Parties informed the 6th Review Meeting that they had made their National Reports publicly 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 (<https://www-ns.iaea.org/conventions/waste-jointconvention.asp>).
16. A total of 3684 written questions / comments were submitted by 54 Contracting Parties on all of the national reports, and 3563 responses were provided. Lesotho, Madagascar, Mauritania, Tajikistan and Uzbekistan did not respond to written questions.
17. Presentations were not provided by Lesotho, Madagascar, Mauritania, Mauritius, Senegal, Tajikistan and Uruguay. Nevertheless, 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 Contracting Parties, with the aim of providing feedback to these Contracting Parties.

## 2. General Observations

18. The Joint Convention process of reporting and peer review continues to highlight progress and remaining challenges. It was evident at the Sixth Review Meeting that participating Contracting Parties are working towards enhancing the level of safety in radioactive waste and spent fuel management.
19. The rate of participation by Contracting Parties in the Review Meeting is held constant in percentage participation, however the percent of Contracting Parties issuing reports has

increased and the number of questions has increased. This shows a small positive trend in adherence to the Joint Convention. Around 10 percent of Contracting Parties are not attending the review meetings.

20. Since the Fifth 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:
  - (i) The development of geological disposal facilities in a number of Contracting Parties, with a licence issued for construction of one facility and two more projects in an advanced stage of development. Other Contracting Parties reported progress on site selection and implementing underground research laboratories.
  - (ii) The development of national policies, strategies and programmes for spent fuel and radioactive waste management;
  - (iii) Demonstration of efforts to enhance openness, transparency and public involvement;
  - (iv) Safety improvements in the regulatory control and funding of disused radioactive sealed source activities;
  - (v) Construction, and commissioning of new or expanded storage facilities for spent fuel
  - (vi) Construction and commissioning of near surface disposal facilities for low level waste.;
  - (vii) Safety of spent fuel storage in light of the Fukushima Daiichi accident;
  - (viii) Research and development (R&D) activities for spent fuel and radioactive waste management;
  - (ix) The remediation of sites containing legacy waste from mining and minerals processing activities;
  - (x) Expanded use of international co-operation and published peer reviews;
  - (xi) Recruiting, training, maintaining and developing human resources to address emerging issues and expanding programmes (but some challenges);
  - (xii) Review of arrangements related to funding of decommissioning and waste management activities; and
  - (xiii) Minimization of radioactive waste volumes
21. 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.
22. IAEA peer review missions were hosted by a number of Contracting Parties and are regarded as an effective process to strengthen the regulatory infrastructure, radiation safety and nuclear safety in particular the introduction of the ARTEMIS peer review process focussed on the safety of radioactive waste and spent fuel management.
23. The Contracting Parties welcomed the following nine new Contracting Parties; Botswana, Cuba, Jordan, Lesotho, Madagascar, Mexico, Niger, Peru and Serbia, that had joined since the last Review Meeting. It was noted however that many more IAEA Member States that have radioactive waste and spent fuel and are not yet Contracting Parties to the Joint Convention. Contracting Parties agreed to promote and facilitate accession to the Joint Convention.

### 3. Progress since the Fifth Review Meeting

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

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

#### 3.1 Staffing, staff development, reliability of funding, and other human resource areas

25. Contracting Parties reported on the measures undertaken in recruiting, training and maintaining the human resources necessary to support operational and regulatory processes. Such measures included the establishment of dedicated training centers or making use of existing national education and training resources. Knowledge transfer from retiring staff had also been undertaken. In some instances use was being made of international assistance programmes, but with the recognition that this assistance represented a step towards establishing national training capacity. Challenges still remain in this area.

26. The need to focus training in areas such as decommissioning and remediation had been identified in Contracting Parties where such activities were about to be undertaken in the foreseeable future.

27. Despite the progress reported challenges remain, particularly in the context of nuclear programme initiation or expansion being matched with a sufficient and sustainable supply of human resources.

#### 3.2 Maintaining or increasing public involvement and engagement on waste management, to provide public confidence and acceptance;

28. The need for effective public involvement and engagement on spent fuel and radioactive waste management was recognised by many Contracting Parties as crucial in gaining public confidence in the safety of management facilities and activities. There was also increasing recognition that regional and international treaties concerning impacts on the environment required openness, transparency and public engagement.

29. A number of Contracting Parties reported successful public involvement programmes by both operators and regulatory bodies that had contributed to the acceptance of radioactive waste disposal facilities by local communities and a broader range of stakeholders. Public hearings as part of environmental impact assessment programmes were often required for radioactive waste and spent fuel management facilities and activities. Nevertheless it was also reported that establishing and maintaining mechanisms for public involvement and engagement had proved to be challenging in some Contracting Parties.

### 3.3 Developing and implementing a holistic and sustainable management strategy for radioactive waste and spent fuel at an early stage

30. Many Contracting Parties reported on the development and approval of national policies and implementing strategies relating to the management of spent fuel, radioactive waste and disused radioactive sources. In some instances these were holistic in others focussed on particular issues such as spent fuel, disused radioactive sources or remediation of contaminated sites. A number of Contracting Parties included waste containing enhanced levels of naturally occurring radioactive materials within the policies and strategies.
31. A number of Contracting Parties indicated that the decision to reprocess or directly dispose of spent nuclear fuel was yet to be made and that such a decision would influence any decisions on the choice of disposal facility design to be adopted.
32. The possibility of shared or regional radioactive waste disposal facilities was still under consideration by some Contracting Parties, but no progress was reported on identification of potential sites for such facilities..
33. A number of Contracting Parties identified challenges in implementing national strategies in some instances related to availability of resources, others in respect of broader societal or political acceptance. Some contracting parties noted a challenge with respect to having detailed plans to implement national strategies particularly in cases where there is an intent to expand nuclear programmes.

### 3.4 Management of disused sealed sources.

34. Contracting Parties reported on implementation of national strategies for ensuring the safe management of disused sealed sources. Whilst the need for disposal of such sources is recognised, many Contracting Parties still only have arrangements in place for storage.
35. Studies had been undertaken in some Contracting Parties to identify solutions including options of returning disused sources to supplier countries or local disposal. Significant reductions in the inventory of disused sources were reported in some Contracting Parties.
36. The increased attention on the management of disused sealed radioactive sources has highlighted the need for their disposal as the final management step, in this regard considerations are being given to which disused sealed sources could be suitable for disposal in existing near surface radioactive waste disposal facilities.
37. A number of Contracting Parties reported progress in the development of borehole type facilities for the disposal of these sources, an option that was being considered in an increasing number of Contracting Parties. The licensing of borehole facilities for the disposal of disused radioactive sources was identified as an important issue. for some Contracting Parties.

### 3.5 Other Highlights of the Country Group Discussions

38. Activities related to extending the capacity and or lifetime of facilities for the storage of spent fuel were reported by a number of Contracting Parties.
39. A number of Contracting Parties reported on accounting for lessons learned in respect of spent fuel storage from the Fukushima Daiichi accident. In some instances design upgrades have been undertaken.
40. The availability of funding for spent fuel and waste management programmes and for decommissioning continues to be a challenging issue raised by Contracting Parties. Such challenges are present in Contracting Parties with operating nuclear power stations and in Contracting Parties where they have been shut down.
41. Good progress was reported in the development and licensing of geological disposal facilities in three Contracting Parties, one has issued a licence for construction. A number of other Contracting Parties reported on geological disposal projects, but with uncertainties on time frames and others with defined timeframes.
42. Several Contracting Parties reported on challenges in the management of former uranium mining and minerals processing sites. These included the need for treatment of contaminated groundwater and some uncertainty over the timeframes required for such treatment. The engineering strategies to be used for stabilization of mine tailings was a challenge as was the approach for long term institutional control of the closed facilities.
43. Regional cooperation in European Union was highlighted by the Contracting Parties involved contributing to harmonized approaches to managing spent fuel and radioactive waste, including through legally-binding directives in the European Union. The obligations of the directives are being transposed into national legislation and national programmes established. Periodic peer reviews are being undertaken of the national framework, the competent regulatory authority, and / or national programmes.
44. 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. In addition, the IAEA Secretariat was receiving an increasing number of requests for the ARTEMIS peer review service, introduced in 2017. This new service, focusing on national radioactive waste management programmes, had been undertaken in three Contracting Parties. . It was evident during the Sixth Review Meeting that many recommendations from international peer review processes are being implemented and contributing to an enhancement of safety assurance. It was also noted that several Contracting Parties that have hosted an international peer review missions have publically posted their reports and Contracting Parties that are planning on hosting future reviews were encouraged by some Contracting Parties to do the same on a voluntary basis.

### 4. Measures to Improve Safety

45. A number of areas were identified for all Contracting Parties where measures to improve safety are planned to be put in place. These measures depend on the nature of waste generating activities undertaken or to be undertaken and the extent and maturity of their



national programme. Some of the initiatives that are being implemented are highlighted below.

46. A considerable number of Contracting Parties are undertaking improvements to their legal and regulatory frameworks. Particular aspects being addressed include the independence of the regulatory body, the integration of safety and radiation protection aspects, the establishment and administration of decommissioning and waste management funds, release of facilities and sites from regulatory control, closure of disposal facilities, and safety assessment.
47. Contracting Parties are also increasing the capacity of their regulatory authorities, improving licensing processes for disposal facilities, improving regulatory inspection programmes and taking measures to reinforce safety culture within the regulatory authorities.
48. The undertaking of peer review missions focussed on the legal and regulatory framework and also increasingly on national radioactive waste and spent fuel management programmes is reported by a number of Contracting Parties to be an important measure to improve and assure safety.
49. Some Contracting Parties are developing or refining national policies and strategies for the management of spent fuel, radioactive waste and disused sealed radioactive sources through to disposal.
50. The returning of disused sealed radioactive sources to supplier countries is being practiced by many Contracting Parties.
51. Contracting Parties are establishing strategies for the cradle to grave management of disused sealed radioactive sources, with some emphasis on disposal, including consideration of disposal in existing near surface disposal facilities and the development of dedicated borehole facilities. Some are giving consideration to replacing radioactive sources with alternative technologies, where suitable.
52. The returning of spent fuel to supplier countries is being carried out by a number of Contracting Parties.
53. Clearance mechanisms are being put in place by some Contracting Parties. These are being based on international safety standards and are giving focus to implementing procedures to assure compliance with clearance levels in place.
54. A number of Contracting Parties reported on the development of new facilities for the near surface disposal of low and very low level radioactive waste.
55. The undertaking of safety assessment for storage of waste, spent fuel and disused sources was reported by a number of Contracting Parties.
56. Safety assessment was also being undertaken by a number of Contracting Parties on disposal facilities. Aspects that were emphasized included the format and content of safety cases (sometimes referred to as safety reports, dossiers, etc.) including the establishment of waste acceptance criteria (WAC).

57. Some Contracting Parties were undertaking clean-up of legacy sites arising from past activities that were not previously adequately controlled and some arising from accidents. Lessons learned from such clean-up activities were also being shared by some Contracting Parties.

58. Retrieval and treatment of historical waste was taking place in some Contracting Parties.

## 5. Good Practices and Areas of Good Performance

59. The Contracting Parties had previously adopted a revised definition of the concept of “*Good Practice*” at the Second Extraordinary Meeting in May 2014, which was applied at the Fifth Review Meeting. Noting the concerns regarding inconsistent application of the definition at the Fifth Review Meeting, the officers of the Six Review Meeting agreed, ahead of the review meeting, to adhere to a stricter and more consistent application of the definition. This was communicated to the Contracting Parties, by the President during the opening plenary.

60. During the Third Extraordinary Meeting held over the period 16-17 May 2017 and, as confirmed during the Organizational Meeting for the Sixth Review Meeting, held over the period 18-19 May 2017, the Contracting Parties agreed that, similar to the approach used during the Seventh Review Meeting of Contracting Parties to the Convention on Nuclear Safety (CNS), the concept of “*Areas of Good Performance*” would be introduced on a trial basis.

61. Benefitting from the participation and feedback by the President of the Seventh Review Meeting of Contracting Parties to the CNS, the officers of the Joint Convention 6th Review Meeting agreed on the following definition of the term “*Area of Good Performance*”, to be used during the Sixth Review Meeting of the Contracting Parties to the Joint Convention: “*An Area of Good Performance is a new or enhanced practice, policy or program for a Contracting Party that is commendable and is being implemented. An Area of Good Performance is a significant accomplishment for that Contracting Party, although it may have been undertaken by other Contracting Parties.*”

62. The President had communicated the definition to all Contracting Parties in a letter dated 17 August 2017. The stricter application of the definition of “*Good Practice*” and the application of the definition of Area of Good performance led to only a limited number good practices being identified during the Country Group Sessions held from Monday 21 May 2018 through Friday 25 May 2018. Some Contracting Parties see merit in the continued use of the concept of “*Area of Good Performance*” along with the concept of “*Good Practice*” in future review meetings, however, there is a need for further discussion on the definitions and their consistent application.

63. The “*Good Practices*” identified by the review meeting are indicated below.

- (i) Significant progress in the establishment of a final disposal facility for spent fuel: a construction licence has been granted and construction has commenced. All stakeholders have been involved in the process of site selection. The decision has been taken with the consent of the local municipality.

- (ii) Completion of a holistic, graded approach to waste management of all waste types, culminating with the recent development of a dedicated VLLW disposal facility as a complement to the overall implementation of the programme.
- (iii) A robust approach to implementing waste management hierarchy has delivered significant benefits for the national programme, particularly regarding the management of LLW which has resulted in major reductions in the volumes of LLW requiring disposal at the LLW repository, thereby extending the lifetime for the facility by a hundred years.
- (iv) A centralized storage facility for treatment and long-term storage of disused sealed radioactive sources.
- (v) Openness and transparency - public involvement in a national regulatory oversight process through reporting on an annual basis independently from any licensing process.
- (vi) Establishment of a consultative forum at each licensed site composed of regulator, regulatory expert organization, local residents, experts recommended by the local residents and local governments.

64. The Review Meeting identified a number of “*Areas of Good Performance*” in all Contracting Parties. These were identified in most areas of spent fuel and radioactive waste management and in regulatory control and public engagement.

## 6. Overarching Issues

65. 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, some addressing a number of topics.

**66. Implementation of national strategies for spent fuel and radioactive waste management.** As reported above most Contracting Parties have undertaken further development of national policies and strategies and good progress has been made. Nevertheless as more attention has been given to developing and implementing strategies a number of particular issues have been identified needing further consideration.

- (i) As existing radioactive waste storage and disposal facilities receive waste and the difficulties in developing new facilities remain, there is a need to ensure adequate capacity will be available and to put in place efforts to reduce the volumes of waste generated. Use of clearance, reuse and recycling programmes can contribute as can efforts to optimize national radioactive waste management and disposal programmes. The timely availability of waste disposal capacity is also of high importance for the planning and funding of decommissioning programmes.
- (ii) The linking of radioactive waste classes with disposal options is an important part of national radioactive waste management policy and strategy and a clear and defined approach to classification is considered important. International standards

for radioactive waste classification and clearance criteria exist and work has been undertaken by a number of international organizations in this area to assist reporting to different international conventions and regional legal instruments. Some Contracting Parties indicated further harmonization in this area would be beneficial through the IAEA's existing processes

- (iii) The adoption of a graded approach within national radioactive waste management programmes could have advantages in deciding on optimal approaches that provide the necessary high level of safety.
- (iv) In some national programmes, particularly in legacy situations, consideration has been given to disposal options at the site of generation. In this regard a holistic consideration is needed of safety, economic, regulatory, environmental and broader societal and political implications. The various implications and views on such an approach would benefit from broader international consideration.
- (v) Whilst national policies and programmes are focussed on prediction of waste and spent fuel to be generated within the foreseeable future, experience has shown that national policy and strategy should also give some consideration to waste that may arise from accident situations and contingency arrangements made in national emergency planning and preparedness.

**67. Safety implications of long term management of spent fuel.** All Contracting Parties in which spent fuel is generated address its long term management until disposal, within national policy and strategy. Actual arrangements within national programmes are influenced by the scale of the nuclear industry within the country, the maturity of the national programme, nuclear fuel supply contractual arrangements and many economic, social and political factors. Despite the various influencing factors Contracting Parties agreed the importance of understanding the safety implications of long term spent fuel management decisions and the need to further such understanding.

- (i) National programmes for long term management of spent fuel can involve direct geological disposal of the spent fuel or reprocessing and disposal of the resulting high level waste arising from reprocessing. Milestones are generally set within the programmes for the steps involved in developing disposal facilities such as site identification, site characterization, site approval, design development, design approval, excavation/construction, commissioning, operation and closure. These steps often involve complex programmes that need to be supported by clear safety arguments and supporting research programmes. Approaches to retrievability and operational safety remain of interest. A common understanding of these processes would be of great benefit as would feedback of experience that is being gathered with these processes.
- (ii) In view of the timeframes being experienced with geological disposal programmes, uncertainties still persist over the timeframes for which storage of spent fuel will be necessary. These uncertainties make it difficult to set storage facility design lifetimes, to predict the necessary storage capacities required and to assure the adequacy of funding provisions. These uncertainties also have to be incorporated into safety cases and evaluated for regulatory approval. To date some instances have been identified where problems have arisen with degradation of spent fuel over time

and the implications for safety, such as ageing management need to be carefully considered in the decisions over delaying disposal over longer time periods.

- (iii) In addition to uncertainties over storage time frames, delays in making decision on whether to reprocess or not have safety implication both for storage and disposal facility design. Both these uncertainties present challenges in the design, operation and licensing of facilities and in particular give rise to difficulties in the establishment and approval of waste acceptance criteria for both storage and disposal.

68. **Staffing, staff development, funding and other Human Resources areas.** Whilst the responsibility for the safety of radioactive waste management is primarily that of the waste generator, national radioactive waste management programmes require a degree of national capabilities to be in place. The availability of the scientific, engineering and legal skills necessary to implement and regulate national programmes requires educational and training provisions to be in place. Specialist scientific disciplines need to be available and research capabilities are required. Bearing in mind the timeframes associated with the development, operation and closure of radioactive waste management facilities, in particular storage and disposal facilities this matter of human resources is of fundamental concern to all Contracting Parties. Understanding of the necessary skills base and experience in maintaining such skills remains an ongoing area of interest to all Contracting Parties. The availability of sufficient financial resources remains a challenge for many spent fuel and radioactive waste management programmes, and is particularly important for the back-end activities of decommissioning and disposal. The availability and feedback of knowledge and experience on costing and financial provision for both back-end activities and legacy situations is of considerable value.

69. **Strengthening regulatory effectiveness to meet the challenges associated with the implementation of national strategies.** Fundamental to assuring the safety of spent fuel and radioactive waste management facilities and activities is the establishment and maintenance of an effectively independent and competent regulatory function. Contracting Parties identified a number of aspects related to this matter that are in need of further and ongoing consideration.

- (i) Experience has shown that licensing processes for radioactive disposal facilities and in particular for geological disposal facilities are complex and often carried out over very long timeframes. Such processes during the conceptualization and pre-licensing stages can also have uncertainties. The feedback and dissemination of information from Contracting Parties with experience with such licensing processes would be of considerable benefit for all Contracting Parties engaged in or contemplating licensing disposal facilities.
- (ii) A fundamental aspect of the regulatory process is to ensure that risk is managed. Removing of sites and facilities from regulatory control at some point in time following closure of the facility is a challenge. This is particularly challenging in respect of radioactive waste from mining and minerals processing facilities and activities. There would be considerable benefit in further exchange and discussion of this matter at an international level.

- (iii) Contracting Parties acknowledged the importance of safety culture for all the organizations involved in the management of spent fuel and radioactive waste whether involved with design, construction and operation, providing research services or exercising regulatory control. The regulatory authorities can have an overall influence in this regard and Contracting Parties expressed an interest in gathering feedback of experience gained in this regard.
- (iv) The independence of the regulatory function continues to be a topic of interest to many Contracting Parties, both in terms of structural / administrative dimensions and in capacity. Insights into approaches adopted in this regard and challenges to establishing and maintaining regulatory independence would be of great interest.
- (v) Maintaining credibility of the regulatory function was considered by Contracting Parties to be important. Independence is a contributory factor in this regard but also is public confidence in the regulatory function which can be enhanced by engagement with the public. Some Contracting Parties have experience in this area and there would be benefit in such experience being shared more broadly.

**70. Linking long term management and disposal of disused sealed radioactive sources.**

The management of disused sealed radioactive sources was highlighted for further consideration by Contracting Parties at the Fifth Review Meeting of the Joint Convention and was reported upon extensively at the Sixth Review Meeting. Such consideration has focused attention on reducing inventories of disused sources in storage and on the disposal of disused sealed radioactive sources and two particular aspects of disposal were identified. The first was the suitability of near surface disposal for disused sources, in particular the identification of which sources are not suitable for disposal in near surface facilities and the second was borehole disposal facilities for disused sources. Several Contracting Parties reported on borehole disposal projects. There is considerable interest for experience feedback on these two topic areas.

**71. Remediation of legacy sites and facilities** Many Contracting Parties are dealing with legacy situations arising from activities undertaken some decades in the past and from accident situations. Considerable progress has been made in undertaking remediation activities, but challenges remain. Remediation activities have identified challenges such as the quantification of potential radiological impact, the determination of optimal remediation actions, the provision of funding and the application of legal and regulatory processes. The further exchange of experiences in this area would be of considerable benefit.

**72. International and regional cooperation.** Contracting Parties generally agree on the benefits of international exchange and cooperation in achieving a high level of safety in the management of spent fuel and radioactive waste. The establishment of international safety standards, the undertaking of international peer reviews and the broader exchange of knowledge and experience have proven to be invaluable. Feedback of experience from engagement in international cooperation activities and the consideration of ways in which to improve and optimize such activities would be welcome.

**73.** Some of the overarching issues had been identified in the previous review meeting and discussed at the Sixth Review Meeting. This discussion had indicated that implementation of measures to address them remained a challenge for many Contracting Parties. Other

overarching issues had not been given particular focus previously and it was considered important to identify the measures being implemented to address them. From discussions during the Review Meeting the Country Group Chairs had identified which of the issues were most broadly discussed across the groups and these had been considered to be important for the next Review Meeting. These factors were taken into consideration in selecting issues to be given focus at the next Review Meeting together with issues important to Contracting Parties with no nuclear power programmes. The Contracting Parties agreed that National Reports for the next Review Meeting should address, as appropriate, the actual measures that have been taken in implementing the following issues.

- (i) Implementation of national strategies for spent fuel and radioactive waste management
- (ii) Safety implications of long term management of spent fuel
- (iii) Linking long term management and disposal of disused sealed radioactive sources.
- (iv) Remediation of legacy sites and facilities

## 7. Outcome of the Open Ended Working Group

74. The outcome of the Open Ended Working Group was presented by Vice-President Geoff Williams. He reported that the group had met on four evenings from 22 to 25 May and had held extensive discussions on the six proposals put forward to the meeting. It had proven difficult to achieve consensus on the proposals for changing guidelines to the Joint Convention Procedures.

75. The discussions in Plenary resulted in four of the amended proposals, which were presented to Contracting Parties being approved.

76. The Plenary was requested to reconsider a proposal upon which there was no consensus concerning the roles and responsibilities of the co-ordinator during the review meeting, specifically *'The Country Group officers should endeavour to work together during the Review Meeting to ensure the efficient functioning of their Country Groups. Cooperation may include allocation of workloads to ensure the best use of resources. For example, in the past in some Country Groups, the co-ordinator has assisted the rapporteur in fulfilling their responsibilities. In addition, Country Group officers are strongly encouraged to discuss before and during the Review Meeting ways their can coordinate their effects to ensure a successful outcome of the peer review process in their respective Country Group'*. The proposal was discussed in plenary but there was no consensus.

77. A proposal to address the country group officers election process during the Organizational Meeting, on which consensus had not been achieved during the meeting of the Open Ended Working Group was introduced to the plenary. The need for clarity, certainty and fairness in this process had been recognised, but there was not agreement on the exact mechanism of the process. This proposal was considered to be urgent for the next Review Meeting. During discussion on this point it was also requested that the election process should consider geographical distribution. The UK and the USA made a proposal to the Review Meeting on a process to select Country Group Officers. The proposed procedure was

presented in detail and was discussed extensively,. Different views were expressed including that such a procedure would be helpful for future Organizational Meetings, but also concern was expressed over the complexity of the proposal and the need for more time to consider all its implications. The proposal was supported by a number of Contracting Parties, but some other Contracting Parties wished to give further consideration to the matter. On the basis of all the discussion, the President concluded it was unlikely to achieve consensus. He proposed that the Secretariat should develop a draft process for election of officers that takes into consideration existing practice and the discussions at the Review Meeting. He further suggested that the Secretariat should circulate the draft process in the note circulated to Contracting Parties announcing the Organizational Meeting for the Seventh Joint Convention Review Meeting, indicating that it will be considered together with any other processes used for the election of officers to similar conventions for which the IAEA is the depository. The Organizational Meeting should then consider and decide on how to take the matter forward. This proposal from the President was agreed by the Contracting Parties.

78. The Contracting Parties in Plenary recommended the following text appear in this Summary Report: *It is recommended that each national report should highlight the significant changes from the previous national report.*
79. The Contracting Parties accepted the recommendation from the OEWG that those Contracting Parties interested in submitting proposals are encouraged to do so no later than thirty days before the start of the Review Meeting, to allow other Contracting Parties sufficient time to review proposals. This recommendation does not preclude the submission of proposals within thirty days before the start of the Review Meeting; or the submission of proposals during the Review Meeting; or changes to submitted proposals.
80. The Contracting Parties accepted the recommendation from the OEWG that the submission of National Reports in electronic form only to the secure website is an acceptable practice.
81. The Contracting Parties accepted the recommendation from the OEWG that the Sixth Review Meeting of the Joint Convention request the IAEA Secretariat to ask the CNS for approval to share the report to be presented to the CNS on its findings regarding video conferencing.
82. Vice President Geoff Williams reported that in view of the difficulties experienced in achieving consensus on proposals to make changes to the Joint Convention Procedures, the Open Ended Working Group had discussed mechanisms to address procedural process issues in a holistic manner and these discussions are recorded in the Chairman's Report of the Open Ended Working Group (Annex 1).
83. Australia put forward a proposal to the Plenary to convene an Extraordinary Meeting. The proposal was amended, recognising the discussion related to the need for clarification on the scope of the proposal. The amended proposal is: To convene an Extraordinary Meeting with the view to discuss possible ways to improve procedural mechanisms of the Joint Convention, taking into account the growing number of Contracting Parties to the Joint Convention, and with the view to identify and eliminate technical discrepancies between existing procedural documents of the Joint Convention. Excluded from the proposal are any changes to the articles of the Joint Convention itself. The proposal was that all recommendations arising from the Extraordinary Meeting can only be adopted by



consensus. Noting that Rule 42, Extraordinary Meetings para 2...” *The Secretariat shall prepare, in consultation with the President of the most recent Review Meeting, the provisional agenda for the Extraordinary Meeting, taking into account any specific matters referred to in the request for the meeting...*” The President assisted by the Secretariat agreed to develop the provisional agenda to be submitted to the Contracting Parties for their agreement within six months. Following these considerations a number of Contracting Parties emphasized the importance of any decisions at the Extraordinary Meeting being decided by consensus and that this would be their expectation. On this basis the proposal was agreed by consensus.

84. The Chairman’s Report of the Open Ended Working Group’ is provided as an Annex 1 to this Summary Report.

## 8. Conclusions

85. The Review Meeting identified that good progress is being made in many areas of spent fuel and radioactive waste safety. In adopting measures to increase safety challenges are often identified and the Joint Convention is increasingly creating awareness of these challenges and providing a forum for exchange of knowledge and experience in overcoming them.

86. Since the last review meeting, in May 2015, the number of contracting parties to the Joint Convention had increased from 69 and with the recent addition of Mexico the number of Contracting Parties are now 78. The president noted that as encouraging as this was, it must however be recognised that a number of IAEA Member States are not yet Contracting Parties to the Joint Convention. Included among these are some Contracting Parties to the Convention on Nuclear Safety and several States that have issued expressions of support for the Code of Conduct on the Safety and Security of Radioactive Sources. The President emphasized the need for Contracting Parties to collectively increase efforts to encourage those IAEA member states who are not yet Contracting Parties to the Joint Convention to become party to the Convention.

87. 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 and that measures to increase further participation are encouraged.

88. Three 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. The Convention recently entered into force for Mexico a short time before the Review Meeting and although a report was not written a presentation was made and Mexico participated in the Review Meeting.

89. IAEA 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 by some Contracting Parties to make the results of these missions publicly available. The voluntary nature of relevant national decisions was underlined.

90. The Contracting Parties decided by consensus to hold an Extraordinary Meeting prior to the Organisational Meeting of the Seventh Review Meeting.
91. The Contracting Parties agreed that National Reports for the next Review Meeting should, as appropriate, address the following:
- (i) Implementation of national strategies for spent fuel and radioactive waste management
  - (ii) Safety implications of long term management of spent fuel
  - (iii) Linking long term management and disposal of disused sealed radioactive sources.
  - (iv) Remediation of legacy sites and facilities
92. The Contracting Parties agreed to hold the Seventh Review Meeting of the Parties at IAEA Headquarters in Vienna, Austria, on 24 May to 4 June 2021 .

## **Annex 1**

### **Chairman's Report**

of the Meeting of the Open-Ended Working Group (OEWG)  
of the Sixth Review Meeting of the Joint Convention

May 22-25, 2018

#### **Introduction**

On 22 May 2018 at 18:00, the Vice President of the Sixth Review Meeting of the Joint Convention, Mr. Geoff Williams (Australia), opened the Open-Ended Working Group (OEWG) session as Chairman. He indicated that six proposals had been received and were to be discussed over the coming days. The Chair reminded the participants of his statements made in the opening plenary session and the process to be followed.

The agenda was updated daily and approved.

The working method as recalled by Mr. Williams was as follows:

- 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 28 May 2018.

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

#### **Proposal JC/RM6/OEWG/P01 submitted by USA, UK and Australia**

- Improving the format and summary of changes from the last National Report

#### **Proposal JC/RM6/OEWG/P02 submitted by USA**

- Roles and Responsibilities of the Co-ordinator during the Review Meeting

#### **Proposal JC/RM6/OEWG/P03 submitted by USA and United Kingdom**

- Country Group Officers Election Process during the Organizational Meeting

#### **Proposal JC/RM6/OEWG/P04 submitted by Australia**

- Setting a deadline for the submission of OEWG proposals to the Secretariat for consideration during a Review Meeting

#### **Proposal JC/RM6/OEWG/P05 submitted by Canada**

- To remove the requirement for Contracting Parties to submit one hard copy of their National Report to the Secretariat

#### **Proposal JC/RM6/OEWG/P06 by Canada**

- Request the IAEA Secretariat to share the same report on video conferencing options with the CPs to the Joint Convention as is already planned for the CPs to the CNS

#### **Conclusion**

The OEWG recommends that the Contracting Parties of the Sixth Review Meeting adopt its recommendations as set out in the Appendix to this Report.

## **Appendix**

### **Outcomes of the OEWG**

#### **Proposal JC/RM6/OEWG/P01 submitted by USA, UK and Australia**

- Improving the format and summary of changes from the last National Report

#### **Discussion**

The United Kingdom presented the proposal and explained that the intent was to assist in highlighting the changes with significance for safety, in order to facilitate the review process. It was pointed out that INFCIRC/604/Rev.3 states in Paragraph 4d that the report should, as appropriate, avoid duplication both within the report and between the report and reports prepared for previous Review Meetings under this Convention; It also states in Paragraph 15 that Section A should consist of general introductory remarks, a survey of the main safety issues and main themes of the report and references to any matters not covered elsewhere in the report that the Contracting Party wishes to raise. The Joint Convention has been in force since June 2001 and six review meetings have now been held, with much guidance remaining the same and other guidance having undergone modification after being reviewed at each meeting. It was considered that by highlighting updated guidance, the review process would be facilitated.

A number of Contracting Parties, whilst welcoming the intent to facilitate the review process, expressed concern that the proposal was somewhat too prescriptive and that the current guidance that allows flexibility in reporting to reflect national circumstances and to avoid duplication and keep the document at a reasonable size is considered adequate. It was also emphasized that the related INFCIRC documents provide guidance, while allowing some inherent discretion.

Based on the feedback, the proponents modified the proposal to read:

It is recommended that each national report should highlight the significant changes from the previous national report.

#### **Outcome of the discussions**

There was broad agreement on the merits of this proposal, but no consensus was able to be reached.

#### **Proposal JC/RM6/OEWG/P02 submitted by USA**

- Roles and Responsibilities of the Co-ordinator during the Review Meeting

#### **Discussion**

The United States presented the proposal to the meeting. It was explained that the proposal was based on feedback of experience from Country Group coordinators and was aimed at improving

the functioning of the review meetings. The OEWG meeting acknowledged that the current Country Group peer review meeting arrangements place significant demands on some officers during the review process, but a view was expressed that the proposal was perhaps too narrow and that a broader review of all roles may be preferable. It was also stated that flexibility is possible under the current guidance.

A modified version of the proposal was submitted for consideration which attracted broad support from those Contracting Parties present, but no consensus was able to be reached on either of the versions.

### **Outcome of the discussions**

No consensus was able to be reached on the proposal.

### **Proposal JC/RM6/OEWG/P03 submitted by USA and United Kingdom**

- Country Group Officers Election Process during the Organizational Meeting

### **Discussion**

The proposal was presented to the meeting by the United States. The proposal to modify INFCIRC/603/Rev.7 had arisen from difficulties experienced at the recent Organizational Meeting with the selection of Country Group officers in respect of both process clarity and fairness. The proposal was supported by a number of Contracting Parties, but reservations were also expressed over the legal coherence and clarity of the overall officer selection process and the need for a deeper analysis.

In view of the lack of consensus over revision to the guidelines, a revised proposal was put forward by the proponents to adopt an election process on a trial basis that involved randomly assigning candidates to unfilled vacancies and use of a secret ballot if there are more candidates available than vacancies. Various options for such a system were discussed, but consensus could not be reached. It was pointed out that Paragraph 11 of INFCIRC/603/Rev.7 on nominations and Paragraph 37 of INFCIRC/602/Rev.5 on elections are relevant.

Many of the Contracting Parties present stated the need for a documented election procedure for Country Group officers to be in place for the next Organizational Meeting to be held in 2020. It was stated that the election process should be determined by the Contracting Parties and captured by a credible, fair and documented procedure.

### **Outcome of the discussions**

There was no consensus on the proposal.

### **Proposal JC/RM6/OEWG/P04 submitted by Australia**

- Setting a deadline for the submission of OEWG proposals to the Secretariat for consideration during a Review Meeting

#### **Discussion**

Australia introduced the proposal to the meeting. A number of Contracting Parties expressed support for the proposal, suggesting that it would assist Contracting Parties with preparations for future meetings of the OEWG at Joint Convention Review Meetings. Whilst the spirit of the proposal was appreciated, there was concern that decisions to convene a meeting of the OEWG could only be taken during a plenary session of the Review Meeting, and that such a proposal could be considered preemptive. Various options were discussed to amend the text of the proposal and the modified proposal was submitted to include text in the Summary Report of the Review Meeting to indicate that Contracting Parties are encouraged to submit proposals not later than thirty days before the Review Meeting.

#### **Outcome of the discussions**

A consensus was reached on a recommendation to include the agreed text in the Summary Report.

#### **Recommendation**

That the following text be recorded in the Summary Report of the Review Meeting:

Contracting Parties interested in submitting proposals are encouraged to do so no later than thirty days before the start of the Review Meeting, to allow other Contracting Parties sufficient time to review proposals. This recommendation does not preclude the submission of proposals within thirty days before the start of the Review Meeting; or the submission of proposals during the Review Meeting; or changes to submitted proposals.

### **Proposal JC/RM6/OEWG/P05 submitted by Canada**

- Remove requirement for Contracting Parties to submit one hard copy of their National Report to the Secretariat

#### **Discussion**

The proposal was presented to the meeting by Canada and supported by a number of other Contracting Parties. There was general agreement on the benefits of flexibility offered to Contracting Parties on submitting electronic versions of their National Reports. Reservations were expressed over not having a hard copy document available as a record of compliance with Article 32 and possible legal implications that may arise. Reservations were also expressed about the need to change the existing guidance and it was stated that the use of electronic means of documentation handling is currently allowed under existing guidelines.

Canada submitted a revised proposal to the meeting to insert text into the Summary Report of the Joint Convention Review Meeting that was agreed by the OEWG.

## **Outcome of the discussions**

Consensus was reached that the submission of National Reports, in electronic form only, to the secure website is an acceptable practice, and on a recommendation to include the agreed text in the Summary Report.

## **Recommendation**

That the following text be recorded in the Summary Report of the Review Meeting:

The submission of National Reports in electronic form only to the secure website is an acceptable practice.

## **Proposal JC/RM6/OEWG/P06 by Canada**

- Request the IAEA Secretariat to share the same report on video conferencing options with the CPs to the Joint Convention as is already planned for the CPs to the CNS

## **Discussion**

The proposal to share the report on video conferencing options being developed for Contracting Parties to the CNS with the Contracting Parties to the Joint Convention was introduced to the meeting by Canada. There was general agreement that it would be informative to receive the report, although a number Contracting Parties expressed concerns over the implementation of such a video conference feature. There were also concerns over the text of the proposal regarding the purpose of sharing the report. Some discussion took place over the wording of the proposal and an amendment was agreed that simplified the proposal to the report being made available to Contracting Parties of the Joint Convention. The text as amended was agreed by the meeting.

In approving this request, it was stated that there was no opinion by the OEWG meeting as to the merits or otherwise of the underlying options.

## **Outcome of the discussions**

Consensus was reached on the following request to the Sixth Review Meeting of the Joint Convention.

## **Recommendation**

That the Sixth Review Meeting of the Joint Convention request the IAEA Secretariat to ask the CNS for approval to share the report to be presented to the CNS on its findings regarding video conferencing.



## **Discussions on addressing procedural process issues in a holistic manner**

The OEWG meeting, in its consideration of the agenda items, discussed various options to enable Contracting Parties to give broader consideration to the Joint Convention Guidelines.

During the discussions, a number of Contracting Parties raised concerns with the effectiveness of the existing peer review process and the rules and guidance that provide the procedural basis for this process. These concerns included issues related to selecting officers, the increasing number of Contracting Parties, assignments of countries to the country groups and balancing the need for having a viable cross section of countries in Country Groups, as well as having countries of comparable programmes in the same group.

In this discussion, many Contracting Parties emphasized that these issues should be addressed in a holistic fashion with sufficient review of all the existing documentation and lessons learnt from prior meetings and with a view to achieving greater efficiency and consistency in the peer review process. Several Contracting Parties suggested that an Extraordinary Meeting could be convened prior to the next Organizational Meeting where these issues could be addressed in a holistic fashion. These Contracting Parties suggested that in preparing for such an Extraordinary Meeting, Contracting Parties should review the existing documentation, identify issues where improvement could be made and if appropriate, develop proposals to change the existing documentation. Contracting Parties were encouraged to undertake preparation for such an Extraordinary Meeting, in the event it were to occur, as soon as possible and where appropriate, work together in developing proposals. Contracting Parties were also encouraged to provide their proposals to the Secretariat for distribution, no later than 90 days before such an Extraordinary Meeting.

It was clearly stated, with no objections raised, that any such review should be limited to relevant guidance and should exclude from its scope any changes to the articles of the Joint Convention itself.

## Annex 2

### Summary of Topical Session 1, 28 May 2018

#### **Recent Developments and Challenges in the Safe Management of Disused Sealed Radioactive Sources**

During the second week of the Review meeting, a topical session took place to discuss new developments and challenges regarding disused sealed radioactive sources (DSRS). Mr. Douglas Tonkay, Vice-President, served as Chairperson for the session with the support of David Bennett of the IAEA.

The management of DSRS has been a longstanding topic of interest and an overarching theme at previous Review meetings. Many Contracting Parties reported on DSRS programs and challenges in their National Reports and presentations throughout the Sixth Review Meeting.

Presentations during the topical session included overviews of IAEA guidance and activities as well as updates from a diverse group of Contracting Parties on their respective national programs. Presentations covered topics such as orphan source management, international assistance efforts by IAEA and Member States, and procedures for handling various categories of sources. The session concluded with a panel discussion and informative question and answer period.

Common themes that emerged during the presentations and discussion included:

- Permanent disposal as preferred end state for DSRS
- Lack of disposal availability (borehole, geologic) for high activity DSRS
- Importance of inventory tracking and documentation for security of DSRS
- Vulnerability of sources during transit
- Licensing and financial assurances for suppliers of sources
- Repatriation and availability of suitable transport containers
- Experiences with dismantling and reuse of DSRS
- IAEA Code of Conduct and Guidance as supporting principles for national strategies.

The panel discussion focused on lessons learned and challenges. Responses addressed development of legislation on DSRS, methods and timing for collecting funds for disposal, and challenges for DSRS management particularly in non-NPP countries with small programs.

Mr. Tonkay concluded that the topical session provided an excellent opportunity for Contracting Parties to share progress and ongoing challenges related to DSRS. The outcomes of the topical session discussion as well as the Country Group sessions at this Sixth Review Meeting have demonstrated a commitment to furthering the safety and security of DSRS around the world.

## Summary of Topical Session 2, 29 May 2018

### **General Safety Issues, Challenges and Public Acceptance Aspects Associated with the Storage and Disposal of Higher-Level Radioactive Waste**

During the second week of the Review meeting, a topical session took place to discuss safety, challenges, and public acceptance of higher-level radioactive waste (HLW) storage and disposal. Mr. Douglas Tonkay, Vice-President, served as Chairperson for the session with the support of Mr. Rob Campbell of the United Kingdom, Office of Nuclear Regulation.

The management of HLW has been a longstanding topic of interest at Review meetings. While geological disposal is widely accepted as the standard for HLW disposal, many issues continue to impact development of such facilities. In their National Reports and throughout the Sixth Review Meeting, many Contracting Parties reported on the challenges of establishing HLW disposal capability within their programs.

Presentations during the topical session included an overview of IAEA safety standards, phased approach to HLW management and interdependencies, and updates from Contracting Parties on their respective national programs for HLW management. Presentations covered topics such as disposal planning timelines, facility design and safety assessments. The session concluded with a panel discussion and an informative question and answer period.

Common themes that emerged during the presentations and discussion included:

- Initiation of disposal planning as soon as HLW activities identified
- Robust facility and package design for accommodating uncertainties
- Increased risks associated with indefinite or perpetual long-term storage
- Evolution of safety requirements over time and need for periodic safety reviews of facilities
- Importance of international feedback, peer reviews and lessons learned
- Commitment to avoiding undue burden on future generations
- Importance of political as well as public support
- Role of regulator
- Determining when analysis is “good enough;” progression from technical design and safety assessment to decision making
- Safety from technical versus social perspective.

The panel discussion focused on lessons learned and ongoing challenges. Responses addressed development of regulatory processes and methods of collaboration with local communities on site selection. Contracting Parties currently engaged in stakeholder coordination for the pre-licensing and licensing phases of disposal facilities shared experience and relevant examples.

Mr. Tonkay concluded that the topical session provided an excellent opportunity for Contracting Parties to share progress and ongoing challenges related to HLW. The outcomes of the topical session discussion as well as the Country Group sessions at this Sixth Review Meeting have demonstrated a commitment to furthering solutions for HLW management around the world.