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RASSC AND WASSC JOINT SESSION
IAEA Headquarters, IAEA Board Room
13-14 December 2011

RW.1 OPENING OF MEETING

The Joint sessions of RASSC and WASSC were opened by Mr P-S.Hahn (DIR-NSRW). Mr Hahn highlighted important activities and events of the International Atomic Energy Agency and particularly the Division of Radiation, Transport and Waste Safety during past months. In addition, he underlined an upcoming event of great importance, the International Conference on Radiation Protection In Medicine – Setting the Scene for the Next Decade” which will be held in Germany in December next year. Mr Hahn also thanked the Committee members continued support to the Agency’s activities and reminded them of the importance the Secretariat place on their advice. Mr Hahn then handed over the meeting to both Chairmen Mr Williams and Mr Massera for the reminder of the meeting.

RW.2 CHAIRMEN’S REMARKS

Mr G. Williams (Chairman, WASSC) and Mr G. Massera (Chairman, RASSC) thanked Mr Hahn for his introductory comments. They welcomed all participants, noting the range of topics to be discussed in the joint session. In particular they drew attention to the agenda items related to Fukushima, underlining the importance of a detailed and open discussion on all aspects of the issues currently being faced by the Japanese authorities.

RW.3 ADOPTION OF AGENDA FOR THE JOINT SESSION

The draft agenda of the joint sessions were adopted without modification.

RW.4 ADMINISTRATIVE ARRANGEMENTS FOR THE MEETING

The IAEA Secretariat drew attention to the location of the emergency exits, introduced the technical support staff for the meeting and summarized the administrative arrangements. The meeting was advised that no exercises of the fire alarm evacuation system were anticipated and all members should respond to any alarm activation and follow directions.

RW.5 GENERAL SAFETY STANDARD ISSUES

RW.5.1 Feedback from the Commission on Safety Standards (CSS30)

Mr D.Delattre (SSCS-NS) informed RASSC and WASSC on the past meeting of the Commission on Safety Standards (CSS30). He particularly addressed the meeting on the status of the endorsed Safety
Standards (SSs) —9 endorsed SSs are being published—, on the Plan for the review of IAEA’s SSs, on policy discussion and on the joint safety-security task force.

Mr Delattre also reported on the SSs approved by CSS30: within the Safety Requirements, DS437 (Regulations for the Safe Transport of Radioactive Material) and within the Safety Guides, DS284 (Safety Case and Safety Assessment for Predisposal Management of Radioactive Waste), DS397 (Safety in the Utilization and Modification of Research Reactors) and DS426 (Periodic Safety Review of Nuclear Power Plants). In addition, there were 2 DPPs approved for the revision of Safety Requirements (GS-R-2 and GS-R-3), and 3 DPPs approved for the revision of several Safety Guides (revision and combination of five occupational radiation protection guides, the revision of WS-G-2.7 and a DPP for a new guide on Establishing a national radiation safety infrastructure). Mr Delattre’s presentation is uploaded to the WASSC member’s area.

**RW.5.2 Feedback from the Meeting of the four Chairs**

Mr G. Williams reported to the meeting on behalf of both Chairmen on the Chairs’ meetings held just before the CSS. The attendees for the first meeting were the four Chairmen of the four Safety Standards Committees, the four Scientific Secretaries of the four Safety Standards Committees, the Scientific Secretary of the CSS and the Section Head of the Coordination Section of the IAEA. For the second meeting, Mr Lacoste, Chair of the CSS, joined the previous attendees. The main points discussed were:

- **New cycle of CSS:** The new cycle starts in 2012 and a new Chair will be appointed. It is foreseen that the main topic for this term is the results of the revision of SSs related to the Action Plan for the Fukushima Accident. It was recognized that this will be a continuous process and the importance of the input from the stress tests being performed in several Member States was emphasized.

The question also raised was which organization should coordinate and collate all the lessons learnt from Fukushima and it was suggested that the IAEA should have such role.

- **The role of the four Chairs of the Safety Standards Committees and an Interface group** for Safety and Security documents were discussed.

- **A new Committee on Nuclear Security Guidance** would be established soon. It was discussed the interfaces among the four safety standards committees and the new committee on security.

- **Implications to SPRESS** were discussed in relation to the incorporation of co-sponsors in developing SS’s.

- **A Nuclear Energy document** on the Objectives of Nuclear Fuel Cycle Facilities was discussed.

- **Feedback from MSs** on the use of Safety Standards is relevant: having the standards in use in MSs it is now pertinent to receive feedback on the language and comprehension of the SS’s, mainly in relation to consistency, coherency and clarity. This feedback would be very useful for the implementation and application of the Safety Standards in Member States.

The next meeting of the four Chairs will be held 20-21 February 2012 with the new Chair and outgoing Chair of the CSS.
RW.6 DOCUMENT PREPARATION PROFILES (DPP) FOR APPROVAL

RW.6.1 DS421: Revision of DPP for Safety Guide: “Protection of the Public against Indoor Exposure to Natural Sources of Radiation”

At the previous joint RASSC/WASSC meeting in June 2011 a decision was made to amend the scope of DS421. This necessitated the preparation of a revised DPP. Mr T. Boal (RSM-NSRW) outlined the proposed structure of the document, which provides guidance on the implementation of requirements 48, 50 and 51 of GSR-Part 3 (BSS) dealing primarily with exposure to radon in existing exposure situations and from natural sources of radioactivity in building materials. Mr Boal confirmed that DS421 could not be sent to Member States for comment until the revised DPP is endorsed by the CSS.

The EC welcomed the document, in particular the guidance provided on the control of building materials, and proposed that it would be appropriate to consider how trade in building materials could be incorporated into international trade agreements.

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

Action: The Secretariat to submit the revised DPP for DS421 to the CSS for endorsement.


At the previous RASSC/WASSC meeting in June 2011 the Secretariat was asked to prepare a DPP for a new publication covering regulatory control of consumer products and associated issues. The June 2011 meeting deferred a decision on whether the new publication should be a safety guide or another safety related document until the scope proposed in the DPP was considered.

Mr T. Colgan (RSM-NSRW) outlined the proposed scope of the document which would address all consumer products covered by the revised definition i.e. manufactured items to which small amounts of radioactive material had been added (such as ionization chamber smoke detectors and certain lighting products), items generating radiation (such as certain cathode ray tubes) and activated products (such as gemstones). The proposed document would cover the entire life cycle of such products and address issues such as the role of the regulatory body, application of the exemption criteria and use of the graded approach. Specific issues related to transportation, storage, disposal and recycling would also be addressed. Mr Colgan noted that the document would be developed jointly with the EC, ISO and NEA and emphasized the importance of greater harmonization to support international trade in consumer products.

RASSC/WASSC noted that the issues related to the justification of consumer products are also covered in DS401 “Justification of Practices”. In subsequent discussions on that document (see item RW7.4), it was agreed that the examples of the justification of consumer products in the annex to DS401 should be transferred to DS458 and the DPP of DS458 amended accordingly. It was also noted that justification involves societal decisions and moral judgements and reference was made to the documents published by HERCA (Heads of European Radiation Protection Competent Authorities) on this issue.

RASSC/WASSC underlined the importance of addressing the exemption criteria in the document and, given the need for a harmonized approach among Member States, supported the development of a safety guide rather than a safety report. The EC suggested that the Agency should consider setting up a
group of international regulators to “approve” specific consumer products in a similar manner to that operated by HERCA.

**Action:** The Secretariat to amend the DPP for DS458 and submit it to the CSS for endorsement.


Mr Z. Fan (WES-NSRW) introduced the document, which resulted from the previous decision of RASSC/WASSC to amend the scope of DS421 and the need to revise WS-G-1.2 in light of new requirements and developments and, at the request of WASSC, to expand it to include the management of wastes of other NORM-related industries. The revised document will update WS-G-1.2 in relation to managing radioactive waste from the mining and milling of ores and will also address the management of waste from other NORM-related industries. The document will primarily address new facilities and will cover strategy for residue management and safety considerations for the long term management and/or disposal (siting, design, construction, operation and closure). In addition the document will cover the application of a graded approach to related facilities and activities. Given the new scope of the document, Mr Fan proposed a revised title “Management of Radioactive Residues from Mining, Mineral Processing, and other NORM-related Activities”. A total of 28 comments, mainly of an editorial nature, were received prior to the meeting and 21 of these were accepted.

Following questions from Japan on the scope of DS459, and the subsequent discussion as to whether the uranium wastes arising from uranium conversion, enrichment and fabrication facilities are included in the scope of the document, it was agreed at the WASSC meeting that the Secretariat would examine possible overlap with other safety guides, and with DS447 “Predisposal Management of Radioactive Waste from Fuel Cycle Facilities” in particular. The Secretariat has now completed that examination and will be reporting to the next WASSC meeting that such wastes arising from uranium conversion, enrichment and fabrication facilities are adequately covered in DS447 and thus outside of the scope of DS459. This will be open for further discussion and approval at WASSC33.

The WNA underlined the importance of involving the uranium mining industry in the development of the document.

RASSC/WASSC approved the DPP for submission to the CSS for endorsement

**Action:** The Secretariat to submit the DPP for DS459 to the CSS for endorsement.

**RW.7 DOCUMENTS FOR APPROVAL**

**RW.7.1 DS421: Draft Safety Guide “Protection of the Public against Indoor Exposure to Natural Sources of Radiation”**

Mr T. Boal (RSM-NSRW) introduced the document, which primarily addresses control of exposure to radon and to gamma radiation indoors. The text is fully consistent with the decision of the joint RASSC/WASSC meeting in June 2011 and with the revised DPP for DS421 discussed previously in the meeting (see item RW6.1). The document also contains seven detailed annexes that support the guidance in the main text. Mr Boal reported that a total of 137 comments had been received on the document: 90 of these were considered editorial, seven related to UNSCEAR data and the remaining 40 were of a more substantive nature. Responses to all comments were still being prepared and would be posted on the website by the end of January 2012.
RASSC/WASSC welcomed the document and considered it to be of a high standard. It was noted that reference is made in the document to occupational exposure to radon and that this text needs to be fully consistent with the safety guide DS453 “Radiation Protection in Occupational Exposure”. There were requests to amend section 4 and annex 7 as follows: (1) provide more information on shielding options to reduce indoor exposure to gamma radiation originating in the building materials of the dwelling (also covering changes to the dimensions of the room); (2) document and reference other algorithms for controlling the radionuclide content of building materials; and (3) include a sensitivity analysis of the dose calculations for the application of the building materials compliance algorithms.

RASSC/WASSC asked that the remaining comments received prior to the meeting be addressed and the changes requested during the meeting be incorporated in the document. RASSC/WASSC approved the submission of DS421 to Member States for comment once the revised DPP was endorsed by the CSS.

Action: The Secretariat to revise DS421 to address all comments received and, once the revised DPP has been approved by the CSS, to submit DS421 to Member States for comment.


This safety guide covers the technical, scientific legal and analytical support provided to the regulatory bodies and was introduced by Mr B. Jeannin (SSCS-NS). It also addresses the ways in which such external support may be provided. Following events at Fukushima, globalisation of cooperation between Technical Service Organizations and regulatory bodies is likely to increase and DS429 will assist in guiding the nature of this interaction.

Mr Jeannin reported that 343 comments had been received from Member States and the majority of these were accepted. An additional 105 comments were received from eight Member States and one international organization on RASSC, of which 98 were accepted. One of the changes accepted was to change the title of the document to “External Expert Support for the Regulatory Body”. The draft text posted for comment by RASSC and WASSC has already been approved by NUSSC and TRANSSC and the technical editing has been completed.

RASSC/WASSC had no comment and approved the document for submission to the CSS for endorsement.

Action: The Secretariat to submit DS429 to the CSS for endorsement.

RW.7.3 DS439: Draft Safety Requirements Addendum to NS-R-5, Appendix IV “Reprocessing Facilities” and Appendix V “Fuel Cycle Research and Development Facilities”

Mr G. Jones (RRSS-NSNI) summarized the history of the development of the document. He noted that general requirements, applicable to all facilities, are addressed in the main body of the text while the five appendices contain facility-specific requirements. Previously three appendices were approved by the Committees and added to the document and these remaining two appendices will finalize the document. Mr Jones reported that 172 comments had been received, of which 147 had been accepted and 25 were rejected. One additional comment from Japan was also accepted and resulted in the deletion of some text. Most of the comments rejected referred to text in the main body of the document and as such were out of scope.

In response to a comment from France, Mr Jones noted that the appendices were not “stand alone” and needed to be reviewed by reference to the generic requirements in the main body of the text.

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RASSC/WASSC considered that this point should be made in the Note Verbale when the document is issued to Member States for comment and approved the document for submission to Member States for comment.

**Action:** The Secretariat to submit DS439 to Member States for comment. The Note Verbale needs to mention that the appendices should be reviewed by reference to the generic requirements in the main body of the text.

**RW.7.4 DS401 Draft Safety Guide: “Justification of Practices”**

Mr T. Boal (RSM-NSRW) reviewed the history of the development of the document, which commenced in 2004 as a safety report on non-medical human imaging. In 2006 it was upgraded by RASSC to a safety guide and contains a generic section on applying the principle of justification and specific text addressing the justification of consumer products and non-medical human imaging. Mr Boal noted that, since the last review by RASSC, two new annexes dealing with discharge lamps and tritium exit signs had been added and an annex on theft detection was deleted as such practices are deemed not to be justified in GSR-Part 3. In line with the request from RASSC a revised title “Justification of Practices Causing Exposure due to Consumer Products and Non-Medical Human Imaging” was now being proposed. Mr Boal briefly reviewed the 104 comments received from 4 Member States. Of these, 80 were regarded as being editorial and the remaining 24 were more substantive. The responses to the comments were still being prepared and would be posted on the website in due course.

RASSC/WASSC supported the document and underlined that justification is primarily an issue for government. Recognizing that this responsibility may be devolved to the regulatory body, greater clarity is required on the government and regulatory body interface. Several members expressed the view that the availability of alternative technologies not involving radiation should be considered in justification decisions; Mr Boal pointed out that such considerations would be contrary to the requirements in GSR-part 3 and therefore could not be discussed in the safety guide. The work already undertaken by HERCA (Heads of European Regulatory Competent Authorities) on security scanning was considered appropriate for inclusion in the annex. The UK offered to provide its justification decision on lightning conductors and Belgium recommended that non-medical human imaging for insurance purposes should be discussed as one of the category 1 practices.

There was extensive discussion regarding the scope of the document and the need for consistency with DS458 on consumer products (see item RW6.2). The Chairman established a working group, consisting of the RASSC representatives from Ireland and Israel and the WASSC representative from the UK, to consider the issues raised. The working group made the following recommendations:

- Delete paragraph 1.8 to make the guidance more generic. Other minor changes of a similar nature should be made throughout the text, where appropriate;
- Delete Annexes I and VII covering consumer products. They are to be included in DS458 “Radiation Protection and Regulatory Control of Consumer Products”;
- Amend the DPP for DS458 to refer to DS401 and the fact that the annexes are being moved
- Retain Section 5 in the main body of DS401 (an alternative would be to move Section 5 to an Appendix, so that it remains part of the Safety Standard);
- Retain all Annexes on non-medical imaging i.e. Annexes II, III, IV and V;
- Retain Annexes on lightning protection systems (Annex VI) and on tritium exit signs (Annex VII) and cover their inclusion in the scope; and
• Change the title of DS401 to better reflect that it provides generic guidance on applying the principle of justification with specific guidance in relation to non-medical human imaging.

RASSC/WASSC accepted the recommendations from the working group and approved DS401 for submission to Member States for comment.

Action: The Secretariat to revise DS401 to address all agreed changes and, once completed, to submit DS401 to Member States for comment.

RW.8 GENERAL SESSION

RW.8.1 Overview on the Integrated Regulatory Review Service (IRRS) programme

Mr H. Mansoux (RIT-NSRW) provided an overview of the Integrated Regulatory Review Service (IRRS), covering the past history, current activities and future plans. The IRRS is a peer review service managed and co-ordinated by the Agency with the purpose of evaluating the status of compliance of Member States regulatory infrastructure with the IAEA Safety Standards. The IRRS commenced in 2006 and up to the end of 2011 a total of 34 missions and seven follow-up missions have been completed.

The IRRS involves a review of a number of “core” areas of the Member State’s regulatory infrastructure for nuclear and radiation safety, the responsibilities, functions and management system of the regulatory body and the national system for emergency preparedness and response. Policy issues are always agreed in advance and discussed as a core component of the IRRS. A number of “additional” areas are optional and may be included in the scope of an IRRS mission, in accordance with the scope of regulatory oversight in the host country. The Agency has developed a Self-Assessment Tool (SAT) that allows each Member State to evaluate its compliance with the IAEA safety standards prior to the IRRS mission. The SAT is presently being revised; the new version will include modules on exposure to natural radiation and will be fully consistent with the recently published International Basic Safety Standards (GSR Part 3).

The outcome of each IRRS consists of recommendations (actions necessary to comply with safety requirements), suggestions (actions that would improve operational performance) and good practices (superior arrangements or programmes that were identified and are suitable for sharing with other Member States). The host is required to prepare an action plan to address all recommendations and suggestions and the Agency offers follow-up missions to evaluate progress in implementing the actions. IRRS mission reports, once officially sent by the IAEA to the host, are usually made public.

To date three workshops have taken place to review lessons learnt from the IRRS, the most recent of which took place in October 2011. IRRS missions are also referred to in the IAEA Action Plan on Nuclear Safety prepared following the Fukushima accident. Priorities for the future include more “full review” missions, a more in-depth review of national regulations, more follow-up missions and a better sharing of results and experiences.


Ms C. Necheva (EC) presented the recently approved Council Directive on establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste in the European Union. Ms Necheva made a comprehensive presentation, referring a brief history of its development, including stakeholder and public consultations, the context of its development, the
general principles on which it is based and the main elements of the directive. They are namely: the national policy on spent fuel (SF) and radioactive waste (RW) management, the national framework and the national programme for the management of SF and RW from generation to disposal. Detailed provisions for each main element were also presented. It was highlighted that this Directive is anchored in the internationally endorsed principles and requirements of the IAEA’s Safety Standards and the Joint Convention, and in this context it makes them legally binding and enforceable in the EU. In addition, the main differences with the Joint Convention were also discussed. Ms Necheva’s full presentation is uploaded to the WASSC32 web folder.

RW.9 IAEA ACTION PLAN ON NUCLEAR SAFETY; REVIEW OF SAFETY STANDARDS FOLLOWING FUKUSHIMA

RW.9.1 Status of the CSS/Secretariat Plan for the Review of Safety Standards after Fukushima

Mr D. Delattre (SSCS-NS) presented the CSS and Secretariat plan for the review of IAEA’s Safety Standards. In particular Mr Delattre briefed on the initial request of this action plan, made by the Director General in June 2011, at the conclusion of the Ministerial Meeting. A specific action for the Safety Standards review in the Action Plan on Nuclear Safety was agreed (GOV/2011/59- GC(55)/14). Action (6) of this document called to “Review and strengthen IAEA Safety Standards and improve their implementation”. This action also includes a footnote stating: This review may include, among other things, the regulatory structure, preparation and conduct of emergency response and safety and nuclear engineering (selection and site evaluation, risk assessment, extreme natural, including their combined effects, management of serious accidents, loss of network, loss of heat sink, accumulation of explosive gases, behaviour of nuclear fuel and means to ensure the safe storage of spent fuel).

An exchange of letters between the Director General of the IAEA and the Chairman of the CSS at the beginning of Summer 2011 confirmed the action of CSS on safety standards, with the aim to submit a Report on the review of Safety Standards to the DG in June 2012.

Mr Delattre presented the methodology of work which focused on a gap review which will carry out a systematic analysis of the topical issues that were highlighted by the accident. It is proposed to start the gap review process by identifying in a systematic manner the lessons learned from the accident, using available sources (reports from the Gov. of Japan, Fact finding mission, INSAG letter). Each lesson will then be allocated to a topical area which will help to make the link to where the topics are addressed in the set of requirements. At the end of 2010, the Secretariat established such a table on the basis of established and potential overarching requirements for all Safety Requirements. 77 topical safety areas have been selected a priori to classify the lessons learned but the review can complement this list by adding other topical areas.

In relation to the prioritization of the work ahead, and given the time it will take for the Fukushima Daiichi accident to be analyzed, the large number of safety standards to be reviewed and the inter-relationships among them, it is proposed that the gap review should cover as a first priority the Safety Requirements. For the Safety Guides, an in depth analysis of the accident would be necessary. It was noted that, the IAEA would have a better overview after the March meeting of the CSS(27-29 March 2012). In addition, prioritization will be given to the safety standards applicable to nuclear power plants and spent fuel storage.

If the conclusion in March 2012 is that there are Safety Requirements that would need to be revised, it is proposed to revise these by means of only one process and one document, consisting of the table of
all proposed changes to the Safety Requirements being submitted to the existing review and approval process.

Finally, a revised document, containing the revised review plan and its methodology of work was uploaded to the SSC’s web folder in November. RASSC and WASSC members were asked to provide comments by 15 February 2012 on this revised document.

Discussion of RASSC and WASSC included:

- Process and timeliness requests for clarification: the document being prepared is a living document, which will be updated regularly. The document with the proposals for review will be discussed by the CSS in March 2012 and will provide inputs to the report on the review of Safety Standards to be delivered in June. As a result of this work, the decision for the revision of the Safety Requirements will follow the process of SPESS and include the input from the Safety Standards Committees and Member States;
- Various status of production/revision of Safety Standards, as the normal process should continue in parallel to this review/revision process;
- Prioritization for different stakeholders, at global and national level, should also be considered in the process; and
- International organizations co-sponsoring IAEA Safety Standards, such as the BSS and GS-R-2, should be consulted on the revision process.

RW.9.2 IEC activities under the IAEA Action Plan

Ms E. Buglova (EIC-NS) presented the IEC activities to strengthen emergency preparedness and response under the IAEA Action Plan on Nuclear Safety. Ms Buglova addressed the following topics:

Emergency Preparedness Review

- Summary information on the Emergency Preparedness Review (EPREV) had been compiled and was available at the web site of the Action Plan on Nuclear Safety;
- Development of specific module, highlighting GS-R-2 requirements highlighting lessons identified in response to accident at TEPCO’s Fukushima Daiichi NPP; and
- Database development for national best practices and recommendations identified in EPREV missions.

Emergency preparedness and response:

- A response and Assistance Network (RANET) meeting will be held in January 2012 to discuss extension of assistance capabilities; and
- A meeting of Inter-Agency Committee on Radiological and Nuclear Emergencies will be held in December 2011.

Review of IAEA Safety Standards related to emergency preparedness and response:

- The EIC participated in the Safety Standards Review Task Force, addressing lessons learned and identified by the IAEA Fact Finding mission and in the Japanese report.

International legal framework activities related to emergency preparedness and response:

- An extraordinary meeting of the Convention on Nuclear will be held in August 2012;
- A meeting of Competent Authorities under Convention on Early Notification of a Nuclear Accident and Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency will be held in April 2012.
Communication and information dissemination related to Emergency preparedness and response:

- A new edition of the Emergency Notification and Assistance Technical Operations Manual (ENATOM) is being prepared;
- The Secretariat has initiated a review of the application of the International Nuclear and Radiological Event Scale (INES) as a communication tool; and
- Development of additional guidance on the application of INES will begin in February 2012.

RW.9.3 Report of the delegation of Japan on the Fukushima Accident focused in the area of WASSC and RASSC

Mr R. Kawamura presented the topics related to WASSC and Mr Iimoto presented the topics related to RASSC in the reports of the Japanese Government issued in June and September 2011. Both reports are available in public web sites:


The following topics were addressed:

- Decrease in the release rate of radioactive material;
- Status of improvements to measures to prevent water with radioactivity from flowing out of the installations;
- Monitoring of information on seawater inside intake channel;
- Responses to people suffering as a result of the nuclear accident: in particular:
  - Decontamination measures and countermeasures related to the generation of secondary radioactive waste,
  - Efforts to lift the designation of an evacuation-prepared area in case of an emergency, taking into account radiation protection and reactor stability, revision of the concept of an evacuation-prepared area;
- Enactment of the act on measures for radioactive waste;
- Basic policy for emergency decontamination work was set as:
  1. The national government directly promotes decontamination with the goal to reduce the estimated annual exposure dose to below 20 mSv.
  2. Effective decontamination is carried out, with the goal to bring the estimated annual exposure dose close to 1 mSv, and particularly to place high priority on thorough decontamination work in children’s living areas (schools, parks, etc.). The goal is to reduce the estimated annual exposure dose of children to close to 1 mSv as soon as possible, and then still lower.
  3. In case of decontamination of an area where an evacuation instruction has been issued (due to the potential of exceeding 20 mSv of annual cumulative dose) the government has the initiative for decontamination in cooperation with the municipalities.
  4. A model decontamination program was initiated at every municipality in the restricted area to reduce the ambient dose rate by large scale area decontamination, taking into account land utilization types and topographic features.
5. A Fukushima decontamination promotion team was set to provide necessary information on
decontamination plans, to promote communication and coordination and to assist in the
development of the decontamination plans.

- Plans for the restoration of the NPPs site, were set to remove the spent fuel and debris and
  ultimately, to take measures for decommissioning;
- Enhancement of safety infrastructure; regulatory and administrative systems. A new Nuclear
  Safety and Security Agency (tentative name) will be established in early 2012;
- The roles of each governmental organization in the radiation monitoring and the details of the
  Comprehensive Monitoring Plan (nationwide) set in August 2011;
- Distribution maps for Cs-137, deposition and dose rate, concentration of Sr-90 and Plutonium
  and maps of aerial and sea monitoring; and
- The results of the assessments of radiation exposure situations for emergency workers, results
  of a simplified survey for thyroid internal exposure of children and the Health Management
  survey for the residents in the Fukushima Prefecture in order to observe the resident’s long
term health.

RW.9.4 IAEA Mission on remediation of large contaminated areas off-site the
Fukushima Dai-ichi NPP

Mr G. Proehl (WES-NSRW) presented a feedback report from the IAEA expert mission to Japan on
Remediation. The mission, requested by the Japanese Government, comprised 12 international experts
from several countries and IAEA experts who visited Japan7 to 14 October 2011. The Mission had
three objectives:

1. Provide assistance related to Japan’s plans to remediate large areas contaminated by the
   accident at the Fukushima Dai-ichi NPP;
2. Review Japan’s ongoing remediation related strategies, plans and activities, including
   contamination mapping; and
3. Share its findings with the international community as part of the joint effort to broadly
   disseminate lessons learned from the accident.

The Mission included an assessment of information provided to the Team, open discussions with
relevant institutions in Japan, and visits to the affected areas, including several demonstration sites.
The Team also visited the Fukushima Dai-ichi NPP. The authorities of Japan provided comprehensive
information on their remediation programme.

The main focus of the Mission was on the “deliberate evacuation area” and had found the following
conditions:

- Cs-134 and Cs-137 were the dominating radionuclides;
- External exposure was the dominating pathway; and
- Internal exposure was less important due to strict food monitoring.

The aims of the remediation activities defined by the Government of Japan were such that:

- In areas with effective doses above 20 mSv/a, doses should be reduced to levels below 20
  mSv/a;
• In areas with effective doses below 20 mSv/a, remediation efforts should be continued. The long-term goal is 1 mSv/a; and

• Specific attention should be given to the exposure of children, particularly in schools and kindergartens.

The area with annual effective doses of 5 mSv and above includes 51 km² of inhabited areas and nearly 1800 km² of agricultural land, forests and other areas. A number of remedial actions are taken into consideration. Among these, much attention is being given to the removal of top soil from public places, residential areas and agricultural land and forests, including its implications. Removal of top soil is well accepted among the population, since the activity is largely removed; however, it but implies high cost and generates large volumes of waste (5 to 28 million m³) with relatively low concentration of Cs-137 (up to a few tens Bq/g). However, so far no final agreement has been achieved for the disposal of large amounts of waste. According to the BSS, waste with activities above national clearance levels is radioactive waste and from GSG-1, waste from remediation has to be managed as radioactive waste, be either stabilized in situ or disposed of in appropriate disposal facilities. Based in this guidance document, the greatest amount of generated waste falls under the category of very low level waste that does not need a high level of containment and isolation and, therefore, it is suitable for disposal in near surface landfill type facilities with limited regulatory control. In this regard, it was pointed out that guidance is needed for these types of disposal facilities, particularly on siting, specification of barriers, monitoring and control and safety assessment and demonstration of safety.

The mission concluded that the Government of Japan established the remediation criteria which are in line with ICRP 103 and the revised IAEA BSS. The mission report, available on the IAEA public website (http://www.iaea.org/newscenter/focus/fukushima/final_report151111.pdf), contains highlights of the progress made and advises to the Government of Japan. In addition, the Radiation Protection community can profit of several conclusions of the experts:

• The optimization process as defined by the radiation protection is a complex and complicated process (due to, inter-alia, fears of the public, stigmatization, cultural issues, marketing of foodstuffs, etc.);

• Involvement of, and cooperation between various stakeholders is important;

• In relation to the extent of remedial actions, benefits and efforts need to be carefully balanced, in particular, remediation of forest areas, requires a careful analysis regarding the radiological benefit and the associated efforts;

• Regarding public perception, great attention is given by the public and the press to levels of radioactivity in environmental media; and

• Taking into account that the relationship between activity and exposure is complex and non-linear, it is of great help to provide careful explanation of facts during a dialogue with the people affected, to have an attitude of readiness to listen to the people and to provide confidence to the implementing entities.

In summary, the experts concluded that

• Radiological criteria for remediation are established, many actions are tested;

• The application of the radiation protection principles “Justification, Limitation, Optimization is not straightforward under field condition;

• Decision on the final remediation strategy has not been made yet; and

• Management of large volumes of very low level radioactive waste is challenging.
RW.9.5 Feedback from the WG of WASSC on Implications on Waste Safety Standards from the Fukushima Accident

Mr D. Howard (WASSC representative of Canada and Chair of the Working Group of WASSC) summarized the work done by the WG at its meeting held in Vienna 27-28 October 2011 and its main conclusions and results. The report of this meeting will be discussed at a dedicated session of WASSC and will be provided to the CSS as an input on the revision of WASSC on the implications of the Fukushima accident in the waste and related safety standards (please see sections W.10.1 to W.10.3 of the WASSC report). The presentation of Mr Howard is available in the WASSC web folder.

RW.9.6 General Discussion

Mr G. Williams Chair of WASSC opened the discussion with RASSC and WASSC on this very important issue. The committee members discussed the following topics:

- **Remediation objectives**: to be seen broadly to allow the estimation of the total volume of waste to be generated. With this information, an overall picture would be available, which is a key element for the communication with stakeholders. This topic needs to be revisited when WS-G-3.1 is reviewed.

- **Communicating exposure or risk to the public**: it seems advantageous to change the current style of communication with the public based, in many cases, on concentration of radioactivity as a way of referring to exposure of the public to radiation. The focus of communications should be changed to inform them in terms of radiation exposure or risk [or to find out an equivalent communicational tool].

- **Reference levels for remediation**: It was recognized that further discussion was required on generic reference levels and their specific application to the situation in Japan. The need for good communication with the public on these issues was emphasized.

- **Optimization process in remediation**: It would be convenient to dispose of guidance to answer the questions related to “optimized” decisions in the remediation process, and to provide a framework for the final decision making, particularly on Waste Management after the remediation, target level of remediation, methods of decontamination and remediation process.

- **Conservative approaches/ over-conservatism**, should be avoided while assessing remediation options and its optimization.

- **Licensing processes for resulting waste management after remediation**: needs to be aligned to national regulations, but also taking into account the need to have management or disposal options in a shorter term than the usual duration of the licensing process.

- **Alternatives of dose reduction should be carefully analysed**, for example, ploughing could provide a reduction in the external dose by a factor of 2 to 5 in many cases. With this result, the removal of top soil could be left for only smaller areas where ploughing would not contribute to the objective of the remediation.

RW.10 CLOSING OF THE MEETING

The joint sessions of RASSC and WASSC were closed by both Chairs who wished their members fruitful discussions for the separate sessions of RASSC and WASSC.
WASSC MEETING
IAEA Headquarters, M Building, Room M03
14-15 December 2011

W.1 OPENING OF WASSC MEETING

The 32nd WASSC meeting was opened jointly by Mr G. Williams, Chair of WASSC, and by Mr. M. Vesterlind, Head of the Waste and Environmental Safety Section (WES), Division of Radiation, Transport and Waste Safety, Department of Nuclear Safety and Security.

W.2 CHAIRMAN’S REMARKS

The Chairman, Mr G. Williams, welcomed all WASSC participants and summarized the main topics to be covered during the WASSC sessions.

W.3 ADOPTION OF AGENDA FOR THE WASSC SESSION

The draft Agenda of the meeting, distributed to all participants, was adopted with a minor change, the addition of item W8.3. “Discussion of the update of the Safety Glossary”. The adopted Agenda is attached to this report as Annex I.

W.4 REPORT FROM THE 31ST MEETING

The meeting approved the WASSC 31st meeting Report with the addition to W.20. Feedback from WASSC members on the use of SSs, which acknowledges the feedback provided in advance of the meeting on the use of the SSs, by Argentina, Finland, Poland Spain and Ukraine.

W.5 STATUS OF ACTIONS ARISING FROM WASSC31

Ms G. Sirak, Coordinator of WASSC (WES-NSRW), presented the status of actions accomplished, arising from the WASSC 31st meeting, which is attached to this report as Annex II.

W.6 ADMINISTRATIVE ARRANGEMENTS FOR THE MEETING

Ms G. Sirak informed WASSC members on the administrative arrangements for the meeting. It was noted that the meeting will be paper-free to the extent possible, therefore electronic versions of the presentations made at WASSC and at RASSC/WASSC Joint Sessions will be posted on the RASSC and WASSC web pages after each session.
W.7 WASTE SAFETY STANDARDS AND FUTURE STEPS

Ms Siraky presented the current status of the Waste Safety Standards. The most relevant news on this field was:

- The publication in 2011 of the Safety Requirements on Disposal of Radioactive Waste, IAEA Safety Standard SSR-5;
- The approval by the Board of Governors of the interim edition of the revised BSS (awaiting decision by co-sponsor organizations);
- The publication in 2011 of the Safety Guide on Geological Disposal Facilities for radioactive waste, IAEA Safety Standard SSG-14, and
- The initiation of the revision process for two generic Safety Requirements: on “Preparedness and Response of a Nuclear or Radiological Emergency” (GS-R-2, 2002) and “The Management System for Facilities and Activities” (GS-R-3, 2006).

W.8 DOCUMENTS FOR APPROVAL

W.8.1 DS433: Draft Safety Guide: “Site Survey and Site Selection for Nuclear Installations” (Revision of 50-SG-S9)

Mr H. Mahmood (International Seismic Safety Centre-NSNI) presented the draft safety guide. Mr Mahmood clarified that the siting process includes the site survey and the site selection, but does not includes detailed site evaluation (conducted during site characterization). In addition, he highlighted that the siting process is not regulated, as it does not require regulatory actions. The document was developed based on the current definition of “nuclear installations” in the Safety Glossary (2007) that excludes predisposal waste management facilities. It was noted by WASSC that during the discussions held on the Reference List of Guides for the Long-term Structure of SSs, it was decided to extend the definition of “nuclear installations”, to include predisposal waste management facilities. As such, all the documents related to “nuclear installations” are also subject to the review of WASSC.

The document was created to assist the Member States in considering the main elements related to the safety of the site during the selection of potential sites, in such a way that the selected site does not present features that cannot be overcome using accepted and proven engineering solutions.

The proposed siting process ensures that the probability of a site being rejected at a later stage for having features that cannot be overcome by design is reduced.

The process helps to identify alternate sites in case the selected site is found to be un-licensable as a result of any flaws uncovered during the detailed site assessment. This process is relevant for all “nuclear installations”, but mainly for nuclear power plants.

Mr Mahmood presented the aims of the site survey and site selection processes and provided a short history of development of the safety guide, including consultancy and technical meetings held. The number and nature of comments received from NUSSC and WASSC were also clarified, including a new paragraph added to include the lessons learnt after the Fukushima accident.

It was also noted that ranking of sites and selection of most suitable site (especially for NPPs) is extremely important as it significantly affects costs, environment and public acceptance. Safety and
non-safety issues are both considered during ranking as demonstrated in the example at Annex-III. However, non-safety factors considered and assigned weightings vary from state to state and installation to installation. WASSC members discussed that ranking of sites could hinder the process of siting WM facilities and agreed to approve the document to be sent to Members States with the condition of the addition of a paragraph to the Note Verbale, remitting the Draft Safety Guide for Member States comments noting that: “the scope of the document does also cover predisposal waste management facilities as per the current definition of nuclear installations (according to the Reference list of Safety Guides)”.

**Action:** The Secretariat to submit the revised DS433 to the Member States for comment, including in the accompanying Note Verbale the text recommended by WASSC.


Mr J. Inoue (Operational Safety Section-NSNI) introduced the revised document for WASSC approval, to be submitted to Member States for comment. He stated the number of comments received from SSC members and observers, the number of comments accepted and rejected, and the proportion of comments of editorial nature and those of technical character or for completeness of the document. Furthermore, Mr Inoue discussed comments of relevance on the document.

The noteworthy comments were:

- The scope of the document changed, as it contained too many technical recommendations (civil, architectural, electrical, mechanical and welding) that were not appropriate for the level of the IAEA Safety Guide. Notably, these types of recommendations are more suitable for TECDOC series of documents;
- The title was also changed to Safety Guide on “Construction for Nuclear Installations”;
- The surveillance by TSO’s and third party activities should be expanded, complementing DS429 SG;
- The interface between design and construction should be clarified, and
- The role of the licensee and the role of the construction organization needs clarification: in many cases the licensee takes the role of the construction organization, but all licensees may not have the capacity to take such role. This document will expand on this topic, but stressing that use of contractor will not reduce the responsibility of the licensee for safety.

Finally, Mr Inoue indicated that as a result of assessing all lessons learned from the Fukushima accident, in reports submitted before 55th General Conference, there is no direct impact to DS441.

**Action:** WASSC approved the Secretariat to submit the revised DS441 to the Member States for comment.

### W.8.3 Discussion on update of the Safety Glossary

A problem arose during the discussion of DS433, Draft Safety Guide: “Site Survey and Site Selection for Nuclear Installations” (Revision of 50-SG-S9). This problem, inherent in the 2007 version of the Safety Glossary, relates specifically to the definition of “nuclear installation”. There was an agreement in 2008 to amend the definition of “nuclear installation” to include the predisposal waste management facilities. This agreed amendment was not possible to be made in the current version of the Glossary
without re-publishing it. This raised the concern of WASSC members that the changes in the Glossary should be expedited, to allow all Technical Officers to work with the most updated version.

Based on the prior-expressed concern, WASSC members suggested that the primary Safety Glossary to be used by Technical Officers and the whole international community working on Nuclear Safety should be maintained as an electronic Glossary, with strict version control. The Technical Officer should state the version that was used for each document under development. This will be a tool to avoid freezing definitions when they need to be modified, and to keep up-to-date versions of definitions. This way of proceeding will allow a harmonized use of definitions.

**Action:** The Secretariat to elaborate a proposal for a “Glossary in electronic format” to be discussed at the forthcoming meetings of the SSCs.

### W.9 PROGRESS REPORTS ON DOCUMENTS UNDER DEVELOPMENT, WASTE SAFETY STANDARDS STATUS AND FUTURE STEPS

**W.9.1 DS450: Draft Safety Requirements: “Decommissioning and Termination of Activities”**

Ms. M. Wong (WES-NSRW) reported on the status of development of the draft Safety Requirements on Decommissioning (DS450). In particular, Ms Wong informed that two Consultants meetings were held during the second semester of 2011. During these meetings, the first draft of the document was prepared and the following issues discussed:

- Items prescribed in the Document Preparation Profile (DPP); and
- The need to include the timeframe for submitting a decommissioning plan.

In addition, the following activities were also carried out:

- Revision of the use of a safety case approach as it relates to decommissioning;
- Performance of a test of the Share Point program in response to the Safety Standards Feedback Process; and
- Development of recommendations/issues requiring further discussions.

Within these topics, the following issues were highlighted:

- Proposed new title of the Safety Requirements: “Decommissioning and Termination of Authorization”; and
- Definition of decommissioning needs to be re-examined.

Taking into account the importance of these topics, a Technical Meeting was organized to provide feedback on the proposed new revisions to the IAEA’s Decommissioning Safety Standards. This TM will be held in Vienna, from 30 January to 1 February 2012.


- Mr K. Moeller (WES-NSRW) gave a status report on the draft Safety Guide on Monitoring and Surveillance of Radioactive Waste Disposal Facilities (DS357). The document was
introduced, referring particularly to its scope that considers the monitoring and surveillance of three types of disposal facilities;

- Near surface disposal facilities, which may be located either above or below the surface;
- Geological disposal facilities, which are designed to be located at depths of several hundred meters below the surface; and
- Disposal facilities for uranium and thorium mine waste.

The draft Safety Guide had been approved by WASSC30 to be sent to Member States for Comments. The draft received 600 comments from 14 countries. The comments largely cover the following areas:

- Safety and security;
- Definition of monitoring and surveillance;
- Occupational exposure;
- Timescale and aim of monitoring; and
- Type of facilities the guide is applicable for.

Mr Moeller informed the WASSC members that the draft is scheduled to be presented at WASSC 34, with a view to moving forward to the CSS.


Mr G. Proehl (NSRW-AMER Unit) presented progress in the development of the draft safety guide DS 427. In particular, he referred to the outcomes of a Technical Meeting held in November 2011 with participants from regulatory bodies, operators and international organizations (Argentina, Belarus, Brazil, Canada, Finland, France (4), Germany, Japan, Switzerland, UK (2), USA, UNSCEAR, UNEP). During this TM many important aspects of the Safety Guide were discussed and consensus obtained on the full content and the level of detail of the draft Guide. In addition, some important technical challenges such as the consideration of protection of the environment and potential exposures were defined. The Secretariat is drafting version 2.0 of this draft Safety Guide based on the inputs received during that TM. This version will be circulated amongst participants of the TM, as agreed at the meeting. After consideration and incorporation of the comments, the Secretariat will submit the draft for consideration of RASCC/WASSC (possibly during the next meetings period in June/July 2012).

W.10 DISCUSSION ON LESSONS LEARNT FROM FUKUSHIMA ACCIDENT

W.10.1 Feedback from the WG of WASSC on Implications on Waste Safety Standards from the Fukushima Accident

The members of the Working Group present at the WASSC 32 meeting, Mr D. Howard, Mr S. Chandler, Mr F. Besnus, and Mr K. Hioki, had the opportunity to provide to WASSC members further details on the discussions held during the Working Group meeting (Vienna 27-28 October 2011). The Working Paper was the basis of the discussions and is attached to this report as Annex III.

Committee members had the opportunity to assess the appropriateness of the suggestions made by the WG regarding the Safety Requirements in the existing documents (GSR Part 5 and SSR-5), in light of
the sequence of events that lead to the Fukushima accident. In addition, WASSC members had the opportunity to provide additional lessons learnt.

Committee members also requested the Japanese representatives of WASSC inform them of the consequences of the earthquake and tsunami on the existing radioactive waste and spent fuel management facilities (at the site of the Fukushima Daiichi NPP and in other locations affected by the events). Japanese representatives informed that the radioactive waste and dedicated spent fuel management facilities outside the Fukushima Daiichi NPP had not been damaged by the events.

Furthermore, it was agreed amongst committee members that the added value of the exercise being done is to transpose the lessons identified to other type of facilities, and to incorporate these lessons into the Safety Standards, with particular reference to the following question:

*What would happen with the RW and SFM facilities if the same events would occur?*

Finally, WASSC members were reminded by Mr Delattre, Scientific Secretary of CSS, that their comments were expected on the strategic areas for the revision of Safety Standards (referred generically as the table with the 77 Over Arching Requirements) by the 15th February 2012.

**W.10.2 General Discussion on the WG report**

WASSC members found value in considering in turn all Safety Requirements listed in the Working Paper and to assessing the comments made by the WG on each one.

The main results of the discussions are identified below (listed by Safety Requirement document and overarching requirement):

**GSR Part 5 – Safety Requirement on Predisposal Management of Radioactive Waste**

The Scope of the GSR Part 5 indicates that this document also applies to the waste resulting from remediation activities. All requirements from GSR Part 5 are applicable to the management of waste arising from remediation.

- **Requirement 2 - National Policy and Strategy on Radioactive Waste Management:** The implementation of overarching requirement 2 from GSR Part 5 and the definition of the RWM strategy, should also cover contingency measures for managing large amounts of waste. The conclusion was that at Safety Requirements level, there is no need for revision. *The relevant guidance will need to be reviewed and possibly revised (WS-G-3.1).*

- **Requirement 3: Responsibilities of the regulatory body:** WASSC concluded that the Requirement is clear and does not need amendment. Accelerated licensing process should be considered at SG or lower level document.

- **Requirement 8: Radioactive waste generation and control:** WASSC recommended that the requirement should not be changed but be developed at guidance level. In case of remedial activities resulting from accident situations or past practices, the aim should be the optimization of the intervention activities, including the secondary wastes generation. *The WASSC considers this point to be dealt at SG level (WS-G-3.1).*
• Requirement 9: Characterization and classification of radioactive waste: WASSC recognized that the requirement should not be changed but the characterization of waste from remediation should be developed at guidance level. The document to be reviewed is WS-G-3.1 and the application of conditional clearance to large areas (remediation and disposal) should be considered.

• Requirement 12: Radioactive waste acceptance criteria: WASSC concluded that the Safety Requirement does not require changes. In application, different parameters may need to be considered when developing the safety case for the wastes arising from an accident or remediation activities, leading to different waste acceptance criteria. That could require the re-examination of safety cases for existing facilities in order to accept wastes arising from accidents, or possibly the need for new facilities. Examples of its application to be included in lower level documents.

• Requirement 14: Scope of the safety case and supporting safety assessment: The Safety case should consider the interdependencies of multiple facilities at the same site. Consideration of stress test results and application to predisposal waste management facilities should be included in Safety Guides (DS447 & DS448).

• Requirement 17: Location and design of facilities: Safety Guides (DS447 & DS448) to provide more guidance for the inclusion of potential chains of events leading to accidents (to be included in the stress tests applied to predisposal waste management facilities). To improve the current approach to assess and design by using stress tests, including multiple facilities at same site.

• Requirement 22: Existing facilities: Stress test results and application to predisposal waste management facilities should be included in Safety Guides (DS447 & DS448).

SSR-5 – Specific Safety Requirement on Disposal of Radioactive Waste

• Requirement 2: Responsibilities of the regulatory body: WASSC concluded that the Requirement is clear and does not need amendment. The potential of an accelerated licensing process should be considered at Safety Guide level or in a lower level safety document.

• Requirement 15: Site characterization for a disposal facility: The requirement should not be changed. Relevant guidance to be updated to consider multiple facilities at the same site.

• Requirement 16: Design of a disposal facility: WASSC recommended that consideration of stress test results and application to disposal facilities are to be included in SGs.

• Requirement 18: Operation of a disposal facility: WASSC recommended that consideration of stress test results and application to disposal facilities are to be included in SGs.

• Requirement 26: Existing disposal facilities: assessment of Safety: WASSC recommended that consideration of stress test results and application to disposal facilities are to be included at Safety Guide level or in a lower level safety document.
W.10.3 Conclusions

Committee members agreed with the WG members that at the Safety Requirements level, there is no compelling need to make changes as all safety issues that relate to waste safety are adequately covered. Several areas have been identified where room for improvement exists in implementation of the safety requirements, either at guidance level or in lower level documents. Guidance should be drafted on the following issues:

- Management of large amounts of contaminated waste [solid and liquid] resulting from remediation (including monitoring criteria and decision on reuse/ recycling);
- Acceleration of licensing process to ensure availability of treatment/ storage/ disposal facilities for the type and amount of wastes generated during an accident or as a result of remediation activities;
- Assessment of RWM facilities (including disposal facilities) for severe accidental conditions (stress tests);
- Criteria for remediation: Practicable means to meet ICRP recommendations and IAEA Safety Requirements should be discussed [application of the optimization process to intervention and remediation] (DS468); and
- Remediation [on and off-site] Policies and Strategies: Contingency measures to cope with remediation activities should be included in the RWM Policies and Strategies (DS468).

W.11 STATUS OF THE PROGRAMME ON RWM

Mr M. Vesterlind (SH-WES) reported on the status of the programme on radioactive waste management. At the 31st WASSC meeting in June 2011, a comprehensive presentation of the Agency’s programme on radioactive waste management was given jointly by Mr Vesterlind and Ms Mele (SH-WTS). Mr Vesterlind thus reported on major activities carried out by WES since the 31st WASSC meeting, as follows.

The project EMRAS II (Environmental Modelling for Radiation Safety Intercomparison and Harmonization) was initiated in 2009 and the work has now been completed. A continuation project called MODARIA (Modelling and Data for Radiological Impact Assessment) will be launched in November 2012 and is expected to last for four years.

The support to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention) and the Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention) has continued. The Agency has developed guidance on assessments of radiological impacts to the public and environment.

The International Project on Use of Safety Assessment Results in the Planning and Implementation of Decommissioning (FaSa) held its final Technical Meeting in November 2011 and reports will be finalized during 2012.

Significant progress has been made on the project for decommissioning of former nuclear facilities in Iraq. The Agency continues to provide expert advice on waste management and decommissioning, and arranges training for Iraqi staff.

The second annual meeting of the International Working Forum on Regulatory Supervision of Legacy Sites (RSLS) was held in October.
The project on Demonstration of Safety of Geological Disposal (GEOSAF) has been completed and a continuation project will commence in March 2012. This project will focus on operational safety and the interface between operation and construction of geological disposal facilities and the post-closure safety.

In November 2011, the annual Technical Meeting of the PRISM project (Practical Illustration and Use of the Safety Case Concept in the Management of Near-Surface Disposal) was held and the project will be completed during 2012.

The Senior Regulators’ Meeting held during the General Conference in September 2011 had a session on Safety and Security Aspects of the Management of High-Level Waste and Spent Fuel.

W.12 REPORT ON THE “INTERNATIONAL WORKSHOP ON HIGH LEVEL RADIOACTIVE WASTE AND SPENT FUEL MANAGEMENT – STORAGE AND DISPOSAL”

Mr M. Vesterlind reported on the International Workshop on High level Radioactive Waste and Spent Fuel Management – Storage and Disposal which took place in Stockholm from 29 November to 1 December 2011. The workshop, organized by the IAEA and hosted by the Swedish Radiation Safety Authority, was attended by 62 participants from 37 Member States, the Nuclear Energy Agency and the European Commission.

From the discussions during the workshop the following outcomes have been reported:

- It is appropriate to revisit the issues of storage and disposal in particular, because of the increasing number of potential newcomers to nuclear power and of the delays occurring in the implementation of disposal programmes;
- The early development of national radioactive waste management programmes with defined end-points is essential; storage can only be a management step, disposal is a management solution;
- Extended periods of storage should not be, or become, “normal practice”;
- Transforming storage into disposal is not acceptable practice;
- Shared facilities might present an option for the management of radioactive waste but should not supersede the development and implementation of national programmes; and
- Secure funding and transfer of knowledge is of major importance in particular for extended periods of storage.

The workshop reemphasized the message that disposal is the eventual end-point and that storage can only be an interim step in managing radioactive waste and spent fuel. There is however a continuous need for the IAEA to support Member States in developing national policies, strategies and national programmes for the safe management of spent fuel and radioactive waste.
W.13 RESULTS OF THE SADRWMS PROJECT

Ms M. Kinker, (WES-NSRW), Scientific Secretary for the International Project Safety Assessment Driving Radioactive Waste Management Solutions (SADRWMS), provided a summary report of the results of the project. She informed that the project was a long term project (initiated in 2003 and ending in 2010), which was designed to examine the application of safety assessment methodology to predisposal radioactive waste management (RWM) practices and facilities. She informed on the activities and elaborated on the final outcomes of the SADRWMS Project, which included:

2. Documentation describing the SADRWMS methodology for safety assessment for predisposal RWM facilities and activities;
3. The Safety Assessment Framework (SAFRAN) software tool for applying safety assessment methodology to predisposal RWM, and
4. Report of the test case of the on application of the methodology and SAFRAN Tool at the Thailand Institute of Nuclear Technology RWM Centre.

Ms Kinker recalled that during the final meeting of the SADRWMS Project, it was agreed that a follow-up project would be initiated to focus on the development of complimentary safety reports illustrating the use and application of the DS284 methodology and the SAFRAN tool. This new project was entitled the International Project on Complimentary Safety Reports, Development and Application to Waste Management Facilities (CRAFT). She informed that the first meeting of the CRAFT project was held on 9-13 May 2011 in IAEA Headquarters, during which the objectives of the CRAFT project were agreed:

- To provide a forum for supporting the use and application of the safety guide DS284 and SADRWMS methodology and SAFRAN tool;
- To share experiences and identify lessons learnt; and
- To apply the DS284 and SADRWMS methodology and SAFRAN tool to predisposal RWM (application cases):
  - Application to Facilities (Operators); and
  - Application to Regulators

She noted that the 2nd meeting of the CRAFT Project was scheduled for 11-15 June 2012 at the IAEA Headquarters.

W.14 UPDATE ON JOINT CONVENTION

Ms G. Siraky, WASSC Coordinator and Scientific Secretary of the Joint Convention, provided a summary report on the current status of the Joint Convention. She noted that the current number of Contracting Parties is 63, with 15 new countries that have accessed or ratified since the Third Review Meeting. In addition, she reported on the activities carried out in 2011 and forthcoming events for 2012, including:
• Organizational Meeting for the Fourth Review Meeting, held in Vienna on 10-11 May 2011. The functioning of the forthcoming review meeting were defined, such as confirmation of the Country Groups, election of Officers, adoption of timeframe and agenda;

• Workshop of incoming and outgoing Officers, held in Vienna on 12 May 2011, held with the purpose of knowledge transference from the outgoing Officers to the recently appointed Officers (elected at the Organizational Meeting);

• Joint Convention Regional Meeting in Latin-America, held in Buenos Aires, Argentina, on 18-19 October 2011, to promote the Joint Convention in the region;

• General Committee meeting, 22-23 March 2012;

• Officers Meeting, 12-13 May 2012;

• Fourth Review Meeting, 14-23 May 2012; and

• Joint Convention Regional Meeting in Africa, 3Q-4Q 2012 (planned).

Finally, WASSC members were informed of the second issue of the Joint Convention Newsletter, released in September 2011.

W.15 FEEDBACK FROM WASSC MEMBERS ON THE USE OF IAEA’S SAFETY STANDARDS

Mr D. Howard from Canada reported on the use of the IAEA’s Safety Standards (SS) in his country. Mr Howard informed WASSC members that the SS are referenced to verify best international practices. He also stated that it is difficult to refer directly to the SS unless they are referenced in a license as they are not legally enforceable in Canada. Notwithstanding this, Mr Howard recognized that depending on the situation, the SS can be quoted in a license, and only then, can they be legally enforceable. Mr Howard highlighted that the IAEA’s SS are considered the benchmark with respect to international best practices.

Mr L. Camper from the USA reported that the IAEA’s SS are used as a safety reference for conducting gap analyses and to compare differences with the national regulations. In addition, Mr Camper informed WASSC members that the revision of the Basic Safety Standards was used as an opportunity to hold a stakeholder meeting to solicit inputs to the BSS revision. A large number of people attended from several state government agencies. Their comments were taken into account to provide the national comments, for further development of the BSS.

Mr S. Chandler from the UK reported that after the Fukushima accident there is greater awareness on the need for international standards. They might be referred to by regulators while updating their licenses. In addition, Mr Chandler stated that the Environment Agency is revising their radioactive substances regulation guidance, following the revision of the regulations covering exclusion and exemption. In this context, the IAEA’s safety guide RS-G-1.7, is considered to provide a good framework, although the actual exemption values used have been those from the European Basic Safety Standards Directive, which are slightly different. The next revision of the BSSD will use RS-G-1.7 values.

Additionally Mr Chandler communicated an initiative which aims to recover orphan sources in scrap yards and for removal of lightning rods, for which the Environment Agency is intending to help with the cost of the disposal of the sources found during this campaign. For this activity, a leaflet is being developed, specifically oriented to the scrap metal industry, about the physical characteristics of radiation sources to facilitate identification, and the associated hazards. This is based on the booklet produced by the IAEA.
Ms J. Lopez, from Spain, reported on the use of the Safety Standards as reference and background information while drafting and revising rules, and during the elaboration of the CNS (Consejo Seguridad Nuclear) instructions. Furthermore, the Safety Fundamentals are quoted in Laws and Instructions. The IAEA’s SS are also used in periodic safety reviews, as a benchmark for best practices. In the Waste Safety area, the SS are used by drafters of regulations and by ENRESA and producers of radioactive waste, as references while performing the safety assessment of facilities and as guidance for preparing internal procedures. In the case of the decommissioning safety requirements and guides, they are used for both, the development of Spain’s own guides and the management systems needed for decommissioning.

Mr Park, from Korea, informed WASSC members that safety standards have been in place in Korea since the early 1970’s. Mr Park also reported that last July an IRRS mission was held in Korea. As a result of findings of the IRRS mission, the IAEA’s SS are seen now as benchmarks for Korea’s own safety standards and have been carefully reflected in setting the Korean SS.

Finally, Mr W. Bloomaert from Belgium, reported on negotiations with the scrap yards, as the Regulator will place radiation measurement equipment at the entrance of scrap yards.

W.16 CLOSURE OF WASSC MEETING

The Chairmen and Mr M. Vesterlind thanked all members for their active involvement in the meeting, which was then closed.
ANNEX I.  : AGENDA OF WASSC32

Radiation Safety Standards Committee (RASSC) - Thirty first Meeting
Waste Safety Standards Committee (WASSC) – Thirty second Meeting

IAEA Boardroom, Room M 03, M Building

FINAL AGENDA

RASSC/WASSC Joint Session

10:00 – Tuesday, 13 December 2011 – IAEA Boardroom (M Building)

<table>
<thead>
<tr>
<th>RW1.</th>
<th>Opening of Meeting</th>
<th>P. Hahn, DIR-NSRW</th>
</tr>
</thead>
<tbody>
<tr>
<td>RW2.</td>
<td>Chairman's Remarks</td>
<td>G. Williams/G. Massera</td>
</tr>
<tr>
<td>RW3.</td>
<td>Adoption of agenda for the Joint Session</td>
<td>G. Williams/G. Massera</td>
</tr>
<tr>
<td>RW4.</td>
<td>Administrative arrangements for the meeting</td>
<td>G. Siraky/T. Colgan</td>
</tr>
<tr>
<td>RW5.</td>
<td>General Safety Standards Issues</td>
<td></td>
</tr>
<tr>
<td>RW5.1.</td>
<td>Feedback from the Commission on Safety Standards (CSS30)</td>
<td>For information D. Delattre</td>
</tr>
<tr>
<td>RW5.2.</td>
<td>Feedback from the Meeting of the four Chairs</td>
<td>G. Williams/G. Massera</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RW6.</th>
<th>DPPs for approval</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RW6.1.</td>
<td>DS421 Revised of DPP for Safety Guide: “Protection of the Public against Indoor Exposure to Natural Sources of Radiation”</td>
<td>For approval for submission to CSS T. Boal</td>
</tr>
<tr>
<td>RW6.2.</td>
<td>DS458 DPP for a Safety Guide: “Radiation Protection and Regulatory Control of Consumer Products”</td>
<td>For approval for submission to CSS T. Colgan</td>
</tr>
<tr>
<td>RW6.3.</td>
<td>DS459 DPP for Revision of a Safety Guide: “Management of Radioactive Waste from the Mining and Milling of Ores” (Revision of WS-G-1.2)</td>
<td>For approval for submission to CSS Z. Fan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RW7.</th>
<th>Documents for approval</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RW7.1.</td>
<td>DS421 Draft Safety Guide: “Protection of the Public against Indoor Exposure to Natural Sources of Radiation”</td>
<td>For approval for submission to MS comment T. Boal</td>
</tr>
</tbody>
</table>
RW7.3. DS439 Draft Safety Requirements: Addendum to NS-R-5, Appendix IV “Reprocessing Facilities” and Appendix V “Fuel Cycle Research and Development Facilities”

To CSS
For approval
For submission to MS
Comment
G. Jones


For approval
For submission to MS
Comment
T. Boal

RW8. General Session

RW.8.1. Overview on the Integrated Regulatory Review Service (IRRS) programme

H. Mansoux


C. Necheva

09:00 – Wednesday, 14 December 2011 – IAEA Boardroom (M Building)


<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RW9.2.</td>
<td>IEC activities under the Action Plan</td>
</tr>
<tr>
<td>RW9.3.</td>
<td>Presentations by Japan (WASSC &amp; RASSC delegation)</td>
</tr>
<tr>
<td>RW9.4.</td>
<td>IAEA Mission on remediation of large contaminated areas off-site the Fukushima Dai-ichi NPP</td>
</tr>
<tr>
<td>RW9.5.</td>
<td>Feedback from the WG of WASSC on Implications on Waste Safety Standards from the Fukushima Accident</td>
</tr>
<tr>
<td>RW9.6.</td>
<td>General Discussion</td>
</tr>
</tbody>
</table>

For information and discussion
D. Delattre

For information
E. Buglova

For information
R. Kawamura

For information
T. Iimoto

For information
G. Proehl

For information and discussion
D. Howard

G. Williams/G. Massera

RW10. Closing of the Meeting

<table>
<thead>
<tr>
<th>RW10.</th>
<th>Closing of the Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>RW10.1.</td>
<td>Other Business</td>
</tr>
<tr>
<td>RW10.2.</td>
<td>Conclusions and closing of the joint session</td>
</tr>
</tbody>
</table>

G. Williams/G. Massera

G. Williams/G. Massera
Waste Safety Standards Committee (WASSC)
Thirty Second Meeting

Room M 03 (M Building)

FINAL AGENDA

14:00 – Wednesday, 14 December 2011 – Room M 03 (M Building)

<table>
<thead>
<tr>
<th>W1. Opening of WASSC Meeting</th>
<th>M. Vesterlind (SH-WES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2. Chairman’s remarks</td>
<td>G. Williams</td>
</tr>
<tr>
<td>W3. Adoption of agenda for the WASSC Session</td>
<td>For approval G. Williams</td>
</tr>
<tr>
<td>W4. Report from 31st meeting</td>
<td>For approval G. Williams</td>
</tr>
<tr>
<td>W5. Status of actions arising from WASSC31</td>
<td>For information G. Siraky</td>
</tr>
<tr>
<td>W6. Administrative arrangements for the meeting</td>
<td>For information G. Siraky</td>
</tr>
<tr>
<td>W7. Waste Safety Standards status and future steps</td>
<td>For information G. Siraky</td>
</tr>
</tbody>
</table>

W8. Documents for approval

| W8.1. DS433 Draft Safety Guide: “Site Survey and Site Selection for Nuclear Installations” (Revision of 50-SG-S9) | For approval for submission to Member States comment H. Mahmood |
| W8.2. DS441 Draft Safety Guide: “Construction of Nuclear Installations” | For approval for submission to Member States comment J. Inoue |
| W8.3. Discussion on the update of the Safety Glossary | |

W9. Progress reports on documents under development

| W9.1. DS450 Draft Safety Requirements: “Decommissioning and Termination of Activities” | For progress Report & discussion M. Wong |
09:00–17:00 – Thursday, 15 December 2011 – Room M 03 (M Building)

W10. Discussion on Lessons learnt from FA

| W10.1. | Feedback from the WG of WASSC on Implications on Waste Safety Standards from the Fukushima Accident | D. Howard |
| W10.2. | General Discussion on the WG report | All WASSC members |
| W10.3. | Conclusions | G. Williams |

09:00 – Friday, 16 December 2011 – Room M 03 (M Building)

W11. Status of the Programme on RWM

| W13. | Results of the SADRWMS Project | M. Kinker |
| W14. | Update on Joint Convention | G. Siraky |
| W15. | Feedback from WASSC members on the use of SSs | WASSC members |
| W16. | Closure of WASSC meeting | G. Williams and M. Vesterlind |

W17. Dates of future meetings

- 32nd RASSC: 11 – 15 June 2012
- Joint 33rd WASSC – 33rd NUSSC meeting: 2-6 July 2012
- 31st CSS meeting: 26-30 March 2012
- 24th TRANSSC: 16-20 July 2012
- 34th WASSC: 26-30 November 2012
- 33rd RASSC: 3-7 December 2012 (TBC)
- 34th NUSSC: 19-23 November 2012
## ANNEX II. STATUS ACTIONS FOLLOWING 31ST WASSC/ 30TH RASSC MEETING
### JOINT WASSC/RASSC SESSIONS

<table>
<thead>
<tr>
<th>ITEM AG</th>
<th>ACTION</th>
<th>STATUS</th>
</tr>
</thead>
</table>
| RW6.1   | DS437 to be sent to CSS for endorsement | Done  
Approved at CSS30 |
| RW7.1   | DPP for DS453 to be sent to CSS for approval | Done  
Approved at CSS30 |
| RW7.2   | DPP for DS454 to be sent to CSS for approval | Done  
Approved at CSS30 |
| RW7.2   | Feedback on the use, usefulness and topics to be amended/improved in WS-G-2.7 | No further feedback received |
| RW7.3   | DPP for DS455 to be sent to CSS for approval taking into account comments to incorporate | Done  
Approved at CSS30 |
| RW7.4   | DPP for DS457 to be sent to CSS for approval taking into account comments to incorporate | Done  
Approved at CSS30 |
| RW7.5   | DPP for DS456 to be sent to CSS for approval taking into account comments to incorporate | Done  
Approved at CSS30 |
| RW9     | Feedback on action plan to address lessons learnt after FA and possible implications to SS | Received |
| RW9     | WG of WASSC  
Nomination of members/experts | Received |
| RW9     | WG meeting to begin process of determining action plan to review SS and advise on practical opportunities for use of SS with regard to Fukushima | Done |
| RW10.2  | To update the item 61. of the Reference List of Safety Guides (2009) related to the Decommissioning of NORM facilities with the following information:  
RASSC30&WASSC31 meeting decided | Pending the update of the Reference List of Safety Guides with this |
<table>
<thead>
<tr>
<th>RW11.1</th>
<th>DS421 to be redrafted to remove parts related to residues</th>
<th>Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>RW11.2</td>
<td>To prepare feedback report and DPP for revision of WS-G-1.2 for approval at WASSC32</td>
<td>Done</td>
</tr>
</tbody>
</table>
### WASSC SESSIONS

<table>
<thead>
<tr>
<th>ITEM AG</th>
<th>ACTION</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>W9.2</td>
<td>To upload the Document History Log (DHL) for each document for approval</td>
<td>To agree final version of DHL</td>
</tr>
<tr>
<td>W9.2</td>
<td>Committee members upload their comments on documents for approval 3 weeks in advance to the meeting</td>
<td>First time of implementation</td>
</tr>
<tr>
<td>W9.2</td>
<td>TO provide the committee members the resolution of comments on documents for approval</td>
<td>First time of implementation</td>
</tr>
<tr>
<td>W11.1</td>
<td>DS433 to provide resolution of comments, and to be redrafted to include explanation on “ranking of sites” (to change the emphasis) and importance of considering socio-economic issues along-side safety issues</td>
<td>Done</td>
</tr>
<tr>
<td>W11.1</td>
<td>Nuclear Installations definition: to be corrected in the Glossary to include Waste Management Facilities, to avoid further confusion in drafting</td>
<td>Pending</td>
</tr>
</tbody>
</table>

Info available in the Reference List of Safety Guides
Glossary to be amended — Activity foreseen for the end of 2012
ANNEX III. WORKING PAPER
of the WASSC Working Group on
Implications of the Fukushima Accident on Waste Safety Standards

INTRODUCTION
The Working Group (WG) of WASSC was convened following the recommendation of WASSC31 with the aim to explore eventual implications on the Waste Safety Standards from the Fukushima Event and at the light of the Action Plan being elaborated at the time of WASSC31 and finally approved by the BoG in September 2011. The WG met in Vienna, on 27 and 28 October 2011.

OBJECTIVES OF THE WORKING GROUP

• To begin process of determining an action plan to review Waste Safety Standards,

• To discuss collected feedback from WASSC members on lessons learnt,

• To review the Waste Safety Requirements (SR) with the aim to identify gaps and those that would need revision,

• To advise WASSC and CSS on the way forward with the revision of the Waste Safety Requirements and Guides at the light of the lessons learnt from the Fukushima accident, and

• To prepare a Working Paper for discussion at WASSC32 based on this draft

DOCUMENTS AVAILABLE FOR ANALYSIS


http://www-ns.iaea.org/committees/comments/default.asp?fd=1114

http://www.iaea.org/newscenter/focus/fukushima/japan-report2/


[5] Presentations made during the Topical Session of WASSC31 (items RW9.1 to RW9.4)
http://www-ns.iaea.org/committees/wassc/default.asp?fd=1085&dt=0

[6] Feedback from WASSC members (Finland + Australia)
WORKING METHODS

To be aligned to the current gap analysis being performed for Nuclear Safety (Please see Ref. [2] above, pages 3 and 4).

For this purpose the list of Safety Requirements applicable to Waste Safety (Safety Requirements applicable to remediation from GSR Part 3 and all Safety Requirements from GSR Part 5 and SSR-5) were collated in one table. In this way the working group started from the Requirements and performed a systematic review. The analysis will continue in a second step with the review of the Safety Guides.

The objective of working with the list of requirements is to verify if they can be impacted by the issues identified in this Working Paper.

WORK DONE

The overarching requirements from the SR documents indicated below were analyzed and the table with the results of the Analysis is attached as Annex I. Where appropriate, the explanatory text below the Overarching Requirements (OARs) was also analyzed.

GSR Part 3 Draft Safety Requirements: Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (OAR 49)

GSR Part 5 Predisposal Management of Radioactive Waste - General Safety Requirements

SSR-5 Disposal of Radioactive Waste - Specific Safety Requirements

As it is premature to extract lessons learnt from the material available until now, a list of issues were identified based on the facts emerging from the actions taken to solve the situation arising from the accident and related to the safety of waste management. Based on these issues, the SRs were analyzed to evaluate how well they cover the situation and comments on each OARs were elaborated.
CONCLUSIONS

The Working Group considers that as most requirements in the existing waste safety standards are applicable not only to normal operation conditions but also to post-accident conditions, they do not need to be amended. The WG agreed that the requirements should not be too prescriptive. The WG also agreed that the problems that Japan is facing are not necessarily all safety-related. The WG has identified a series of issues; some being WASSC-specific and others being common issues with RASSC and/or NUSSC. The WG recommends that these issues be dealt at the Safety Guide document level or at other Safety related document level.

ISSUES IDENTIFIED AND ADVICE TO WASSC

WASSC RELATED ISSUES

WSI - 1) Management of large amount of contaminated waste [solid and liquid] resulting from remediation (including monitoring criteria and decision on reuse/ recycling)

WSI - 2) Acceleration of licensing process to ensure availability of treatment/ storage/ disposal facilities for the type and amount of wastes generated during an accident or as a result of remediation activities

ADVISE:

Guidance related to these issues should be drafted.

WSI - 3) Assessment of RWM facilities (including disposal facilities) for severe accidental conditions (stress tests)

ADVISE:

The IAEA should extract the results and knowledge from national exercises on stress tests methodologies before applying to WM facilities and develop corresponding guidance documents.

RASSC-WASSC RELATED ISSUES

RWSI - 1) Criteria for remediation

ADVISE:

Practicable means to meet ICRP recommendations and IAEA Safety Requirements should be discussed [application of the optimization process to intervention and remediation].

RWSI - 2) Remediation [on and off-site] Policies and Strategies

ADVISE:

Contingency measures to cope with remediation activities should be included in the RWM Policies and Strategies.
NUSSC & WASSC RELATED ISSUES

NWSI - 1) Interim storage of SF

ADVISE:

The safety of SF should be ensured at all times.

- Strategies for SF management should be re-examined in the light of the lessons learnt from the accident and the results of the work on stress tests.

- This examination should be done with respect to the various options available [type of storage, time limitations for storage in NPPs and other facilities, safety implications of the options chosen, etc.].

- The SGs should be reviewed/ revised after the reexamination exercise finishes.

The decommissioning documents were not considered by the WG as they are now under revision. They should take into account explicitly the decommissioning of facilities after an accident [the configuration of the facility has changed in relation to the original design].
### ANNEX IV.

RESULT OF THE FIRST ANALYSIS FOR THE WASTE SAFETY REQUIREMENTS

<table>
<thead>
<tr>
<th>Topical Area</th>
<th>SSs</th>
<th>OAR Number</th>
<th>OAR Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REMEDIATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77(^1) - Related to RWSI - 1</td>
<td>Remediation of areas with residual radioactive material</td>
<td>GSR Part 3 DRAFT DS 379</td>
<td>Requirement 49: Responsibilities for remediation of areas with residual radioactive material</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The government shall ensure that provision is made for identifying those persons or organizations responsible for areas with residual radioactive material, for establishing and implementing remediation programmes and post-remediation control measures, if appropriate, and for putting in place an appropriate strategy for radioactive waste management.</td>
</tr>
</tbody>
</table>

**Conclusion of the review:**

The Safety Requirement 49 covers an accident with release of radioactive material with consequences inside or outside of the site boundaries, therefore it does not need amendment.

| **WASTE MANAGEMENT** | | | |
| | Gov. Resp. in providing legal and regulatory framework for RWM | GSR Part 5 | Requirement 1: Legal and regulatory framework |
| | | | The government shall provide for an appropriate national legal and regulatory framework within which radioactive waste management activities can be planned and safely carried out. This shall include the clear and unequivocal allocation of responsibilities, the securing of financial and other resources, and the provision of independent regulatory functions. Protection shall also be provided beyond national borders as appropriate and necessary for neighbouring States that may be affected. |

**COMMENT:** The Requirement is clear and does not need amendment.

<table>
<thead>
<tr>
<th>Related</th>
<th>National Policy and</th>
<th>GSR Part 5</th>
<th>Requirement 2: National policy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>To ensure the effective management and control of radioactive</td>
</tr>
</tbody>
</table>

\(^1\) Order number in the List of topical Areas of Review and Link to the Overarching Requirements – Ref [2]
The national policy and strategy shall form the basis for decision making with respect to the management of radioactive waste.

**RECOMMENDATION:**

As far as possible, the P&S documents should also address waste management issues from potential Remediation Activities resulting from abnormal events with consequences outside nuclear facilities.

**COMMENT:** The Scope of the GSR Part 5 indicates that this document also applies to the waste resulting from remediation activities. All requirements from GSR Part 5 are applicable to the management of waste arising from remediation. The implementation of OAR2 from GSR Part 5 and the definition of the RWM strategy should also cover contingency measures for managing large amounts of wastes.

**CONCLUSION:** At SR level seems not needed a revision [PERHAPS SUGGEST TO BE EXPLICIT ALSO IN THIS REQUIREMENT TO COVER WASTES ARISING FROM REMEDIATION ACTIVITIES].

<table>
<thead>
<tr>
<th>Related to</th>
<th>GSR Part 5</th>
<th>Requirement 3: Responsibilities of the regulatory body</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSI - 2</td>
<td></td>
<td>The regulatory body shall establish the requirements for the development of radioactive waste management facilities and activities and shall set out procedures for meeting the requirements for the various stages of the licensing process.</td>
</tr>
</tbody>
</table>
The regulatory body shall review and assess the safety case and the environmental impact assessment for radioactive waste management facilities and activities, as prepared by the operator both prior to authorization and periodically during operation. The regulatory body shall provide for the issuing, amending, suspension or revoking of licences, subject to any necessary conditions. The regulatory body shall carry out activities to verify that the operator meets these conditions. Enforcement actions shall be taken as necessary by the regulatory body in the event of deviations from, or non-compliance with, requirements and conditions.

**COMMENT:** The Requirement is clear and does not need amendment.

Accelerated licensing process could be considered at SG levels.

<table>
<thead>
<tr>
<th>GSR Part 5</th>
<th>Requirement 4: Responsibilities of the operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operators shall be responsible for the safety of predisposal radioactive waste management facilities or activities. The operator shall carry out safety assessments and shall develop a safety case, and shall ensure that the necessary activities for siting, design, construction, commissioning, operation, shutdown and decommissioning are carried out in compliance with legal and regulatory requirements.</td>
<td></td>
</tr>
</tbody>
</table>

**COMMENT:** The Requirement is clear and does not need amendment.

<table>
<thead>
<tr>
<th>GSR Part 5</th>
<th>Requirement 5: Requirements in respect of security measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures shall be implemented to ensure an integrated approach to safety and security in the predisposal management of radioactive waste.</td>
<td></td>
</tr>
</tbody>
</table>

**COMMENT:** The Requirement is clear and does not need amendment.

<table>
<thead>
<tr>
<th>GSR Part 5</th>
<th>Requirement 6: Interdependences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interdependences among all steps in the predisposal management of radioactive waste, as well as the impact of the anticipated disposal option, shall be appropriately taken into account.</td>
<td></td>
</tr>
</tbody>
</table>

**COMMENT:** The Requirement is clear and does not need amendment.
<table>
<thead>
<tr>
<th>GSR Part 5</th>
<th>Requirement 7: Management systems</th>
<th>Management systems shall be applied for all steps and elements of the predisposal management of radioactive waste.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMENT:</strong></td>
<td>The Requirement is clear and does not need amendment.</td>
<td></td>
</tr>
<tr>
<td>GSR Part 5</td>
<td>Requirement 8: Radioactive waste generation and control</td>
<td>All radioactive waste shall be identified and controlled. Radioactive waste arisings shall be kept to the minimum practicable.</td>
</tr>
<tr>
<td><strong>COMMENT:</strong></td>
<td>The requirement should not be changed but be developed at guidance level.</td>
<td>In case of remedial activities resulting from accidental situations or past practices, the aim should be the optimization of the intervention activities, including the secondary wastes generation. The WG considers this point to be dealt at SG level.</td>
</tr>
<tr>
<td>GSR Part 5</td>
<td>Requirement 9: Characterization and classification of radioactive waste</td>
<td>At various steps in the predisposal management of radioactive waste, the radioactive waste shall be characterized and classified in accordance with requirements established or approved by the regulatory body.</td>
</tr>
<tr>
<td><strong>COMMENT</strong></td>
<td>The requirement should not be changed but the characterization of waste from remediation should be developed at guidance level.</td>
<td>SG: WS-G-3.1, Application of conditional clearance to large areas (remediation and disposal) should be considered.</td>
</tr>
<tr>
<td>GSR Part 5</td>
<td>Requirement 10: Processing of radioactive waste</td>
<td>Radioactive material for which no further use is foreseen, and with characteristics that make it unsuitable for authorized discharge, authorized use or clearance from regulatory control, shall be processed as radioactive waste. The processing of</td>
</tr>
</tbody>
</table>
Radioactive waste shall be based on appropriate consideration of the characteristics of the waste and of the demands imposed by the different steps in its management (pretreatment, treatment, conditioning, transport, storage and disposal). Waste packages shall be designed and produced so that the radioactive material is appropriately contained both during normal operation and in accident conditions that could occur in the handling, storage, transport and disposal of waste.

**COMMENT:** The requirement should not be changed.

| GSR Part 5 | Requirement 11: Storage of radioactive waste | Waste shall be stored in such a manner that it can be inspected, monitored, retrieved and preserved in a condition suitable for its subsequent management. Due account shall be taken of the expected period of storage, and, to the extent possible, passive safety features shall be applied. For long term storage in particular, measures shall be taken to prevent degradation of the waste containment.

**COMMENT:** The requirement should not be changed.

| GSR Part 5 | Requirement 12: Radioactive waste acceptance criteria | Waste packages and unpackaged waste that are accepted for processing, storage and/or disposal shall conform to criteria that are consistent with the safety case.

**COMMENT:** A different safety case could be needed for the wastes arising from an accident or remediation activities, leading to different waste acceptance criteria. That could imply the re-examination of safety cases for existing facilities to accept wastes arising from accidents or the need of new facilities.

| GSR Part 5 | Requirement 13: Preparation of the safety case and supporting safety assessment | The operator shall prepare a safety case and a supporting safety assessment. In the case of a step by step development, or in the event of modification of the facility or activity, the safety case and its supporting safety assessment shall be reviewed and updated as necessary.

**COMMENT:** The requirement should not be changed.

| GSR Part 5 | Requirement 14: Scope of the safety case and supporting safety assessment | The safety case for a predisposal radioactive waste management facility shall include a description of how all the safety aspects of the site, the design, operation, shutdown and...
decommissioning of the facility, and the managerial controls satisfy the regulatory requirements. The safety case and its supporting safety assessment shall demonstrate the level of protection provided and shall provide assurance to the regulatory body that safety requirements will be met.

**COMMENT:** Stress test results and application to PRWM facilities should be included in SGs.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>GSR Part 5</th>
<th>Documentation of the safety case and supporting safety assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requirement 15:</strong></td>
<td><strong>GSR Part 5</strong></td>
<td>The safety case and its supporting safety assessment shall be documented at a level of detail and to a quality sufficient to demonstrate safety, to support the decision at each stage and to allow for the independent review and approval of the safety case and safety assessment. The documentation shall be clearly written and shall include arguments justifying the approaches taken in the safety case on the basis of information that is traceable.</td>
</tr>
<tr>
<td><strong>Comment:</strong></td>
<td><strong>GSR Part 5</strong></td>
<td>The requirement should not be changed.</td>
</tr>
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<thead>
<tr>
<th>Requirement</th>
<th>GSR Part 5</th>
<th>Periodic safety reviews</th>
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</thead>
<tbody>
<tr>
<td><strong>Requirement 16:</strong></td>
<td><strong>GSR Part 5</strong></td>
<td>The operator shall carry out periodic safety reviews and shall implement any safety upgrades required by the regulatory body following this review. The results of the periodic safety review shall be reflected in the updated version of the safety case for the facility.</td>
</tr>
<tr>
<td><strong>Comment:</strong></td>
<td><strong>GSR Part 5</strong></td>
<td>The requirement should not be changed.</td>
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<thead>
<tr>
<th>Requirement</th>
<th>GSR Part 5</th>
<th>Location and design of facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requirement 17:</strong></td>
<td><strong>GSR Part 5</strong></td>
<td>Predisposal radioactive waste management facilities shall be located and designed so as to ensure safety for the expected operating lifetime under both normal and possible accident conditions, and for their decommissioning.</td>
</tr>
<tr>
<td><strong>Comment:</strong></td>
<td><strong>GSR Part 5</strong></td>
<td>SG to provide more guidance for the inclusion of chain of events leading to accidents to be included in the stress tests applied to PRWM facilities. To improve the current</td>
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<tr>
<td>Requirement</td>
<td>Description</td>
<td>Comments</td>
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<tr>
<td><strong>GSR Part 5</strong> Requirement 18: Construction and commissioning of the facilities</td>
<td>Predisposal radioactive waste management facilities shall be constructed in accordance with the design as described in the safety case and approved by the regulatory body. Commissioning of the facility shall be carried out to verify that the equipment, structures, systems and components, and the facility as a whole, perform as planned.</td>
<td><strong>COMMENT:</strong> The requirement should not be changed.</td>
</tr>
<tr>
<td><strong>GSR Part 5</strong> Requirement 19: Facility operation</td>
<td>Predisposal radioactive waste management facilities shall be operated in accordance with national regulations and with the conditions imposed by the regulatory body. Operations shall be based on documented procedures. Due consideration shall be given to the maintenance of the facility to ensure its safe performance. Emergency preparedness and response plans, if developed by the operator, are subject to the approval of the regulatory body.</td>
<td><strong>COMMENT:</strong> OK – referring for EPR on-site.</td>
</tr>
<tr>
<td><strong>GSR Part 5</strong> Requirement 20: Shutdown and decommissioning of facilities</td>
<td>The operator shall develop, in the design stage, an initial plan for the shutdown and decommissioning of the predisposal radioactive waste management facility and shall periodically update it throughout the operational period. The decommissioning of the facility shall be carried out on the basis of the final decommissioning plan, as approved by the regulatory body. In addition, assurance shall be provided that sufficient funds will be available to carry out shutdown and decommissioning</td>
<td><strong>COMMENT:</strong> The requirement should not be changed.</td>
</tr>
<tr>
<td><strong>GSR Part 5</strong> Requirement 21: System of accounting for and control of nuclear material</td>
<td>For facilities subject to agreements on nuclear material accounting, in the design and operation of predisposal radioactive waste management facilities the system of accounting for and control of nuclear material shall be implemented in such a way as not to compromise the safety of the facility</td>
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<td>Requirement</td>
<td>Commentary</td>
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<tr>
<td>GSR Part 5</td>
<td>The requirement should not be changed.</td>
<td></td>
</tr>
<tr>
<td>Requirement 22: Existing facilities</td>
<td>The safety at existing facilities shall be reviewed to verify compliance with requirements. Safety related upgrades shall be made by the operator in line with national policies and as required by the regulatory body.</td>
<td></td>
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<tr>
<td>SSR-5</td>
<td>Stress test results and application to PRWM facilities should be included in SGs.</td>
<td></td>
</tr>
<tr>
<td>Requirement 1: Government responsibilities</td>
<td>The government is required to establish and maintain an appropriate governmental, legal and regulatory framework for safety within which responsibilities are clearly allocated for disposal facilities for radioactive waste to be sited, designed, constructed, operated and closed. This shall include: confirmation at a national level of the need for disposal facilities of different types; specification of the steps in development and licensing of facilities of different types; and clear allocation of responsibilities, securing of financial and other resources, and provision of independent regulatory functions relating to a planned disposal facility.</td>
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<tr>
<td>SSR-5</td>
<td>The requirement should not be changed.</td>
<td></td>
</tr>
<tr>
<td>Requirement 2: Responsibilities of the regulatory body</td>
<td>The regulatory body shall establish regulatory requirements for the development of different types of disposal facility for radioactive waste and shall set out the procedures for meeting the requirements for the various stages of the licensing process. It shall also set conditions for the development, operation and closure of each individual disposal facility and shall carry out such activities as are necessary to ensure that the conditions are met.</td>
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<tr>
<td>SSR-5</td>
<td>The Requirement is clear and does not need amendment. Accelerated licensing process could be considered at SG levels.</td>
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<tr>
<td>Requirement 3: Responsibilities of the operator</td>
<td>The operator of a disposal facility for radioactive waste shall be responsible for its safety. The operator shall carry out safety assessment and develop and maintain a safety case, and shall carry out all the necessary activities for site selection and</td>
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</tbody>
</table>
evaluation, design, construction, operation, closure and, if necessary, surveillance after closure, in accordance with national strategy, in compliance with the regulatory requirements and within the legal and regulatory infrastructure.

**COMMENT:** The requirement should not be changed.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSR-5</td>
<td>Requirement 4: Importance of safety in the process of development and operation of a disposal facility</td>
<td>Throughout the process of development and operation of a disposal facility for radioactive waste, an understanding of the relevance and the implications for safety of the available options for the facility shall be developed by the operator. This is for the purpose of providing an optimized level of safety in operational stage and after closure. <strong>COMMENT:</strong> The requirement should not be changed.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 5: Passive means for the safety of the disposal facility</td>
<td>The operator shall evaluate the site and shall design, construct, operate and close the disposal facility in such a way that safety is ensured by passive means to the fullest extent possible and the need for actions to be taken after closure of the facility is minimized. <strong>COMMENT:</strong> The requirement should not be changed.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 6: Understanding of a disposal facility and confidence in safety</td>
<td>The operator of a disposal facility shall develop an adequate understanding of the features of the facility and its host environment and of the factors that influence its safety after closure over suitably long time periods, so that a sufficient level of confidence in safety can be achieved. <strong>COMMENT:</strong> The requirement should not be changed.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 7: Multiple safety functions</td>
<td>The host environment shall be selected, the engineered barriers of the disposal facility shall be designed and the facility shall be operated to ensure that safety is provided by means of multiple safety functions. Containment and isolation of the waste shall be provided by means of a number of physical barriers of the disposal system. The performance of these physical barriers is achieved by means of diverse physical and chemical processes together with various operational controls. The capability of the individual barriers and controls together with that of the overall</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 8: Containment of radioactive waste</td>
<td>The engineered barriers, including the waste form and packaging, shall be designed, and the host environment shall be selected, so as to provide containment of the radionuclides associated with the waste. Containment shall be provided until radioactive decay has significantly reduced the hazard posed by the waste. In the case of heat generating waste, containment shall be provided while the waste is still producing heat energy in amounts that could adversely affect the performance of the disposal system.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 9: Isolation of radioactive waste</td>
<td>The disposal facility shall be sited, designed and operated to provide features that are aimed at isolation of the radioactive waste from people and from the accessible biosphere. The features shall aim to provide isolation for several hundreds of years for short lived waste and at least several thousand years for intermediate and high level waste. In so doing, consideration shall be given to both the natural evolution of the disposal system and events causing disturbance of the facility.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 10: Surveillance and control of passive safety features</td>
<td>An appropriate level of surveillance and control shall be applied to protect and preserve the passive safety features, to the extent that this is necessary, so that they can fulfil the functions that they are assigned in the safety case for safety after closure.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 11: Step by step development and evaluation of disposal facilities</td>
<td>Disposal facilities for radioactive waste shall be developed, operated and closed in a series of steps. Each of these steps shall be supported, as necessary, by iterative evaluations of the site, of the options for design, construction, operation and management, and of the performance and safety of the disposal system.</td>
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<tr>
<td>Requirement</td>
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<td>Comment</td>
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<tr>
<td>SSR-5</td>
<td>Requirement 12: Preparation, approval and use of the safety case and safety assessment for a disposal facility</td>
<td>The requirement should not be changed.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 13: Scope of the safety case and safety assessment</td>
<td>The requirement should not be changed.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 14: Documentation of the safety case and safety assessment</td>
<td>The requirement should not be changed.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 15: Site characterization for a disposal facility</td>
<td>The requirement should not be changed.</td>
</tr>
</tbody>
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A safety case and supporting safety assessment shall be prepared and updated by the operator, as necessary, at each step in the development of a disposal facility, in operation and after closure. The safety case and supporting safety assessment shall be submitted to the regulatory body for approval. The safety case and supporting safety assessment shall be sufficiently detailed and comprehensive to provide the necessary technical input for informing the regulatory body and for informing the decisions necessary at each step.

The safety case for a disposal facility shall describe all safety relevant aspects of the site, the design of the facility, and the managerial control measures and regulatory controls. The safety case and supporting safety assessment shall demonstrate the level of protection of people and the environment provided and shall provide assurance to the regulatory body and other interested parties that safety requirements will be met.

The safety case and supporting safety assessment for a disposal facility shall be documented to a level of detail and quality sufficient to inform and support the decision to be made at each step and to allow for independent review of the safety case and supporting safety assessment.

The site for a disposal facility shall be characterized at a level of detail sufficient to support a general understanding of both the characteristics of the site and how the site will evolve over time. This shall include its present condition, its probable natural evolution, and possible natural events and also human plans and actions in the vicinity that may affect the safety of the facility over the period of interest. It shall also include a specific understanding of the impact on safety of features, events and processes associated with the site and the facility.
<p>| SSR-5 | Requirement 16: Design of a disposal facility | The disposal facility and its engineered barriers shall be designed to contain the waste with its associated hazard, to be physically and chemically compatible with the host geological formation and/or surface environment, and to provide safety features after closure that complement those features afforded by the host environment. The facility and its engineered barriers shall be designed to provide safety during the operational period. |
| SSR-5 | Requirement 17: Construction of a disposal facility | The disposal facility shall be constructed in accordance with the design as described in the approved safety case and supporting safety assessment. It shall be constructed in such a way as to preserve the safety functions of the host environment that have been shown by the safety case to be important for safety after closure. Construction activities shall be carried out in such a way as to ensure safety during the operational period. |
| SSR-5 | Requirement 18: Operation of a disposal facility | The disposal facility shall be operated in accordance with the conditions of the licence and the relevant regulatory requirements so as to maintain safety during the operational period, and in such a manner as to preserve the safety functions assumed in the safety case that are important to safety after closure. |
| SSR-5 | Requirement 19: Closure of a disposal facility | A disposal facility shall be closed in a way that provides for those safety functions that have been shown by the safety case to be important after closure. Plans for closure, including the transition from active management of the facility, shall be well defined and practicable, so that closure can be carried out safely at an appropriate time. |
| SSR-5 | Requirement 10: Surveillance and control of passive safety features | An appropriate level of surveillance and control shall be applied to protect and preserve the passive safety features, to the extent that this is necessary, so that they can fulfil the functions that they are assigned in the safety case for safety after closure. COMMENT: The requirement should not be changed. |
| SSR-5 | Requirement 20: Waste acceptance in a disposal facility | Waste packages and unpackaged waste accepted for emplacement in a disposal facility shall conform to criteria that are fully consistent with and are derived from the safety case for the disposal facility in operation and after closure. COMMENT: The requirement should not be changed. |
| SSR-5 | Requirement 21: Monitoring programmes at a disposal facility | A programme of monitoring shall be carried out prior to and during the construction and operation of a disposal facility, and after its closure, if this is part of the safety case. This programme shall be designed to collect and update information necessary for the purposes of protection and safety. Information shall be obtained to confirm the conditions necessary for the safety of workers and members of the public and protection of the environment during the period of operation of the facility. Monitoring shall also be carried out to confirm the absence of any conditions that could affect the safety of the facility after closure. COMMENT: The requirement should not be changed. |
| SSR-5 | Requirement 22: The period after closure and institutional controls | Plans shall be prepared for the period after closure to address institutional control and the arrangements for maintaining the availability of information on the disposal facility. These plans shall be consistent with passive safety features and shall form part of the safety case on which authorization to close the facility is granted. COMMENT: The requirement should not be changed. |
| SSR-5 | Requirement 23: Consideration of the State system of accounting for and control of nuclear material | In the design and operation of disposal facilities subject to agreements on accounting for and control of nuclear material, consideration shall be given to ensuring that safety is not compromised by the measures required under the system of accounting for and control of nuclear material. |</p>
<table>
<thead>
<tr>
<th>SSR-5</th>
<th>Requirement 24: Requirements in respect of nuclear security measures</th>
<th>Measures shall be implemented to ensure an integrated approach to safety measures and nuclear security measures in the disposal of radioactive waste.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSR-5</td>
<td>Requirement 25: Management systems</td>
<td>Management systems to provide for the assurance of quality shall be applied to all safety related activities, systems and components throughout all the steps of the development and operation of a disposal facility. The level of assurance for each element shall be commensurate with its importance to safety.</td>
</tr>
<tr>
<td>SSR-5</td>
<td>Requirement 26: Existing disposal facilities: assessment of Safety</td>
<td>The safety of existing disposal facilities shall be assessed periodically until termination of the licence. During this period, the safety shall also be assessed when a safety significant modification is planned or in the event of changes with regard to the conditions of the authorization. In the event that any requirements set down in this publication are not met, measures shall be put in place to upgrade the safety of the facility, economic and social factors being taken into account.</td>
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<td><strong>COMMENT:</strong> The requirement should not be changed.</td>
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<td><strong>COMMENT:</strong> Stress test results and application to disposal facilities to be included in SGs.</td>
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**WG Members**
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Boris Brendebach, Germany
Steve Chandler, UK
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