WASTE SAFETY STANDARDS COMMITTEE (WASSC)

12 to 15 June 2017

IAEA HEADQUARTERS, VIENNA, AUSTRIA

REPORT OF THE FORTY THIRD MEETING
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WASSC SESSION

WASSC MEETING
IAEA HEADQUARTERS, VIENNA
12 and 14 June 2017 (until 12:30) and 15 June 2017

W.1 GENERAL ISSUES

W.1.1 Opening of the Meeting

The 43rd WASSC meeting was opened by Mr John Rowat, Acting Section Head of the Waste and Environmental Safety Section (WES/NSRW). Mr Rowat welcomed all participants and provided an overview on the news in the areas of interest which had occurred since the previous meeting in November 2016.

With regard to Safety Standards to be discussed at this meeting, Mr Rowat informed the WASSC members about the latest developments concerning the revision of the Safety Guide RS-G-1.7 Application of the Concepts of Exclusion, Exemption and Clearance. While the WASSC and RASSC approved the DPPs for DS499 and DS500 – one dealing with exemption, and the other with clearance – at their last meetings in November 2016, there were a number of important issues raised that the Secretariat felt required further consideration. A Consultancy Meeting was held prior to this WASSC meeting to review the DPPs. It has made a clear recommendation on how to proceed.

Concerning ARTEMIS – the Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation – the Agency held a workshop in April 2017. It was directed at all IAEA Member States and aimed at presenting the review service and its methodology and possibilities to support the Member States, based on the draft guidelines developed so far. It was attended by about 100 participants from 49 Member States. The first ARTEMIS mission will take place in July 2017 and will be a review of Italy’s national decommissioning programme. ARTEMIS reviews requested under the European Waste Directive will take place in Poland (October 2017) and in France (January 2018).

The First Plenary Meeting of the International Project on Demonstration of the Operational and Long-Term Safety of Geological Disposal Facilities for Radioactive Waste, known by the acronym ‘GEOSAF III’, was held from 22 to 26 May 2017. This project continues international efforts in the field of geological disposal of radioactive waste carried out during the period from 2008 to 2015 within the GEOSAF I and II projects on the demonstration of safety of geological disposal. Among the three working groups, one is focused on the analysis of potential gaps in the IAEA Safety Standards related to different safety issues during the operation of geological disposal facilities. The objective of this activity is to develop a proposal for a new guidance document on operational safety.

Mr Rowat informed that the Agency is organizing a Technical Meeting on Planning and Implementation of Long Term Institutional Control and on Release of Site from Regulatory Control, to be held in Vienna from 27 to 30 November 2017. The meeting will provide for sharing of information in dealing with long term institutional controls and release of sites from regulatory control after decommissioning and remediation. It will also be helpful for the anticipated revision of the Safety Guide Release of Sites from Regulatory Control on Termination of Practices (WS-G-5.1).

The International Project on Managing the Decommissioning and Remediation of Damaged Nuclear Facilities (DAROD) is nearing completion and the final event of this project will be an international workshop held in the United Kingdom in October 2017. The workshop aims to disseminate the results of three-years of discussions of strategic planning, regulatory and technical aspects of
decommissioning of damaged facilities. The project will produce a report summarizing experiences and providing recommendations related to the topic.

Mr Rowat again thanked all members and observers for their interest in and contribution to the work of WASSC and looked forward to an active and productive meeting.

**W.1.2 Chairman’s Introduction**

The WASSC Chairman, Mr Geoff Williams, welcomed members and in particular participants attending a WASSC meeting for the first time. He highlighted various topics in the agenda and wished all participants a successful meeting. Mr Williams noted that this is the first WASSC meeting which will be broadcasted live using the WebEx technology (internet audio/video streaming), in line with a decision made at WASSC-42 in November 2016.

**W.1.3 Adoption of the Agenda**

The Agenda of the 43rd WASSC meeting (see Annex I) was adopted without changes. The list of participants is contained in Annex IV.

**W.1.4 Administrative Arrangements**

Ms Sandra Geupel, Coordinator of WASSC (WES/NSRW) announced the administrative arrangements for the meeting. Ms Geupel also welcomed all WASSC members, in particular those delegates attending a WASSC meeting for the first time and those participating on behalf of WASSC members, and announced the regrets received. Ms Geupel also referred to the fact that WASSC meetings adhered to the Agency’s paperless meeting policy and that all the presentations would be made available by the end of the day in the dedicated WASSC web folder.

**W.1.5 Report from the 42nd WASSC meeting**

The report from the EPreSC-3/WASSC-42 Joint Session was posted on the WASSC-43 website prior to the meeting. No comments from WASSC members were received. The Report of the WASSC-42 Alone Session will be posted on the WASSC-44 website.

**W.1.6 Status of actions arisen from the 42nd WASSC meeting**

Ms Geupel presented the current status of actions arising from the previous meeting, WASSC-42. All have been implemented since the last meeting.

**W.2 GENERAL SAFETY STANDARDS ISSUES**

**W.2.1 Information on INSAG-27 report “Ensuring Robust National Nuclear Safety Systems – Institutional Strength in Depth” and possible impact on Safety Standards**

Mr Peter Tarren (NSNI) presented an overview of how the concept of institutional strength in depth, as set out in the INSAG-27 report, is reflected in the IAEA Safety Standards and safety review
services. He described the component parts of the three sub-systems (industry, regulatory, and stakeholder) of a robust nuclear safety system, and then listed the IAEA Safety Standards that address each of these sub-systems. Mr Tarren also described how the peer review services and other related IAEA activities address the concepts set out in INSAG-27.

The main conclusion is that, taken together, the IAEA Safety Standards and safety review services do address the three sub-systems identified in INSAG-27, and that these are supported and enhanced by cross-cutting activities such as missions and training that specifically address institutional strength in depth.

Mr Tarren confirmed that the General Safety Requirements GSR Part 5 and GSR Part 6, covering predisposal waste management and disposal, were also relevant to institutional strength in depth, although they had not been explicitly referenced in his presentation.

W.3 REVIEW OF SAFETY STANDARDS ISSUES

W.3.1 DS403 Draft Safety Guide: Decommissioning of Medical, Industrial and Research Facilities (Revision of WS-G-2.2)

Mr Vladan Ljubenov (WES/NSRW) introduced the document, highlighting that this is the second draft of the revised Safety Guide Decommissioning of Medical, Industrial and Research Facilities” (DS403) sent to WASSC for review and approval.

Mr Ljubenov briefed the participants on the history of development of the document, whose DPP was approved by the CSS in 2007, on the several facts that made the document to be held to focus on the collection of feedback from Member States on the use of the valid Safety Guide WS-G-2.2 (published in 1999) and on the development of the General Safety Requirements GSR Part 6 in this area, and to advance with the Draft Safety Guide Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities (DS452).

The inputs considered in the revision of the document were identified as: Member States practices and experiences; revised Safety Requirements publications (mainly GSR Part 3 and GSR Part 6); and the updates incorporated into DS452. In addition, other inputs were arising from the outcomes of international projects and a joint IAEA/EC extra-budgetary project on model regulations for decommissioning.

The identified challenges arise from the need to accommodate widely varying types of facilities, applications, site configurations and other related safety, technological and radiological conditions. These situations call to the application of the graded approach in decommissioning of different types of medical, industrial and research facilities.


DS403 was submitted to Member States for comments (SPRESS Step 8) in August 2015. In total, 315 comments from 11 Member States were received. All comments helped to improve the draft. From
them, 217 of the comments were accepted, 25 accepted with modifications and 73 rejected. The table of resolutions was posted on the IAEA website in April 2017.

A further set of 67 comments were received from Committee members review at SPESS Step 11. Most of the comments were editorials, for clarifications or completeness. All comments have been addressed and resolutions provided. Mr Ljubenov highlighted the reasons why specific comments were rejected by the Secretariat, for example due to terminology issues ("should" versus "is/are required to") or inconsistencies with the approved wording in the sister document DS452. By navigating through the revised draft, Mr Ljubenov presented the paragraphs in question on the screen and put them for discussion. WASSC members finally decided to replace “is/are required to” by “should” in a number of paragraphs. The related modifications were shown on the screen.

With these changes, DS403 was approved for submission to the CSS for endorsement.

**Action:** The Secretariat to submit the Draft Safety Guide *Decommissioning of Medical, Industrial and Research Facilities* (DS403) to the CSS for endorsement.

### W.3.2 DS487 Draft Safety Guide: Design of Fuel Handling and Storage Systems for Nuclear Power Plants (Revision of NS-G-1.4)

Mr Ki Seob Sim (NFCM/NEFW) introduced the the Draft Safety Guide *Design of Fuel Handling and Storage Systems for Nuclear Power Plants* (DS487). NS-G-1.4 was published in 2003 to provide guidance on how to meet the requirements in NS-R-1. The current revision of NS-G-1.4 was initiated

- To ensure coherency and consistency with all safety requirements established in SSR-2/1 (Rev. 1), published in early 2016;
- To incorporate experience on application of the documents, and the operating experience feedback from the IAEA Incident Reporting Systems (IRS), and the feedback from the accident at the Fukushima-Daiichi NPP;
- To comply with the long term structure of IAEA Safety Standards approved in 2008.

The scope of the document remains essentially unchanged from NS-G-1.4; the Safety Guide applies primarily to land based stationary nuclear power plants with water cooled reactors. It addresses the design aspects of fuel handling and storage systems that remain part of the operational activities of a nuclear power plant. Spent fuel storage systems with associated fuel handling systems that do not remain as part of the operational activities of a nuclear power plant are addressed in the Safety Guide SSG-15 *Storage of Spent Nuclear Fuel* (under revision by DS489).

The new information incorporated in DS487 includes: (1) all relevant safety requirements in SSR-2/1 (Rev. 1) and associated design recommendations; (2) plant states to be taken into account in design; (3) design limits for each plant state; and (4) reliability in design for accident conditions. In addition, major changes in the structure of the Safety Guide will be made, from “Fresh fuel handling & storage versus Spent fuel handling & storage” (in NS-G-1.4) to “Design basis for fuel storage systems versus Design basis for fuel handling systems” (in DS487).

The DPP was approved by the Committees in June 2014. Four Consultancy Meetings have been held in the period 2015–2017 to develop and discuss the draft.

At this stage (SPESS Step 7), the document received a total of 143 comments from Committee members review. The comments were mainly for clarification, in addition to some technical comments. All comments were addressed and the resolution table was posted on the IAEA website prior to the meeting. There are no unresolved comments.
There were no questions to this presentation, and DS487 was approved for submission to Member States for comment.

**Action:** The Secretariat to submit the Draft Safety Guide *Design of Fuel Handling and Storage Systems for Nuclear Power Plants* (DS487) to Member States for comment.


Mr Palmiro Villalibre (NSNI) gave a presentation summarizing the history of the draft and mentioned the requirements which are supported by DS491. SSG-2 was published in 2009 to provide guidance on how to meet the requirements in NS-R-1 and GSR Part 4. The current revision of SSG-2 was initiated mainly

- To provide recommendations in accordance with the safety requirements established in SSR-2/1 (Rev. 1) and GSR Part 4 (Rev. 1), both published in early 2016;
- To take into account feedback and lessons learned from the TEPCO Fukushima Daiichi NPP accident and other sources, as well as recent experience with Deterministic Safety Analysis (DSA) included in safety analysis reports for current reactor designs in the Member States;
- To ensure consistency with current IAEA Safety Standards.

With respect to the implications from Fukushima Daiichi NPP accident, specific aspects included in DS491 are:

- Section 3: Identification and categorization of postulated initiating events and accident scenarios
  - Identification of Design Extension Conditions (DEC);
  - Event sequences and accident scenarios to be ‘practically eliminated’;
- Section 7: DSA for plant states and accident scenarios
  - DSA for DEC without significant fuel degradation;
  - DSA for DEC with core melting;
  - DSA in support of ‘practical elimination’ of certain conditions.

Applications of DSA to several areas – e.g. NPP design by the designer, periodic safety review, plant modifications and severe accident management guidelines – will be provided as an Annex in DS491.

The DPP was approved by NUSSC/RASSC/WASSC in November 2014 and by the CSS in April 2015. Three Consultancy Meetings have been held in the period 2015–2016 to develop and discuss the draft. DS491 was submitted to Member States for comments in August 2016. In total, 387 comments from 16 Member States were received. Member States comments were resolved in a Consultancy Meeting held in January 2017. The table of resolutions was posted on the IAEA website in April 2017.

A further set of 45 comments were received from Committee members review at SPESS Step 11. All comments have been addressed and resolutions provided. Editorial review by IAEA’s Technical Editors is planned in July 2017.

There were no questions to this presentation.

**Action:** The Secretariat to submit the Draft Safety Guide *Deterministic Safety Analysis for Nuclear Power Plants* (DS491) to final editorial review by the IAEA’s Technical Editors prior to SPESS Step 11.
W.3.4 Waste Safety Standards – Status and future steps

Ms Geupel presented the current status of the Waste Safety Standards (WSS). She noted where to find a copy of the latest status of Safety Standards online. She presented the updated work plan for the second half of the four-year period 2014–2017. The following WSS are planned to be submitted:

- For approval at WASSC 44 (November 2017): DS459 (S11) and DS477 (S7).

W.4 REVIEW OF DOCUMENT PREPARATION PROFILES (DPPs) FOR IAEA SAFETY STANDARDS

W.4.1 DPP DS507 Draft Safety Guide: Seismic Hazards in Site Evaluation for Nuclear Installations (Revision of SSG-9)

Mr Yoshimitsu Fukushima (NSNI) gave a presentation summarizing the history of the draft and mentioned the requirements which are supported by this Safety Guide. SSG-9 was published in 2010 to provide guidance on how to meet the requirements in NS-R-3. The current revision of SSG-9 was initiated

- To ensure consistency with applicable requirements for site evaluation, i.e. NS-R-3 (Rev. 1) and its successor DS484;
- To ensure coherency and consistency with the other relevant IAEA Safety Standards, e.g. SF-1, SSR-2/1 (Rev. 1), GSR Part 2 and GSR Part 4 (Rev. 1);
- To incorporate the lessons learned and address challenges highlighted in the IAEA Report on the Fukushima-Daiichi NPP Accident.

The scope and table of contents will follow SSG-9. The new information incorporated in DS507 includes inter alia: (1) newly developed methods of data collection; (2) addressing issues related to multi-unit sites, consistent with DS484; and (3) guidance on hazard/design interface with site response. Furthermore, DS507 will address in more detail capable faults and fault displacement hazard analysis for new and existing nuclear installations, and the combination of seismic hazards (surface faulting and ground motion) and relevant geological, hydrological and geotechnical hazards.

The following implications to Fukushima Daiichi NPP Accident are relevant for DS507:

- The accident highlighted issues of uncertainties in the assessment of seismic hazards;
- Natural hazard assessment has to be sufficiently conservative;
- Historical data in the establishment of the design basis of nuclear power plants are not sufficient to characterize the risks of extreme natural hazards;
- Data for the establishment of the design basis have to be re-evaluated on a periodic basis to consider advances in knowledge, and necessary corrective actions or compensatory measures.

Mr Fukushima provided an overview of the comments received by the Committees. 13 comments were received from 5 NUSSC Members (Belgium, Czech Republic, France, Germany, and Japan). Among them, 10 were accepted without or with modifications, and 3 rejected. One for the reasons for rejection was the reference to out-of-scope elements such as facilities for deep geological disposal of radioactive waste.
Subsequent to the presentation, the USA stressed that maintaining consistency with DS484 is essential when developing DS507. No questions were raised to the presentation. DS484 was approved by WASSC for submission to the CSS.

**Action:** The Secretariat to submit the DPP for the Draft Safety Guide *Seismic Hazards in Site Evaluation for Nuclear Installations* (DS507) to the CSS for endorsement.

**W.5 DOCUMENTS FOR INFORMATION**

**W.5.1 Draft Safety Guide: Management of Radioactive Residues from Uranium Production and other NORM Activities, DS459**

Mr Zhiwen Fan (WES/NSRW) presented the current status of development of the Draft Safety Guide DS459 to the participants. In June 2011, WASSC 31 concluded that the Safety Guide WS-G-1.2 (published in 2002) was to be revised in the light of new requirements and developments. WASSC 32 and the CSS endorsed the DPP in 2011 and 2012, respectively. The main input considered for the revision are the recently published relevant Safety Requirements and Safety Guides and current practices and experiences in Member States, but also a number of international conferences and workshops on NORM held in 2013 and 2014.

Mr Fan explained the background for developing the Safety Guide. DS459 will focus on residues generated from uranium production and other NORM activities. It will apply for newly generated residues and new facilities (including from operation, decommissioning and remediation). The Safety Guide will take into consideration the needs of a new audience with rather weak awareness of radiation safety in NORM activities. It will consider the less developed knowledge and experience to NORM residues compared with those for radiation sources and the nuclear fuel cycle.

Seven Consultancy Meetings have been held between mid-2012 and mid-2016 to develop and discuss drafts of the guide. Progress reports on DS459 were provided at WASSC 38 (November 2014) and WASSC-40 (November 2015). In the course of development of the Safety Guide, the title proposed in the DPP – *Management of Radioactive Residues from Mining, Mineral Processing, and other NORM related Activities* – has been changed into *Management of Radioactive Residues from Uranium Production and Other NORM Activities* (endorsed at WASSC 38) to better meet the scope of the Safety Guide.

The current draft of the Safety Guide includes the following sections: 1. Introduction; 2. Overview of NORM residues; 3. Governmental, legal and regulatory framework; 4. Protection of people and the environment; 5. System for regulatory control; 6. Strategies for NORM residue management; 7. The safety case and safety assessment for NORM residues management; and 8. Safety consideration for long term management of NORM residues. Additional information is provided in three appendices and four annexes. Mr Fan noted that DS459, due to its scope and nature, is a complex Safety Guide, and to address in-situ leaching (ISL) adequately, a specific Safety Report is being developed.

DS459 was submitted to Member States for comments (SPES Step 8) in August 2016. In total, 275 comments from 11 Member States were received. All comments helped to improve the draft.

Several Member States recommended that the scope of DS459 should also including ores, feedstock, etc. that are not considered as residues. There were also questions on the relationship between DS459 and the Safety Requirements publication NS-R-5 (Rev. 1), *Safety of Nuclear Fuel Cycle Facilities* (under revision by DS478). Mr Fan clarified that DS478 does not apply to radioactive residues from uranium production and other NORM activities.
Member States also provided comments on the application of graded approach in DS459. Given the broad spectrum of NORM residues arising from a wide range of activities, it is important that a graded approach to radiation protection and to management option is adopted. That is, the protection measures adopted should be commensurate with the magnitude and likelihood of exposures and risks.

Mr Fan informed the Committee that a Technical Meeting on Application of the Graded Approach to Safety for Management of NORM Residues will take place from 19–23 June 2017 in Vienna. The purpose of the meeting is to provide a forum for sharing information and exchanging knowledge and experiences among the participating Member States in relation to management of NORM residues, with a particular focus on the application of a graded approach. The meeting will address, *inter alia*, the following topics: (1) the IAEA Safety Standards GSR Part 3 and DS459; the methodology for grading, including categorization of residues and relevant facilities and activities; (3) the methodology for regulatory control, license, registration, notification and exemption; (4) options for clearance, disposal and long term management; and (5) consideration of grading of safety assessment. The meeting will also collect the participants’ feedback on DS459.

Mr Fan presented two issues for advice by the WASSC members in the process of further development of the Safety Guide, based on two comments received. The first issue is the activity limit requiring a radiological risk assessment. In residues from uranium mining, the activity concentrations of all radionuclides in the U-238 and Th-232 decay series are, in most cases, less than 1 Bq/g. In the international practice, however, the activity limit requiring a radiological risk assessment was set to 0.2 Bq/g for each of the above-mentioned radionuclides. The second issue is the question whether a situation of exposure due to radionuclides of natural origin in new construction materials and agricultural fertilizer should be treated as an existing exposure situation, as addressed in footnotes 17 and 64 of the current draft. With regard to NORM residues arising from phosphate fertilizer production, having often specific activities of more than 1 Bq/g, more specific recommendations on residue management will be given in the next stage of development of DS459.

Finally, Mr Fan outlined the path forward. Before being submitted for the second review by WASSC and RASSC, DS459 will be further reviewed and revised to incorporate Member States’ comments and feedback of the Technical Meeting on Application of the Graded Approach to Safety for Management of NORM Residues.

Several questions and comments were subsequently raised to the Secretariat.

France requested that Figure 1 in DS459, illustrating a stepwise and graded approach to the regulatory control of NORM residues in accordance with GSR Part 3, should be separated with regard to planned exposure situations and existing exposure situations. The United States proposed that the management scheme for NORM residues, as shown in the presentation in line with DS459, should be modified. The United Kingdom highlighted the importance of ensuring consistency of DS459 with the revision of the Safety Guide *Application of the Concepts of Exclusion, Exemption and Clearance (RS-G-1.7)* by DS499 and DS500.


At the 29th WASSC meeting in June 2010, it was agreed to revise and combine the two Safety Guides *Management System for the Processing, Handling and Storage of Radioactive Waste* (GS-G-3.3) and *Management System for the Disposal of Radioactive Waste* (GS-G-3.4), both published in 2008. The aim was to ensure proper treatment of the various interdependencies between predisposal management
and disposal of radioactive waste. The new Safety Guide will address all stages in the lifetime of a waste management facility.

The DPP was approved at the 35th WASSC meeting in July 2013. The draft was subsequently developed through six Consultancy Meetings, which were convened from May 2014 to April 2017. There are two reasons for delay in development of DS477: (1) coherency and consistency with the safety requirements established in GSR Part 2 (published in June 2016) has to be ensured; and (2) there have been several Technical Officers for DS477 due to staff turnover in WES/NSRW during the long development period.


The draft is now ready for internal review by IAEA’s Coordination Committee. It will then be submitted to WASSC-44 (November 2017) for requesting approval to submit the document to the Member States for comment. The target publication date is the first quarter of 2019.

The United Kingdom expressed their strong support for combining the Safety Guides GS-G-3.3 and GS-G-3.4, arguing that there are many interfaces between predisposal management and disposal. Regarding the structure of the document, the United States pointed out that examples are usually presented in annexes (instead of appendices). The Secretariat will consider this comment in the further development process for DS477.

There were no further questions or comments from WASSC members to the presentation.


Mr Donald Dudenhoeffer (NSNS) introduced the document. The objective of NST045 is to address the establishment and improvement of programmes and appropriate security controls to protect those computer systems, networks and other digital systems at nuclear facilities.

The DPP was approved in June 2014. The draft was subsequently developed through eight Consultancy Meetings and one Technical Meeting, which were convened from October 2014 to March 2017. NST047 was developed in close coordination with the following documents:

- NST045 Computer Security for Nuclear Security (Implementing Guide); and

Mr Dudenhoeffer explained the difference between two terminologies:

- The term sensitive information assets is defined in NSS 20 as any equipment or components that are used to store, process, control or transmit sensitive information.

- The term sensitive digital assets is used in NST045 to identify those sensitive information assets that are computer-based and need computer security measures for their protection.

Mr Dudenhoeffer pointed out that the Nuclear Security Series publication NSS 17 Computer Security at Nuclear Facilities (Technical Guidance) is planned to ultimately be superseded and replaced by NST045 and NST047.
During the review by the Committees, 11 comments were received from France (NSGC), all of which were accepted in full or in modified form.

In response to a question from Belgium, Mr Dudenhoeffer highlighted the specifics of nuclear facilities with respect to computer security: There are additional challenges due to the presence of nuclear/radioactive material, and also regulatory and implementation challenges, considering that the nuclear industry is strongly regulated – computer security has to be embedded in the regulatory framework.

There were no further questions on the presentation.

W.6 STRATEGIC ISSUES

W.6.1 Information on Self-Assessment of the Commission on Safety Standards and the Safety Standards Committees

Mr Dominique Delattre (SSDS/NSOC) informed the Committee that the Deputy Director General had requested that each Committee undertake a performance review (self-assessment) against its Terms of Reference. The results should be included in an annex in the end-of-term report. The self-assessment would be carried out independently for each Committee and outcomes would not be compared.

Mr Delattre confirmed that the self-assessment should be carried out directly between the Chair and the Committees, without the direct involvement of the Secretariat. A proposed structure, based on the Terms of Reference of all Committees, was posted on the Committees website in a dedicated folder (https://www-ns.iaea.org/committees/comments/default.asp?fd=1773). This covers issues such as the efficiency and effectiveness of the work of the Committee, interaction with the Secretariat and with other Committees, review of safety standards and of documents other than safety standards etc. It would also be appropriate to propose changes to the terms of reference if such were seen as being beneficial.

There were no specific proposals from WASSC members as to how the self-assessment should be carried out and it was agreed to consider the approaches adopted by other Committees before taking a final decision.

Action: The Secretariat to facilitate the implementation of the self-assessment.

W.6.2 WASSC Four Year Report 2014 – 2017

Ms Sandra Geupel (WES/NSRW) summarized the proposed structure and content of the end-of-term report for the period 2014 to 2017. In 2013, an agreement was reached among all Safety Standards Committees on standardizing the end-of-term reports to include an identical annex in each report summarizing the status of all IAEA Safety Standards reviewed at any time during the term.

Ms Geupel proposed that the following issues of the current four-year term should be highlighted in the WASSC report:

- Revision of Safety Guides on predisposal management of radioactive waste;
- Revision of Safety Guides on decommissioning of facilities;
- The need to develop adequate guidance on management of NORM residues and environmental protection;
- The need to update existing guidance on remediation and clearance;
- Long-term storage *versus* disposal;
- Incorporation of lessons learned from the Fukushima-Daichii NPP accident into the relevant Waste Safety Standards;
- The broadcasting of meetings using the WebEx technology (internet audio/video streaming).

The WASSC Chairman suggested adding the broadcasting of meetings using the WebEx technology (internet audio/video streaming) to this list; this was supported by WASSC members. Upon request by the CSS, the end-of-term report will include an annex with the self-assessment report of WASSC. This report will undergo specific drafting process.

Ms Geupel encouraged members and observers for providing the issues for consideration as priorities for the incoming Committee, as well as items for consideration for future Topical Sessions.

The WASSC Chairman opened the presentation for comment and asked for further proposals for priority issues to be developed during the forthcoming term. In the brainstorming session, the following priorities for the next term were proposed:

- Operational safety of geological disposal facilities;
- National policies and strategies for waste management, decommissioning and remediation;
- Graded approach to NORM regulation;
- Continued review and revision of safety documents in light of the Fukushima Daiichi NPP accident;
- Financial assurance for decommissioning of nuclear installations.

In addition, WASSC members pointed out the issues considered of relevance during this term, such as:

- the importance of having Topical Sessions on subject matters of special interest for WASSC on a regular basis; and
- the importance of having joint meetings with other Committees.

These customs have to be kept for the next term, subject to the availability of meeting rooms.

Committee members will provide further inputs to the four-year report.

Ms Geupel indicated that the report should be circulated prior and agreed at the next WASSC meeting in November 2017.

**Action:** The Secretariat to make the draft end-of-term report available to WASSC members and observers in advance of the next meeting.
W.7 STATUS AND FEEDBACK REPORTS BY THE SECRETARIAT


Mr Andrey Guskov (WES/NSRW) introduced the International Project on Demonstration of the Operational and Long-Term Safety of Geological Disposal Facilities for Radioactive Waste, known by the acronym ‘GEOSAF III’. This project continues international efforts in the area of geological disposal of radioactive waste carried out during the period from 2008 to 2015 within the GEOSAF I and GEOSAF II projects on the demonstration of safety of geological disposal.

The First Plenary Meeting of GEOSAF III was held from 22–26 May 2017 in Vienna.

Three Working Groups have been established in the frame of the project:

- WG1 – Operational safety;
- WG2 – Consistency between requirements, design target and safety envelope;
- WG3 – Managing uncertainties and deviations from the design target and safety envelope; Updating the safety case.

The main objective of WG1 is to assess how safety aspects that were previously identified as not or poorly covered in IAEA Safety Standards on geological disposal are addressed within requirements and guides on waste disposal and waste management, to define the structure of a future guidance document on safety of geological disposal facilities during operation. In a first step, all topics specific for the operational period of a geological disposal facility will be compiled in a skeleton document. In a second step, the topics will be rearranged into general themes, to develop a structure of a guidance document. The envisaged output by 2020 is a consolidated report that will provide the basis for a future guidance document on safety of geological disposal facilities during operation.

Mr Guskov outlined the path forward. Draft Terms of Reference for GEOSAF III are to be updated and sent to the participants for review before end of June 2017. Working Group Meetings will be held from 11–15 December 2017 and in February 2018. The Second Plenary Meeting of GEOSAF III is planned to take place from 4–8 June 2018 in Vienna.


Mr Andrey Guskov (WES/NSRW) introduced the International Project on Establishment of Working Group on Use of Monitoring Programmes in Safe Development of Disposal Facilities for Radioactive Waste. The overall objective of this project is to support the decision-making process regarding the development of geological disposal facilities based on:

- Status of development and implementation of the monitoring programmes in the Member States;
- Approaches and procedures for management of monitoring information;
- Justification of decisions and actions as result of analysis of monitoring data; and
- Involvement of interested parties as “users” of monitoring information in decision making processes.
The envisaged output is an IAEA safety document to demonstrate the use of monitoring data analysis for decision making in development of geological disposal facilities.

A Consultancy Meeting is being held from 19‒23 June 2017 to develop Draft Terms of Reference for the project. A Technical Meeting within the project will be organized from 2‒6 October 2017 in Vienna.

W.7.3 Overview on the CGULS Project (Coordination Group for Uranium Legacy Sites)

Ms Michelle Roberts (WES/NSRW) provided an overview on the CGULS project.

Since 2009, the IAEA has made concerted efforts to assist Central Asian countries – in particular Kyrgyzstan, Tajikistan and Uzbekistan – to address the environmental legacy of uranium mining and milling. The uranium legacy sites in that region pose a threat to the environment and to the health of the population, while the affected countries do not have the means to solve these very challenging problems by themselves.

In 2012, the IAEA established the Coordination Group for Uranium Legacy Sites (CGULS), to coordinate international assistance in the region. CGULS supports Member States by assisting them in the development of their regulatory and safety frameworks, and building national capacity that will strengthen future uranium legacy sites remediation projects. CGULS provides a forum for the affected Member States and international partners to be informed of each other’s current activities, future plans, interests and potential to optimize use of resources. It will also be a mechanism to ensure international standards and good practices are applied to remediation projects. Partner organizations who participate in CGULS include the IAEA, the European Commission, the European Bank for Reconstruction and Development (EBRD), the Commonwealth of Independent States (CIS), and the Norwegian Radiation Protection Authority (NRPA).

CGULS is presently focused on the development of a Strategic Master Plan (SMP), which aims to ensure that environmental remediation of the uranium legacy sites in Central Asian countries will be done in a timely, coordinated, cost-effective and sustainable manner, and in accordance with relevant international conventions and agreements.

The SMP will have two main elements: (1) the strategy to be adopted and followed in remediating the uranium legacy sites in Central Asia; and (2) the master plan for implementing the strategy. The main components of the SMP will be:

- A ranking of the sites in terms of risk and/or priority for remediation;
- A systematic, coherent, cost-effective and fully integrated approach for evaluating the need for, and the nature of, remediation at each site;
- A programme detailing the main tasks or activities to be undertaken, along with associated schedules, key milestones and costs;

1 Few protective measures were in place prior to the mine and mill closures. A large amount of radioactively contaminated material was placed in mining waste dumps and tailing sites. Most of the mines were closed by 1995 but very little remediation has been carried out at the disused facilities and waste disposal sites since then.

2 The EBRD is owned by 65 countries from five continents, as well as the European Union and the European Investment Bank. The EBRD manages seven donor funds providing support to increase nuclear safety and reduce radiological risk in Eastern Europe and Central Asia. To date, 45 donor countries and institutions have pledged over €4.0 billion to EBRD-managed nuclear safety projects. The largest project is the transformation of Chernobyl into an environmentally safe and secure site.
Institutional and organizational arrangements and funding for implementation.

The SMP will cover the priority legacy sites in the region for which the respective governments have had to assume responsibility for the safety of the site in the absence of a private owner. It will reflect the advances made in the national safety frameworks in Central Asian countries and provide a platform for prioritisation of remediation activities going forward.

Implementation of the remediation projects will be funded through the Environmental Remediation Account for Central Asia (ERA), which was established at the EBRD in 2015 at the initiative of the European Commission. A pledging conference is proposed for mid-2018 to attract financial contributions to the ERA.

W.7.4 Overview on the MODARIA II Project (Modelling and Data for Radiological Impact Assessment)

Mr Gerhard Proehl (WES/NSRW) introduced the International Project on Modelling and Data for Radiological Impact Assessment, known by the acronym ‘MODARIA II’. This project continues international efforts in the area of radiological impact assessment carried out during the period from 2012 to 2015 within the MODARIA I project. The objectives of MODARIA I were

- To improve capabilities in radiological impact assessment (test, compare and develop models; analyze, evaluate and compile data);
- The application of assessment methodologies in planned, emergency and existing exposure situations (for people and for the environment);
- To develop harmonized assessment tools;
- To support Member States to fulfil regulatory requirements;
- To provide a forum for discussion and exchange of experiences and knowledge.

Four themes of work were defined under MODARIA I as follows: (1) Remediation of Contaminated Areas; (2) Uncertainties and Variability; (3) Exposures and Effects on Biota; and (4) Marine Modelling.

Mr Proehl noted that MODARIA I came to an end in November 2015. The related reports of the working groups have been published as TECDOCs. The basis for the follow-up project MODARIA II was elaborated in a brainstorming session during the last Technical Meeting of MODARIA I in November 2015. A Consultancy Meeting was subsequently organized in the first quarter of 2016, in order to analyze the proposals in view of the Member States’ needs (a) to implement the IAEA Safety Standards; (b) to develop assessment capabilities; and (c) to ensure appropriate control of exposures to the public.

The MODARIA II project runs from November 2016 to November 2019. It is focused on modelling environmental dispersion and transfer of radionuclides, as well as assessing impacts to people and the environment. The First Technical Meeting to launch MODARIA II was held from 31 October to 4 November 2016 in Vienna. Work plans for the next three years have been developed, and seven Working Groups have been established in the frame of the project as follows:

- **WG 1** – Assessment and Decision Making of Existing Exposure Situations for NORM and Nuclear Legacy Sites;
- **WG 2** – Assessment of exposures and doses plus effectiveness of countermeasures in urban environments;
• WG 3  –  Assessment and control of exposures to the public and biota for planned releases to the environment;
• WG 4  –  Transfer processes and data for radiological impact assessment, including transfer in tropical and sub-tropical environments;
• WG 5  –  Modelling radiation exposures and effects on wildlife;
• WG 6  –  Biosphere modelling for long-term safety assessments of waste disposal facilities;
• WG 7  –  Assessment of fate and transport of radionuclides released in the marine environment.

Mr Proehl outlined the path forward. All Working Groups will meet once per year at a joint Technical Meeting in Vienna. The Second Technical Meeting of MODARIA II is scheduled from 30 October to 3 November 2017. The Final Technical Meeting is envisaged for October/November 2019.

W.7.5  Report on the Third Extraordinary Meeting and the Organizational Meeting for the Sixth Review Meeting of the Contracting Parties to the Joint Convention

Ms Sandra Geupel (JC Coordinator, WES/NSRW) presented the Secretariat’s Report on the Third Extraordinary Meeting (Vienna, 16–17 May 2017) and the Organizational Meeting for the Sixth Review Meeting of the Contracting Parties to the Joint Convention (Vienna, 18–19 May 2017). Both meetings were attended by approximately 270 delegates, representing 57 Contracting Parties.

The agenda of the Third Extraordinary Meeting included, among other items,

• The discussion of the conclusions of the Consultancy Meeting held in October 2016 to assess proposals for improving the review process, in particular for Contracting Parties without a nuclear power programme.
• A presentation on the Openness and Transparency activities adopted by the CNS Contracting Parties, and an assessment whether they are transferable to the Joint Convention.
• A discussion of proposals submitted by Contracting Parties, dealing with important topics such as the definition of Good Practices, the discussion on Overarching Issues, the time management at the Sixth Review Meeting, and provisions for transboundary movement and multinational disposal of spent fuel and radioactive waste within the framework of the Joint Convention.

The Contracting Parties decided by consensus that

• The JC Guidelines regarding the Review Process (INFCIRC/603/Rev.6) will be amended to make publicly available each National Report, 90 days after the Review Meeting, unless the Contracting Party notifies the Secretariat otherwise;
• The President can permit web-streaming of the Opening Plenary Session and the part of the Closing Plenary Session at which the final version of the Summary Report is adopted;
• The President can request the Secretariat to invite journalists to the Opening Plenary Session and the part of the Closing Plenary Session at which the final version of the Summary Report is adopted;
• In the Rapporteurs Reports, in addition to identifying “Good Practices”, “Suggestions” and “Challenges”, a new category “Areas of Good Performance” will be introduced, to encourage Contracting Parties to develop their waste safety regime in a positive way;
• The following issues will further be discussed in the Open-Ended Working Group at the Sixth Review Meeting:
− Exploring the feasibility of providing financial support to new Contracting Parties attending their first Review Meeting;
− Establishing a Working Group to review and propose, as appropriate, the revision of the JC guidance documents, in particular to accommodate specific reporting needs of Contracting Parties without a nuclear power programme, including potential development of templates.

During the Organizational Meeting for the Sixth Review Meeting, the Contracting Parties, *inter alia,*

- Elected the President and the two Vice-Presidents for the Sixth Review Meeting;
- Established 8 Country Groups for the Sixth Review Meeting;
- Elected the Country Group Officers; and
- Decided on a provisional agenda and timetable for the Sixth Review Meeting.

Mr Bismark Tyobeka (South Africa) was elected as the President of the Sixth Review Meeting. Mr Geoff Williams (Australia) and Mr Douglas Tonkay (United States of America) were elected Vice-Presidents of the Sixth Review Meeting.

The Contracting Parties decided to hold two sequential Topical Sessions during the Final Plenary Sessions of the Sixth Review Meeting, dealing with:

- Management of disused sealed sources;
- General safety issues, challenges and public acceptance aspects associated with the long-term storage of higher level radioactive waste (i.e. HLW and ILW).

Finally, the Contracting Parties agreed to invite the two States that have signed, but not yet ratified, accepted or approved the Joint Convention – Lebanon and the Philippines – to attend selected parts of the Sixth Review Meeting as observer, namely the Opening Plenary Session and the part of the Closing Plenary Session where the Summary Report will be adopted.

As part of her presentation, Ms Geupel also provided the schedule of meetings and deadlines, as agreed by Contracting Parties ahead of the Sixth Review Meeting.

**W.7.6 Feedback from the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety**

Due to lack of time, this presentation was cancelled.

**W.7.7 New IAEA Initiatives/Projects within the Radioactive Waste and Spent Fuel Management Unit**

Due to lack of time, this presentation was cancelled and moved to the 44th WASSC meeting, which will be held in November 2017.
W.8 REPORTS FROM WASSC MEMBERS AND INTERNATIONAL ORGANIZATIONS

W.8.1 Feedback from the United Kingdom

Ms Denise Varley (ONR), WASSC member representing the United Kingdom, presented an overview on recent regulatory developments and the use of IAEA Safety Standards in the country.

Her presentation covered the following topics:

- UK regulatory framework for radioactive waste management and decommissioning for nuclear sites
- Regulatory body for nuclear safety
- Regulatory bodies for environmental protection
- UK regulatory approach
- Recent regulatory developments in radioactive waste management
- Use of IAEA Safety Standards in the UK
- Future developments

After the Brexit referendum, UK will withdraw from the EU and the EURATOM Treaty; the respective negotiations have not yet started. Priorities are defined as follows:

- No interruption in quality or robustness of UK civil nuclear safety and safeguards regime
- UK remains fully committed to fulfill its obligations under the CNS and the Joint Convention
- Maintenance of co-operation with EURATOM
- Close collaboration with international counterparts
- Full commitment to nuclear safety matters through IAEA membership
- Key strategic importance of working closely with the nuclear industry

W.8.2 Feedback from Japan

Mr Taiki Yoshii (NRA), Alternate WASSC member representing Japan, presented on the regulation for radioactive waste and recent activities in Japan.

His presentation covered the following topics:

- Regulatory framework for radioactive waste disposal in Japan
- Classification of radioactive waste
- Estimated amount of radioactive waste and material generated by decommissioning of NPPs
- Regulation for disposal of HLW
- Regulation on clearance
- Regulation on decommissioning
- Overview on NPPs under decommissioning
Ongoing activities related to the Fukushima Daiichi NPP accident

W.9 CLOSING OF THE MEETING

W.9.1 Any other business

There were no additional items for discussion.

W.9.2 Dates of future meetings

The Secretariat confirmed that the 44th WASSC meeting will be held in the week from 13 to 17 November 2017. Tentative dates for the WASSC meetings in 2018 are as follows:

- 45th WASSC meeting: 2–6 July 2018 (provisional);
- 46th WASSC meeting: 19–23 November 2018 (provisional).

W.9.3 Conclusions of the 43rd WASSC meeting

The Chairman thanked all the WASSC members and observers from international organisations for their active participation in the meeting. He also thanked the Secretariat for their work in organizing the meeting. Finally, he reminded the participants that the next meeting in November will be the last one in the Seventh Term of WASSC, which covers the period 2014–2017.

W.9.4 Closure

The 43rd WASSC meeting was closed by the Chairman, Mr Williams, who wished all participants a safe trip back home.
RW.1 OPENING OF THE MEETING

RW 1.1 Opening of the Joint Session

The Joint Session of RASSC and WASSC was opened by the Director of the Division of Radiation, Transport and Waste Safety (NSRW), Mr Peter Johnston. He welcomed all participants and briefed them on some items of possible interest.

Hereafter, Mr Johnston drew the attention of the attendees to a number of past and future events that are of interest to both Committees.

Regarding items to be discussed in the Joint Session, Mr Johnston emphasized the importance of agreeing how to proceed in relation to revising the Safety Guide Application of the Concepts of Exclusion, Exemption and Clearance (RS-G-1.7). While the Committees approved the DPPs – one dealing with clearance, and the other dealing with exemption – at their last meetings in November 2016, there were a number of important issues raised that the Secretariat felt required further consideration. A Consultancy Meeting held prior to the meetings of RASSC and WASSC has made a clear recommendation on how to proceed.

In November 2016, the three Safety Guides DS427, DS432 and DS442, providing state-of-the-art recommendations on regulatory approaches for protection of public and the environment, including the flora and fauna, have been endorsed by Commission on Safety Standards and are in the process for publication. The Secretariat is now working intensively in developing practical methodologies applicable to specific facilities and activities. An important issue in this regard is the need to develop guidance on the regulation and use of radiotracers for industrial applications and in environmental studies. Mr Johnston requested the advice of RASSC and WASSC on the best way to progress on this issue.

Mr Johnston highlighted the RASSC opinion on the implications of the 2012 UNSCEAR report “Attributing Health Effects to Ionizing Radiation Exposure and Inferring Risks” for the development of IAEA safety standards. RASSC concluded that the UNSCEAR report has no direct and immediate implications for the IAEA safety standards and, as such, it reinforces the appropriateness of, and sound scientific basis for, these standards. There is a division of opinion on this topic among members of the Commission on Safety Standards, and a Working Group to discuss this matter further is to be established.

Next, Mr Johnston drew the attention of the participants to the upcoming International Conference on Radiation Protection in Medicine (Vienna, 11–15 December 2017). This is a follow-up to the very successful predecessor held in Bonn in December 2012, and it will provide the radiation protection community with the opportunity to evaluate progress in implementation of the “Bonn Call for Action” as well as identifying new challenges from the increasing and varied applications of ionizing radiation in medical diagnosis and treatment.

Significant progress has been made with regard to ARTEMIS, the Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation. The Agency is implementing the first missions to take place. These include a review of the decommissioning
programme in Italy in July 2017 and the two reviews requested in line with the obligations of the European Waste Directive – Poland in October 2017 and France in January 2018.

Finally, Mr Johnston highlighted that, in May 2017, the Contracting Parties of the Joint Convention have held their Third Extraordinary Meeting as well as their Organizational Meeting for the Sixth Review Meeting in May 2018. Both meetings were attended by approximately 270 delegates, representing 57 out of a total of 74 Contracting Parties.

Mr Johnston ended wishing a productive Joint Session to the attendees.

RW 1.2 Chairmen’s Introduction

Mr Gustavo Massera (RASSC Chairman) and Mr Geoff Williams (WASSC Chairman) thanked Mr Johnston for his opening remarks. They also welcomed all newly appointed and existing members and observers of RASSC and WASSC to the Joint Session. Mr Massera outlined that RASSC and WASSC have often met in the past and always had fruitful discussions.

RW 1.3 Adoption of the Agenda

The Agenda of the Joint RASSC/WASSC Session was approved and adopted without changes (see Annex II). It was agreed to alter the order of the presentations, to better suit the availability of the presenters. The list of participants is contained in Annex IV.

RW 1.4 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, including the joint hospitality event. It was agreed that Geoff Williams chairs the morning session and Gustavo Massera the afternoon session.

RW.2 GENERAL SAFETY STANDARDS ISSUES

RW 2.1 Report of the Meeting of the Chairs and of the Commission on Safety Standards

Mr Dominique Delattre (SSDS/NSOC), Head of the Safety Standards and Security Guidance Development Section (NSOC), presented the main results of the 41st CSS meeting held in April 2017.

The following draft safety standards were endorsed for publication:

- Draft Safety Requirements DS478 on Safety of Nuclear Fuel Cycle Facilities (revision of NS-R-5 Rev. 1);

The following DPP was approved:
• DPP for the Draft Safety Guide DS498 on *External Events Excluding Earthquakes in the Design of Nuclear Installations* (revision of NS-G-1.5).

Since the 40th CSS meeting in November 2016, one safety standard was published:


A Working Group of CSS members from Argentina, Australia, Finland and USA, as well as the Chairs of EPReSC, RASSC and WASSC and staff of the Secretariat, was established to consider the implications of the 2012 UNSCEAR report “Attributing Health Effects to Ionizing Radiation Exposure and Inferring Risks” for the development of IAEA safety standards. Representatives of ICRP and UNSCEAR would also be invited to contribute to the Working Group. The Working Group was requested to prepare a report for consideration at the 42nd CSS meeting on the potential implications for both the content of the safety standards and the implementation of and communication on the standards.

CSS members were also informed on improvements in the publishing process. A permission granted to reproduce or translate a standard will automatically extend to future revisions of that standard, without the need for further requests. Draft safety standards will be approved in a two-step process by the Publications Committee, which will enable the CSS to learn about substantive comments at an earlier stage than before.

There were no questions to this presentation.

**RW 2.2  Registration for Access to the NSS-OUI Platform (Nuclear Safety and Security Online User Interface)**

Mr Dominique Delattre (SSDS/NSOC) provided a presentation on the latest status of development of the new IT platform “NSS-OUI” (Nuclear Safety and Security Online User Interface) in NUCLEUS. The presentation updated information provided at the five previous meetings of the Committees in November/December 2014, June 2015, November 2015, June 2016, and November 2016.

NSS-OUI is a content management system and knowledge management system. The system allows the management of relationships between requirements and associated guidance, including safety reports and TECDOCs. In addition, the system has advanced search and navigation capabilities (search by publication or by requirement). The platform will be used in the future as part of the review and revision process for both Safety Standards and Nuclear Security Series publications.

Most of the current work in relation to safety standards focuses on the revision of existing safety standards. This means that systematic feedback on the application of safety standards, as well as the identification of gaps and/or inconsistencies, is becoming more important. In order to ensure greater consistency across the entire set of safety standards, it is also desirable to be able to update a number of different Safety Standards simultaneously.

The principal objectives of the new platform are:

1. To ensure that the review and revision of publications in the Safety Standards Series and in the Nuclear Security Series are based on a systematic process of collection and analysis of feedback;
2. To ensure that any revision of publications or parts of publications is justified by the above mentioned feedback process, therefore stability of the parts of the standards and guidelines that remain valid;
3. To maintain technical consistency between publications by managing them as a series;
(4) To enhance semantic consistency through the systematic use of harmonized terminology;
(5) To ensure comprehensive coverage by means of a systematic ‘top-down’ approach to review and revision complemented by topical gap analyses;
(6) To support the harmonized use and application of Safety Standards and Nuclear Security Series publications by enhancing their user-friendliness and by providing tools for users to easily navigate within the series.

As of May 2017, all IAEA Safety Standards are available and tagged in NSS-OUI. Metadata search and full text search for a total of 122 Safety Standards and 23 Nuclear Security Series are fully operational.

Mr Delattre demonstrated the functionality of the new system, including the use of metadata, the various search functions and the mechanisms for providing feedback. It is intended that the final system will be compatible with use on a desktop, laptop, tablet and smart phone and will work with all popular browsers. He requested feedback of the users on how the platform works. Online guidance has been developed on how to use the new system and a training video is also available.

The next steps in the further development of the system include inter alia:

- A new relationship search tool with possibility to select/deselect topical areas;
- A full SharePoint process flow to manage the review and approval process steps for the revisions up to the final approval and publication;
- To import the Glossaries, followed by semi-automatic tagging to import as metadata the definitions and associated information notes for defined terms used in the text of the publications;
- To continue inserting relationships to relevant Safety Reports, TECDOCs and other relevant publications;
- To insert links to e-learning tools for the requirements and, where appropriate, for guides.

Mr Delattre demonstrated how to register on the homepage of the NSS-OUI platform. He pointed out that only CSS members and SSC members/observers are eligible to register, as agreed with the DDG-NS.

Finally, Mr Delattre thanked Japan and the United States for their financial support to develop the new platform.

RASSC and WASSC welcomed the development of the IT platform, noting that the system’s strong functionality can greatly improve the review and revision process.

**RW 2.3 Holistic Review of the Safety Standards Structure**

As integral part of his presentation, Mr Dominique Delattre (SSDS/NSOC) presented a Word file showing the situation that would be reached after finalization of all drafts being prepared. The overview comprised all DPPs which have been approved by the Coordination Committee as of 24 May 2017. The Committees are asked to review the resulting set of future IAEA Safety Standards, with the objective to identify potential gaps, if any. Mr Delattre reminded the Committee members that even in the case that such a gap would be identified, this should not lead to a proliferation of the number of Safety Standards.
JOINT RASSC/WASSC SESSION

RW.3 REVISION OF IAEA SAFETY STANDARDS

RW 3.1 Revision of the Safety Guide RS-G-1.7 “Application of the Concepts of Exclusion, Exemption and Clearance” (DS499 and DS500)

Mr Miroslav Pinak (Section Head RSM/NSRW) and Mr Vladan Ljubenov (WES/NSRW) informed on the latest developments with respect to the DPPs for DS499 and DS500.

Although RASSC and WASSC approved both DPPs at their meetings in November/December 2016, there were a number of comments that needed to be addressed. In advance of the 41st CSS meeting (April 2017), extensive written comments from Czech Republic were received. Considering the nature of the comments, the Secretariat decided not to submit the DPPs to the CSS, and organized a Consultancy Meeting (30 May – 1 June 2017) prior to the meetings of RASSC and WASSC to discuss the best way forward. The invited consultants had already experience in drafting of RS-G-1.7.

The minutes of the Consultancy Meeting have been made available on the RASSC-42 and WASSC-43 websites. The consultants recommended the following:

- It is appropriate to develop two separate safety guides dealing with application of the concepts of exemption and clearance, respectively.
- International trade of commodities containing radionuclides should be addressed in a separate safety report or TECDOC.
- Both safety guides should be developed in a coordinated manner to ensure consistency of approach and content.
- Consideration needs to be given to developing generic values for exemption and clearance of items with surface contamination. While some Member States already have their own values, generic values could be of great benefit to others.
- Attention needs to be given to ensuring consistency of any numbers that will potentially be referenced or introduced throughout all three documents.
- The existing DPPs should be revised to reflect this new approach (two Safety Guides and one Safety Report/TECDOC).

The scope of DS500 (dealing with clearance) remains unchanged, while the scope of DS499 (dealing with exemption and international trade) will be narrowed, by removing the contents related to international trade. In both DPPs, some contents were restructured to better align them with each other. The clear intention is to place the DPPs on the agenda for approval at the 42nd CSS meeting in November 2017. TRANSSC has been asked to consider if it wishes to continue as a Review Committee for DS499 knowing that the issues of trade will not be addressed in the document.

The presentation was followed by a vigorous discussion.

The United Kingdom was asking for justification to remove the issue of international trade of commodities containing radionuclides from DS499. The dose criteria for international trade are different from those for exemption. Therefore, both issues should be dealt with separately.

Australia, Belgium, the Czech Republic and the European Commission supported the development of two separate Safety Guides for the revision of RS-G-1.7. In this context, Australia stressed the need to proceed with DS499 and DS500 in parallel and in a well-coordinated manner. Mr Monti (European Commission) warned that it will become difficult to get consensus on values for conditional clearance, as the practices adopted in the EU Member States are different. He suggested to present examples in an Annex to DS500 which should provide guidance on methodology rather than numerical values.
Finland also supported the development of two Safety Guides, but recommended to maintain the option to merge them into a single Safety Guide at the end of the process, in order to reduce the total number of Safety Standards in the long-term structure.

In response to a related question from the United States, Mr Ljubenov clarified that the issue of surface contamination is addressed in DS500 for use of material, not for transport. In addition, the Unites States raised the question whether it is intended to bring new numbers into DS500 that could potentially be inconsistent with GSR Part 3. Mr Ljubenov clarified that it is not intended to change any existing numbers in RS-G-1.7. Instead, a few numbers will be added in DS500 only.

In response to a related question from India, Mr Ljubenov pointed out that clearance on the basis of gross activity is not considered to be a good practice and, thus, will not be recommended in DS500.

IRPA insisted on avoiding unnecessary conservatism in clearance values when developing DS500.

Finally, the WASSC Chair requested formal approval of both Committees to remove the issue of international trade of commodities containing radionuclides form the scope of DS499, and to address this topic in a safety report or TECDOC. No objections were raised.

**Action:** The Secretariat to amend the DPPs for DS499 and DS500 and to submit them for the revision of RS-G-1.7 to the Chairs of RASSC and WASSC for approval.

### RW.4 OTHER SAFETY STANDARDS ISSUES

#### RW 4.1 Applications of Radioisotopes in Industry and Research

Mr Jovan Thereska presented an overview on commonly used radioisotopes and state-of-the-art radiation technologies applications and commonly used in industry.

Radiotracers are chemical compounds in which one or more atoms have been replaced by a radioisotope. Radiotracer techniques are used extensively throughout the world for diagnostic purposes, troubleshooting and process optimization in industry. Examples of applications include: Residence time distribution analysis; Flow rate measurements; Leak detection in buried pipelines and heat exchangers; Mixing/blending studies; Corrosion/wear monitoring; Environmental pollution investigation; Sediment movement on river and sea bed; Inter-well tracer test in oil fields; Material inventory; and Positon emission tomography.

Criteria for selection of a tracer for a specific investigation include: (a) type and energy of the emitted radiation; (b) half-life of the radionuclide; (c) physical and chemical stability; (d) easy and unambiguous detection.

Radiation protection measures for workers are necessary throughout all aspects of operations (i.e. production, transport, injection and waste management including cleaning of the working area). Public exposures due to radiotracers are composed of near-field exposure (inside facilities) and far-field exposure (outside facilities). The latter is arising from direct exposure and internal exposure of traced products.

There were no comments or questions to the presentation.
RW 4.2 Proposal to Develop a Safety Guide on Regulatory Control and Radiation Safety for Radiotracers

Mr Diego Telleria (WES/NSRW) presented a proposal by the Secretariat to develop a Safety Guide on Regulatory Control and Radiation Safety for Radiotracers. He explained the background for this proposal. NSRW had received a request from a number of Member States, channelled through NAPC, to provide advice on a regulatory approach applicable for the use of radioactive tracers in industry and environmental studies. The immediate need is to cover a chapter with safety and regulatory considerations in a TECDOC on “Using Radiotracers Safely: Regulation and Environmental Protection” (working title), which is currently being prepared by NAPC. Due to the lack of specific Safety Standards on this matter, NSRW based its advice on the following IAEA publications:

- General Safety Requirements – notably GSR Part 1 (Rev. 1), GSR Part 2, GSR Part 3 and GSR Part 4 (Rev. 1);
- General Safety Guides (in publication) – notably GSG-7 (ex DS453), GSG-8 (ex DS432), GSG-9 (ex DS442) and GSG-10 (ex DS427); and
- TECDOCs – notably Notification and Authorization for the Use of Radiation Sources (TECDOC-1525) and Inspection of Radiation Sources and Regulatory Enforcement (TECDOC-1526).

The chapter on safety and regulatory considerations, to be included in the TECDOC in preparation by NAPC, was drafted with the assistance of international consultants, in cooperation with staff from NAPC and NSRW. The Secretariat highlighted the following observations:

- The use of radioactive tracers in industry and environmental studies involves interested parties outside the nuclear sector;
- The radiation risk is relatively low in most of the scenarios, even for unplanned events;
- There is a lack of a uniform regulatory approach;
- Environmental practices involving radionuclides are becoming more and more controversial.

As a summary of the presentation, the Secretariat considered that a Safety Guide might be justified, and put this to the Committee members for discussion on how to move forward. The WASSC Chair requested to involve NSGC in drafting such a Safety Guide, to ensure that safety-security interfaces are adequately addressed.

In response to a related question from Indonesia, Mr Telleria pointed out that a user of radiotracers should have a license for the related application.

As a conclusion of the question and answer session, despite the interest in the topic, there was no clear view of the Committee members about the need for a Specific Safety Guide on Regulatory Control and Radiation Safety for Radiotracers. RASSC and WASSC appreciated the work being carried out by the Secretariat in preparing the TECDOC, but left open any decision to develop a Safety Guide for further discussions. The Secretariat noted that, once the chapter on safety and regulatory aspects in the mentioned TECDOC is finalized, it could be submitted to RASSC, WASSC and NSGC for information and comments.

RW 4.3 Applying a Graded Approach to Regulation

Mr Jovica Bosnjak (NSRW) reminded the Committees that the application of the graded approach was discussed in December 2015 when approving the draft safety requirements Leadership and Management for Safety (GSR Part 2). At the time, RASSC had some questions as to how the graded
approach is applied by the regulatory body both in relation to its own operations and the requirements it places on licensees, particularly in relation to non-nuclear applications, and if these issues are adequately covered in the safety standards.

Mr Bosnjak noted that application of the graded approach to regulation is addressed in the following safety standards: Principle 3\(^3\) and Principle 5\(^4\) of the Safety Fundamentals SF-1; safety requirements GSR Part 1 (Rev. 1), GSR Part 2 and GSR Part 3. It is also covered in the safety guides Regulatory Control of Radiation Sources (GS-G-1.5), Application of the Concepts of Exclusion, Exemption and Clearance (RS-G-1.7) and Characterization of Radioactive Sources (RS-G-1.9).

More recently, the graded approach is addressed in the three draft safety guides Establishing the Infrastructure for Radiation Safety (DS455), Organization, Management and Staffing of a Regulatory Body for Safety (DS472), and Functions and Processes of the Regulatory Body for Safety (DS473). In these documents, the graded approach is mentioned or referred to on 22, 12 and 35 occasions, respectively.

The concept is present, but not explicitly referred to in Notification and Authorization for the Use of Radiation Sources (TECDOC-1525) and Inspection of Radiation Sources and Regulatory Enforcement (TECDOC-1526). It is intended that both these documents will be revised in the near future, at which time more focus will be given to application of the graded approach. The graded approach is also central to the report on Use of Graded Approach in the Application of Management Systems Requirements for Facilities and Activities (TECDOC-1740), published in 2014.

Application of the graded approach has been raised in a number of recent IRRS missions and there have been a number of recommendations on its application in relation to various aspects of the licensing and inspection process for users of radiation sources. It is recognized that there is a need for improvement but the experience of these missions is that Member States are applying the concept in a more consistent and effective manner than was previously the case.

Mr Bosnjak considered that the graded approach is adequately reflected in the recently developed safety standards. Experience has shown that there is increasing awareness at the national level that the graded approach is a fundamentally important concept and that it is now being applied in a more consistent manner to all facilities and all activities. Nevertheless, the Agency will continue to underline the importance of the concept and will develop additional guidance material in the future.

The United States noted that the definition of the term “graded approach” in the Safety Glossary (2016 Revision) uses the expression “… likelihood of the exposures …”. This suggests the need to use a probabilistic approach, but it is not always clear how this should be done.

Australia, Belgium and France considered that, while the definition suggests that the concept is relatively straightforward, it is difficult to apply in practice. It is also important that it is applied correctly and effectively. They all supported the development of guidance on how the graded approach should be applied, including examples of its application in Member States. Indonesia referred to the relationship between optimization and the graded approach; both are widely quoted, but rarely applied in an appropriate manner.

ILO emphasized the responsibility of the regulatory body to ensure the use of the graded approach by its licensees and end users. It is essential that the application of the graded approach continues to be

\(^3\)“Safety has to be assessed for all facilities and activities, consistent with a graded approach. …” (Para 3.15 of SF-1)

\(^4\)“To determine whether radiation risks are as low as reasonably achievable, all such risks, whether arising from normal operations or from abnormal or accident conditions, must be assessed (using a graded approach) a priori and periodically reassessed throughout the lifetime of facilities and activities. …” (Para 3.22 of SF-1)
emphasised during IRRS missions, and the ILO welcomed the intention to develop additional guidance material.

From the point of view of WASSC, Mr Williams stressed that regulation of NORM activities lends itself particularly well to the use of a graded approach. He supported the view that application in specific situations is not always clear and proposed that the new TECDOCs being developed cover all possible situations in which the graded approach should be applied.

**RW 4.4  Prudence and Conservatism in Radiation Protection**

Mr Roger Coates (IRPA) thanked both Committees for the opportunity to present the view of radiation protection professionals on this particular aspect of the application of the System of Radiological Protection. He noted that the System is based not only on science, but also needs to take account of ethical judgements and experience. From the ethical point of view, the four key considerations are beneficence/non-maleficence, prudence, justice, and dignity. At the level of principle, prudence is about caution, care and a sensible approach. However, practical interpretation of prudence involves a degree of judgement in that what is appropriate at a high level of risk may not be appropriate at a lower risk level.

In practice, prudence has been interpreted as the need for adopting a conservative approach, as is often reflected in international and regulatory guidance and expectations. But this inevitably introduces an intrinsic bias towards lower and lower doses, without there necessarily being any discernible benefit either to individuals or to society.

As an example, Mr Coates described the current regulatory system for releasing items from regulatory control (the concept of clearance). While the intention is to focus the regulatory system on matters of significance and not on trivia, the various steps in the decision-making process each add further conservatism to the estimates of individual dose. From a starting point of a few tens of μSv in a year being regarded as a prudent approach, Mr Coates estimated that the actual radiation doses would be at least one hundred times lower i.e. of the order of 0.1 μSv in a year. This compares with an annual dose from natural background radiation of around 2000 μSv (2 mSv) in a year.

Such a conservative approach has major financial implications for decommissioning. For example, the experience in the United Kingdom is that to reduce the clearance value for Caesium-137 from 1 Bq/g to 0.1 Bq/g would cost several billion pounds over the lifetime of a facility. Mr Coates considered that this was not money well spent and that the clearance values could be increased by a factor of up to 100 and still meet a high standard for radiation protection of the public.

Mr Coates added that a good starting point would be to establish a minimum value for exemption and clearance of 1 Bq/g for artificial nuclides, which would have the added benefit of consistency with the values currently applied to natural radionuclides such as uranium and thorium. This would have an immediate impact in relation to important radionuclides such as Cobalt-60, Zinc-65, Ruthenium-106, Caesium-134/137, Plutonium-238/239/240/241 and Americium-241, for which the clearance value is currently set at 0.1 Bq/g.

In summary, Mr Coates stated that while prudence is right in principle, its application is judgemental and it has drifted into conservatism. Society has limited resources and if these are used on inappropriate prudence/conservatism, this results in poor value for society. This in turn contradicts the ethical consideration of beneficence, which is about doing the best that can be done with society’s resources. Recognizing the problem of conservatism is the first but important step to remedying the situation.

The United States remarked that uncertainties in risk analysis are very large and there is a need to develop a more realistic approach, possibly through the use of probabilistic risk assessment. Belgium
urged caution in this regard, noting that some degree of conservatism is necessary to account for the possibility that we may be seriously wrong in our understanding and assessment of radiation risks.

Several comments were made in relation to the public perception of risk by Belgium, Czech Republic and Ireland. It appears that the public does not understand the risks and even the financial argument is not readily accepted. In the eyes of the public, all radiation is not equal and their decisions are often made on the basis of subliminal feelings rather than scientific facts. Mr Coates noted that treating natural and man-made radiation differently suggests that they are indeed in some way different and, as radiation protection professionals, we have a duty to seek to address such public perception rather than accepting it without challenge.

Canada considered that it is difficult to communicate the conservatism that already exists within the System of Radiological Protection and this makes it difficult to increase the current values for clearance. The United Kingdom commented that the enormous and unnecessary additional costs for low level waste management need to be communicated to the public as such costs are often reflected in additional everyday charges.

Indonesia reminded the Committees that, apart from issues related to prudence and conservatism, there are very real technical issues to be addressed, for example the use of conditional clearance. It could be considered that unconditional clearance represented the “optimistic” approach while conditional clearance was the option chosen by the pessimist. Conditional clearance could therefore possibly be an added degree of conservatism that is unwarranted.

There was a general acceptance that the current system, certainly as it is applied to clearance from regulatory control, is highly conservative but there are a number of reasons as to why changes to the currently agreed numbers would be challenging. However, it was emphasized that we should not allow additional conservatism to be introduced, for example in the development of exemption and clearance values for surface contaminated material.

Mr Pinak noted that safety standards are developed on the basis of practical experience and what is implementable. Public perception does play a role in such an approach. While the current safety standards do allow for individual Member States to develop their own values, a harmonized approach where the same values are applied worldwide has clear advantages.

The RASSC and WASSC Chairs thanked Mr Coates for a stimulating presentation.

**RW.5 DPPS FOR APPROVAL**

**RW 5.1 Draft Safety Guide: Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency, DS504**

Ms Svetlana Nestoroska Madjuranova (IEC) introduced the DPP for a revision of the safety guide *Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency (GS-G-2.1)* which was published in 2007. GS-G-2.1 supported the safety requirements *Preparedness and Response for a Nuclear or Radiological Emergency (GS-R-2)*, which were superseded and replaced by GSR Part 7 (same title) published in 2015. It complements the safety guide *Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency (GSG-2)* published in 2011.

The main reasons for revising GS-G-2.1 are to better address how specific requirements in GSR Part 7 can be met while ensuring consistency in terminology and concepts; providing more detailed guidance on a number of requirements in GSR Part 7, such as those for infrastructure; removing outdated guidance or other guidance which has been addressed in more recent EPR related safety standards;
ensuring appropriate cross-references are given to various EPR related safety standards; and addressing the five emergency preparedness categories with common guidance.

The revised safety guide addresses all nuclear or radiological emergencies, irrespective of cause. The target audience is emergency planners with responsibilities to prepare adequately to respond to any nuclear or radiological emergency at facility, local, regional and national levels. This includes governments, response organizations, operating organizations and regulatory bodies. The proposed structure of the revised safety guide follows GS-G-2.1 to a great extent.

Ms Nestoroska Madjuranova summarized the proposed structure of the document and noted the target publication date of Q3 2022. A total of 29 comments on the draft DPP were received from the Committees. These were mainly editorial in nature and 23 of them were accepted. In response to a question from Iran, Ms Nestoroska Madjuranova confirmed that DS504 will contain detailed guidance on emergency categorization, consistent with what is published in GSR Part 7.

There were no further comments from RASSC and WASSC, who approved the DPP for submission to the CSS for endorsement.

**Action:** The Secretariat to submit the DPP for the Draft Safety Guide *Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency* (DS504) to the CSS for endorsement.

**RW 5.2  Draft Safety Guide: Source Monitoring, Environmental Monitoring and Individual Monitoring for Protection of the Public and the Environment, DS505**

Ms Tamara Yankovich (WES/NSRW) introduced the DPP to revise the safety guide *Environmental and Source Monitoring for Purposes of Radiation Protection* (RS-G-1.8) which was published in 2005. A Consultancy Meeting in March 2016 identified the following key issues to be covered in the revised document:

1. Consistency with more recently published safety standards, including in relation to the use of terminology and the application to different exposure situations;
2. Use of monitoring data to assess doses to the public and to flora and fauna;
3. Development of harmonized monitoring programmes that demonstrate protection of people and the environment;
4. Application of the graded approach;
5. Reporting requirements;
6. Data management and quality management; and
7. Communication and consultation with interested parties.

The revised safety guide will address the planning and implementation of characterization and monitoring to verify compliance with regulatory requirements. It will address the use of source monitoring, environmental monitoring and individual monitoring for the purposes of assessment of radiological impacts to the public and the environment. The target audience is regulatory bodies, operating organizations, decision-makers and others responsible for developing monitoring strategies, for planning and implementing monitoring, and for interpreting monitoring data in relation to planned, existing or emergency exposure situations.

The key issues to be addressed in the new safety guide relate to the characterization and monitoring for planned, emergency and existing exposure situations, using the graded approach. This includes
(1) Source monitoring and environmental monitoring of discharges for authorized facilities and activities;

(2) Source monitoring, environmental monitoring and individual monitoring for unplanned and uncontrolled releases;

(3) Individual monitoring of members of the public in emergency and existing exposure situations; and

(4) Interpretation of results, including those for dose assessment.

Ms Yankovich outlined the proposed structure and content of the document, including possible annexes and appendices. The target publication date is the end of 2021.

Out of the scope of DS505 is the monitoring

- of non-radiological contaminants or physical stressors;
- of disposal facilities (addressed in the Safety Guide SSG-31, Monitoring and Surveillance of Radioactive Waste Disposal Facilities);
- of workers and the workplace;
- of emergency workers and helpers;
- for the purposes of protection of patients; and
- for security purposes.

A total of 71 comments were received from 14 Member States and one International Organization. All were accepted and were very helpful if clarifying the scope of the document. A number of comments were received on the title of the safety guide. Ms Yankovich noted that it is common practice for safety standards to have changes made to the title on a number of occasions during the development process. As such, the current title should be regarded as a ‘working title’ that need not be finalized at this time.

Korea welcomed the proposal to update RS-G-1.8 and underlined the importance of addressing the protection of flora and fauna. Ms Yankovich confirmed that this would indeed be addressed in the document, consistent with the approach recommended by ICRP. Belgium noted that monitoring for clearance does not appear to be addressed and asked that this be considered for inclusion.

India noted that IAEA guidance on the use of delay tanks in medical facilities is causing difficulties for several Member States and asked if this could be addressed in the document. The Secretariat responded that the new safety guide will cover all facilities that discharge to the environment. Therefore, in situations where delay tanks are in operation, the safety guide will address monitoring of the associated discharges. However, this is different to the policy on whether or not delay tanks are justified; such issues are outside the scope of the document.

The United Kingdom considered the that the subject matter of the safety guide was more within the remit of RASSC than WASSC and proposed that RASSC be nominated as lead Committee for the development of the safety guide. This position was supported by Sweden and the United States, and Japan had submitted a similar comment during the review of the DPP for DS505. No other opinions, either in support of or contrary to this proposal, were expressed.

The Russian Federation asked the Secretariat to consider shortening the title of DS505 to “Source, Environmental and Individual Monitoring for Protection of the Public and the Environment”. In response, the Safety Standards and Security Guidance Development Section indicated that it is necessary to maintain the terms ‘Source Monitoring’ and ‘Environment Monitoring’ in the title, consistent with the terminology in the IAEA Safety Glossary.
There were no more comments from RASSC and WASSC, and the DPP was approved for submission to the CSS for endorsement.

**Action:** The Secretariat to submit the DPP for the Draft Safety Guide *Source Monitoring, Environmental Monitoring and Individual Monitoring for Protection of the Public and the Environment* (DS505) to the CSS for endorsement.

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**RW.6 REVIEW OF IAEA SAFETY STANDARDS**


The documents were introduced by Mr Jovica Bosnjak (NSRW) who noted that, in line with the Long Term Structure of the IAEA Safety Standards published in 2013, four current documents have been amalgamated in the development of DS472. These are *Organization and Staffing of the Regulatory Body for Nuclear Facilities* (GS-G-1.1); *Regulatory Control of Radiation Sources* (GS-G-1.5); *Management Systems for Regulatory Bodies* (DS113); and *Use of External Experts by the Regulatory Body* (GS-G-4).

For the development of DS473, the documents which have been merged are *Review and Assessment of Nuclear Facilities by the Regulatory Body* (GS-G-1.2); *Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body* (GS-G-1.3); *Documentation for Use in Regulating Nuclear Facilities* (GS-G-1.4); *Regulatory Control of Radiation Sources* (GS-G-1.5); *Licensing Process for Nuclear Installations* (SSG-12); and *Release of Sites from Regulatory Control upon Termination of Practices* (WS-G-5.1).

As part of the approval of the DPPs it was agreed that, due to the large volume of material to be addressed, two separate but complementary safety guides should be developed: one dealing with organizational issues (DS472) and the other with practical aspects (DS473). In developing both documents, account was also taken of experiences in Member States as well as feedback from IRRS and other missions. Both safety guides are expected to form the basis for all future IRRS missions.

Mr Bosnjak reviewed the structure and development process for both documents, which were submitted to Member States for comment in June 2015. A total of 136 comments were received on DS472. Of these, 105 were accepted and 31 were rejected. In the case of DS473, 369 comments were received, of which 222 were approved and 147 were rejected.

As part of the review process by the Committees, a further 54 comments were received from six Member States on DS472. Of these, 24 were accepted and 30 were rejected. In the case of DS473, 132 comments were received, of which 42 were accepted and 80 were rejected. The majority of the comments were editorial in nature and no technical issues were raised. The resolution of comments tables were posted on the Committees’ website in advance of the meeting.

Finland opened the discussions, stating that it had serious concerns about the manner in which the application of the graded approach was addressed in both documents, in particular in relation to non-nuclear facilities. Both documents appeared unbalanced and were addressed primarily at countries with nuclear facilities, an approach that fails to recognize that the majority of IAEA Member States are non-nuclear. Finland referred specifically to Paragraphs 3.100, 4.30 and 6.3, where this imbalance
is evident. These concerns were supported by Czech Republic and France. Both stressed the importance of both documents to support IRRS missions but recognized that the text as currently written could be accepted by them.

Finland also noted that the need to read both documents in parallel is not helpful. Much of the material in the main body of the text is not essential and this could be moved to annexes. This would make both documents more user-friendly and the key issues on which an IRRS mission is established and judged would be clear. On the same point, Czech Republic noted that it was difficult to identify the most important and relevant issues in the documents.

In response the Secretariat recognized that it had been difficult to draft the text in that it needs to be relevant for all facilities and all activities. It also pointed out that the text on the graded approach had been intentionally written in a manner that allowed for maximum flexibility in its application in different circumstances. Work was already starting to develop TECDOCs on the application of the graded approach, including to non-nuclear facilities and low risk activities. These should help greatly with application of the guidance in DS473, in particular.

Mr Williams noted that the comments being raised were of a substantive nature and it would have been helpful if they had been raised at an earlier stage in the development of both documents. Sweden recognized the validity of this comment, but nevertheless supported the views expressed by Finland that both documents should be improved before proceeding to the CSS. This position was also supported by Denmark.

The meeting came to the view that the comments from Finland, supported by others, in relation to the application of the graded approach should be reflected in amended versions of both documents. It was also considered that the necessary changes could be made relatively easily and need not delay final publication.

Even though NUSSC is the lead Committee, the issue of the application of the graded approach to non-nuclear facilities is of direct relevance to the responsibilities of RASSC. Consequently RASSC and WASSC did not approve DS472 and DS473 for submission to the CSS in their current form. The Secretariat was asked to inform NUSSC of the issues raised and the view of both Committees that these need be satisfactorily resolved before the documents proceed further. It was agreed that, following the NUSSC meeting the following week, amended versions of both documents would be posted on the RASSC and WASSC websites for review and approval. In circumstances where no comments were received, this would be taken as approval of the documents.

RASSC also noted that it would like to be involved in the development of the TECDOCs on the application of the graded approach, as mentioned by the Secretariat.

**Action:** The Secretariat to inform NUSSC of the discussions at RASSC and WASSC and that the concerns raised in relation to the application of the graded approach need be satisfactorily resolved before the documents proceed further. Following the NUSSC meeting, revised texts of DS472 and DS473 should be posted on the Committees’ website for review and approval.

**RW 6.3 Draft Safety Guide: Arrangements for the Termination of a Nuclear or Radiological Emergency, DS474**

Ms Svetlana Nestoroska Madjunarova (IEC) introduced the draft safety guide *Arrangements for the Termination of a Nuclear or Radiological Emergency* (DS474), which supports Requirement 18 of *Preparedness and Response for a Nuclear or Radiological Emergency* (GSR Part 7) and Requirement 46 of *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards* (GSR Part 3).
The objective of DS474 is to provide guidance and recommendations to Member States on developing arrangements at the preparedness stage to respond to a nuclear or radiological emergency in relation to the transition to either an existing exposure situation, or to a planned exposure situation, as appropriate, and the termination of the emergency.

Ms Nestoroska Madjunarova reviewed the history of the development of the document. The text was developed through six Consultancy Meetings in 2014 and 2015. In addition, a Technical Meeting was held in November 2015. The draft was subsequently submitted to Member States for comment in July 2016. In parallel, an ad-hoc working group was established in 2014 under the auspices of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE) and this mechanism was used for ongoing consultation with International Organizations.

A total of 275 comments were received from 13 Member States and three International Organizations. Most of the comments were of an editorial nature and 193 were accepted. Comments were rejected on the grounds of either being outside the scope of the document or because of inconsistency with other IAEA safety standards.

After these comments were addressed, the updated draft was posted for review by the Committees and an additional 33 comments were received from seven Member States. Of these, 22 were accepted. No new technical issues were identified and the revised text was posted on the Committees website in May 2017.

Mr Williams noted that the text of DS474 is consistent with that of Remediation Process for Areas Affected by Past Activities and Accidents (DS468), currently under development. He thanked the Secretariat for ensuring this to be the case and that there are no outstanding issues to be resolved.

There were no questions or comments from RASSC and WASSC, and DS474 was approved for submission to the CSS for endorsement.

**Action:** The Secretariat to submit the Draft Safety Guide Arrangements for the Termination of a Nuclear or Radiological Emergency (DS474) to the CSS for endorsement.

**RW 6.4 Draft Safety Guide: Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency, DS475**

Ms Lisa Berthelot (IEC) introduced the draft safety guide Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency (DS475), which supports the Requirements 10 and 13 of Preparedness and Response for a Nuclear or Radiological Emergency (GSR Part 7) and Requirement 43 of Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (GSR Part 3).

CSS-34 endorsed the DPP for DS475 in November 2013. Six Consultancy Meetings and one Technical Meeting were held during 2014–2016 to develop the draft. The International Organizations contributed through the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE).

The document provides guidance and recommendations on developing arrangements, at the preparedness stage, for communicating with the public and media and for coordinating with all sources of official information in the preparedness and response to a nuclear or radiological emergency. The key issues addressed in the document are protection of the public; informing the public about the hazards, protective actions and other response actions; building and maintaining public trust; addressing public concerns regarding potential health effects; preventing panic and helping to ensure that actions taken do more good than harm; minimizing rumours and responding to misinformation; and enabling interested parties to make informed decisions.
The document is directed at those responsible for communicating with the public and media in a nuclear or radiological emergency within all organizations involved in EPR at facility, local, national and international levels, including those without a daily communication function. Its scope covers the full range of nuclear and radiological emergencies, regardless of cause, including those due to a perceived hazard, natural disasters and nuclear security events.

When posted for review by the Committees, a total of 161 comments were received from nine Member States. Of these, 147 were accepted. A number of comments related to the use of social media and the approach to managing rumours. In addition, some new text was added on the INES scale and the personality traits of Public Information Officers (PIOs). Some sections of the text were relocated to improve clarity.

Australia noted that the intensity of communication needs to change as one moves from the emergency phase into transition and recovery, but the key messages must remain consistent. France questioned the use of “communication” in the preparedness phase and suggested that “constructive dialogue” might be a more appropriate term.

There were no further questions or comments from RASSC and WASSC, and DS475 was approved for submission to Member States for comment.

**Action:** The Secretariat to submit the Draft Safety Guide Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency (DS475) to Member States for comment.

**RW 6.5 Draft Safety Guide: Operating Experience Feedback for Nuclear Installations, DS479**

Mr Peter Tarren (NSNI) introduced the draft safety guide Operating Experience Feedback for Nuclear Installations (DS479), which is a revision of the safety guide A System for the Feedback of Experience from Events in Nuclear Installations (NS-G-2.11) published in 2006.

The revision of NS-G-2.11 is necessary to ensure coherency and consistency with the other relevant IAEA safety standards, in particular the recently published Safety of Nuclear Power Plants (SSR-2/2 Rev. 1). The new document will provide comprehensive guidance on recommended ways of fulfilling Requirement 24 of SSR-2/2 Rev. 1 on feedback of operating experience. It will also incorporate experience on application of the safety standards, the operating experience (OE) feedback from the IAEA incident reporting systems, and relevant experience from major accidents.

DS479 is applicable to all stages of a nuclear installation, including design, construction, commissioning, operation and decommissioning. While the scope of NS-G-2.11 remains essentially unchanged, it has been restructured to provide recommendations for the OE programme at operating organisations and regulatory bodies. New information in DS 479 relates to the management system and the role of managers; identification and reporting of issues; involvement of interested parties in the OE programme; and the regulatory OE programme.

Mr Tarren reviewed the content of the document and its development. It was submitted to Member States for comment on two occasions: in 2015 and again in 2016. Following resolution of all comments, the revised draft was posted for review by the Committees in April 2017. A total of 117 comments were received through NUSSC from six Member States, and 98 were accepted. No comments were received from either RASSC or WASSC. Comments were mainly of an editorial nature and were very helpful in clarifying and improving the text.

There were no questions or comments from RASSC and WASSC, and DS479 was approved for submission to the CSS for endorsement.
**Action:** The Secretariat to submit the Draft Safety Guide *Operating Experience Feedback for Nuclear Installations* (DS479) to the CSS for endorsement.

**RW 6.6 Draft Safety Guide: Severe Accident Management Programmes for Nuclear Power Plants, DS483**

Mr Anthony Ulses (NSNI) introduced the draft safety guide *Severe Accident Management Programmes for Nuclear Power Plants* (DS483), which is a revision of the safety guide NS-G-2.15 (same title) published in 2009. The document provides guidance on the establishment of a Severe Accident Management Programme at nuclear power plants and addresses all possible fuel locations, primarily the reactor core and the spent fuel pool.

Mr Ulses described the structure and content of the document, which was developed through a series of Consultancy Meetings between 2013 and 2015. The draft text was approved in June 2015 for submission to Member States for comment. A total of 364 comments were received from 12 Member States and one International Organization. A number of these comments related to the balance between preventative and mitigatory accident management; these and other comments were resolved through a Consultancy Meeting in January 2016.

Following review by the Committees, a further 146 comments were received, of which 135 were accepted. These were primarily of an editorial nature and no new technical issues emerged. The revised text and the resolution of comments table were posted on the Committees’ website in advance of the meeting.

There were no questions or comments from RASSC and WASSC, and DS483 was approved for submission to the CSS for endorsement.

**Action:** The Secretariat to submit the Draft Safety Guide *Severe Accident Management Programmes for Nuclear Power Plants* (DS483) to the CSS for endorsement.

**RW 6.7 Draft Safety Requirements: Site Evaluation for Nuclear Installations, DS484**

Mr Ovidiu Coman (NSNI) introduced the draft safety requirements *Site Evaluation for Nuclear Installations* (DS484), which are intended to replace the safety requirements NS-R-3 (Rev. 1), published in 2016 to address the lessons learned from the Fukushima Daiichi accident. Following approval, the new Safety Requirements will be referred to as SSR-1 in the long-term structure of Safety Standards. The current revision was initiated

- to incorporate the new developments related to site evaluations for nuclear installations since the publication of NS-R-3 in 2003;
- to ensure coherency and consistency with the other relevant IAEA Safety Standards (e.g. SF-1 and GSRs), and the recently revised Safety Standards (GSR Part 2 and GSR Part 7); and
- to incorporate the operating experience feedback and the feedback from the accident at the Fukushima-Daiichi NPP.

The DPP was approved by the Committees in July 2014 and by the CSS in November 2014. Three Consultancy Meetings were held during 2013–2015 to develop the draft.

The scope of the document remains essentially unchanged from NS-R-3 (Rev. 1); it covers site evaluation for both new and existing nuclear installations. The new information incorporated in DS484 includes inter alia: safety principles and concepts; site safety objectives and link with the Safety
Fundamentals SF-1; requirements for site suitability and data collection; identification and screening of the site specific external hazards.

Mr Coman provided an overview of the comments received by the Committees. A total of 248 comments were received from 12 Member States and one International Organization. Among them, 184 were accepted without or with modifications, 51 rejected, and 13 requested clarifications. There are no unresolved comments or issues remaining.

No questions were raised to the presentation. DS484 was approved by RASSC and WASSC for submission to Member States for comments.

**Action:** The Secretariat to submit the Draft Safety Requirements *Site Evaluation for Nuclear Installations* (DS484) to Member States for comment.


Mr Christopher Bajwa (RIT/NSRW) introduced the draft Safety Requirements *Regulations for the Safe Transport of Radioactive Materials, 20xx Edition*, on behalf of the Technical Officer, Ms Nancy Capadona (RIT/NSRW). DS495 is a revision of the 2012 Edition of the Regulations for the Safe Transport of Radioactive Material (SSR-6), with a scope applying to the transport of radioactive material by all modes on land, water or air. Transport comprises all operations and conditions associated with and involved in, the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, and loading, carriage including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages. A detailed review by TRANSSC identified the need to update the current requirements to address ageing management for packages to be transported after long periods of storage as well as the need to improve harmonization with UN transport regulations. In addition, a new category of Surface Contaminated Objects (SCO-III) is to be introduced to cover the transport of large reactor components and other items with surface contamination.

CSS-39 endorsed the DPP for DS495 in April 2016. DS495 was approved in June 2016 by the Committees for submission to Member States for comment.

A total of 167 comments were received from 15 Member States and one International Organization, with the majority identifying technical issues (76) or seeking further clarification (50). Among them, 65 were accepted, 50 accepted with modifications, and 52 rejected.

Prior to the meetings of the Safety Standards Committees, no further comments were received.

Canada raised some concern about the high number of technical comments received by the Member States, and that the resolution table for Member States comments were not posted on the IAEA website. Mr Bajwa responded that the resolution table would be made available on the TRANSSC-34 website and that a detailed discussion and final agreement on the resolution of comments would take place only during the 34th TRANSSC meeting (10–13 July 2017).

USA asked whether the outcomes from the recent meeting of the TRANSSC Working Group for NORM will have any implications for the development of DS495. Mr Bajwa replied in the negative.

Pending a final decision by TRANSSC as the lead Committee, RASSC and WASSC approved DS495 for submission to the CSS for endorsement.

**Action:** The Secretariat to submit the Draft Safety Requirements *Regulations for the Safe Transport of Radioactive Material, 20xx Edition* (DS495) to the CSS for endorsement.
RW.7 CLOSING OF THE MEETING

RW 7.1 Conclusions of the Joint Session

Mr Massera and Mr Williams thanked the members and observers of both Committees for their active involvement in the meeting.

Mr Williams welcomed the clear way forward on the revision of RS-G-1.7. Mr Massera pointed out that the concerns raised by RASSC in relation to the application of the graded approach in DS472 and DS473 need be satisfactorily resolved before the documents proceed further, and encouraged the RASSC members to convince themselves that this has been done after the revised texts of DS472 and DS473 have been posted on the Committees’ website for review and approval.

RW 7.2 Closing

The joint RASSC/WASSC session was closed by the Chairs, Mr Massera and Mr Williams.
# ANNEX I: AGENDA OF THE WASSC ALONE SESSION

## AGENDA

43rd Meeting of the Waste Safety Standards Committee (WASSC)

**Monday, 12 June 2017, 14:00 – 17:30**  
**Wednesday, 14 June 2017, 9:00 – 12:30**  
**Thursday, 15 June 2017, 9:00 – 15:30**

VIC, Meeting Room M7, M Building, Ground Floor

### W 1 General Issues

<table>
<thead>
<tr>
<th>W 1.1</th>
<th>Opening of the Meeting</th>
<th>Mr J. Rowat, WES Acting Section Head</th>
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<tbody>
<tr>
<td>W 1.2</td>
<td>Chairman’s Introduction</td>
<td>Mr G. Williams</td>
</tr>
<tr>
<td>W 1.3</td>
<td>Adoption of the Agenda</td>
<td>For approval</td>
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<tr>
<td>W 1.4</td>
<td>Administrative Arrangements</td>
<td>Ms S. Geupel</td>
</tr>
<tr>
<td>W 1.5</td>
<td>Report from the 42nd WASSC meeting</td>
<td>For approval</td>
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<tr>
<td>W 1.6</td>
<td>Status of actions arisen from the 42nd WASSC meeting</td>
<td>For information</td>
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</tbody>
</table>

### W 2 General Safety Standards Issues

<table>
<thead>
<tr>
<th>W 2.1</th>
<th>Information on INSAG-27 report “Ensuring Robust National Nuclear Safety Systems – Institutional Strength in Depth” and possible impact on Safety Standards</th>
<th>For information and discussion</th>
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<tbody>
<tr>
<td></td>
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<td>Mr P. Tarren</td>
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### W 3 Review of IAEA Safety Standards

<table>
<thead>
<tr>
<th>W 3.1</th>
<th><strong>DS403</strong> Draft Safety Guide: Decommissioning of Medical, Industrial and Research Facilities (Revision of WS-G-2.2) (also for NSGC)</th>
<th>For approval for submission to CSS</th>
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<tr>
<td></td>
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<td>Mr V. Ljubenov</td>
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<tr>
<td>W 3.2</td>
<td><strong>DS487</strong> Draft Safety Guide: Design of Fuel Handling and Storage Systems for Nuclear Power Plants (Revision of NS-G-1.4) (also for NUSSC, TRANSSC and NSGC)</td>
<td>For approval for submission to the Member States</td>
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<td></td>
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<td>Mr K.S. Sim</td>
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</table>
| W 3.3 | **DS491** Draft Safety Guide: Deterministic Safety Analysis for Nuclear Power Plants (Revision of SSG-2)  
(also for NUSSC and EPReSC) | For discussion of SSCs' comments resolution | Mr P. Villalibre |
| W 3.4 | Waste Safety Standards – Status and future steps | For information | Ms S. Geupel |

**W 4** Review of Document Preparation Profiles (DPPs) for IAEA Safety Standards

| W 4.1 | **DPP DS507** Draft Safety Guide: Seismic Hazards in Site Evaluation for Nuclear Installations (Revision of SSG-9)  
(also for NUSSC) | For approval for submission to CSS | Mr Y. Fukushima |

**W 5** Documents for Information

| W 5.1 | **DS459** Draft Safety Guide: Management of Radioactive Residues from Uranium Production and Other NORM Activities (Revision of WS-G-1.2) | For information and discussion | Mr Z. Fan |
| W 5.2 | **DS477** Draft Safety Guide: The Management System for the Predisposal and Disposal of Radioactive Waste (Revision and combination of GS-G-3.3 and GS-G-3.4) | For information | Mr G. Bruno |
| W 5.3 | **NST047** Draft Technical Guidance: Computer Security Techniques for Nuclear Facilities  
(also for NUSSC and NSGC) | For information | Mr D. Dudenhoeffer |

**W 6** Strategic Issues

| W 6.1 | Information on Self-Assessment of the Commission on Safety Standards and the Safety Standards Committees | For information and discussion | Mr D. Delattre / Ms S. Geupel / Mr G. Williams |
| W 6.2 | WASSC Four Year Report 2014–2017 | For information and discussion | Ms S. Geupel / Mr G. Williams |

**W 7** Status and Feedback Reports by the Secretariat

| W 7.1 | Overview on the International Project on Demonstration of the Operational and Long-Term Safety of Geological Disposal Facilities for Radioactive Waste (GEOSAF Part III) | For information | Mr A. Guskov |

For information  Mr A. Guskov

W 7.3 Overview on the CGULS Project (Coordination Group for Uranium Legacy Sites)

For information  Ms M. Roberts

W 7.4 Overview on the MODARIA II Project (Modelling and Data for Radiological Impact Assessment)

For information  Mr G. Proehl

W 7.5 Report on the Third Extraordinary Meeting and the Organizational Meeting for the Sixth Review Meeting of the Contracting Parties to the Joint Convention

For information  Ms S. Geupel

W 7.6 Feedback from the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety

For information  Mr M. Svab

W 7.7 New IAEA Initiatives/Projects within the Radioactive Waste and Spent Fuel Management Unit

For information  Ms A. Zavazanova

W 8 Reports from WASSC Members and International Organizations

W 8.1 Feedback from the United Kingdom

For information  Ms D. Varley

W 8.2 Feedback from Japan

For information  Mr T. Yoshii

W 9 Closing of the Meeting

W 9.1 Any other business  Ms S. Geupel / Mr G. Williams

W 9.2 Dates of future meetings  Mr G. Williams

WASSC-44:  13–17 November 2017
WASSC-45:  2–6 July 2018 (provisional)
WASSC-46:  19–23 November 2018 (provisional)

W 9.3 Conclusions of the 43rd WASSC meeting  Mr G. Williams

W 9.4 Closure  Mr J. Rowat
ANNEX II: AGENDA OF THE JOINT RASSC/WASSC SESSION

AGENDA

42\textsuperscript{nd} Meeting of the Radiation Safety Standards Committee (RASSC)
43\textsuperscript{rd} Meeting of the Waste Safety Standards Committee (WASSC)

Tuesday, 13 June 2017, 9:00 – 17:30
Wednesday, 14 June 2017, 14:00 – 17:30
VIC, Meeting Room M3, M Building, First Floor

\begin{tabular}{|l|l|l|}
\hline
RW 1 & Opening of the Meeting & \\
\hline
RW 1.1 & Opening of the Joint Session & Mr P. Johnston, NSRW Director \\
RW 1.2 & Chairmen’s Introduction & Mr G. Massera / Mr G. Williams \\
RW 1.3 & Adoption of the Agenda & For approval Mr G. Massera / Mr G. Williams \\
RW 1.4 & Administrative Arrangements & Mr T. Colgan / Ms S. Geupel \\
\hline
RW 2 & General Safety Standards Issues & \\
\hline
RW 2.1 & Report of the Meetings of the Chairs and of the Commission on Safety Standards & For information Mr D. Delattre \\
RW 2.2 & Registration for Access to the NSS-OUI Platform (Nuclear Safety and Security Online User Interface) & For information Mr D. Delattre \\
RW 2.3 & Holistic review of the Safety Standards structure & For information Mr D. Delattre \\
\hline
RW 3 & Revision of IAEA Safety Standards & \\
\hline
RW 3.1 & Revision of the Safety Guide RS-G-1.7 “Application of the Concepts of Exclusion, Exemption and Clearance” (DS499 and DS500) & For discussion Mr V. Ljubenov \\
\hline
RW 4 & Other Safety Standards Issues & \\
\hline
RW 4.1 & Applications of Radioisotopes in Industry and Research & For discussion Mr J. Thereska \\
\hline
\end{tabular}
RW 4.2 Proposal to Develop a Safety Guide on Regulatory Control and Radiation Safety for Radiotracers  
For discussion  
Mr D. Telleria

RW 4.3 Applying a Graded Approach to Regulation  
For information  
Mr J. Bosnjak

RW 4.4 Prudence and Conservatism in Radiation Protection  
For discussion  
Mr R. Coates

RW 5 DPPs for Approval

RW 5.1 DS504 Draft Safety Guide: Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency (Revision of GS-G-2.1)  
For approval for submission to CSS  
Ms S. Nestoroska Madjunarova  
(for all SSCs and NSGC)

RW 5.2 DS505 Draft Safety Guide: Source Monitoring, Environmental Monitoring and Individual Monitoring for Protection of the Public and the Environment (Revision of RS-G-1.8)  
For approval for submission to CSS  
Ms T. Yankovich  
(also for EPreSC and NUSSC)

RW 6 Review of IAEA Safety Standards

For approval for submission to CSS  
Mr J. Bosnjak  
(for all SSCs and NSGC)

For approval for submission to CSS  
Mr J. Bosnjak  
(for all SSCs and NSGC)

RW 6.3 DS474 Draft Safety Guide: Arrangements for the Termination of a Nuclear or Radiological Emergency  
For approval for submission to CSS  
Ms S. Nestoroska Madjunarova  
(for all SSCs)

RW 6.4 DS475 Draft Safety Guide: Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency  
For approval for submission to the Member States  
Ms L. Berthelot  
(for all SSCs and NSGC)

RW 6.5 DS479 Draft Safety Guide: Operating Experience Feedback for Nuclear Installations (Revision of NS-G-2.11)  
For approval for submission to CSS  
Mr P. Tarren  
(also for NUSSC, TRANSSC and NSGC)
RW 6.6 DS483 Draft Safety Guide: Severe Accident Management Programmes for Nuclear Power Plants (Revision of NS-G-2.15)  
(Also for EPReSC, NUSSC and NSGC)

RW 6.7 DS484 Draft Safety Requirements: Site Evaluation for Nuclear Installations (Revision of NS-R-3 Rev. 1)  
(For all SSCs and NSGC)

RW 6.8 DS495 Draft Safety Requirements: Regulations for the Safe Transport of Radioactive Material 20xx edition (Revision of SSR-6)  
(For all SSCs and NSGC)

RW 7 Closing of the Meeting

RW 7.1 Conclusions of the Joint Session

RW 7.2 Closing

Tuesday, 13 June 2017, at 17:30

Reception for participants of the RASSC / WASSC Joint Session  
(VIC Restaurant, Mozart room)

Dates of future meetings:

| CSS 41 | 19 – 21 April 2017 |
| CSS 42 | 30 October – 3 November 2017 |
| EPReSC 4 | 6 – 9 June 2017 |
| EPReSC 5 | 6 – 9 November 2017 |
| NSGC 11 | 19 – 23 June 2017 |
| NSGC 12 | 27 November – 1 December 2017 |
| NUSSC 43 | 19 – 23 June 2017 |
| NUSSC 44 | 27 November – 1 December 2017 |
| RASSC 42 | 12 – 16 June 2017 |
| RASSC 43 | 13 – 17 November 2017 |
| TRANSSC 34 | 10 – 14 July 2017 |
| TRANSSC 35 | 11 – 15 December 2017 |
| WASSC 43 | 12 – 16 June 2017 |
| WASSC 44 | 13 – 17 November 2017 |
## ANNEX III: LIST OF ACTIONS ARISING FROM THE 43RD WASSC MEETING

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>W1.5</td>
<td>WASSC-42 Meeting Report: To finalize the report</td>
</tr>
<tr>
<td>W3.1</td>
<td>DS403, Draft SG: Decommissioning of Medical, Industrial and Research Facilities, to be submitted to the CSS for endorsement</td>
</tr>
<tr>
<td>W3.2</td>
<td>DS487, Draft SG: Design of Fuel Handling and Storage Systems for Nuclear Power Plants, to be submitted to the Member States for comment</td>
</tr>
<tr>
<td>W3.3</td>
<td>DS491, Draft SG: Deterministic Safety Analysis for Nuclear Power Plants, to be submitted to IAEA’s Technical Editors for final editorial review prior to SPESS Step 11</td>
</tr>
<tr>
<td>W4.1</td>
<td>DPP for DS507, Draft SG: Seismic Hazards in Site Evaluation for Nuclear Installations, to be submitted to the CSS for endorsement</td>
</tr>
<tr>
<td>RW3.1</td>
<td>DPPs for DS499 and DS500 (revision of the Safety Guide RS-G-1.7 Application of the Concepts of Exclusion, Exemption and Clearance), to be amended and submitted to the Chairs of RASSC and WASSC for approval</td>
</tr>
<tr>
<td>RW5.1</td>
<td>DPP for DS504, Draft SG: Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency, to be submitted to the CSS for endorsement</td>
</tr>
<tr>
<td>RW5.2</td>
<td>DPP for DS505, Draft SG: Source Monitoring, Environmental Monitoring and Individual Monitoring for Protection of the Public and the Environment, to be submitted to the CSS for endorsement</td>
</tr>
<tr>
<td>RW6.1, RW6.2</td>
<td>DS472, Draft SG: Organization, Management and Staffing of a Regulatory Body for Safety, and DS473, Draft SG: Functions and Processes of the Regulatory Body for Safety, to inform NUSSC of the discussions at RASSC and WASSC and that the concerns raised in relation to the application of the graded approach need be satisfactorily resolved before the documents proceed further. Following the 43rd NUSSC meeting, the revised versions of DS472 and DS473 to be posted on the RASSC and WASSC websites for final review and approval (deadline for comments: end of July 2017)</td>
</tr>
<tr>
<td>RW6.3</td>
<td>DS474, Draft SG: Arrangements for the Termination of a Nuclear or Radiological Emergency, to be submitted to the CSS for endorsement</td>
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<tr>
<td>RW6.4</td>
<td>DS475, Draft SG: Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency, to be submitted to the Member States for comment</td>
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<td>RW6.6</td>
<td>DS483, Draft SG: Severe Accident Management Programmes for Nuclear Power Plants, to be submitted to the CSS for endorsement</td>
</tr>
<tr>
<td>RW6.7</td>
<td>DS484, Draft SR: Site Evaluation for Nuclear Installations, to be submitted to the Member States for comment</td>
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ANNEX IV: LIST OF PARTICIPANTS

Waste Safety Standards Committee (WASSC)

Argentina          Ms Marcela Medici
Australia          Mr Geoff Williams    CHAIRMAN
Belgium            Mr Walter Blommaert
Brazil             Mr Nerbe Rupert Junior
Denmark            Mr David Ulfbeck
Egypt              Mr Yasser Tawfik Mohamed Selim
Finland            Mr Jaakko Leino
Iran               Mr Hossein Sadeghloo
Israel             Mr Roni Hakmon
Korea, Republic of Mr Won-Jae Park
Russian Federation Mr Andrei Sobolev
South Africa       Ms Vanessa Maree
Sweden             Mr Bengt Hedberg
Switzerland        Mr Olivier Beffort
United Kingdom     Ms Denise Varley
United States of America Mr John Tappert

Alternates/Advisors

Australia          Mr Peter Honda
Canada             Ms Karine Glenn
France             Mr Christophe Serres
Germany            Mr Markus Archinger
                   Mr Klemens Hummelsheim
Hungary            Mr Gabor Nagy
Japan              Mr Tatsuya Kijima
                   Mr Taiki Yoshii
                   Mr Hirokazu Tachikawa
United States of America Mr Rateb Abu-Eid

Organizations

ENISS               Mr Pierre Nocture
ISSPA               Mr Wolfgang Fasten
UNEP               Mr Ferid Shannoun
WNA               Ms Binika Shah

Radiation Safety Standards Committee (RASSC)

Argentina          Mr Gustavo Massera    CHAIRMAN
Belgium            Mr Lodewijk Van Bladel
China              Mr Huating Yang
Croatia            Ms Ivana Kralik
Czech Republic     Ms Karla Petrova
Denmark            Ms Mette Ohlenschlaeger
<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
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<tbody>
<tr>
<td>Egypt</td>
<td>Mr Mohammed Ezz El Din</td>
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<tr>
<td>Finland</td>
<td>Ms Ritva Bly</td>
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<tr>
<td>France</td>
<td>Mr Jean-Luc Godet</td>
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<tr>
<td>Germany</td>
<td>Mr Axel Boettger</td>
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<td>Hungary</td>
<td>Mr Arpad Vincze</td>
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<td>India</td>
<td>Mr Rayroth Kunhanveettil Gopalakrishnan</td>
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<tr>
<td>Indonesia</td>
<td>Mr Yus Rustdian Ahmad</td>
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<td>Iran</td>
<td>Mr Sayed Hosseini</td>
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<tr>
<td>Ireland</td>
<td>Mr David Fenton</td>
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<tr>
<td>Italy</td>
<td>Mr Luciano Bologna</td>
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<td>Korea, Republic of</td>
<td>Mr Jai Kwong Chang</td>
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<tr>
<td>Luxembourg</td>
<td>Mr Patrick Majerus</td>
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<td>Netherlands</td>
<td>Ms Miriam Tijsmans</td>
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<td>New Zealand</td>
<td>Mr Glenn Stirling</td>
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<td>Norway</td>
<td>Mr Gunnar Saxebo</td>
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<tr>
<td>Pakistan</td>
<td>Ms Ameena Bano</td>
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<tr>
<td>Russian Federation</td>
<td>Mr Sergey Mikheenko</td>
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<td>Slovakia</td>
<td>Mr Vladimir Jurina</td>
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<tr>
<td>South Africa</td>
<td>Mr John Pule</td>
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<tr>
<td>Spain</td>
<td>Ms Carmen Álvarez García</td>
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<td>Sweden</td>
<td>Ms Ann-Christin Haegg</td>
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<tr>
<td>Switzerland</td>
<td>Mr Andreas Leupin</td>
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<td>Ukraine</td>
<td>Ms Tatyana Pavlenko</td>
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<tr>
<td>United States of America</td>
<td>Mr Daniel Collins</td>
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**Alternates/Advisors**

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<tr>
<th>Country</th>
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<tr>
<td>Australia</td>
<td>Mr Alex Kalaiзовski</td>
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<td>Brazil</td>
<td>Mr Alessandro Fracure Neves de Salles Soares</td>
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<tr>
<td>France</td>
<td>Mr Jean-Francois Lecomte</td>
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<td>Germany</td>
<td>Ms Annemarie Schmitt-Hannig</td>
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<td>Japan</td>
<td>Mr Isao Kawaguchi</td>
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<td>Korea, Republic of</td>
<td>Mr Doh Yun Jang</td>
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<td>Norway</td>
<td>Mr Sindre Overgaard</td>
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<td>Poland</td>
<td>Mr Szymon Kawa</td>
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<td>United Kingdom</td>
<td>Ms Liz Thomas</td>
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<td>United States of America</td>
<td>Ms Cindy Flannery</td>
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**Organizations**

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<tr>
<td>EC</td>
<td>Mr Stefan Mundigl</td>
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<td>ENISS</td>
<td>Mr Bernd Lorenz</td>
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<td>FAO</td>
<td>Mr Carl Blackburn</td>
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<td>ICRP</td>
<td>Mr Haruyuki Ogino</td>
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<td>ILO</td>
<td>Mr Shengli Niu</td>
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<td>Mr Michael Gaunt</td>
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<td>Mr Tasos Zodiates</td>
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<td>IRPA</td>
<td>Mr Roger Coates</td>
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<td>ISO</td>
<td>Mr Yann Billarand</td>
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<td>OECD/NEA</td>
<td>Ms Olvido Guzman</td>
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