Report of the Joint Session of the 38th NUSSC Meeting, the 37th RASSC Meeting and the 38th WASSC Meeting

26-27 November 2014
NRW1. OPENING OF THE MEETING

The meeting was opened by Mr D. Flory (DDG-NS) who welcomed the initiative of the three Safety Standards Committees meeting together and noted that this cooperation is highly beneficial for ensuring a high quality of safety standards. Mr Flory provided information on the Joint Convention, the 5th Review Meeting of which will be held in Vienna from 11 to 22 May 2015 and on the Convention on Nuclear Safety which agreed to convene a Diplomatic Conference in 2015 to consider a proposed amendment from Switzerland to the CNS text to address the design and construction of both existing and new nuclear power plants. The Diplomatic Conference will commence on Monday, 9 February 2015.

Referring to the 58th IAEA General Conference, Mr Flory updated the Committees on both the Senior Regulators’ Meeting and the Scientific Forum on radioactive waste management. As part of an overall theme of creating more adaptive and robust nuclear regulation, the Senior Regulators’ Meeting considered the role of the regulatory body in strengthening the implementation of the concept of defence in depth, and the regulatory needs and challenges in nuclear security. The Scientific Forum provided an opportunity to demonstrate the progress made in the management of radioactive waste and to highlight the importance of safety in developing radioactive waste management programmes. To further support the work in Member States, the Agency has recently launched a Radioactive Waste Management Integrated Review Service, called ARTEMIS, for the review of parts or entire radioactive waste management, decommissioning and remediation programmes.

Mr Flory also referred to the International Basic Safety Standards (the BSS), the cosponsored edition of which was published in July 2014. The BSS is widely used by Member States as a basis for their radiation protection regulation and this newest edition identifies a number of new radiation protection challenges. Further challenges have been raised by the Fukushima Daiichi accident in March 2011; the Agency is presently finalizing its Fukushima Report and expects to have it published in September 2015.

Finally, three important upcoming conferences were noted: the International Conference on Occupational Radiation Protection: Enhancing the Protection of Workers – Gaps, Challenges and Developments to be held on 1-5 December 2015 and the IAEA International Conference on Operational Safety to be held on 23 – 26 June 2015. In November 2016, the Department of Nuclear Safety and Security will be organizing an international conference on the safety of radioactive waste management. All three conferences will take place in Vienna.

Mr Flory noted the imminent departure from the Agency of Mr J. Lyons, Director of the Division of Nuclear Installation Safety and thanked him for his important contribution to the work of the Nuclear Safety Standards Committee and the other responsibilities within his remit.

In response, Mr Lyons recognized the important role of the Safety Standards Committees and thanked them for their continuous support and contribution to the development and review of safety standards. He referred to the IRRS missions to France, Korea, Netherlands, Slovenia (follow-up) and Vietnam (follow-up) that took place in 2015, as well as the OSART missions to France, the Russian Federation and the United States and a corporate OSART mission to Electricité de France (EDF).
NRW2. CHAIRMAN’S COMMENTS

The three Chairmen welcomed the members and observers of the Committees and noted that the interfaces between the three Committees have been strengthened as a result of the Fukushima Daiichi accident. They invited an open discussion in order to achieve the best possible consensus on each of the safety standards and to agree the appropriate next steps.

NRW3. ADOPTION OF THE AGENDA

The Agenda was adopted without change, noting that some flexibility would be required depending on the duration of discussion on each agenda item.

NRW4. ADMINISTRATIVE ARRANGEMENTS

The Scientific Secretaries drew attention to the location of the emergency exits, introduced the administrative support staff for the meeting and summarized the administrative arrangements. The meeting was informed that the proceedings would be recorded.

NRW5. GENERAL SAFETY STANDARDS ISSUES

NRW5.1 Report from the 36th Meeting of the Commission on Safety Standards

NRW5.2 Report from the Meeting of the Six Chairs

Mr D. Delattre reported on both items together, noting that the Chairman of the Nuclear Security Guidance Committee was unable to attend either meeting because of illness. During the meeting of the Chairs, the following issues were discussed:

- The interface between the three safety guides (DS427, DS432 and DS442) dealing with protection of the environment;
- The resolution of comments on the revised safety requirements Revision by amendment of GSR Part 1, NS-R-3, SSR-2/1, SSR-2/2 and GSR Part 4 (DS462);
- The DPP for the draft safety guide Human Factors Engineering in NPPs (DS492);
- The OIOS review of the intermediate Committee structure; and
- SPESS E on the planned feedback system for the revision of safety standards.

Mr Delattre also referred to the structure of the Nuclear Security Series where “Technical Guides” are developed as supporting documents. These are similar to Safety Reports and TEDCOCs in the Safety Standards Series and, as such, are not referred to the Safety Standards Committees. However, it was agreed that some Technical Guides contained material relevant to safety and it was agreed that such documents would be made available to the Committees for comment on a case-by-case basis.

Currently there are 124 published safety standards and a further 7 have been established and are awaiting publication. A further 49 safety standards, most of which are revisions of existing safety standards, are at varying stages of development. To date in 2014, eleven safety standards have been published. Regarding the General Safety Requirements, five have been published, one (GSR Part 7) will soon be submitted to the Board and the remaining one (GSR Part 2) will be submitted to the Committees in 2015 for final approval. Of the Specific Safety Requirements, four have been published and the remaining three are under development.

At its 36th Meeting, the CSS endorsed DS431, DS457 and DS462 (the revision by amendment of five Safety Requirements) and five DPPs (DS484, DS485, DS486, DS487 and DS488). The meeting also reviewed the CSS priorities for its fourth and fifth terms, the development of guidance on contaminated non-food commodities and the proposed IT platform for the future review, revision and
publication of safety standards. The OIOS review of the intermediate Committee structure was also discussed.

In response to a question from the floor, Mr Flory briefly summarized the situation regarding the OIOS review. This was carried out on behalf of the Director General earlier in 2014 using external experts. The review recommended the establishment of a separate Commission to oversee the work of the Nuclear Security Guidance Committee. This is different to the previous in-house discussions which considered one Commission overseeing development of both the Safety Standards Series and the Nuclear Security Series. The OIOS report was discussed at both the NSGC and CSS meetings, without much support in either for the OIOS proposal. The OIOS report will now be considered by the Director General.

Belgium asked for clarification of the changes made to the safety requirements Preparedness and Response for a Nuclear or Radiological Emergency (DS457) at the request of the United States. Mr Delattre stated that internal references in the annexes needed to be changed to avoid misinterpretation of the requirements on the protection of pregnant women. This did not represent a substantive change to the requirements themselves and was agreed to by the Chairman of RASSC.

**NRW5.3 Interface between Safety and Security**

Mr Delattre reported on the recent decisions of the Interface Group. The safety guides Storage of Spent Nuclear Fuel (DS489 – revision of SSG-15) and Deterministic Safety Analysis for Nuclear Power Plants (DS491 – revision of SSG-2) have both been identified as interface documents with NUSSC and WASSC and NUSSC, RASSC and WASSC respectively. The safety guides Seismic Design and Qualification for Nuclear Power Plants (DS490 - revision of NS-G-1.6) and Human Factors Engineering in Nuclear Power Plants (DS492) are not considered to have an interface with security. However, it was agreed to provide the DPP for DS492 to the NSGC for information in order to confirm that there is no interface.


Mr Delattre reported on work to date to develop the new IT platform for future review, revision and publication of safety standards and nuclear security series documents. The need for such a management tool is highlighted by the fact that most of the safety standards currently under development are revisions of existing safety standards and the changes in one standard can impact on parallel requirements or guidance in one or more other standards. For this reason, it is envisaged that safety standards will not be regarded as “stand alone” documents but, instead, as a suite of safety standards for which those addressing similar issues might be revised in parallel in the future.

So far, all existing safety standards have been reviewed and 575 overarching requirements, covering 394 separate topics, have been identified. Each overarching requirement is the basic “module” of the IT platform; these have been entered in the database and links have been established with the supporting guidance. Thus, for each overarching requirement, there will be online links to related requirements and to guidance material across the entire suite of safety standards. The system is a tool for the Secretariat but is being developed to also allow external users to submit online comment and feedback on safety standards. Once the need to revise a safety standard is identified and justified, the Secretariat will develop a DPP and the current process for development, approval and establishment of a safety standard process will be implemented. One key difference compared with the current approach is that the safety standards will be revised on a thematic basis and those aspects of a safety standard that do not need to be revised will not be changed.

It is planned to establish the IT Platform by the end of 2014 and to undertake further testing in 2015, subject to the availability of funding.

The Committees voiced strong support for the concept and the work carried out to date. A number of comments were made in relation to ensuring that the platform is user-friendly as this will encourage greater participation by external users. The ability to obtain quality feedback was seen as challenging.
and the Secretariat was urged to make maximum use of external reviews, for example IRRS and other missions.

Some concerns were expressed regarding the maintenance of the glossary, where the same term might have a different meaning in different safety standards and between safety standards and documents in the Nuclear Security Series. Mr Delattre informed the Committees that the revised edition of the safety glossary was being finalized and would be available online in early 2015. He assured them that the IT Platform would assist with the ongoing management of the glossary by ensuring that only the most up-to-date definition is used when revising existing safety standards.

NRW6. SAFETY STANDARDS FOR APPROVAL

NRW6.1 Draft Safety Guide: Occupational Radiation Protection (DS453)

Mr P. Haridasan introduced the draft safety guide, which combines, revises and replaces five existing safety guides, namely Occupational Radiation Protection (RS-G-1.1), Assessment of Occupational Exposure due to Intakes of Radionuclides (RS-G-1.2), Assessment of Occupational Exposure due to External Sources of Radiation (RS-G-1.3), Occupational Radiation Protection in the Mining and Processing Raw of Materials (RS-G-1.6) and The Management System for Technical Services in Radiation Safety (GS-G-3.2).

The revised safety guide will provide updated guidance on occupational radiation protection in planned, emergency and existing exposure situations as defined in the BSS and new guidance has been developed for some sectors such as itinerant workers and female workers during and after pregnancy. The text has been developed in close cooperation with the ILO, which is a potential cosponsor.

At the time of Member State consultation a total of 535 comments were received from 19 Member States and three International Organizations. Many were editorial – 249 were accepted in full or in a modified version and 286 were rejected. Changes were proposed in relation to the table on the restriction of dose for emergency workers, which also appeared in the draft safety requirements Preparedness and Response for a Nuclear or Radiological Emergency (DS457). It was also recommended that about 20 paragraphs in the draft of DS453 dealing with remediation be relocated to the safety guide Remediation Process for Areas with Residual Radioactive Material (DS468). The first issue was discussed internally and with the ILO and the text was amended in line with the comments received. Agreement was also reached on transferring some of the text to DS468 and, in addition, para. 5.40 was rewritten to focus solely on the occupational exposure aspects of remediation.

When the revised text was posted for review by the Committees, 20 comments in total were received from one Member State and one International Organization. All comments were satisfactorily resolved.

Some members of the Committees questioned the guidance on declaration of pregnancy. It was noted that the situation is different in different Member States – in some it is possible to legally oblige notification of pregnancy, while in others it is not. Mr Haridasan indicated that this issue had been discussed in depth in a Consultants Meeting; the current wording recognizes that the legal position varies between Member States and is in line with the ILO position. Following discussion, it was agreed that the wording in the draft safety guide would remain unchanged.

The Committees approved DS453 for submission to the CSS for endorsement.

Action: The Secretariat to submit DS453 to the CSS for endorsement.

NRW6.2 Draft Safety Guide: Radiation Protection of the Public and the Environment (DS432)

Mr T. Boal introduced the document, which is one of the three general safety guides supporting implementation of the BSS. The draft safety guide applies to all facilities and all activities and is intended to clarify the principles of protection of members of the public and the environment against radiation exposure in planned, emergency and existing exposure situations. The guidance is intended
to underpin the development of facility and activity specific Safety Guides and other relevant documents dealing with this area of protection to ensure a consistent approach. The text was developed in cooperation with UNEP, which participated in most of the Consultant Meetings and is a potential cosponsor.

DS432 was posted on the Committees’ website on 1 October 2014 and 126 comments were received from six Member States and two International Organizations. Most of the comments were of an editorial nature and were accepted. Comments that were not accepted related to changing text quoted from the BSS and to deleting Appendix 1. Mr Boal noted that additional comments relating to terms used in the section on protection of the environment may require further review by the Secretariat, depending in part on the discussion on the draft safety guides A General Framework for Radiological Environmental Impact Assessment and Protection of the Public (DS427) and Regulatory Control of Radioactive Discharges to the Environment from Facilities and Activities (DS442) (see agenda items NRW6.3 and NRW6.4).

The Committees considered that the text on radiation protection of the environment should be revised to be in line with DS427. There was also support for modifying the text in order to clarify the relationship between the regulatory body and the operator/licensee in the setting of dose constraints and dose limits for the public in planned exposure situations. The importance of self-help processes in the management of existing exposure situations also needs greater emphasis.

There were some concerns that criteria for protection of the environment were being introduced in DS432 without being firmly grounded in the BSS. UNEP welcomed the attention being given by the Committees to this issue and noted that the inclusion of requirements on protection of the environment in the BSS was an important development. The Committees agreed with UNEP that guidance on how the ambitions in the BSS should be interpreted was welcome, recognizing that in due course the BSS requirements could be strengthened.

Overall, the Committees considered that the document had a number of repetitions and unresolved issues. As such, it required further work, in particular to provide greater detail and make it fully consistent with the other two documents dealing with protection of the environment. Nevertheless, the Committees supported submitting the document to Member States for comment in order to get a wider range of views on the content and advised that all three documents – DS427, DS432 and DS442 – should only be submitted to Member States jointly.

A separate informal discussion took place between the three Chairs, the three Scientific Secretaries and the technical officers to discuss the further development of DS427, DS432 and DS442. It was proposed that all three documents would be reviewed and updated in line with comments received and be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States. In order for the three draft safety guides to be available for consideration by the Committees at their meeting in November 2014, the drafts would need to be cleared by the Chairmen in early March 2015. This was agreed by the Committees.

**Action:** The Secretariat to revise DS432 in line with the comments received and to make it fully consistent with both DS427 and DS442. Following revision, the document should be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States for comment.


Mr D. Telleria introduced the draft Safety Guide DS427, the aim of which is to present a general framework for prospective radiological environmental impact assessment (REIA) and protection of the public. This document, together with DS432 and DS442, is part of the set of Safety Guides on protection of the public and the environment. The draft document provides recommendations and guidance to perform the above mentioned assessments to estimate and control the radiological effects on the public and on the environment using defined criteria.
Mr Telleria noted the objectives of his intervention, focused to present the consideration of the comments on DS427 (November 2014 version) by the Secretariat, to discuss the essential comments not accepted by the Secretariat and to seek the advice of the SSCs on those matters, and to discuss the way forward.

The comments received on this Safety Guide (April 2014 version) were 269 from RASSC, WASSC and NUSSC, of which 198 comments were accepted and provided useful input to the version distributed for the SSCs meeting in November 2014.

The version dated November 2014 received 290 comments from SSC members, and 70% of them were accepted. The Technical Officer noted that the consideration of these comments will considerably improve the document. The main types of comments were on:

- Increased scope definition;
- Improved interrelation with other Safety Standards;
- Increase simplicity/clarity to the sections on potential exposures and flora and fauna;
- Reduction of superfluous information;
- Less redundancy; and
- Terminology, editorial and style improvement.

Mr Williams, Chair of WASSC, noted that the reason for having separate discussions with WASSC on this document was because of the complexity of the topic, and it was considered important to discuss topics in detail with WASSC, and not spend half a day of discussion on these documents at the joint sessions. The above-mentioned issues were clarified and the WASSC views were not intended to override the decision of the three committees regarding the changes to be introduced to the documents.

The SSCs members recognized that the document has been considerably improved, notwithstanding this, a few remaining issues still needed to be addressed. The Committees discussed the following topics:

- Structure of the document to denote differences between small and large facilities, and preliminary versus detailed Safety Assessments, as those differences might be seen as non-consistencies;
- Relationship between optimization of radiation protection measures and REIA;
- Selection of the Representative Person;
- Application of graded approaches;
- Improve wording on the process of Safety Assessment supporting licensing decisions

The Committees concluded that it was important to keep the document at a higher level to give guidance, but not solutions to the problems, as this would imply a standard of prescriptive nature, creating further problems. It was also recognized there was a need to keep flexibility, which would imply incorporating improvements to the wording. Criteria related to environmental protection were to be transferred to an annex.

Consistent with the decision taken on DS432, it was agreed that DS427 would be reviewed and updated in line with comments received and be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States. In order for the three draft safety guides to be available for consideration by the Committees at their meeting in November 2014, the drafts would need to be cleared by the Chairmen in early March 2015.

**Action:** The Secretariat to revise DS427 in line with the comments received and to make it fully consistent with both DS432 and DS442. Following revision, the document should be provided to
the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States for comment.

**NRW6.4 Draft Safety Guide: Regulatory Control of Radioactive Discharges to the Environment from Facilities and Activities, DS442**

Mr Telleria introduced the draft Safety Guide on Regulatory Control of Radioactive Discharges to the Environment from Facilities and Activities for discussion prior to approval by the SSCs for submission to the CSS for endorsement for publication. This document is a revision of the existing safety guide WS-G2.3, on Regulatory Control of Radioactive Discharges to the Environment.

Mr Telleria informed the Committees that the objective of the presentation was to present the consideration given by the Secretariat to the comments from SSCs members to DS442 (November 2014 version), to discuss the main technical issues and the next steps.

221 comments were received (April 2014 version) from RASSC, WASSC and NUSSC, of which 209 comments (90%) were accepted and nine were being considered. There were no essential comments and approximately 40% of the comments were of an editorial nature and 60% for clarification purposes.

The technical issues commented on concerned:

- The contribution of Tritium and C-14 to the effective committed dose;
- Ranges of dose constraint, clarification of constraint versus optimization;
- Use of the concept of representative person, as part of the methodology versus public protection;
- Dose limit to the lens of the eye of members of the public;
- Releases during and after decommissioning, new authorization for discharges during decommissioning;
- Discharges from NORM facilities;
- Argumentation on the justification of releases;
- Avoidance of quoting the BSS, just reference it, and
- References to other Safety Guides.

Mr Telleria then went on to discuss the need and options for setting a range for public dose constraints, noting that no specific numerical values are given in the International BSS. The possible range of values was from 10 µSv (below which exemption from regulatory control applies) up to 1 mSv (the dose limit for members of the public).

Following extensive discussion, the Committees agreed that public dose constraints needed to be established on a case-by-case basis and the safety guide should discuss the criteria to be applied in establishing numerical values. A value of 300 µSv should not be considered as appropriate for all facilities. Specific mention was made of the need to address multiple installation sites and mining and milling activities, for which the appropriate value of public dose constraint might be very different to that for a NPP.

The Committees concluded that, before submission to Member States for comment, DS442 should be improved to better address NORM, tritium and carbon-14 discharges, and the establishment and use of dose constraints. Consistent with the decision taken on DS432, it was agreed that DS442 would be reviewed and updated in line with comments received and be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States. In order for the three draft safety guides to be available for consideration by the Committees at their meeting in November 2014, the drafts would need to be cleared by the Chairmen in early March 2015.
**Action:** The Secretariat to revise DS442 in line with the comments received and to make it fully consistent with both DS432 and DS427. Following revision, the document should be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States for comment.


Ms M. Kinker introduced the draft Safety Guide on *Predisposal Management of Radioactive Waste (RW) from Nuclear Fuel Cycle Facilities (NFCFs)* for discussion prior to approval by the SSCs for submission to the CSS for endorsement for publication.

Ms Kinker began with the background of DS447 and DS448 (draft Safety Guide on the *Predisposal Management of RW from Nuclear Reactors*), as these documents shared a common history of development. She explained that DS447 and DS448 were revisions of WS-G-2.5, *Safety Guide on the Predisposal Management of Low and Intermediate Level Radioactive Waste*; and WS-G-2.6, *Safety Guide on the Predisposal Management of High Level Radioactive Waste*. She explained that, consistent with the Roadmap for the Long Term Structure of the Safety Standards, and addressing the need for a holistic plan that considered the interdependences and optimization in the management of RW (from generation up to disposal), it was proposed that the Secretariat develop these thematic Safety Guides into facility-specific documents that addressed “general” safety matters and also taking into consideration facility-specific details.

The objective of DS447 is to provide operators, regulators and government bodies with recommendations on the predisposal management of RW at NFCFs, including centralized facilities, taking into consideration the need for a holistic and optimized RW management programme at the design stage; recently gained knowledge and experience; the lifecycle of the facility (siting to decommissioning), waste categorization and acceptance criteria, the safety case and supporting safety assessment, and regulatory processes. The scope of the document is focused on the predisposal management of RW from NFCFs, including RW generated from uranium conversion (natural and irradiated), uranium enrichment (centrifuge), uranium/mixed oxide fuel fabrication, spent fuel reprocessing, and centralized RW management facilities.

The DPP for DS447 was approved by the CSS in October 2010, after which a number of consultancies were held to develop the document, with the first draft being approved in July 2013 by WASSC 35 for submission to the Member States for review. It was noted that 366 comments were posted by 16 Member States (Afghanistan, Australia, Canada, Finland, France, Germany, India, Indonesia, Iraq, Japan, Russian Federation, Sweden, Switzerland, Ukraine, United Kingdom, and the United States of America) and one international observer (European Nuclear Installations Safety Standards Initiative, ENISS). The Secretariat held consultancies to address Member State comments, after which the documents were posted for comments by NSGC, NUSSC, RASSC, and WASSC.

Ms Kinker noted that the majority (88%) of comments received from the Member States were accepted either in whole or with some modification (12% were rejected); the majority (89%) of comments adding clarification and thus improving the quality of the document; another 6% focussed on RW management strategies and management systems (responsibilities of relevant parties); and the remaining 5% of the Member States comments related to the approach, structure and scope of the document. The Secretariat reported on the work of the consultancies held in 2014 whose efforts were aimed to improve consistency and comprehensiveness of sections covering general safety matters; to expand the sections covering facility-specific details; to clarify responsibilities and interfaces between the RW management organizations, RW owners, license holders, and contractors; to clarify RW management strategies including the use of waste classification schemes and the mixing or blending of waste; and to remove references to the term “design extension condition”, which has not yet officially been defined for RW management facilities or for NFCFs (currently established in SSR-2/1 for design of NPPs but not in GSR Part 5 for RW management facilities or in NS-R-5 for NFCFs).

Ms Kinker moved on to the 144 comments received from the SSCs: one comment received from the NSGC (France); four comments received from NUSSC (Japan and Ukraine); 11 comments received...
from WASSC/RASSC/NUSSC (Finland and Korea); and 128 comments from WASSC (ENISS, Germany, Japan, Russian Federation, South Africa, and the United States of America).

She reported on her meeting with NSGC6 (Item 5.1.a of the NSGC agenda) and the discussion related to the comment received from the NSGC that, in accordance with the IAEA definitions of the Nuclear Security Series and the Safety Standards, Requirements 5 and 21 of GSR Part 5 belonged to the Nuclear Securities Series. As GSR Part 5 is currently not under review and the comment was not viewed to require immediate resolution, the Secretariat proposed to forward the comment to WASSC for consideration during future revision. She then accepted a subsequent request to add reference to the Nuclear Security Fundamentals. NSGC6 agreed with the proposed resolution and cleared the document for submission to the SSCs for approval.

Ms Kinker recalled her discussion with WASSC 38, with whom she summarized the resolution of comments from the Member States, the SSCs and the Technical Editor. Of the 144 comments received from the SSCs, she indicated that the majority (97%) were accepted either in whole or with some modification. She recalled discussions with WASSC which focused on comments which were rejected and comments which required further discussion with the Committee Member: these included a general comment to combine DS447 and DS448 and to check the document for consistency in wording and completeness (no change was proposed on the basis of the original approach to the documents and on the basis of improvements already performed); a general comment to regroup specific guidance related to waste without a disposal path into a new chapter (further discussion was requested with the SSC member; no change was proposed on the grounds that such extensive change was not justifiable at this stage in the development of the document); a request to examine the need for additional changes to accommodate SNF encapsulation plants that will be constructed and used in the future (further discussion was requested with the SSC member; no change was proposed on the grounds that this should be considered in the next revision of the document); and a comment to delete Appendix 7 Management Flow diagram for solid RW as the diagram was confused (further discussion was requested with the SSC members; after corrections were made to the diagram it was agreed it could remain in the document). She also informed on comments for consideration by the Technical Editor (whose review was performed in parallel with the review by the SSCs), which included a request to review the use of terminology (e.g. waste acceptance requirements versus waste acceptance criteria) and to reconfirm those paragraphs referring to doses and radiation protection, discharges, and decommissioning with the relevant Secretariat of Safety Standards currently under development or recently approved. She concluded with WASSC’s agreement with the proposed resolutions and with the document being forwarded to the Joint Meeting of the SSCs for approval, pending resolution of unresolved issues (resolved as indicated in parentheses above). The Joint Meeting of NUSSC/RASSC/WASSC agreed with the resolution of the Member State and SSCs comments, and agreed that the Secretariat could submit the document to the CSS for approval for publication.

**Action:** The Secretariat to submit DS447 to the CSS for endorsement.


Ms M. Kinker introduced the draft Safety Guide on *Predisposal Management of Radioactive Waste from Nuclear Reactors, DS448* for discussion prior to approval for submission to the CSS for endorsement for publication. She recalled the common background (with DS447) and rationale for the development of the document.

The objective of DS448 is to provide operators, regulators and government bodies with recommendations on the predisposal management of RW at Nuclear Power Plants and Nuclear Research Reactors, taking into consideration the need for a holistic and optimized RW management programme at the design stage; recently gained knowledge and experience; interdependencies in the lifecycle of the facility, waste categorization and acceptance criteria, the safety case and supporting safety assessment, and regulatory processes. She recalled that the DPP was approved by the CSS in October 2010, with the first draft being approved in July 2013 by WASSC35 for submission to Member States for review.
She recalled that 373 comments were posted by 17 Member States (Afghanistan, Australia, Belgium, Canada, Finland, France, Germany, Hungary, Indonesia, Iraq, Japan, Russian Federation, Sweden, Turkey, Ukraine, United Kingdom, and the United States of America – who also requested that their general comments on DS447 be considered in this document) and one international observer (ENISS). She noted that the majority (89%) of comments received by the MSs were accepted either in whole or with some modification (11% were rejected); the majority (87%) of comments contributed to improve the clarity of the document; another 6% focussed on RW management strategies and management systems (responsibilities of relevant parties); and the remaining 7% related to the approach, structure and scope of the document. In addition to general comments mentioned for DS447, she noted a general comment that some key words or phrases given in GSR Part 3 and GSR Part 5 are slightly different from the Safety Glossary definitions e.g. waste acceptance criteria versus waste acceptance requirements, waste generator versus waste management organization (Secretariat agreeing with the comment that the safety standards are prevailing on the Safety Glossary and to ensure consistency in terminology), and to clarify the categorization of spent ion exchange resins as both solid and liquid RW.

Ms Kinker moved on to the 140 comments received from the NSGC and the SSCs: two comments received from the NSGC (France); five comments received from NUSSC (Japan and Ukraine); 15 comments received from WASSC/RASSC/NUSSC (Finland and Korea); and 118 comments from WASSC (European Commission, ENISS, Germany, Japan, Russian Federation, and the United States of America). She reported on her meeting with NSGC6 (Item 5.1.b of the NSGC agenda) and the discussion related to the two comments received from the NSGC; one general comment as discussed for DS447 related to Requirements 5 and 21 of GSR Part 5 (resolution as discussed for DS447), and another specific editorial comment (accepted by the Secretariat). NSGC6 agreed with her proposed resolution and cleared the document for submission to the SSCs for endorsement.

She recalled her discussion with WASSC 38 (Item W.7.3 of the WASSC agenda), and the discussions related to the resolution of comments from the Member States, the NSGC and the SSCs. Of the 144 comments received from the SSCs, she indicated that the majority (98%) were accepted either in whole or with some modification. She recalled WASSC discussions requesting to add details related to thermal treatment (rejected as only incineration was described in the document) and management of spent sealed sources (proposed additional text accepted); to ensure consistency in consideration of spent fuel declared as RW (proposed revised text accepted); a comment to change the title of the document (discussions below); and a subsequent request to ensure coherency with DS452 in relation to discussion on public involvement (text proposed by the Secretariat was reviewed but it was decided that the additional text was not appropriate as DS448 covers the entire lifecycle of the facilities and not only decommissioning activities).

Regarding the proposed change to the title (original comment by Japan), the Secretariat shared discussions held with WASSC. Noting the rationale for the original comment which considered the term Nuclear Reactors to be ambiguous, the Secretariat proposed to change to the title to “Nuclear Power Plants and Research Reactors” on the basis of coherency with the objectives and scope of the document. During the subsequent discussion with the Joint meeting, the Secretariat noted that, while the term “nuclear reactor” is not defined in the Safety Glossary, it is generally understood (and specified in the DPP and in the scope of the document) to include NPPs and RRs; and while many safety provisions would be applicable to other types of reactors, the scope of the safety guide was not intended to address transportable reactors (e.g. ships, icebreakers, submarines, etc).

WASSC was also informed on comments for consideration by the Technical Editor (whose review was performed in parallel with review by the SSCs), which included general comments as discussed for DS447, and to consider whether Appendices providing examples from a particular Member States would be better as annexes, as well as a request to consider to change the title to “Nuclear Power Plants and Research Reactors” (with subsequent clarification footnote added in the document; noting discussions above). She concluded with WASSC’s agreement with the proposed resolutions and with the document being forwarded to the Joint Meeting of the SSCs for approval, pending resolution of unresolved issues. The Joint Meeting of NUSSC/RASSC/WASSC agreed with the resolution of
Member State and SSC comments and with the Secretariat’s proposal to submit the document to the CSS for approval for publication.

**Action:** The Secretariat to submit DS448 to the CSS for endorsement.

**NRW 6.7 Draft Safety Requirements: Safety of Research Reactors (DS476)**

The document was presented to the Committees by Mr D. Sears. The DPP was approved at the beginning of 2014 and it aims at updating NS-R-4 (2005). A first draft was prepared during two consultancy meetings. Prior to the joint session of NUSSC, RASSC and WASSC, nearly 647 comments were received. Two thirds were widely accepted by the Secretariat. Shortly before the meeting, the table introducing the actions taken on the comments received was posted on the Committees’ website. NSGC gave its consent for submission of the document to Member States’ consultation.

During the joint session of NUSSC, RASSC and WASSC, the discussions focused on:

- Redundancies between DS476 and requirements already outlined in GS-R-3 and NS-R-3. The Secretariat pointed out that new requirements were not added and the text showed to the reader why the requirements were important. It led to a few more pages only. The Committee members considered that the current situation at this stage of the development of DS476 was reasonable;

- The content of the safety report and the safety analysis: the Secretariat emphasized that several requirements were dealing with the content of safety reports on research reactors because of experience feedback from missions;

- The requirements which were only concerned with major modifications of the installation, and not all modifications (paragraphs 6.114 and 6.115). The Secretariat explained that for research reactors, experiments or modifications are categorized into safety classes depending on whether they have a major effect on safety, significant effect on safety, minor effect on safety or no effect on safety. The text refers to the categorization process;

- The consistency between requirements stated in DS476 and those stated in SSR-2/1 and SSR-2/2, when specificities of research reactors do not justify a distinction;

- The fact that some paragraphs in DS476 would rather be a matter for a safety guide. The Secretariat indicated that guidance was removed in the resolution of comments;

- The consideration of design extension conditions (DEC) (Requirement 22). To date, only a few, or even no reactor, possess an analysis of DEC. Paragraph 6.68 is a subject of controversy (“The means of confinement shall be able to withstand extreme scenarios that result in unacceptable radiological release”), as it seems surprising that a regulatory body would accept unacceptable consequences. The Secretariat suggested the deletion of paragraph 6.68. Moreover, some paragraphs should rather be covered in a safety guide, as, should they be similar to what was provided for regarding nuclear power plants, they relate to new practices.

- Some requirements going beyond SSR-2/2, for example in paragraph 7.5: the paragraph will be modified so that authorizations to engage in the position of reactor manager, shift supervisors or reactor operators could be issued by the regulatory body or the operating organization;

- The consistency of DS476 with other requirements on decommissioning and waste management. The IAEA noted that DS476 only addresses preparation for decommissioning and not decommissioning itself. The IAEA also stressed that paragraph 8.3(b) was deleted. The IAEA pointed out that GSR Part 5 and GSR Part 6 also apply to research reactors, without the need for a reminder.
**Action:** The Secretariat to modify DS476 in line with the comments received and to submit to Member States for comment.

**NRW7. DOCUMENT PREPARATION PROFILE FOR APPROVAL**

**NRW7.1 Draft Safety Guide: Deterministic Safety Analysis for Nuclear Power Plants (revision of SSG-2), DS491**

The document was presented to the audience by Mr P. Villalibre. The purpose of this DPP is the update of SSG-2 (2009). This update aims at taking into account the publication of SSR-2/1 in 2012 and its current revision (introducing the concept of DEC and corresponding requirements) and the feedback experience and lessons learned from the Fukushima Daiichi NPP accident and from other sources.

About 30 comments were received and most of them were accepted. The Secretariat went over two rejected comments:

- The issues of engineering aspects important to safety assessment and safety verification of any specific NPP design (reference made to its applicability to the deterministic safety analysis, which will be covered in the revision);
- The inclusion of NS-R-4 in the list of interfaces, in particular to allow the use of DS491 for the deterministic analysis of research reactors.

Prior to the joint session of NUSSC, RASSC and WASSC, an updated version of the DPP was posted on the Committees’ website, as well as the table introducing the follow-up to the comments received.

**Action:** The Secretariat to submit the DPP for DS491 to the CSS for endorsement.

**NRW8. SECURITY SERIES DOCUMENTS FOR CLEARANCE**

**NRW8.1 Draft Implementing Guide: Sustaining a Nuclear Security Regime (NST020)**

Ms R. Evans gave an explanation of the document. The objective of this document is to provide guidance to Member States, competent authorities authorized persons and other organizations with nuclear security responsibilities on the principles and actions to sustain a nuclear security regime. Sustainability is the set of principles and implementing actions incorporated into the nuclear security regime that support its continuing effectiveness. The DPP was approved in 2013. Prior to the joint meeting of NUSSC, RASSC, WASSC and the NSGC meeting, about 30 comments were received and most of them were accepted by the Secretariat. The NSGC gave its consent for the document to be submitted to Member States for comment.

**Action:** The Secretariat to submit NST020 to Member States for comment.

**NRW8.2 Draft Implementing Guide: Preventive and Protective Measures against Insider Threats (NST041)**

The explanation of the document was provided by Mr N. Pope.

Prior to the joint meeting and the meeting of the NSGC, about 80 comments were received, most of which were accepted by the Secretariat. About 20 comments came from NUSSC, RASSC and WASSC. The comments rejected were related to terminology issues, e.g. “nuclear material”. The Committee discussed the rule of “binomial” (2 persons), as well as its compatibility with radiation protection rules, including for places where the radiation is high. The Secretariat stressed that it would remind about the applicability of radiation protection rules in NST041.

NUSSC, RASSC and WASSC once again reminded the participants of the importance of progressing towards a shared terminology between Safety Standards and Nuclear Security Series publications.
**Action:** The Secretariat to submit NST041 to Member States for comment.

**NRW9. DOCUMENTS FOR DISCUSSION**

**NRW9.1  DPP Implementing Guide: Security during the Lifetime of a Nuclear Facility (NST051)**

The DPP was presented to the Committees by Mr I. Barraclough. The document was initially intended as a Technical Guidance document (the equivalent of a Safety Report). However, regarding the content, it was decided to reclassify the document as an Implementing Guide. This change of status was decided by the NSGC during its meeting in November 2014. The DPP will be submitted to the Interface Group and it is likely to be considered as an Interface Document. Future drafts of NST051 (at Step 7 and Step 11) will therefore probably be submitted for review at least by NUSSC and WASSC, and possibly the other safety standards committees, depending on the Interface Group’s decision.

The document will provide guidance on implementing recommendations in NSS No. 13 to develop and implement comprehensive nuclear security at all stages of the lifetime of a facility. The scope of this guide is for all phases of the facility lifetime from concept to decommissioning and it is intended to be applicable to all nuclear facilities including NPPs.

During the joint session of NUSSC, RASSC and WASSC, discussions focused on:
- The scope of the installations covered by the document (what about storage facilities for radioactive waste?);
- Grouping together decommissioning and release from regulatory control.

**NRW9.2  Fukushima Report**

Mr G. Caruso gave a presentation on the Fukushima Report and reminded the Committees of the twelve main actions of the Nuclear Safety Action Plan. Amongst these, Action No. 6 is concerned with the update of safety standards, while Action No. 11 deals with communication.

Mr Caruso expounded the progress made on the drafting of the report and reminded the Committees of the organization established to draft and authenticate the report (about 180 persons contributed to the drafting of the report and more than 700 reports of various origins were considered).

The report has more than 1 500 pages and includes a part which is understandable for decision makers and the general public (about 50 pages) and five scientific/technical chapters:
- Chapter 1: description and context of the accident;
- Chapter 2: safety assessment;
- Chapter 3: emergency preparedness and response;
- Chapter 4: radiological consequences;
- Chapter 5: post-accident recovery.

The official publication of the report is planned for September 2015 during the 59th General Conference of the IAEA.

**During the joint session of NUSSC, RASSC and WASSC, a few remarks were made about:**
- How the lessons learned from a nuclear accident having occurred in a nuclear power plant could be used for other types of nuclear installations and whether the IAEA will orientate the conclusions of the Fukushima Report towards one type of installation or another. The Secretariat stressed its preference for general conclusions;
- The scope of chapter 4 (public and workers) and chapter 5 (on and off-site). Mr Caruso emphasized that chapter 4 was effectively covering consequences on the public and workers. In contrast, chapter 5 addresses the radiological aspects, socio-economic aspects being little broached;
In chapter 2, the assessment of the source term was made. Mr Caruso underscored that the Secretariat had not determined itself a source term, but had used five source terms otherwise calculated;

- The critical analysis of the actions of the IAEA during the accident, especially as regards the dissemination of information;
- The management of contaminated water on the Fukushima site and the environmental monitoring at sea.

NRW10. CLOSING OF THE MEETING

NRW10.1 Any other business
No particular additional matter was raised at the end of the meeting.

NRW10.2 Conclusions of the Joint Session
The Chairmen of NUSSC, RASSC and WASSC emphasized that the joint session allowed the three Committees to work together and to better understand each other’s comments. It also allowed the committees’ members to adopt a common position on several documents and to speed up the preparation process of safety standards. The Committee members were ready to have another joint session in the future.

As has been the practice in RASSC and WASSC for a few years, the joint meeting was ‘paperless’. It should however be ensured that the presentations are uploaded to the Committees’ website.

NRW10.3 Closing
The Chairmen thanked all NUSSC, RASSC and WASSC members for their participation in the joint session and closed the meeting.
Annex I
List of Actions

**Action 1:** The Secretariat to submit DS453 to the CSS for endorsement. (agenda item NRW2.1)

**Action 2:** The Secretariat to revise DS432 in line with the comments received and to make it fully consistent with both DS427 and DS442. Following revision, the document should be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States for comment. (agenda item NRW6.2)

**Action 3:** The Secretariat to revise DS427 in line with the comments received and to make it fully consistent with both DS432 and DS442. Following revision, the document should be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States for comment. (agenda item NRW6.3)

**Action 4:** The Secretariat to revise DS442 in line with the comments received and to make it fully consistent with both DS432 and DS427. Following revision, the document should be provided to the Chairmen of NUSSC, RASSC and WASSC for clearance prior to submission to Member States for comment. (agenda item NRW6.4)

**Action 5:** The Secretariat to submit DS447 to the CSS for endorsement. (agenda item NRW6.5)

**Action 6:** The Secretariat to submit DS448 to the CSS for endorsement. (agenda item NRW6.6)

**Action 7:** The Secretariat to modify DS476 in line with the comments received and to submit to Member States for comment. (agenda item NRW6.7)

**Action 8:** The Secretariat to submit the DPP for DS491 to the CSS for endorsement. (agenda item NRW7.1)

**Action 9:** The Secretariat to submit NST020 to Member States for comment. (agenda item NRW8.1)

**Action 10:** The Secretariat to submit NST041 to Member States for comment. (agenda item NRW8.2)
Annex II

Agenda

Nuclear Safety Standards Committee (NUSSC) - Thirty-eighth Meeting
Radiation Safety Standards Committee (RASSC) – Thirty-seventh Meeting
and
Waste Safety Standards Committee (WASSC) - Thirty-eighth Meeting

Boardroom A – M Building

26-27 November 2014

AGENDA FOR THE JOINT SESSION

09:00 – Wednesday 26 November 2014

| NRW1. | Opening of Meeting | D. Flory, DDG-NS |
| NRW2. | Chairman’s Comments | F. Feron/ G. Massera/ G. Williams |
| NRW3. | Adoption of the Agenda | F. Feron/ G. Massera/ G. Williams |
| NRW4. | Administrative Arrangements | M. Svab/T. Colgan/ G. Siraky |

NRW5. General Safety Standards Issues

| NRW5.1 | Report from the 36th Meeting of the Commission on Safety Standards | For information | D. Delattre |
| NRW5.2 | Report from the Meeting of the Six Chairs | For information | D. Delattre |
| NRW5.3 | Interface between Safety and Security | For discussion | D. Delattre |

NRW6. Safety Standards for Approval

| NRW6.1 | DS453 | Draft Safety Guide: Occupational Radiation Protection (also to TRANSSC) | For approval for submission to the CSS | P.P. Haridasan |
| NRW6.2 | DS432 | Draft Safety Guide: Radiation Protection of the Public and the Environment (also to TRANSSC) | For approval for submission to Member States | T. Boal |
| NRW6.3 DS427 | Draft Safety Guide: A general framework for radiological environmental impact assessment and protection of the public. | For approval for submission to Member States | D. Telleria |
| NRW6.4 DS442 | Draft Safety Guide: Regulatory Control of Radioactive Discharges to the Environment from Facilities and Activities | For approval for submission to Member States | D. Telleria |
| NRW6.5 DS447 | Draft Safety Guide: Predisposal Management of Radioactive Waste from Nuclear Fuel Cycle Facilities (also to NSGC) | For approval for submission to the CSS | M. Kinker |
| NRW6.6 DS448 | Draft Safety Guide: Predisposal Management of Radioactive Waste from Nuclear Reactors (also to NSGC) | For approval for submission to the CSS | M. Kinker |
| NRW6.7 DS476 | Draft Safety Requirements: Safety of Research Reactors (also to TRANSSC and NSGC) | For approval for submission to Member States | D. Sears |

**NRW7. DPPs for Approval**

| NRW7.1 DS491 | Draft Safety Guide: Deterministic Safety Analysis for Nuclear Power Plants (revision of SSG-2) (also to NSGC) | For approval for submission to the CSS | P. Villalibre |

**NRW8. Security Series Documents for Clearance**

| NRW8.1 NST020 | Draft Implementing Guide: Sustaining a Nuclear Security Regime (also to TRANSSC and NSGC) | For clearance for submission to Member States | R. Evans |
| NRW8.2 NST041 | Draft Implementing Guide: Preventive and Protective Measures against Insider Threats (also to TRANSSC and NSGC) | For clearance for submission to Member States | N. Pope |
NRW9. Status Report on Documents under Development

NRW9.1 NST051 Draft Implementing Guide: Security during the Lifetime of a Nuclear Facility (also to NSGC) For information I. Barraclough

NRW9.2 IAEA Fukushima Report For information G. Caruso

NRW10. Closing of the Meeting

NRW10.1 Any other business F. Feron/ G. Massera/ G. Williams

NRW10.2 Conclusions of the Joint Session F. Feron/ G. Massera/ G. Williams

NRW10.3 Closing F. Feron/ G. Massera/ G. Williams

CSS 37 20-22 April 2015
CSS 38 October 2015
NSGC 7 22-26 June 2015
NSGC 8 2-6 November 2015
NUSSC 39 29 June – 3 July 2015
NUSSC 40 30 November – 4 December 2015
TRANSSC 30 15-19 June 2015
TRANSSC 31 2-6 November 2015
RASSC 38 22-26 June 2015
RASSC 39 7-12 December 2015 2-6 November 2015
WASSC 39 29 June – 3 July 2015
WASSC 40 2-6 November 2015
NUCLEAR SAFETY STANDARDS COMMITTEE

(NUSSC)

WASTE SAFETY STANDARDS COMMITTEE

(WASSC)

Report of the Joint Session of the 38th NUSSC Meeting

and the 38th WASSC Meeting

27 November 2014

International Atomic Energy Agency

Vienna
SUMMARY OF CONCLUSIONS OF THE JOINT SESSION OF THE 38TH NUSSC MEETING AND THE 38TH WASSC MEETING ON DRAFT SAFETY STANDARDS REVIEWED

- DS452 SG on Decommissioning of Nuclear Installations was approved for submission to Member States, provided that the title of the document was changed to “Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities”.

- DPP DS489 SG on Storage of Spent Nuclear Fuel was approved for submission to CSS, provided that the “feedback report” was included in the document in order to target parts of SSG-15 to be revised.

- DPP DS492 SG on Human Factors Engineering in NPPs was approved for submission to CSS. Committees concluded that it was not necessary for WASSC to participate in the review of the document. NUSSC and WASSC invited the IAEA to make sure that, during the development of the guide, practices used in other risk industries or systems related to security were considered.
NW1. REVIEW OF DRAFT SAFETY STANDARDS

DS452 Draft Safety Guide: Decommissioning of Nuclear Installations (revision and consolidation of WS-G-2.1 and WS-G-2.4) (Agenda Item NW1.1)

Mr V. Ljubenov (WES-NSRW) introduced the draft Safety Guide on decommissioning of nuclear installations, for approval for submission to Member States for comments. This document is a revision and consolidation of two previous Safety Guides on decommissioning of nuclear power plants and research reactors (WS-G-2.1) and on decommissioning of nuclear fuel cycle facilities (WS-G-2.4).

Mr Ljubenov referred briefly to the history of development of the draft and to the challenges while accommodating widely varying types of facilities, site configuration, and safety related issues, technological and radiological conditions. Specifically, the challenges can be summarized as:

- To provide guidance to different type of facilities: fuel cycle facilities, research reactors and power reactors;
- To consider single facilities as well as large scale multi-facility sites;
- Different decommissioning strategies;
- Criticality concerns for some fuel cycle facilities;
- Different types (activation products, alpha contamination, airborne or ground water contamination) and extent of contamination in and around facilities; and
- Aspects of decommissioning after an accident.

The structure of the safety Guides follows the structure of GSR Part 6, and six Annexes, with examples for the content of a final decommissioning plan including supporting documents, content of the final decommissioning report, contents of the final radiological survey report, on considerations for Safety Assessment for decommissioning of nuclear installations and one annex with bibliography.

This first draft sent for the review of the SSC’s received 321 comments from members of NUSSC, NSGC and WASSC, and observer organizations. From them, 67 % were accepted, 13 % accepted with modifications and 20 % rejected.

Mr Ljubenov then went on providing information on the comments disposition, main reasons for rejecting comments or disagreeing with some proposals. He highlighted the resolution of WASSC34 (November 2012), when the title was discussed, with the aim to reflect better the scope of the document. At that time, the decision of WASSC was to entitle the document “Decommissioning of Nuclear Installations”, as encompasses both reactors and nuclear fuel cycle facilities.

After one of the comments received for this meeting and to ensure all the intended NFCF are covered by the draft document, the title of the document will be changed to “Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle facilities” and one paragraph will be added to the scope to specify the types of nuclear facilities that are included in the scope of this Safety Guide, as follows:

- “uranium conversion plants, uranium enrichment plants, nuclear fuel fabrication plants, research reactors including subcritical and critical assemblies, nuclear power plants, facilities for storage of spent fuel, reprocessing facilities and facilities for predisposal management of radioactive waste. Uranium and thorium mines and facilities for disposal of radioactive waste are out of the scope, as they are subject to closure and not to decommissioning. Surface processing facilities for mining and milling of uranium and thorium are to be decommissioning, and all the considerations in this Safety Guide are applicable to this type of facilities. For radioactive waste disposal facilities this Safety Guide provides information relevant for decommissioning of support infrastructure, i.e. parts of the facilities other than the disposal section itself.”
In addition, throughout the document, the term “nuclear installation” will be replaced by “facilities”, in the restricted sense and indicated above, and denoted in the footnote one of the document.

Finally, Mr Ljubenov underlined the fact that the document is developed primarily for installations with a normal operational history which was followed by a planned shutdown. However, many of the considerations are also applicable to decommissioning after an accident.

WASSC and NUSSC members thanked the clarity of the document and the presentation. SSCs members commented the following:

- Management systems for decommissioning: the current text is good, but seems too large for a specific SG. Notwithstanding this, it was recognized that specificities do exist, and that leaving the text to be included into another SG dealing with MS seems not appropriate. In addition, it was noted that one of the major challenges is that contractors are continuing changing during the project implementation, and this needs proper registration. Then SSCs members concluded that the text should be comprehensive, including up to the stage of decommissioned sites.

- Decommissioning following an accident: One committee member recalled the WG of WASSC meeting held in November 2013 recommending that damaged reactors should be included into the scope of DS452. In response, it was highlighted that this subject was discussed at an experts meeting under the NSAP, and the results published as an NE series document (briefing on this document was provided during WASSC37). Discussion went on about the treatment of waste after decommissioning a damaged reactor: if it should be included or not in this draft SG. Finally, SSC’s members decided that this is a matter of RWM, and will be addressed by a TM to be held in January 2015.

⇒ NUSSC and WASSC gave their approval for changing the title of DS452 and for consulting the Member States.

NW2. REVIEW OF DOCUMENT PREPARATION PROFILES (DPPs)

DS489 DPP Draft Safety Guide: Storage of Spent Nuclear Fuel (Revision of SSG-15) (Agenda Item NW2.1)

Ms Y. Kumano (WES-NSRW) introduced the DPP for the revision, by amendment, of the Safety Guide on Storage of Spent Fuel (SSG-15).

Ms Kumano provided the background for the revision of SSG-15, back to 2011, when the Working Group of WASSC met in October and had drawn lessons from the FDA, and recommended SSG-15 should be reviewed and revised. At that point in time WASSC members recommended the re-examination of strategies for SFM.

The review conducted by experts indicated that SSG-15 is basically in a good shape for its intended purpose and recommended the document be revised by addendum to some paragraphs in order to better capture the extreme situations such as multiple initiating events occurring simultaneously.

The objective of the revision of SSG-15 is to incorporate the result of the gap analyses on the SSs based on the feedback from the FDA.

The current scope of SSG-15 will be kept.

Forty two comments from SSCs members were received. 22 of them have been accepted, 13 rejected and 7 needs further discussion with the SSCs for their resolution. The comments accepted where those requesting more detailed information on affected paragraphs in the Feedback Analysis Report, consistency with other documents, addition of references, proposal of change of text due to clarification purposes and editorial ones.

Ms Kumano then went on explaining the reasons of the rejected comments, in particular the following ones, had major interest and where discussed at the meeting:
- Character of the revision by amendment, suggested to be changed: In response, Ms Kumano noted that since SSG-15 was published in 2012, this revision should focus on the lessons learnt from the FDA, and this should be done by amendment. Discussion at the SSC agreed on keeping the character of the revision by amendment;

- Proposal to address on “how to deal with the maximum allowable time and amount of SF in the pools collocated with a NPP”. It was rejected as the SF pools are out of the scope of SSG-15 as long as the pool remains a part of the operational activities of the nuclear reactor. The SF in these conditions are covered by NS-G-1.4, SG on Design of Fuel Handling and Storage Systems for Nuclear Power Plants (2003), under review by DS487, Safety Guide on “Design of Fuel Handling and Storage Systems for Nuclear Power Plants”;

- Proposal to add guidance on SNF management after cessation of operation and during decommissioning before license termination into the scope. It was rejected due to the fact that this period is out of scope of the current SSG-15. Since SSG-15 was published in 2012, this revision should focus on the lessons learned from the FDA. As a result of the discussion it was clarified that NS-G-1.4 should be applied during the phase after final shutdown, as the operational license should be kept up to the time the decommissioning plan or licence/authorization for decommissioning is approved. In this process, the removal of the SF from the plant, or change in the licensing conditions of the SF pools should be considered.

- Introduction of the concept of DEC into the revision of SSG-15: The concept of DEC is already addressed in GSG-3, Safety Guide on “The Safety Case and Safety Assessment for the Predisposal Management of Radioactive Waste”. The intention of the revision is not to introduce new concepts but to enhance the description on the consideration of existing requirements.

- Topics to be considered in the SSG-15 revision, focusing of safety analysis and safety of accident management including extreme situations (e.g.: multiple initiating events occurring simultaneously). This topic is already included in the scope of the document (first bullet below, on the objectives of the revision).

- Redefinition of the last bullet of the objectives of the revision: extensive discussion on the different views regarding this topic. The final conclusion was to choose a language close to the performance criteria used in the changes agreed to SSR2/1, reflecting the fact of “practically eliminating early and large releases”, as a design criterion instead of “avoidance of land contamination”. Then this concept, as applicable to SF pools, will be completely aligned to the same concept in SSR2/1 for NPPs.

Therefore as a result of the discussions, the objectives of the revision of SSG-15 will include the following topics:

- Strengthening accident management
- Protection against internal and external hazards. The design of a spent fuel storage facility should provide for an adequate margin to withstand internal or external hazards exceeding those to be considered for the design
- Practical elimination of accidents leading to early or large releases

⇒ NUSSC and WASSC approved the DPP, provided that the “feedback report” was included in the document in order to target parts of SSG-15 to be revised.
The document was presented to the participants by A. Duchac. The IAEA explained the necessity of a guide on this topic, given the comments collected during the development of other safety standards (revision of SSR-2/1, DS431 on instrumentation and control, etc.). DS492 is a new guide, not an update.

Prior to the meeting, less than 30 comments were received and most of them were accepted. The IAEA expounded the reasons for refusing some comments:

- The Secretariat is in favor of the extension of DS431: it considered that the topic was not just an I&C issue and it would have been inappropriate to cover it in an I&C document;
- The deletion of the section on human reliability assessment (HRA): the Secretariat considered as short-sighted to limit HRA to the Probabilistic Safety Assessment (PSA);
- Regarding the fact that security issues need to be addressed in the design and operation: the intent of the SG is to provide recommendations to meet provisions of the SSR-2.1, Requirement 32. The Secretariat would rather make reference to the relevant Security Series publications;
- The involvement of WASSC in the development of the document.

⇒ NUSSC and WASSC approved the DPP.

⇒ They concluded that it was not necessary for WASSC to participate in the review of the document. NUSSC and WASSC invited the Secretariat to make sure that, during the development of the guide, practices used in other risk industries or systems related to security were considered.
NW1. NUSSC/WASSC JOINT SESSION – REVIEW OF DRAFT SAFETY STANDARDS

NW1.1 DS452 Draft Safety Guide: Decommissioning of Nuclear Installations (revision and consolidation of WS-G-2.1 and WS-G-2.4) For approval for submission to Member States Mr V. Ljubenov

NW2. NUSSC/WASSC JOINT SESSION – REVIEW OF DOCUMENT PREPARATION PROFILES (DPPs)

NW2.1 DS489 DPP Draft Safety Guide: Storage of Spent Nuclear Fuel (Revision of SSG-15) For approval for submission to CSS Ms Y. Kumano

NW2.2 DS492 DPP Draft Safety Guide: Human Factors Engineering in NPPs For approval for submission to CSS Mr A. Duchac
NUCLEAR SAFETY STANDARDS COMMITTEE

(NUSSC)

Report of the 38th Meeting

28 November 2014

International Atomic Energy Agency

Vienna
SUMMARY OF CONCLUSIONS OF THE 38TH NUSSC MEETING ON DRAFT SAFETY STANDARDS REVIEWED

- After the joint session of NUSSC, RASSC and WASSC, and both NUSSC and WASSC, a separate session solely with NUSSC members took place.

- During this meeting, the NUSSC members approved the submission of DPP DS490 (Seismic Design and Qualification for NPPs (rev. of NS-G-1.6)) to CSS.

- Four other presentations were made to introduce certain documents and topics to the audience: DS456 (Leadership and Management for Safety); NST036 (Security of I&C Systems for Nuclear Facilities); Information on the draft TECDOC Considerations on the Application of the IAEA Safety Requirements for Design of NPPs; and Feedback on Regulatory Arrangements and Current Developments in NUSSC Member States (Canada, China).
1. GENERAL ISSUES

Chairman’s remarks (Agenda Item 1.1) – Mr. F. Féron, NUSSC Chairman, greeted the participants and briefly comment on the previous debates that had occurred during the joint sessions of NUSSC, RASSC and WASSC, and of NUSSC and WASSC.

Agenda of the 38th NUSSC Meeting (Agenda Item 1.2) – approved.

Report of the 37th NUSSC Meeting (Agenda Item 1.3) – approved.

Actions of NUSSC Meetings (Agenda Item 1.4) – The progress made on the actions decided at the 37th NUSSC Meeting was presented by Mr. M. Svab, NUSSC Scientific Secretary. The IAEA Secretariat was requested to prepare a DPP for updating SSG-2.

Dates of the next meeting (Agenda Item 1.5) – The dates proposed for the next NUSSC meeting were accepted: the 39th NUSSC Meeting will take place from the 29th of June 2015 to the 3rd of July 2015 and the 40th NUSSC Meeting will be held from the 30th of November 2015 to the 4th of December 2015.

2. REVIEW OF DOCUMENT PREPARATION PROFILES (DPPs)

Status of Safety Standards (Agenda Item 2.1) – The status of the safety standards was presented by Mr. Svab. Later on, the presentation was uploaded on the IAEA website.

DS490 DPP Draft Safety Guide: Seismic Design and Qualification for NPPs (revision of NS-G-1.6) (Agenda Item 2.2) – The document was presented to the audience by Mr. F. Beltran. The aim of this DPP is the update of NS-G-1.6 (2003). It relates to the new nuclear power plants, whereas NS-G-2.13 deals with existing nuclear power plants. Prior to the NUSSC meeting, about 20 comments were received and 2/3 of them were accepted. Prior to the meeting, the IAEA posted online, on the IAEA website, the table introducing the actions taken on these comments, as well as an updated version of the DPP. The IAEA explained the rejection of some comments.

During the NUSSC meeting, a few questions were raised regarding the consideration of other IAEA Safety Standards, including some old ones, like NS-G-2.13 (2009). Furthermore, it was indicated that the IAEA was thinking about producing new documents explaining how to take into account tsunamis in design (beyond SSG-18 dealing with risk assessment of tsunamis).

⇒ NUSSC approved the submission of the DPP to CSS.

3. DOCUMENTS UNDER DEVELOPMENT

DS456 Draft Safety Requirements: Leadership and Management for Safety (Agenda Item 3.1) – The document was presented to the NUSSC members by Ms. H. Rycraft. Although the update of GS-R-3 started prior to DS462 and before the consultation of Member States – which was taking place at the same time as the ones relating to DS462 and DS457, approved by CSS – the revised version of DS456, taking into account the comments received from Member States, had not been submitted to the approval of the review committees. During the consultation, nearly 500 comments were received by the IAEA and a consultancy meeting took place in February 2014 to decide on the actions to be taken; 2/3 of the comments were accepted.

A new version of the document, including the accepted comments, was presented to the Coordination Committee of the IAEA, but was not endorsed. The main reasons for such refusal were:

- The responsibility for safety;
- Redundancies in the document; and
- Insufficient consideration of some lessons learned from the Fukushima Daiichi accident.

At this stage, the IAEA exchanged views with the main States which issued comments and consideration was given to requesting informal comments from the review committees at the beginning of 2015. This would allow the IAEA to improve the document and prepare a better version for the formal consultation of the review committees at the beginning of summer 2015.

⇒ NUSSC requested DS456 to be placed on the agenda of the next NUSSC meeting, either to approve the submission of the document to CSS, or to discuss the topics in respect of which there was no consensus.

4. MISCELLANEOUS

NST036 Draft Technical Guidance: Security of I&C Systems for Nuclear Facilities (Agenda Item 4.1) – Mr. D. Dudenhoef er presented the document to the participants. This document is not an interface document, but a Technical Guidance (the equivalent of a safety report). The IAEA indicated that this document, initiated in 2012, was being developed in cooperation with the TO of DS431 and the Incident and Emergency Centre (IEC). Five consultancy meetings and one Technical Meeting took place to draft the document. The consultation of Member States will be held soon. The IAEA drew the attention of the audience to paragraph 3.47 regarding the interface between safety and security. The IEC had no more comments on the last version of NST036.

⇒ The NUSSC members were invited to review the document and to bring forward possible comments from Member States, according to their national processes.

The IAEA reminded that a conference would be organized in June 2014 on the security of I&C systems, including a section on the interface between safety and security.

Information on the draft TECDOC Considerations on the Application of the IAEA Safety Requirements of Design of NPPs (Agenda Item 4.2) – Mr. J. Yllera presented to the NUSSC members this draft TECDOC, under development, and provided further details on certain concepts appearing in SSR-2/1, such as “practical elimination”, Design Extension Conditions (DEC), or design basis of plant equipment, etc. The development of this document by the IAEA is intended for Member States, but also to fulfil the Agency’s needs as regards the initiated revision of several safety guides.

The drafting of the TECDOC started at the same time as the revision of SSR-2/1. Three consultancy meetings were organized in that purpose. A presentation to the Senior Regulators Meeting took place in September 2014; another one to INSAG, in October 2014. A briefing session of CSS was held in September 2014. On these occasions, a few comments were made on the following topics:
- The excessive use of WENRA or EUR as reference information;
- The question of the connection between levels of defence-in-depth and condition of nuclear installations, including Design Basis Accident (DBA) and DEC;
- Paragraphs dealing with common cause failures;
- The use of non-permanent equipment for DEC;
- The levels of confidence regarding several scenarios related to practical elimination;
- The interface with the ongoing work of the Nuclear Energy Agency (which focuses on levels 3a and 3b of WENRA and not levels 4a and 4b, as the TECDOC does).
The IAEA underscored that some comments were rather related to SSR-2/1, instead of the TECDOC. The IAEA also reminded the participants of the fact that a TECDOC is not a Safety Standard; its review by the review committees and the Member States is, hence, not expected.

During the NUSSC meeting, the following issues were discussed:

- The point of the TECDOC;
- The status of the document, especially the possibility to convert it into a Safety Guide. Some of the NUSSC members considered that there might be a tendency to use the TECDOC instead of SSR-2/1 (or other safety guides), and the TECDOC might jeopardize the consensus achieved on SSR-2/1. The IAEA confirmed that it was not its intention. It was recalled that TECDOCs were sometimes the first stirrings of safety guides. The IAEA explained that, to date, it would be probably premature to develop in the short-term a guide on SSR-2/1;
- The fact that the TECDOC suggested further development of definitions in the IAEA Safety Glossary or SSR-2/1;
- The comparison of levels of defence-in-depth with the approach adopted by WENRA;
- The point in having more time available to make comments and making them public on the NUSSC website or on the CSS website, for instance.

⇒ NUSSC confirmed the importance of developing this TECDOC, especially because it was allowing the documentation of some contextual elements which presided over the development of SSR-2/1. NUSSC emphasized that this TECDOC was not ordinary, as shown during the presentations made to INSAG or the Senior Regulators Meeting.

⇒ NUSSC reminded that this TECDOC should be fully consistent with SSR-2/1.

⇒ NUSSC wished to be able to participate in the development of this document, while acknowledging that this TECDOC did not constitute a Safety Standard. NUSSC was ready to hold a working group meeting on this matter in spring 2015. NUSSC invited the IAEA to examine how to convene such a meeting.

⇒ The NUSSC members were invited to express comments on the draft TECDOC by the end of December 2014, as indicated by CSS.

Furthermore, the IAEA mentioned the preparation of a TECDOC on safety classification for which a consultancy meeting had already taken place. The objective of the IAEA was to publish the TECDOC in the first half of 2015.

Feedback on regulatory arrangements and current developments in NUSSC Member States (Canada, China) (Agenda Item 4.3) – One of the presentations was addressing the Canadian system, whereas the other presentation was related to the Chinese system.

The first presentation was conducted by Mr. P. Webster, who talked about the nuclear installations and activities regulated by the Canadian Nuclear Safety Commission (CNSC). He explained that the Canadian regulation was based on one law and twelve regulations. Moreover, for its controls (inspections and authorizations), the CNSC covers 14 areas (management systems, safety analysis, radioprotection, waste management, preparation for emergency situations, security…). In order to regulate activities and installations, the CNSC uses national standards developed by the Canadian Standard Association. The main actions undertaken in the aftermath of the Fukushima Daiichi accident were mentioned. Part of the presentation dealt with the debates relating to a possible
amendment to the Convention on Nuclear Safety and the challenge of combining diplomatic consensus and technical precision.

The second presentation was conducted by Mr. Y. Zhao, who explained that 20 units of nuclear power reactors were currently in operation, while 28 units were under construction. The objective of China is to have, in 2020, 60 units in operation and 30 units under construction. The presentation focused on the mechanisms set up for operating experience feedback which is subject to more precise regulatory requirements since 2004. A detailed document on this topic was published in 2012.

In the same year, the National Nuclear Safety Administration (NNSA) published a report describing more than 600 events which had occurred in nuclear power plants. The industry (China Nuclear Energy Association) has also been leading overall initiatives on this matter, e.g. seminars and trainings (which gathered together nearly 3000 persons).

In the aftermath of the Fukushima Daiichi accident, NNSA carried out stress tests and changes were made to nuclear power plants. Currently, NNSA draws up a new version of requirements on design of new nuclear power plants.

Closing of the meeting – The Chairman of NUSSC noted the fact that the NUSSC members appreciated the joint session of NUSSC, RASSC and WASSC, and afterwards the joint session of NUSSC and WASSC. These sessions allowed speeding up the process of safety standards preparation. The NUSSC members agreed to renew this type of meeting in the future.

The NUSSC members were also supportive of the “paperless” initiative proposed by the IAEA Secretariat, as long as the presentations were simultaneously posted on the IAEA website.

The Chairman of NUSSC thanked the participants for their productive work and closed the meeting.
# 38th Meeting of the Nuclear Safety Standards Committee (NUSSC)

**28 November 2014**

VIC, M Building, Board Room A Friday, 28 November 2014, at 8:30 a.m.

## N1. NUSSC SESSION – GENERAL ISSUES

<table>
<thead>
<tr>
<th>N1.</th>
<th>NUSSC SESSION – GENERAL ISSUES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N1.1</td>
<td>Chairman’s Remarks</td>
<td>Mr F. Feron</td>
</tr>
<tr>
<td>N1.2</td>
<td>Adoption of Agenda for the 38th NUSSC session</td>
<td>For approval NUSSC Members</td>
</tr>
<tr>
<td>N1.3</td>
<td>Approval of the Report of the 37th NUSSC Meeting</td>
<td>For approval NUSSC Members</td>
</tr>
<tr>
<td>N1.4</td>
<td>Actions of NUSSC Meetings</td>
<td>For information Mr M. Svab</td>
</tr>
<tr>
<td>N1.5</td>
<td>Dates of the next meetings:</td>
<td>For approval NUSSC Members</td>
</tr>
<tr>
<td></td>
<td>39th NUSSC Meeting: 29 June – 3 July 2015</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40th NUSSC Meeting: 30 November – 4 December 2015</td>
<td></td>
</tr>
</tbody>
</table>

## N2. NUSSC SESSION – REVIEW OF DOCUMENT PREPARATION PROFILES (DPPs)

<table>
<thead>
<tr>
<th>N2.</th>
<th>NUSSC SESSION – REVIEW OF DOCUMENT PREPARATION PROFILES (DPPs)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N2.1</td>
<td>Status of Safety Standards</td>
<td>Mr M. Svab</td>
</tr>
<tr>
<td>N2.2</td>
<td><strong>DS490</strong> Draft Safety Guide: Seismic Design and Qualification for NPPs (rev. of NS-G-1.6)</td>
<td>For approval for submission to CSS Mr F. Beltran</td>
</tr>
</tbody>
</table>
### N3. STATUS REPORT ON DOCUMENTS UNDER DEVELOPMENT

<table>
<thead>
<tr>
<th>N3.1</th>
<th><strong>DS456</strong> Draft Safety Requirements: Leadership and Management for Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For information Ms H. Rycraft</td>
</tr>
</tbody>
</table>

### N4. NUSSC SESSION – MISCELLANIOUS

<table>
<thead>
<tr>
<th>N4.1</th>
<th><strong>NST036</strong> Draft Technical Guidance: Security of I&amp;C Systems for Nuclear Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For information Mr D. Dudenhoeffer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N4.2</th>
<th>Information on the draft TECDOC Considerations on the Application of the IAEA Safety Requirements for Design of NPPs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For information Mr J. Yllera</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N4.3</th>
<th>Feedback on Regulatory Arrangements and Current Developments in NUSSC Member States (Canada, China)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For information NUSSC Members</td>
</tr>
</tbody>
</table>
Annex III
List of Participants

Radiation Safety Standards Committee (RASSC)

The Committee

Argentina
Mr Gustavo Massera (Chair)

Australia
Mr Alex Kalaiziovski (alternate)

Belgium
Mr Lodewijk Van Bladel

Brazil
Ms Maria Helena Da Hora Marechal

Canada
Ms Caroline Purvis (alternate)

Croatia
Ms Ivana Kralik

Czech Republic
Ms Karla Petrova

France
Mr Philippe Bérard (alternate)
Mr Jean-François Lecomte (alternate)

Germany
Mr Manfred Helming

Hungary
Mr Arpad Vincze

India
Mr R.K. Gopalakrishnan

Iran
Mr Mohammad Kardan

Ireland
Ms Barbara Rafferty

Israel
Mr Jean Koch

Italy
Mr Luciano Bologna

Japan
Ms Naoko Ishikawa

Kenya
Mr Joseph A.W. Maina

Korea, Republic of
Mr Sae-Yul Lee

Malaysia
Ms Noraisha Pungut

Netherlands
Ms Miriam Tijsmans

Norway
Mr Gunnar Saxebol

Poland
Ms Agnieszka Jaworska-Sobczak

Romania
Mr Sorin Mancas

Russian Federation
Mr Sergey Mikheenko

Slovakia
Mr Vladimir Jurina

Slovenia
Ms Nina Jug

South Africa
Mr John Pule

Spain
Ms Carmen Alvarez

Sweden
Ms Ann-Christin Haegg

Switzerland
Mr Andreas Leupin

United Arab Emirates
Ms Aayda Al Shehhi

United Kingdom
Ms Susan McCready-Shea

United States of America
Ms Laura Dudes

Advisors

Germany
Ms Annemarie Schmitt-Hannig

Italy
Ms Assunta Principe

Japan
Mr Isao Kawaguchi

Mr Nobuyuki Sugiura

Mr Hirokazu Tachikawa

United States of America
Mr Vincent Holahan
United Nations Organizations
FAO  Mr Carl Michael Blackburn
ILO  Mr Tasos Zodiates (alternate)
UNSCEAR Mr Malcolm Crick
Mr Ferid Shannoun
WHO Ms Maria del Rosario Perez
Ms Emilie van Deventer

International Organizations
EC  Mr Ivo Alehno (alternate)
NEA/OECD  Mr Edward Lazo

Other Organizations
ENISS  Mr Bernd Lorenz
ICRP  Mr Christopher Clement
Mr Jean-Francois Lecomte
ISSPA  Mr Wolfgang Fasten
WNA  Ms Binika Shah
Ms Catrin Baureus Koch

Nuclear Safety Standards Committee (NUSSC)
Austria  Mr N. Müllner
Belgium  Mr B. De Boeck
Brazil  Mr A. Gromann De Araujo Goes
Canada  Mr M. Reid
Mr P. Webster
China  Mr Y. Zhao
France  Mr F. Feron (Chair)
Mr E. Wattelle
Germany  Mr M. Rueffer
Mr K-J. Weidenbrueck
India  Mr J. Mohan
Israel  Mr R. Harari
Japan  Mr T. Nakajima
Korea, Republic of  Mr H.J. Ahn
Mr T.S. Hwang
Mexico  Mr A. Nunez Carrera
Netherlands  Mr R. Jansen
New Zealand  Mr C. Arduin
Norway  Mr H. Mattsson
Poland  Mr W. Kielbasa
Russian Federation  Mr M. Lankin
Slovakia  Mr P. Uhrick
South Africa  Mr K. Naidoo
Sweden  Mr A. Hallman
Ukraine  Mr O.M. Dybach
United Arab Emirates  Mr H. A. Alkhafili
Mr N. Tricot
United Kingdom  Ms M. Golshan
United States of America  Mr M.J. Case
ENISS  Mr G. Bassing
Waste Safety Standards Committee (WASSC)

Australia: Mr G. Williams (Chair)
Belgium: Mr W. Blommaert
Brazil: Mr M. Leal
Bulgaria: Mr N. Grozev
Canada: Ms P. Doughty
Denmark: Mr D. Ulfbeck
Egypt: Mr M. Abdel-Geleel, Mr Y.T. Mohamed Selim
Finland: Ms K-L. Hutri
France: Mr F. Besnus
Germany: Ms S. Geupel, Mr C. Goetz, Ms K. Kugel
Hungary: Mr I. Lazar
India: Mr C.P. Kaushik
Israel: Mr R. Hakmon, Mr I. Hitibash
Italy: Mr M. Dionisi
Japan: Mr T. Yamanaka, Mr R. Dobashi
Korea, Republic of: Mr W-J. Park
Lithuania: Mr V. Paulikas
Norway: Mr R. Lystad
Poland: Mr M. Zagrajek
Russian Federation: Ms I. Abalkina, Ms M. Nepeypivo, Mr A. Sobolev
South Africa: Ms L. Khechane
Spain: Ms A. Alvarez Alonso
Sweden: Mr B. Hedberg
Switzerland: Mr O. Beffort
United Kingdom: Ms K. McDonald
United States of America: Mr L. Camper
EC: Ms B. Batandjjeva-Metcalf
ENISS: Mr P. Nocture, Mr L. Noviello
ISO: Mr M. Garamszeghy
ISSPA: Mr W. Fasten
UNEP: Mr F. Shannoun
WNA: Mr R. Muscetti, Ms B. Shah