6 November 2017

41st Meeting of the Commission on Safety Standards

19–20 April 2017

IAEA Headquarters, Vienna

Report of the Meeting

Overview of main results of the meeting

A. The following draft Safety Standards were endorsed for publication:

- DS478: Draft Safety Requirements on Safety of Nuclear Fuel Cycle Facilities (revision of NS-R-5 (Rev. 1))
- DS485: Draft Safety Guide on Ageing Management and Programme for Long Term Operation of Nuclear Power Plants (revision of NS-G-2.12)

B. The following DPP was approved:

- DS498: Draft Safety Guide on External Events Excluding Earthquakes in the Design of Nuclear Installations (revision of NS-G-1.5)

C. A Working Group of CSS members from Argentina, Australia, Finland and USA, as well as the Chairs of EPReSC, RASSC and WASSC and staff of the Secretariat, was established to consider the implications of the 2012 UNSCEAR report “Attributing Health Effects to Ionizing Radiation Exposure and Inferring Risks” for the safety standards. Representatives of ICRP and UNSCEAR would also be invited to contribute to the Working Group.

1. Opening Session

1.1 Opening of the Meeting

Mr Juan Carlos Lentijo, Deputy Director General and Head of the Department of Nuclear Safety and Security, opened the 41st meeting of the Commission on Safety Standards and welcomed all members. He noted that there were three new CSS participants and a new nomination from the United Kingdom was expected soon.

Mr Lentijo referred to the meeting agenda and noted that this included a presentation on the IAEA priorities on nuclear safety for 2017 and beyond. Another key item on the agenda was the approval of the draft Safety Requirements DS478 on the Safety of Nuclear Fuel Cycle Facilities. This revision includes important updates, among them elements that incorporate lessons from the Fukushima Daiichi accident. The adoption of this publication would complete the Fukushima Daiichi-related updates to the Safety Requirements.

Mr Lentijo noted that at the recent 7th Review Meeting of the Convention of Nuclear Safety, the Parties to the Convention took note of the CSS confirmation that the technical elements of the 2015 Vienna Declaration on Nuclear Safety are reflected in relevant IAEA Safety Requirements. Work is now underway to revise the Safety Guides following the principles of the Vienna Declaration.

Mr Lentijo also announced that the process for publication of the IAEA safety standards had been improved, and it would enable the Commission to learn about substantive comments at an earlier stage than before.

Finally, he informed the Commission about the following upcoming important events:

- International Conference on Topical Issues in Nuclear Installation Safety: Safety Demonstration of Advanced Water Cooled Nuclear Power Plants, 6–9 June 2017;
- International Conference on Physical Protection of Nuclear Material and Nuclear Facilities, 13–17 November 2017;
- International Conference on Radiation Protection in Medicine: Achieving Change in Practice, 11–15 December 2017.

Mr Lentijo concluded by wishing all participants a very productive meeting.

Mr A. González commented that the integration of safety and security was an important issue that had still to be fully resolved. Mr Lentijo noted that different Member States had different expectations that needed to be taken into account. He welcomed any additional advice from the Commission and noted that the upcoming international conference on physical protection would provide an opportunity for this issue to be addressed further.

1.2 Introductions, Adoption of the Agenda, Adoption of the 40th CSS meeting report

Ms D. Drábová, Chair of the Commission, welcomed all participants. She introduced as new members of the Commission: Mr Elsner from Germany; Mr Baek from the Republic of Korea; and Mr Brown from the United States of America. A new nomination from the United Kingdom is expected soon.

A complete list of participants is provided in Annex I.

The provisional agenda was distributed. Mr D. Delattre indicated that as this was the first CSS meeting for the member from the United States of America, the proposed presentation from the USA on the use of IAEA safety standards would be postponed to a future CSS meeting.

The revised agenda was approved and is provided in Annex II.

Ms Drábová informed the Commission that the draft report of the 40th CSS meeting had been made available. Comments had been received from Japan, and these had been accepted. The report of the 40th CSS meeting was approved and would be posted on the CSS website [Annex III, Action 41.01].

1.3 Administrative arrangements for the meeting; status of the overall structure; status of the endorsed standards; and response to actions from the 40th CSS meeting

Mr Delattre informed the Commission of the administrative arrangements for the meeting. He noted that all material had been made available more than two months in advance of the meeting for effective review by the Commission.

Mr Delattre presented the status of the roadmap for the long term structure of the General Safety Requirements and the Specific Safety Requirements, as well as the status of the endorsed safety standards. He informed the Commission that no safety standards had been published since the last CSS meeting, but noted that 11 safety standards endorsed by the Commission were in the publishing process. Lists of current standards, projects and draft standards under preparation/revision, and drafts of the Nuclear Security Series that are interface documents are included as Annexes IV, V and VI, respectively[1].

Mr Delattre described the amendment to the process for publishing the safety standards, whereby the reviews of draft standards by the Commission and the Publications Committee would in future be carried out in parallel.

Mr Delattre also provided information on the response to the actions from the 40th CSS meeting (see Annex VII).

Mr González asked about the publication of the 2016 Safety Glossary; in particular he hoped that the 2016 Glossary would be made available in all official languages, as had the 2007 edition of the Glossary. Mr Delattre confirmed that the 2016 Glossary is available via the IAEA website and is in the publishing process, but noted that there are as yet no plans to issue it in all official languages.

2. Information on the Nuclear Safety and Security Departmental priorities for 2017 and beyond

Mr G. Caruso presented information on the Nuclear Safety and Security priorities for 2017 and beyond. This included a description of the background, structure and content of the 2017 Nuclear Safety Review. The aim of this review was to describe activities and trends, and identify priorities for the Agency for 2017 and beyond for strengthening nuclear, radiation, transport and waste safety, as well as emergency preparedness and response. Mr Caruso summarized the trends, activities and priorities in each of these areas. He also addressed safety in nuclear installations, and listed the Agency's priorities for assisting Member States in this area. These include assistance in: applying the safety standards; strengthening severe accident management guidelines; improving programmes for long term operation of nuclear installations; developing safety infrastructure; implementing safety upgrades and facilitating the exchange of operating experience. The management of the safety and security interface and the establishment of an effective global nuclear liability regime were also addressed.

The final version of the Nuclear Safety Review 2017 based on Member States comments would be issued for the General Conference in September 2017.

Mr Caruso's presentation is available on the CSS web site.

Mr González welcomed the changed structure of the Nuclear Safety Review, especially in terms of it being a forward-looking exercise, as well as a retrospective review. He also noted that the Vienna Declaration on Nuclear Safety makes explicit and positive reference to the IAEA safety standards. Mr J-L. Martins indicated that work on strengthening the standards taking into account the principles of the Vienna Declaration was welcomed by the EC, taking into account that the standards serve as a reference for OSART and IRRS review missions. He stated that EC considered that the main challenge now lay in the application of the standards to fulfil the provisions of the Vienna Declaration, and that the Agency's assistance in developing a practical approach was welcome.

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[1] Comprehensive, up-to-date information on the status of all standards, published and in draft, as well as on the status of all drafts of the Nuclear Security Series that are interface documents, is available at https://www-ns.iaea.org/committees/files/CSS/205/status.pdf

Mr P. Webster commented that it was important that the contents of the Nuclear Safety Review were linked to the overall medium term strategy of the Agency. Mr I. Lund agreed with the proposed activities arising from the Nuclear Safety Review, and asked how these would be prioritized within the Agency's budgetary constraints. Mr Caruso responded that the priorities are framed in general terms and that all the identified activities were expected to be able to be undertaken, and that future reviews would include a status report on the implementation of these actions.

3. Reports from the Safety Standards Committees and the Nuclear Security Guidance Committee

3.1 Emergency Preparedness and Response Standards Committee (EPReSC)

Ms A. Heinrich, EPReSC Chair, reported on the third meeting of EPReSC, whose membership consisted of representatives of 44 Member States and 15 representatives from international organizations as observers. EPReSC had approved one draft standard for submission to CSS (DS478) and five draft standards for submission to Member States for comment (DS434, DS449, DS468, DS489 and DS492). EPReSC had cleared five drafts of the Nuclear Security Series (NST004, NST044, NST045, NST048 and NST051).

EPReSC discussed a preliminary DPP for the revision of GS-G-2.1, and also discussed the priorities for the future development of EPR safety standards. EPReSC had also discussed communication topics and a WHO report on 'evidence based' effectiveness of protective actions.

Ms Heinrich's presentation is available on the CSS web site.

Mr Martins noted that it was necessary to take account of the potential impact of a nuclear or radiological emergency in neighbouring States and ensure that arrangements allow for international cooperation and aim for compatible levels of protection in different countries. Furthermore, Mr Martins noted that future standards and guidance needed to consider how to integrate the EPR arrangements for nuclear or radiological emergencies with the arrangements for other types of emergencies.

Mr González and Mr Lund both commented that EPR arrangements need to cover both safety-related and security-related events, and enquired what actions EPReSC were taking in this regard. Ms Heinrich noted that the requirements of GSR Part 7 were intended to be broadly applicable to all nuclear and radiological emergencies, irrespective of their triggering event. In addition, EPReSC specifically considers the interfaces between safety and security in the development of individual publications. Ms Heinrich also emphasised that there was effective coordination with NSGC in terms of ensuring consistent terminology.

Mr Lund asked for clarification on the issues arising from the WHO report, and Ms Heinrich indicated that, within the context of a nuclear or radiological emergency, the amount of available evidence on the actual use of a protective action was not necessarily a reliable indicator of the effectiveness of that action, such as in the case of sheltering. It is understood that the report is being reviewed by WHO.

3.2 Nuclear Safety Standards Committee (NUSSC)

Mr F. Feron, NUSSC Chair, reported on the 42nd NUSSC meeting. NUSSC had approved two draft standards for submission to CSS (DS478, DS485), five draft standards for submission to Member States for comment (DS434, DS449, DS481, DS489 and DS492) and one DPP (DS498). NUSSC had cleared three drafts of the Nuclear Security Series (NST045, NST048 and NST051).

NUSSC had discussed the DPP for DS502, the draft Safety Guide on Continuous Improvement of Operational Safety Performance in Nuclear Power Plants. Many comments had been received, and the DPP would be developed further prior to its resubmission to NUSSC. NUSSC had also reviewed progress with the revisions of Safety Guides to incorporate the lessons learned from the Fukushima Daiichi accident, and also to take account of the Vienna Declaration. Work is starting on the preparation of the 4-year term NUSSC report. In addition, an extra day would be added to the next

meeting to discuss the long-term structure (holistic review) of Safety Guides. The Committee is also investigating methods to encourage and increase Member State participation in NUSSC meetings, including remote attendance using tools such as WebEx.

Mr Feron's presentation is available on the CSS web site.

Mr M. Hirano commented that the supply chain was a major issue, in particular the procurement and quality assurance of spare parts, and asked what work was being done in this regard. Mr Feron indicated that supply chain issues had been discussed, especially in relation to ageing management, but agreed that a more detailed consideration in terms of the management system for all nuclear installations was warranted. Mr Delattre noted that GSR Part 2 does include requirements on the supply chain, and also indicated that discussion were taking place with ISO on the preparation of a quality standard (ISO:19443) for supply chains. Mr P. Tiippana indicated that further work on the regulatory approach to supply chain issues would be welcome.

3.3 Radiation Safety Standards Committee (RASSC)

Mr G. Massera, RASSC Chair, provided a presentation on the 41st RASSC meeting. RASSC had approved one draft standard for submission to the CSS (DS478), three draft standards for submission to Member States for comment (DS434, DS449 and DS468) and two DPPs for submission to CSS (DS500 and DS502). It was noted that the title of DS434 had been modified to Radiation Safety of Accelerator Radioisotope Production Facilities, to indicate its restricted scope more clearly. It was also noted that further work had been undertaken on the DPP for DS499 (Implementation of the Concept of Exemption, including Criteria for Trade in Contaminated Commodities) to take account of RASSC and Member State comments. RASSC had also cleared drafts of the Nuclear Security Series (NST045, NST048 and NST051). NST044 had initially not been cleared by RASSC, but it was subsequently cleared via email.

RASSC agreed to the development of a Safety Report on Living in Areas affected by Past Nuclear or Radiological Events (working title). This would deal exclusively with existing exposure situations and medium- to long-term issues, and the intention was to include NGOs in the development of the document.

Several requests had been received from Member States for guidance on regulatory control and radiation safety for radiotracers.. As a result, guidance on regulatory control and radiation safety for radiotracers would be added as a separate chapter in the Guidelines for the Safe Use of Radiotracers in Industry and Environment, which is currently in preparation. The need to develop a separate Safety Guide on regulatory control and radiation safety for radiotracers would also be considered.

Other issues from the RASSC meeting included updates on Safety Reports in preparation, a report on implementation of the IAEA safety standards in Switzerland, a topical session on the implementation of GSR Part 3 (including a presentation from the Chair of ICRP) and an update on the development of Guidance on the Management of Disused Radioactive Sources supplementary to the Code of Conduct.

Mr Massera's presentation is available on the CSS web site.

On the Safety Report to be developed on Living in Areas affected by Past Nuclear or Radiological Events, and why areas of high natural background radiation were excluded from the scope, Mr Massera noted that the intended focus was on the experiences of people returning to areas they had previously left following an accident. Mr González noted that there were still issues relating to the understanding of the concept of existing exposure situations that warranted further discussion. Mr F. Brown and Mr J. Dies Llovera also suggested that the DPP should specify the involvement of NGOs and experts with relevant expertise. Mr Lentijo concluded the discussion by noting that the proposed title of the Safety Report was clear in terms of the topic to be addressed, and that consequently further emphasis in the title on existing exposure situations was not necessary.

Mr González requested that further consideration be given to the title of DS434; the current title would be challenging to translate owing to the use of nouns as adjectives.

3.4 Transport Safety Standards Committee (TRANSSC)

Mr P. Hinrichsen, Chair of TRANSSC, reported on the 33rd TRANSSC meeting and provided an update on the revision of SSR-6. The final draft is expected to be published in 2018. TRANSSC approved two DPPs (DS499 and DS500) for submission to the CSS, two draft standards (DS434 and DS502) for submission to Member States for comment and one draft standard for submission to the CSS (DS478). TRANSSC also cleared three drafts of the Nuclear Security Series (NST044, NST045 and NST051).

TRANSSC had concluded that TS-G-1.3, TS-G-1.4 and TS-G-1.5 all need to be revised; the schedule of revision would be agreed at its next meeting in July 2017. A number of Working Groups would be convened at the next meeting, including groups for A1/A2 values and for NORM, and they would report to the TRANSSC 34 plenary.

Mr Hinrichsen's presentation is available on the CSS web site.

Mr S. Whittingham noted that the TRANSSC working group on criticality was working to harmonize the requirements for the criticality safety assessment for packages containing fissile material. In the course of a wider discussion on dual purpose casks Mr G. Bruno confirmed that work was being undertaken jointly by WASSC and TRANSSC on the safety assessment of dual purpose casks, and Mr Whittingham confirmed that specific requirements on ageing management and shipment after storage had been incorporated into the latest revision of SSR-6. He noted that the regulatory provisions of SSR-6 were considered to be suitably robust, and that the main issue now was demonstrating compliance.

3.5 Waste Safety Standards Committee (WASSC)

Mr G. Williams, WASSC Chair, provided a report on the 42nd WASSC meeting, which was the first held jointly with EPReSC. WASSC had approved four draft standards (DS489, DS468, DS434 and DS449) for submission to Member States for comment. Two draft standards (DS478 and DS485) and four DPPs (DS498, DS499, DS500 and DS502) had been approved for submission to the CSS. WASSC also approved one standard for submission to the CSS for publication (DS478). WASSC also cleared three drafts of the Nuclear Security Series (NST045, NST048 and NST051).

WASSC had also considered the draft Safety Report on Living in Areas Affected by Past Nuclear or Radiological Events" (see agenda item 3.3) and the development of Safety Reports on Safety Aspects of Uranium Production, and on Uranium Production by In Situ Leaching.

WASSC had also received an update on the Joint Convention, including a report from the Topical Meeting under the Joint Convention on Challenges and Responsibilities of Multinational Radioactive Waste Disposal Facilities. There were also reports from: the International Conference on the Safety of Radioactive Waste Management; the Technical Meeting of the Joint Working Group on Spent Fuel and Radioactive Waste; and the International Workshop on Operational Safety of Geological Disposal Facilities. WASSC also discussed progress on the development of Guidance on the Management of Disused Radioactive Sources supplementary to the Code of Conduct. with regard to the management of disused radioactive sources was discussed.

Mr Williams' presentation is available on the CSS web site.

3.6 Information on the meetings of the Nuclear Security Guidance Committee (NSGC)

Mr B. Dal, Chair of NSGC, reported on the tenth NSGC meeting. He noted that NST044 and NST048 had been approved for publication. NST004 had been cleared by EPReSC after agreed revisions and NSGC gave tacit approval after that clearance. There were some further comments and the Committee is now clarifying whether these can be addressed without re-submitting the draft to the next NSGC meeting.

NST045 and NST051 had been approved for submission to Member States for comment, and the DPP for NST060 had also been approved. The DPP for NST057 had not been approved; instead the

proposal was to finalize the recommendations and include the text as an Annex to NST045, and then publish later in the various Recommendations level publications when they are fully revised. The need to consult Member States on the Annex (and at what stage) would also have to be considered. Regarding interface documents, several standards and DPPs for standards had also been cleared. DS481 and DS468 are no longer considered interface documents by NSGC.

NSGC also discussed the Committee structure and decided that a review was not necessary at the end of the 2nd term. However NSGC would expect to be involved if a review of the structure of the SSCs would affect it. Mr Dal also reported on the NSS Roadmap; almost all Implementing Guides are expected to be complete by the end of 2017.

Mr Dal's presentation is available on the CSS web site.

There were further discussion on the difficulties that can arise from dealing with safety and security as separate issues.

Mr Williams queried the proposed approach to NST057, i.e. in which requirements would be presented in an Annex to an Implementing Guide. Mr Delattre confirmed that this was problematic for two reasons: recommendations should be approved by the Board of Governors; and an Annex is not considered part of the main text, and has no official status. Mr Dal explained that a number of other options had been considered but had been discounted; however, he noted the CSS comments and would take them back to NSGC.

3.7 Information on the meeting of the Chairs held on 19 April before the CSS meeting

The meeting of the Chairs of the Committees and the Commission addressed the following topics:

- Preparation and harmonization of the end of term reports for the six Committees. The Secretariat was requested to prepare guidance for a harmonized implementation of a self-assessment of performance by all Review Committees to be reported as part of their end of term report [Annex III, Action 41.02].
- How to further improve the participation of Member States in Committee meetings, for example through remote access tools such as WebEx.
- Input from the Committees on the CSS holistic review of the Safety Guides, including the emphasis on providing practical guidance.
- The current status of NSS-OUI and the registration of members to give access to the feedback collection interface module.
- The future approach to updating and versioning of the Safety Glossary and the Nuclear Security Series Glossary, in the context of their importation into NSS-OUI.
- Update on the expected changes to the publication process.
- The approach to numbering paragraphs when standards are revised by amendment, e.g. SSR-6. The Secretariat was requested to prepare introductory material for the revision of SSR-6 in order to explain, at the next TRANSSC meeting, the new numbering system for revision by amendment and to prevent possible misinterpretation by the users of this new numbering system [Annex III, Action 41.03].[2]

Mr González commented that the titles of Safety Standards were not always consistent, and that it would be useful to review these and rationalize them where appropriate.

[2] The CSS Chair indicated to the Secretariat that this new numbering system should obviously be adopted also for the revision of SSR-6 for consistency and stability of cross-referencing.

4. Approval of draft publications and DPPs

4.1 Draft Safety Requirement DS478: Safety of Nuclear Fuel Cycle Facilities

Mr R. Gater presented the draft Safety Requirements publication, and outlined its background in terms of the revision of NS-R-5. Mr Gater described the objectives of the revisions, and summarized the content and new information presented in DS478. A total of 26 comments had been provided by Germany, India, Japan and the Republic of Korea. All comments were addressed (in most cases accepted in full) and their resolutions discussed and agreed. In particular, Mr Gater confirmed that the phrase 'engineering judgement', which is widely understood, had been reinstated.

Mr Gater's presentation is available on the CSS web site.

Mr Hirano expressed support for the publication, but queried the positioning of the text on design extension conditions, which should be associated with the design basis. Mr Gater agreed and suggested that by removing the subheading 'Safety Analysis' this issue would be resolved. This was accepted.

Mr González emphasized the importance of industry participation in the preparation of the standards. Mr Gater confirmed that the preparation of the draft had involved very substantial contributions from industry. Mr Delattre also agreed that industry participation was important in the preparation of standards, but reminded the meeting that industry participation was explicitly excluded from the CSS to ensure an independent final approval step.

The Commission endorsed the draft for publication, subject to the changes agreed.

4.2 Draft Safety Guide DS485: Ageing Management and Programme for Long Term Operation of Nuclear Power Plants

Mr R. Krivanek presented the draft Safety Guide and provided an overview of its background and objectives, including addressing the requirements in SSR-2/2 (Rev. 1) and taking account of the IGALL Safety Reports Series No. 82. Mr Krivanek described the comments that had been provided by Finland, Germany, India and Japan, and confirmed that these had been accepted in full.

Mr Krivanek's presentation is available on the CSS web site.

Mr T. Elsner queried the scope of the Safety Guide, particularly in terms of the need to undertake periodic safety reviews of old nuclear power plants against current safety standards. This issue was also raised in general discussions that followed. Mr R. Krivanek explained that periodic safety review was specifically addressed by SSG-25, and Mr Feron confirmed that DS485 made specific reference to this, for example in Section 7.

Mr González initiated a general discussion on whether specific reference to the Vienna Declaration, in particular Principle 2, should be included in DS485. There were differing views expressed on this, and the Secretariat was requested to consider whether to include such a reference (e.g. as a footnote) in DS485.

The Commission endorsed the draft for publication.

4.3 Draft DPP Safety Guide DS498: External Events Excluding Earthquakes in the Design of Nuclear Installations

Mr Altinyollar presented the draft DPP, which was for a revision of the existing Safety Guide NS-G-1.5. Mr Altinyollar described the objectives of the revision and the proposed structure, including how it would address specific issues arising from the accident at the Fukushima Daiichi nuclear power plant. Comments had been provided by India, Japan and the Republic of Korea: all of these had been accepted, either in full or with modifications.

Mr Altinyollar's presentation is available on the CSS web site.

Mr Feron confirmed the support of NUSSC for the DPP. Mr Webster queried the length of time that it had taken to produce the DPP; Mr Caruso explained that several consultancy meetings had been necessary to ensure that the scope and objectives of the Safety Guide were fully defined and agreed.

The Commission approved the DPP.

5. DPPs and Draft Nuclear Security Series publications for information

5.1 Draft Implementing Guide NST048: Security of Radioactive Material in Use and in Storage and of Associated Facilities

Ms C. George presented the draft Implementing Guide, an interface document, for information. She outlined the outcomes of the reviews of the draft by the Committees and the resolution of the 218 comments that had been received from Member States, as well as a comment from the CSS (India) on the need to harmonize the terminology used to define security levels. The next step is approval by the Deputy Director General.

Ms George's presentation is available on the CSS web site.

6. Policy discussions

6.1. CSS Working Group results on the implications of the UNSCEAR report "Attributing Health Effects to Ionizing Radiation Exposure and Inferring Risks" for the development of IAEA safety standards

At the 40th CSS meeting it had been agreed that a Working Group would be established to consider the implications of the UNSCEAR report.

Ms Drábová and Mr Delattre confirmed that repeated communications had been sent to try to recruit volunteers for the Working Group: the only response had been a very recent input from Finland, who had provided written comments.

Mr González regretted that no progress had been made since the previous CSS meeting, and re-emphasised the need for a Working Group to examine the implications of what was a fundamental safety issue.

There was a general consensus that the UNSCEAR report does have implications for risk communication, which is an important area in which improvements can be made. It was agreed that a CSS Working Group would be established including: the CSS members from Argentina, Australia, Finland and the United States of America; and the Chairs of EPReSC, RASSC and WASSC. The Working Group should also invite the UNSCEAR and ICRP Secretariats to contribute, together with staff from the IAEA Secretariat. The Working Group should consider the implications of the UNSCEAR report for the safety standards, using as a basis the proposal submitted to the 40th CSS meeting by Australia and Argentina, and taking account of the comments already provided by Finland. The Working Group was requested to prepare a report for discussion at the 42nd CSS meeting on the potential implications for the content of the safety standards and the potential implications for the application of and communication of the standards [Annex III, Action 41.04].

6.2 Summary of how the standards reflect the concept of institutional strength in depth as set out in the INSAG-27 report.

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

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

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

Mr H. Wanner enquired whether further actions by the IAEA in response to INSAG-27 were envisaged. Mr Tarren indicated that several actions, including improvements in the review services, had already been taken in parallel while the INSAG report was being prepared, and that this was reflected in the findings presented. Mr Lund considered that the stakeholder sub-system could warrant further consideration in the standards; although the standards address communication with or involvement of stakeholders, accountability to stakeholders is less emphasized. Mr Lentijo confirmed that the Secretariat expected to undertake a second, more detailed, assessment of the implications of the report to consider what further actions are needed (including, if deemed appropriate, a specific IAEA publication on the topic) [Annex III, Action 41.05].

6.3 Holistic review of the collection of Safety Guides

Mr Delattre presented an overview of all the safety standards, according to the thematic area, from the point of view of the expected situation in three years' time. The total number of publications, including those that are planned or in preparation, is 131 (of which 116 are Safety Guides), which is consistent with the original expectations.

Mr Delattre explained that the Safety Fundamentals and Safety Requirements publications are considered to have a stable structure: the future focus is expected to be on revisions to these publications where there is a demonstrable need to do so. The scope covered by the Safety Guides is to be reviewed by the Safety Standards Committees, to ensure that the Safety Guides properly address the needs of Member States in terms of providing practical assistance in implementing the Safety Requirements. Where possible, Safety Guides would be combined to ensure that the total number of standards remains around 130.

Mr Delattre also explained that the relationships between all the standards are already included in NSS-OUI, and that additional links to relevant informational publications, such as Safety Reports and TECDOCs, are being included.

Following Mr Delattre's presentation, there was a general discussion in which the need to ensure stability in the safety standards was noted by several members of the Commission. It was noted that the needs of Member States often vary, but in general, more publications addressing the practical implementation of the standards would be welcome.

Mr Dies Llovera noted that the availability of translated standards was a key factor in encouraging their implementation in practice, and requested that more translations be arranged.

6.4. Status of the NSS-OUI IT platform

Mr Delattre provided a presentation on the current status of the NSS-OUI system. He summarized the basic strategies and basic elements of the system, and indicated that all available safety standards (121 publications) and nuclear security guidance (23 publications) were now within the system. The content of these publications was tagged to enable both full text and metadata searches, as well as an advanced topical search function. The central feedback mechanism was now fully functional, and this will facilitate the revision of standards in future.

He also set out the next steps, including: importing and tagging the glossaries to enable 'pop up' displays of definitions in publications; including links to Safety Reports, TECDOCs and other relevant publications; and inserting links to e-learning tools. Also planned are a new Relationship Search tool and a SharePoint process to manage the document review and approval process.

Mr Delattre expressed appreciation for the extrabudgetary funding received from the United States of America and Japan for this project, looked forward to future progress and encouraged CSS members to use the system. The presentation by Mr Delattre is available on the CSS web site.

Mr Zhao commented that the system was very useful, and enquired about the format in which the comments received by the feedback mechanism could be viewed. Mr Delattre indicated that it was possible to display comments individually and collectively, and that at present the system was intended to collect and collate comments on existing standards. Comments could be received from Committee and Commission members as well as from Agency staff, for example during missions. The precise arrangements for representatives of Member States to securely access the system were still to be determined.

6.5. Copyright related issues

Ms Asfaw provided a short presentation on proposed changes to the text included in IAEA communications granting permission to reproduce or translate standards. The proposed text is:

"The IAEA also extends this permission to include all subsequent same language revisions that may be published by the IAEA (this permission does not extend to drafts), assuming that the rights requested remain exactly the same. In all cases, this would be non-commercial reuse. The requestor should ensure that the relevant references and links are updated, as appropriate, when a revision is reproduced. It is noted that the IAEA cannot grant permission for the reuse of third party copyrighted material included in the IAEA Safety Standards, so if the IAEA publication contains such material, the requestor is responsible for obtaining these permissions.

In case of queries, sales.publication@iaea.org can advise and we would always be grateful to be informed of the use of IAEA publications."

Mr Webster welcomed the improvement, but noted that the standard copyright text still appeared to imply that non-commercial reproductions would be subject to royalty payments, and requested that further consideration be given to its modification.

7. Use of IAEA Safety Standards in Member States

7.1 Spain

Mr Dies Llovera provided a presentation on the use of standards in Spain, which is available on the CSS web site. Mr Dies Llovera described the mission, organization and regulatory functions of CSN, the Spanish regulatory body for nuclear safety and radiation protection. He described the nuclear facilities and radiation facilities and activities under CSN supervision and control.

Mr Dies Llovera also described the Spanish regulatory framework, consisting of laws, royal decrees, CSN instructions and CSN guides. He then described the commitment of Spain to the international protection and safety framework through: conventions; participation in international organizations and forums; Euratom and CSN's involvement in the Commission, the Safety Standards Committees and the Nuclear Security Guidance Committee. He described the Spanish commitment to the IAEA safety standards, and gave specific examples of their use. He also summarised previous and future participation in the IAEA IRRS and ARTEMIS review services. Mr Dies Llovera also requested that the number of safety standards not be increased, but that more effort be put into translating standards as soon as possible after they are issued in English.

In the discussion that followed, Mr Dies Llovera provided clarification of the CSN instructions relating to emergency preparedness and response, and further details on how CSN manages the interface between safety and security.

7.2 Sweden

Mr Lund provided a presentation on the use of standards in Sweden, which is available on the CSS web site. Mr Lund described the Swedish Radiation Safety Authority, the national regulatory system, and the nuclear programme in Sweden. The evolution and future development of nuclear safety and radiation protection legislation was described, including a comprehensive review to take account of EU directives, new IAEA safety standards and the IRRS recommendations and suggestions from the missions carried out in 2012 and 2016.

Mr Lund also described the approach used in Sweden to consult with interested parties and take comments into account when revising national regulations and guidance. Key issues arising from this process were the need for a comprehensive and consistent set of regulations, and an integrated approach to regulating safety and security.

In the discussion that followed, Mr Lund noted that the preparation of new regulations for the decommissioning of nuclear power plants might be deferred to allow for decommissioning experience to be incorporated, in which case the decommissioning of specific facilities would be subject to regulatory control imposed via licensing conditions. Mr Lund also noted that expansion of the existing radioactive waste disposal facility was planned to cover also waste from decommissioning.

On the question of merging of nuclear safety and radiation protection functions into a single regulatory body, Mr Lund admitted that such mergers could indeed cause problems, but that ultimately there were significant advantages that can be realised. He noted, however, that a single regulatory body did not also result in the merging of the regulations. Ms Drábová agreed, noting that the same process in the Czech Republic had been challenging but beneficial.

8. Information on the activities of the OECD/NEA

Mr A. White presented a summary of recent NEA activities in the areas of safety and regulation, as follows:

Nuclear regulation

The Committee on Nuclear Regulatory Activities met in December 2016 and approved a review of stakeholders' views on nuclear regulatory organisation communications, and a workshop on commendable practises in inspection of digital I&C.

Nuclear safety

The Committee on the Safety of Nuclear Installations (CSNI) completed reports on:

- Safety of Long-Term Interim Storage Facilities in NEA Member Countries;
- RIA (Reactivity Insertion Accident) Fuel-Code Benchmark;
- Proceedings of a Conference on Fatigue of Nuclear Reactor Components;
- Operating Experience lnsights into Pressure Boundary Component Reliability & lntegrity Management;
- Experimental Results from the HEAF (High Energy Arcing Fault) Research Project.

The CSNI is establishing joint projects to support Fukushima safety research and decommissioning that were recommended by the Senior Expert Group on Safety Research Opportunities post-Fukushima.

Human aspects of nuclear safety

The NEA Workshop on Stakeholder Involvement in Nuclear Decision Making was held in January 2017. A total of 147 participants from 26 countries and international organisations attended the workshop. All NEA standing technical committees were invited and contributed to the workshop by

sharing approaches, ideas and perspectives on the common topic of how to engage stakeholders in nuclear decision making.

Radioactive Waste Management

The 5th International Conference on Geological Repositories took place in December, and evaluated the social, political, scientific and economic aspects of geological repositories and helped to advance understanding of the complexity of overall radioactive waste management.

The Working Party on Decommissioning and Dismantling finalized a joint NEA/IAEA publication on Addressing Uncertainties in Cost Estimates for Decommissioning Nuclear Facilities.

The Expert Group on Waste Inventorying and Reporting Methodology developed a methodology for presenting national spent fuel and radioactive waste inventory data using a common format.

Radiological Protection and Public Health

The Working Party on Nuclear Emergency Matters has continued its work on the NEA's 5th nuclear emergency exercise, INEX-5, which includes the participation of 23 NEA member countries.

The NEA's Information System on Occupational Exposure continued its nuclear power plant occupational exposure data collection and analysis work, but is now focusing on occupational exposure at nuclear power plants under decommissioning.

The CRPPH Expert Group on Legacy Management plans to complete its report on practical guidance for the regulatory management of ‘legacy’ sites and installations by the end of 2017.

The NEA Workshop on the Management of Non-Nuclear Radioactive Waste will be held in May 2017 in Italy.

9. Miscellaneous. Report of the meeting, Date of the next meeting

Mr Brown, Mr Scott and Mr Moscrop volunteered to provide presentations at the 42nd CSS meeting on the use of standards in the United States of America, Australia and the United Kingdom, respectively. Mr A. Ferapontov and Mr Elsner also volunteered to provide presentations on the use of standards in the Russian Federation and Germany, respectively. Ms Drábová indicated that these two additional presentations would be included in the agenda for the 42nd CSS meeting if time allowed; if not, they would be deferred until the 43rd CSS meeting.

Mr Delattre informed the Commission of the proposed dates for the next meeting, namely in the week from 30 October to 3 November 2017, and reminded members that preparation of the mid-term report would need to start soon so as to envisage its finalization at that meeting. Members of the Commission requested that the exact dates for the next CSS meeting be confirmed at the earliest opportunity.

Mr Delattre also indicated that a draft list of actions resulting from the 41st CSS meeting would be provided for comment to the CSS members [Annex III, Action 41.06] and that the draft report of the 41st CSS meeting would be posted for comment to the CSS web site [Annex III, Action 41.07]. Mr Delattre informed the Commission that all presentations made at the 41st CSS meeting would be posted on the CSS web site [Annex III, Action 41.08].

ANNEX I

PARTICIPATION AT THE 41st CSS MEETING

The Commission

A.J. González, Argentina

C.-M. Larsson, Australia (sent apologies – unable to attend; represented by Mr Scott)

P.F. Lavalle Heilbron Filho, Brazil (sent apologies – unable to attend)

R. Jammal, Canada (sent apologies – unable to attend; represented by Mr Webster)

Y. Zhao, China

D. Drábová (Chair), Czech Republic

M.R.M. Ezz El-Din, Egypt

P. Tiippana, Finland

J.-L. Lachaume, France

T. Elsner, Germany

S. A. Bhardwaj, India (sent apologies – unable to attend; represented by Mr Ansari)

M. Markovits, Israel

T. Fuketa, Japan (sent apologies – unable to attend; represented by Mr Hirano)

M Baek, Republic of Korea

H. Mohd Ali, Malaysia (sent apologies – unable to attend)

M. A. Habib, Pakistan

A. Ferapontov, Russian Federation

Ms M. Žiaková, Slovakia (sent apologies – unable to attend; represented by Mr Turner)

C.O. Phillips, South Africa

J. Dies Llovera, Spain

I. Lund, Sweden

H. Wanner, Switzerland

D. Senior, United Kingdom (sent apologies – unable to attend; represented by Mr Moscrop)

F. Brown, United States of America

Observers

R. Awad, AdSec (sent apologies – unable to attend)

M. Garribba, EC (sent apologies – unable to attend; represented by Mr Martins)

C. Cousins, ICRP (sent apologies – unable to attend)

R. Meserve, INSAG (sent apologies – unable to attend)

H. Nieh, OECD NEA (sent apologies – unable to attend; represented by Mr White)

Chairpersons of the Review Committees

A. Heinrich, EPReSC

B. Dal, NSGC

F. Feron, NUSSC

G. Massera, RASSC

P. J. Hinrichsen, TRANSSC

G. Williams, WASSC

Representatives and associated experts

Mr Ahn, Mr Ansari, Ms Forest, Mr Hirano, Mr Iwata, Mr Martins, Mr Moscrop, Mr Nakajima, Mr Nilsson, Mr Park, Ms Sampson, Mr Scott, Mr Sharafutdinov, Ms Spevakova, Mr Turner, Mr Webster, Mr Weidenbrück, Mr White, Mr Zegri

IAEA Staff Members

J.-C. Lentijo, Deputy Director General, Department of Nuclear Safety and Security

E. Buglova, Head, Incident and Emergency Centre (IEC)

G. Caruso, Director, Nuclear Safety Office of Coordination (NSOC)

P. Johnston, Director, Division of Radiation, Transport and Waste Safety (NSRW)

R.A.A. Raja Adnan, Director, Division of Nuclear Security (NSNS)

G. Rzentkowski, Director, Division of Nuclear Installation Safety (NSNI)

T. Andrews, L. Guo, M. Khaliq, D. Liu, S. Mallick, H. Mansoux, S. Morita, A. Nicic, A. Orrell, M. Pinak, S. Purvis, A. Shokr, C. Spitzer, P. Tarren

A. Altinyollar, K. Asfaw, R. Gater, C. George, R. Krinavek

Coordinators of review Committees and of the Commission on Safety Standards

R. de la Vega, Incident and Emergency Centre (IEC), EPReSC

M. Svab, Regulatory Activities Section (NSNI), NUSSC

T. Colgan, Radiation Safety and Monitoring Section (NSRW), RASSC

S. Whittingham, Regulatory Infrastructure and Transport Safety Section (NSRW), TRANSSC

S. Geupel, Waste and Environmental Safety Section (NSRW), WASSC

I. Barraclough, Safety Standards and Security Guidance Development Section (NSOC), NSGC

D. Delattre, Scientific Secretary of the CSS, (NSOC) Safety Standards and Security Guidance Development Section

ANNEX II

AGENDA

Forty-First Meeting of the
COMMISSION ON SAFETY STANDARDS
19-21 April 2017

1. Opening Session

1.1 Opening of the Meeting

1.2 Introductions, Adoption of the Agenda, Adoption of the 40th CSS meeting report

1.3 Administrative arrangements for the meeting, Status of the Overall Structure, Status of the endorsed Standards and Response to Actions from the 40th Meeting and remaining actions from previous meetings

2. Information on the Nuclear Safety and Security Departmental priorities for 2017 and beyond

3. Reports from the Safety Standards Committees and the Nuclear Security Guidance Committee

3.1 Emergency Preparedness and Response Standards Committee

3.2 Nuclear Safety Standards Committee

3.3 Radiation Safety Standards Committee

3.4 Transport Safety Standards Committee

3.5 Waste Safety Standards Committee

3.6 Information on the meeting of the Nuclear Security Guidance Committee

3.7 Information on the meeting of the Chairs held on 19 April before the CSS meeting

4. Approval of draft publications and DPPs

4.1 Draft Safety Requirement DS478 Safety of Nuclear Fuel Cycle Facilities

4.2 Draft Safety Guide DS485 Ageing Management and Programme for Long Term Operation of Nuclear Power Plants

4.3 Draft DPP Safety Guide DS498 External Events Excluding Earthquakes in the Design of Nuclear Installations, revision of NS-G-1.5

5. DPPs and draft Nuclear Security Series publications for information

5.1 Draft Implementing Guide NST048 Security of Radioactive Material in Use and in Storage and of Associated Facilities

6. Policy discussion

6.1 CSS Working Group results on the consideration of the implications of the UNSCEAR report "Attributing Health Effects to Ionizing Radiation Exposure and Inferring Risks" for the development of IAEA safety standards

6.2 Summary on how the standards reflect the concept of institutional strength-in-depth as set out in the INSAG-27 Report

6.3 Holistic review of the collection of Safety Guides

6.4 Status of the NSS-OUI IT platform

6.5 Copyright related issues

7. Use of IAEA Safety Standards in Member States

7.1 Spain

7.2 Sweden

8. Information on activities of the OECD/NEA

9. Miscellaneous. Report of the meeting, Date of the next meeting

ANNEX III

ACTIONS ARISING FROM THE 41st MEETING OF THE COMMISSION

41.01 The final report of the 40th CSS meeting to be uploaded on the CSS web page. **[Action: Secretariat, CSS Scientific Secretary]. Done**

41.02 The Secretariat to prepare guidance for a harmonized implementation of a self performance assessment by all Review Committees to be reported as part of their end of term report. **[Action: CSS and Review Committee Scientific Secretaries].**

41.03 The Secretariat to prepare introductory material for the revision of SSR-6 in order to explain, at the next TRANSSC meeting, the new numbering system adopted with the Publishing Section for revision by amendment and to prevent possible miss-interpretation by the users of this new numbering system. **[Action: Secretariat with the Technical Editors Standards Specialists].**

41.04 A CSS Working Group to consider the implications of the UNSCEAR report "Attributing Health Effects to Ionizing Radiation Exposure and Inferring Risks" for the development of IAEA safety standards, using as a basis the proposal submitted by Argentina and Australia. The Working Group will include the CSS members from Argentina, Australia, Finland and USA, as well as the Chairs of EPReSC, RASSC and WASSC and staff of the Secretariat. The WG should also invite UNSCEAR and ICRP Secretariat to contribute. Prepare report for consideration at 42nd CSS on both the potential implications on the content of the safety standards and on the potential implications on the implementation of, and communication on the standards. **[Action: Secretariat; CSS Scientific Secretary; CSS members from Argentina, Australia, Finland and USA; Chairs of EPReSC, RASSC and WASSC; ICRP and UNSCEAR Secretariat]**

41.05 The Secretariat to undertake a 2nd more in-depth assessment of the implications of INSAG-27 report on the Standards and IAEA Safety Review Services. Also to be considered in 2018 review of OSART. **[Action: Secretariat]**

41.06 A draft list of actions resulting from the 41st CSS meeting to be provided to the CSS members for comment. **[Action: Secretariat, CSS Scientific Secretary]. Done**

41.07 The draft report of the 41st CSS meeting to be posted for comment. **[Action: Secretariat, CSS Scientific Secretary]. This report**

41.08 The presentations made at the 41st CSS meeting to be uploaded on the CSS web page. **[Action: Secretariat, CSS Scientific Secretary]. Done**

ANNEX IV

CURRENT SAFETY STANDARDS

[Status on 8 May 2017]

A. Safety Fundamentals

SF-1	Fundamental Safety Principles (2006) **Co-sponsorship:** Euratom, FAO, ILO, IMO, OECD/NEA, PAHO, UNEP, WHO [ACEFRS][3]

B. General Safety Standards (applicable to all facilities and activities)

GSR Part 1 (Rev.1)	Governmental, Legal and Regulatory Framework for Safety (2016) [ACER]
GSR Part 2	Leadership and Management for Safety (2016) [ACEF]
GSR Part 3	Radiation Protection and Safety of Radiation Sources –International Basic Safety Standards (2014) [ACEFRS]
GSR Part 4 (Rev.1)	Safety Assessment for Facilities and Activities (2016) [ACEFR]
GSR Part 5	Predisposal Management of Radioactive Waste (2009) [ACEFRS]
GSR Part 6	Decommissioning of Facilities (2014) [ACER]
GSR Part 7	Preparedness and Response for a Nuclear or Radiological Emergency (2015) **Co-sponsorship:** FAO, ICAO, ILO, IMO, INTERPOL, OECD/NEA, PAHO, CTBTO, UNEP, OCHA, WHO, WMO [ACER]

GSG-1	Classification of Radioactive Waste (2009) [ERS]
GSG-2	Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency (2011) [AEFRS]
GSG-3	The Safety Case and Safety Assessment for the Predisposal Management of Radioactive Waste (2013) [E]
GSG-4	Use of External Experts by the Regulatory Body (2013) [E]
GSG-5	Justification of Practices, Including Non-medical Human Imaging (2014) [E]
GS-G-2.1	Arrangements for Preparedness for a Nuclear or Radiological Emergency (2007) **Co-sponsorship:** FAO, OCHA, ILO, PAHO, WHO [ERS]
GS-G-3.1	Application of the Management System for Facilities and Activities (2006) [ERS]
GS-G-3.2	The Management System for Technical Services in Radiation Safety (2008) [EFR]
GS-G-3.3	The Management System for the Processing, Handling and Storage of Radioactive Waste (2008) [ER]
RS-G-1.1	Occupational Radiation Protection (1999) **Co-sponsorship:** ILO [ACEFRS]
RS-G-1.2	Assessment of Occupational Exposure Due to Intakes of Radionuclides (1999) **Co-sponsorship:** ILO [ACEFRS]
RS-G-1.3	Assessment of Occupational Exposure Due to External Sources of Radiation (1999) **Co-sponsorship:** ILO [ACEFRS]
RS-G-1.4	Building Competence in Radiation Protection and the Safe Use of Radiation Sources (2001) **Co-sponsorship:** ILO, PAHO, WHO [ACEFRS]
RS-G-1.7	Application of the Concepts of Exclusion, Exemption and Clearance (2004) [CERS]
RS-G-1.8	Environmental and Source Monitoring for Purposes of Radiation Protection (2005) [ERS]
RS-G-1.9	Categorization of Radioactive Sources (2005) [ACEFRS]

[3] A=available in Arabic; C=available in Chinese; E=available in English; F=available in French; R=available in Russian; S=available in Spanish

WS-G-2.3	Regulatory Control of Radioactive Discharges to the Environment (2000) (under revision) [ACEFRS]
WS-G-3.1	Remediation Process for Areas Affected by Past Activities and Accidents (2007) [ES]
WS-G-5.1	Release of Sites from Regulatory Control on Termination of Practices (2006) [ERS]
WS-G-5.2	Safety Assessment for the decommissioning of Facilities Using Radioactive Material (2008) [ERS]
WS-G-6.1	Storage of Radioactive Waste (2006) [ERS]

C. Specific Safety Standards (applicable to specified facilities and activities)

C.1. Nuclear Power Plants

SSR-2/1 (Rev.1)	Safety of Nuclear Power Plants: Design (2016) [ACER]
SSR-2/2 (Rev.1)	Safety of Nuclear Power Plants: Commissioning and Operation (2016) [ACEFR]
NS-R-3 (Rev.1)	Site Evaluation for Nuclear Installations (2016) [ACEF]
GS-G-1.1	Organization and Staffing of the Regulatory Body for Nuclear Facilities (2002) [CEFRS]
GS-G-1.2	Review and Assessment of Nuclear Facilities by the Regulatory Body (2002) [CEFR]
GS-G-1.3	Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body (2002) [CEFRS]
GS-G-1.4	Documentation for Use in Regulating Nuclear Facilities (2002) [CEFRS]
GS-G-3.5	The Management System for Nuclear Installations (2009) [ER]
GS-G-4.1	Format and Content of the Safety Analysis report for Nuclear Power Plants (2004) [EC]
NS-G-1.4	Design of Fuel Handling and Storage Systems for Nuclear Power Plants (2003) [ERS]
NS-G-1.5	External Events Excluding Earthquakes in the Design of Nuclear Power Plants (2003) [ER]
NS-G-1.6	Seismic Design and Qualification for Nuclear Power Plants (2003) [ER]
NS-G-1.7	Protection against Internal Fires and Explosions in the Design of Nuclear Power Plants (2004) [ER]
NS-G-1.9	Design of the Reactor Coolant System and Associated Systems in Nuclear Power Plants (2004) [ERS]
NS-G-1.10	Design of Reactor Containment Systems for Nuclear Power Plants (2004) [ER]
NS-G-1.11	Protection against Internal Hazards other than Fires and Explosions in the Design of Nuclear Power Plants (2004) [E]
NS-G-1.12	Design of the Reactor Core for Nuclear Power Plants (2005) [ECR]
NS-G-1.13	Radiation Protection Aspects of Design for Nuclear Power Plants (2005) [ER]
NS-G-2.1	Fire Safety in the Operation of Nuclear Power Plants (2000) [ECFR]
NS-G-2.2	Operational limits and Conditions and Operating Procedures for Nuclear Power Plants (2000) [CEFRS]
NS-G-2.3	Modifications to Nuclear Power Plants (2001) [CEFRS]
NS-G-2.4	The Operating Organization for Nuclear Power Plants (2001) [CEFR]
NS-G-2.5	Core Management and Fuel Handling for Nuclear Power Plants (2002) [ER]
NS-G-2.6	Maintenance, Surveillance and In-Service Inspection in Nuclear Power Plants (2002) [ER]
NS-G-2.7	Radiation Protection and Radioactive Waste Management in the Operation of Nuclear Power Plants (2002) [ERS]

NS-G-2.8	Recruitment, Qualification and Training of Personnel for Nuclear Power Plants (2002) [ER]
NS-G-2.11	A System for the Feedback of Experience from Events in Nuclear Installations (2006) [ERS]
NS-G-2.12	Ageing Management for Nuclear Power Plants (2009) [ER]
NS-G-2.13	Evaluation of Seismic Safety for Existing Nuclear Installations (2009) [ERS]
NS-G-2.14	Conduct of Operations at Nuclear Power Plants (2008) [ERS]
NS-G-2.15	Severe Accident Management Programmes for Nuclear Power Plants (2009) [ERS]
NS-G-3.1	External Human Induced Events in Site Evaluation for Nuclear Power Plants (2002) [ECFR]
NS-G-3.2	Dispersion of Radioactive Material in Air and Water and Consideration of Population Distribution in Site Evaluation for Nuclear Power Plants (2002) (under revision) [ER]
NS-G-3.6	Geotechnical Aspects of Site Evaluation and Foundations for Nuclear Power Plants (2005) [ECR]
SSG-2	Deterministic Safety Analysis for Nuclear Power Plants (2009) [ERS]
SSG-3	Development and Application of Level 1 Probabilistic Safety Assessment for Nuclear Power Plants (2010) [ER]
SSG-4	Development and Application of Level 2 Probabilistic Safety Assessment for Nuclear Power Plants (2010) [ER]
SSG-9	Seismic Hazards in Site Evaluation for Nuclear Installations (2010) [E]
SSG-12	Licensing Process for Nuclear Installations (2010) [ES]
SSG-13	Chemistry Programme for Water Cooled Nuclear Power Plants (2011) [ER]
SSG-16	Establishing the Safety Infrastructure for a Nuclear Power Programme (2012) [ER]
SSG-18	Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations (2011) **Co-sponsorship:** WMO [E]
SSG-21	Volcanic Hazards in Site Evaluation for Nuclear Installations (2012) [ES]
SSG-25	Periodic Safety Review for Nuclear Power Plants (2013) [ER]
SSG-27	Criticality Safety in the Handling of Fissile Material (2014) [E]
SSG-28	Commissioning for Nuclear Power Plants (2014) [ER]
SSG-30	Safety Classification of Structures, Systems and Components in Nuclear Power Plants (2014) [E]
SSG-34	Design of Electrical Power Systems for Nuclear Power Plants (2016) [E]
SSG-35	Site Survey and Site Selection for Nuclear Installations (2015) [E]
SSG-38	Construction for Nuclear Installations (2015) [E]
SSG-39	Design of Instrumentation and Control Systems for Nuclear Power Plants (2016) [E]
SSG-40	Predisposal Management of Radioactive Waste from Nuclear Power Plants and Research Reactors (2016) [E]
WS-G-2.1	Decommissioning of Nuclear Power Plants and Research Reactors (1999) (under revision) [AECFR]

C.2. Research Reactors

NS-R-3 (Rev.1)	Site Evaluation for Nuclear Installations (2016) [ACEFR]
SSR-3	Safety of Research Reactors (2016) [E]
GS-G-1.1	Organization and Staffing of the Regulatory Body for Nuclear Facilities (2002) [CEFRS]
GS-G-1.2	Review and Assessment of Nuclear Facilities by the Regulatory Body (2002) [CEFR]
GS-G-1.3	Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body (2002) [CEFRS]
GS-G-1.4	Documentation for Use in Regulating Nuclear Facilities (2002) [CEFRS]

GS-G-3.5	The Management System for Nuclear Installations (2009) [ER]
NS-G-2.11	A System for the Feedback of Experience from Events in Nuclear Installations (2006) [ERS]
NS-G-2.13	Evaluation of Seismic Safety for Existing Nuclear Installations (2009) [ERS]
NS-G-4.1	Commissioning of Research Reactors (2006) [E]
NS-G-4.2	Maintenance, Periodic Testing and Inspection of Research Reactors (2006) [E]
NS-G-4.3	Core Management and Fuel Handling for Research Reactors (2008) [E]
NS-G-4.4	Operational Limits and Conditions and Operating Procedures for Research Reactors (2008) [E]
NS-G-4.5	The Operating Organization and the Recruitment, Training and Qualification of Personnel for Research Reactors (2008) [E]
NS-G-4.6	Radiation Protection and Radioactive Waste Management in the Design and Operation of Research Reactors (2008) [E]
SSG-9	Seismic Hazards in Site Evaluation for Nuclear Installations (2010) [E]
SSG-10	Ageing Management for Research Reactors (2010) [E]
SSG-12	Licensing Process for Nuclear Installations (2010) [ES]
SSG-18	Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations (2011) **Co-sponsorship:** WMO [E]
SSG-20	Safety Assessment for Research Reactors and Preparation of the Safety Analysis Report (2012) [E]
SSG-21	Volcanic Hazards in Site Evaluation for Nuclear Installations (2012) [E]
SSG-22	Use of a Graded Approach in the Application of the Safety Requirements for Research Reactors (2012) [E]
SSG-24	Safety in the Utilization and Modification of Research Reactors (2012) [E]
SSG-27	Criticality Safety in the Handling of Fissile Material (2014) [E]
SSG-35	Site Survey and Site Selection for Nuclear Installations (2015) [E]
SSG-37	Instrumentation and Control Systems and Software Important to Safety for Research Reactors (2015) [E]
SSG-38	Construction for Nuclear Installations (2015) [E]
SSG-40	Predisposal Management of Radioactive Waste from Nuclear Power Plants and Research Reactors (2016) [E]
WS-G-2.1	Decommissioning of Nuclear Power Plants and Research Reactors (1999) (under revision) [AECFR]

C.3. Fuel Cycle Facilities

NS-R-3 (Rev.1)	Site Evaluation for Nuclear Installations (2016) [ACEF]
NS-R-5 (Rev.1)	Safety of Nuclear Fuel Cycle Facilities (2014) [ACEFR]

GS-G-1.1	Organization and Staffing of the Regulatory Body for Nuclear Facilities (2002) [CEFRS]
GS-G-1.2	Review and Assessment of Nuclear Facilities by the Regulatory Body (2002) [CEFR]
GS-G-1.3	Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body (2002) [CEFRS]
GS-G-1.4	Documentation for Use in Regulating Nuclear Facilities (2002) [CEFRS]
GS-G-3.5	The Management System for Nuclear Installations (2009) [ER]
NS-G-2.11	A System for the Feedback of Experience from Events in Nuclear Installations (2006) [ERS]
NS-G-2.13	Evaluation of Seismic Safety for Existing Nuclear Installations (2009) [ER]
SSG-5	Safety of Conversion Facilities and Uranium Enrichment Facilities (2010) [E]
SSG-6	Safety of Uranium Fuel Fabrication Facilities (2010) [E]
SSG-7	Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities (2010) [E]

SSG-9	Seismic Hazards in Site Evaluation for Nuclear Installations (2010) [E}
SSG-12	Licensing Process for Nuclear Installations (2010) [ES]
SSG-15	Storage of Spent Nuclear Fuel (2012) [E]
SSG-18	Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations (2011) **Co-sponsorship:** WMO [E]
SSG-21	Volcanic Hazards in Site Evaluation for Nuclear Installations (2012) [E]
SSG-27	Criticality Safety in the Handling of Fissile Material (2014) [E]
SSG-35	Site Survey and Site Selection for Nuclear Installations (2015) [E]
SSG-38	Construction for Nuclear Installations (2015) [E]
SSG-41	Predisposal Management of Radioactive Waste from Nuclear Fuel Cycle Facilities (2016) [E]
WS-G-2.4	Decommissioning of Nuclear Fuel Cycle Facilities (2001) (under revision) [ECFRS]

C.4. Radioactive Waste Disposal Facilities

SSR-5	Disposal of Radioactive Waste (2011) [ACEFRS]
GS-G-1.1	Organization and Staffing of the Regulatory Body for Nuclear Facilities (2002) [CEFRS]
GS-G-1.2	Review and Assessment of Nuclear Facilities by the Regulatory Body (2002) [CEFR]
GS-G-1.3	Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body (2002) [CEFRS]
GS-G-1.4	Documentation for Use in Regulating Nuclear Facilities (2002) [CEFRS]
GS-G-3.4	The Management System for the Disposal of Radioactive Waste (2008) [ER]
SSG-1	Borehole Disposal Facilities for Radioactive Waste (2009) [E]
SSG-14	Geological Disposal Facilities for Radioactive Waste (2011) [E]
SSG-23	The Safety Case and Safety Assessment for the Disposal of Radioactive Waste (2012) [E]
SSG-29	Near Surface Disposal Facilities for Radioactive Waste (2014) [E]
SSG-31	Monitoring and Surveillance of Radioactive Waste Disposal Facilities (2014) [E]

C.5. Mining and Milling

RS-G-1.6	Occupational Radiation Protection in the Mining and Processing of Raw Materials (2004) [ES]
WS-G-1.2	Management of Radioactive Waste from the Mining and Milling of Ores (2002) (under revision) [ERS]

C.6. Applications of Radiation Sources

GSR Part 3	Radiation Protection and Safety of Radiation Sources – International Basic Safety Standards (2014) [ACEFRS]
GS-G-1.5	Regulatory Control of Radiation Sources (2004) **Co-sponsorship:** FAO, ILO, PAHO, WHO [AEFS]
RS-G-1.4	Building Competence in Radiation Protection and the Safe Use of Radiation Sources (2001) **Co-sponsorship:** ILO, PAHO, WHO [ACEFRS]
RS-G-1.5	Radiological Protection for Medical Exposure to Ionizing Radiation (2002) **Co-sponsorship:** PAHO, WHO (under revision) [CEFRS]
RS-G-1.9	Categorization of Radioactive Sources (2005) [ACEFRS]

RS-G-1.10	Safety of Radiation Generators and Sealed Radioactive Sources (2006) **Co-sponsorship**: ILO, PAHO, WHO [EFS]
SSG-8	Radiation Safety of Gamma, Electron and X Ray Irradiation Facilities (2010) [ES]
SSG-11	Radiation Safety in Industrial Radiography (2011) [AEFS]
SSG-17	Control of Orphan Sources and Other Radioactive Material in the Metal Recycling and Production Industries (2012) [AEFR]
SSG-19	National Strategy for Regaining Control over Orphan Sources and Improving Control over Vulnerable Sources (2011) [AEFS]
SSG-32	Protection of the Public against Exposure Indoors due to Radon and Other Natural Sources of Radiation (2015) [E]
SSG-36	Radiation Safety for Consumer Products (2016) [E]
WS-G-2.2	Decommissioning of Medical, Industrial and Research Facilities (1999) (under revision) [ACEFRS]
WS-G-2.7	Management of Waste from the Use of Radioactive Materials in Medicine, Industry, Agriculture, Research and Education (2005) [CERS]

C.7. Transport of Radioactive Material

SSR-6	Regulations for the Safe Transport of Radioactive Material 2012 Edition (2012) [ACEFRS]
SSG-26	Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (2012 edition) (2014) [ES]
SSG-27	Criticality Safety in the Handling of Fissile Material (2014) [E]
SSG-33	Schedules of Provisions of the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition) (2015) [ERS]
TS-G-1.2	Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material (2002) [ERS]
TS-G-1.3	Radiation Protection Programmes for the Transport of Radioactive Material (2007) [ES]
TS-G-1.4	The Management System for the Safe Transport of Radioactive Material (2008) [ER]
TS-G-1.5	Compliance Assurance for the Safe Transport of Radioactive Material (2009) [E]

ANNEX V

PROJECTS AND DRAFT STANDARDS UNDER DEVELOPMENT

[Status on 8 May 2017]

PROJECTS:

DS499: Application of the Concept of Exemption including Criteria for Trade in Contaminated Commodities [Step 3]

DS500: Implementation of the Clearance Concept [Step 2]

DS502: Continuous Improvement of Operational Safety Performance [Step 2]

DS503: Protection against Internal and External Hazards in the Operation of Nuclear Power Plants, revision of NS-G-2.1 [Step 3]

DS504: Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency, revision of GS-G-2.1 [Step 4]

DS505: Source Monitoring, Environmental Monitoring and Individual Monitoring for Protection of the Public and the Environment, revision of RS-G-1.8 [Step 3]

DS506: Schedules of Provisions of the IAEA Regulations for the Safe Transport of Radioactive Material (20xx Edition), revision of SSG-33 [Step 3]

DS507: Seismic Hazards in Site Evaluation for Nuclear Installations, revision of SSG-9 [Step 3]

DS508: Application of Safety Principles and General Design Requirements for Nuclear Power Plants [Step 3]

DRAFT STANDARDS UNDER DEVELOPMENT:

DS498: External Events Excluding Earthquakes in the Design of Nuclear Installations, revision of NS-G-1.5 [Step 5]

DS497: Revision of eight closely interrelated safety guides on operational safety for NPPs: NS-G-2.2 to 2.8 and NS-G-2.14 [Step 5]

DS496: Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material – Edition for the revision of SSR-6 [Step 7]

DS495: Regulations for the Safe Transport of Radioactive Material, 20xx Edition – SSR-6, revision of SSR-6 [Step 11]

DS494: Protection against Internal Hazards in the Design of Nuclear Power Plants, revision and combination of NS-G-1.7 and NS-G-1.11 [Step 5]

DS493: Package Design Safety Reports for the Transport of Radioactive Material, amendment and addendum to TS-G-1.5 [Step 9]

DS492: Human Factors Engineering in Nuclear Power Plants [Step 9]

DS491: Deterministic Safety Analysis for Nuclear Power Plants (revision of SSG-2) [Step 11]

DS490: Seismic Design and Qualification for Nuclear Power Plants (revision of NS-G-1.6) [Step 5]

DS489: Storage of Spent Nuclear Fuel, revision of SSG-15 [Step 8]

DS488: Design of the Reactor Core for Nuclear Power Plants, revision of NS-G-1.12 [Step 11]

DS487: Design of Fuel Handling and Storage Systems for Nuclear Power Plants, revision of NS-G-1.4 [Step 7]

DS486: Establishing the Safety Infrastructure for a Nuclear Power Programme (Rev. 1), revision of SSG-16 [Step 10]

DS485: Ageing Management and Programme for Long Term Operation for Nuclear Power Plants, revision of NS-G-2.12 [Step 12]

DS484: Site Evaluation for Nuclear Installations, revision of NS-R-3 [Step 7]

DS483: Severe Accident Management Programme for Nuclear Power Plants, revision of NS-G-2.15 [Step 11]

DS482: Design of Reactor Containment Systems for Nuclear Power Plants, revision of NS-G-1.10 [Step 11]

DS481: Design of the Reactor Coolant System and Associated Systems in Nuclear Power Plants, revision of NS-G-1.9 [Step 8]

DS479: Operating Experience Feedback for Nuclear Installations, revision of NS-G-2.11 [Step 11]

DS478: Safety of Nuclear Fuel Cycle Facilities, revision of NS-R-5 [Step 12]

DS477: The Management System for the Predisposal and Disposal of Radioactive Waste, revision and combination of GS-G-3.3 and GS-G-3.4 [Step 5]

DS475: Arrangements for Public Communications in Preparedness and Response for a Nuclear or Radiological Emergency [Step 7]

DS474: Arrangements for the Termination of a Nuclear or Radiological Emergency [Step 11]

DS473: Regulatory Body Functions and Processes, revision and combination of GS-G-1.2, GS-G-1.3, GS-G-1.4, part of GS-G-1.5, part of SSG-12 and part of WS-G-5.1 [Step 11]

DS472: Organization, Management and Staffing of a Regulatory Body, revision and combination of GS-G-1.1, part of GS-G-1.5, GSG-4 and DS113 and DS460 [Step 11]

DS471: Radiation Safety of X-ray Generators and Radiation Sources Used for Inspection Purposes and for Non-Medical Imaging [Step 9]

DS470: Radiation Safety of Radiation Sources Used in Research and Education [Step 5]

DS469: Preparedness and Response for an Emergency during the Transport of Nuclear Material or Radioactive Material, Revision of TS-G-1.2 [Step 5]

DS468: Remediation Process for Areas with Residual Radioactive Material (revision of WS-G-3.1) [Step 8]

DS460: Communication and Consultation with Interested Parties by the Regulatory Body [Step 14]

DS459: Management of Radioactive Residues from Mining, Mineral Processing, and other NORM related Activities (revision and expansion of WS-G-1.2) [Step 9]

DS455: Establishing the Infrastructure for Radiation Safety [Step 14]

DS454: Predisposal Management of Waste from the Use of Radioactive Materials in Medicine, Industry, Research, Agriculture and Education (revision of WS-G-2.7) [Step 14]

DS453: Occupational Radiation Protection (revision of RS-G-1.1, RS-G-1.2, RS-G-1.3, RS-G-1.6, GS-G-3.2) [Step 14]

DS452: Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities (revision of WS-G-2.1 and WS-G-2.4) [Step 14]

DS449: Format and Content of the Safety Analysis Report for Nuclear Power Plants (revision of GS-G-4.1) [Step 8]

DS442: Regulatory Control of Radioactive Discharges to the Environment (revision of WS-G-2.3) [Step 14]

DS440: Design of Auxiliary and Supporting Systems in Nuclear Power Plants [Step 7]

DS434: Radiation Safety of Radioisotope Production Facilities [Step 8]

DS432: Radiation Protection of the Public and Protection of the Environment [Step 14]

DS427: Prospective Radiological Environmental Impact Analysis for Facilities and Activities, revision of NS-G-3.2 [Step 14]

DS420: Radiation Protection and Safety in Nuclear Gauges [Step 11]

DS419: Radiation Protection and Safety in Well Logging [Step 11]

DS403: Decommissioning of Medical, Industrial and Research Facilities (revision of WS-G-2.2) [Step 11]

DS399: Radiation Protection and Safety in Medical Uses of Ionizing Radiation (revision of RS-G-1.5) [Step 14]

DS381: Safety of Nuclear Fuel Cycle R&D Facilities [Step 14]

DS360: Safety of Nuclear Fuel Reprocessing Facilities [Step 14]

ANNEX VI

DRAFTS OF THE NUCLEAR SECURITY SERIES UNDER DEVELOPMENT (INTERFACE DOCUMENTS ONLY; TENTATIVE TITLES ONLY) [Status 8 May 2017]

NST058: Development, Use and Maintenance of Threat Assessment and Design Basis Threat [Step 5]

NST051: Security During the Lifetime of a Nuclear Facility [Step 9]

NST049: Detection of Radioactive Material at Undesignated Points of Entry and Exit [Step 5]

NST048: Security of Radioactive Material in Use and Storage and of Associated Facilities [Step 12]

NST045: Computer Security for Nuclear Security [Step 9]

NST044: Security of Radioactive Material in Transport [Step 12]

NST041: Preventive and Protective Measures against Insider Threats [Step 12]

NST023: Physical Protection of Nuclear Facilities and of Nuclear Material [Step 14]

NST020: Sustaining a Nuclear Security Regime [Step 14]

NST016: Detection of Radioactive Material at Designated Points of Entry and Exit [Step 5]

NST011: Preventive Measures for Nuclear and Other Radioactive Material out of Regulatory Control [Step 11]

NST009: Building Capacity for Nuclear Security [Step 14]

NST006: Framework for International Cooperation and Assistance on Nuclear Security [Step 5]

NST005: Regaining Control over Nuclear and Other Radioactive Material out of Regulatory Control [Step 5]

NST004: Developing a National Framework for Managing Response to Nuclear Security Events [Step 11]

NST002: Developing Regulations and Associated Administrative Measures for Nuclear Security [Step 14]

ANNEX VII

STATUS OF ACTIONS FROM THE 40TH MEETING OF THE COMMISSION

40.01 The final report of the 39th CSS meeting to be uploaded on the CSS web page. **[Action: Secretariat, CSS Scientific Secretary]. Done.**

40.02 A Working Group of CSS members, including the Chairs of RASSC, EPReSC and WASSC, to be established to consider the implications of the UNSCEAR report "Attributing Health Effects to Ionizing Radiation Exposure and Inferring Risks" for the development of IAEA safety standards, using as a basis the proposal submitted by MM. Larsson and González; representatives from the Secretariats of ICRP and UNSCEAR to be invited to participate in the Working Group **[Action: Secretariat, CSS Scientific Secretary; CSS members, ICRP and UNSCEAR Secretariat] Two messages sent to the CSS, as well as ICRP and UNSCEAR, one on 09/01/2017 and one on 05/04/2017. Discussed under item 6.1: new action 41.04.**

40.03 A summary to be provided at the 41st CSS meeting on how the standards reflect the concept of institutional strength in depth as set out in the INSAG-27 report **[Action: Secretariat, CSS Scientific Secretary] Presented and discussed under item 6.2: new action 41.05.**

40.04 The Secretariat to investigate means by which the copyright conditions, as set out at the front of all IAEA Safety Standards and on the publications web page, can be simplified and made more welcoming to possible reproductions or translations of standards **[Action: Secretariat, CSS Scientific Secretary] Presented under item 6.5.**

40.05 An agenda item to be included at the 41st CSS meeting on a holistic review of the collection of Safety Guides, aimed at developing an approach to ensuring their consistency, completeness and proper interdependence, with background material to be provided accordingly, including as a first input the situation that is to be expected in three years' time, when ongoing projects are completed **[Action: Secretariat, CSS Scientific Secretary] Presented and discussed under item 6.3.**

40.06 The agreed priorities, or 'interests', of the CSS for its 6th term to be updated in accordance with the discussions at the 40th meeting and included as an annex to the meeting report of the 40th meeting **[Action: Secretariat, CSS Scientific Secretary] Done.**

40.07 CSS members to request, on a voluntary basis, rights for accessing the feedback collection interface of the NSS-OUI Platform **[Action: Secretariat, CSS Scientific Secretary; CSS members] Addressed under item 6.4.**

40.08 A list of actions resulting from the 40th CSS meeting to be provided to the CSS members for comment. **[Action: Secretariat, CSS Scientific Secretary]. Done.**

40.09 The draft report of the 40th CSS meeting to be posted for comment. **[Action: Secretariat, CSS Scientific Secretary]. Done. Report approved under item 1.2.**

40.10 The presentations made at the 40th CSS meeting to be uploaded on the CSS web page. **[Action: Secretariat, CSS Scientific Secretary]. Done.**