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6 January 2014

Dear Director General Amano,

I am pleased to provide you, on behalf of the Commission on Safety Standards (CSS), the mid-term report for the activities of the Commission in 2012 and 2013. It also includes a progress report responding to your request for the CSS contained in your letter of July 7, 2011: “to review the IAEA safety standards, and report back to me within the next 12 months, with recommendations for strengthening the standards, where gaps would be identified, and for further promoting their universal application”.

The CSS met four times in 2012 and 2013. At its 34th meeting, the CSS reviewed the progress made at these meetings, which constitute the first half of its fifth term, and is proud to report on its achievements so far.

- The CSS welcomes the good progress toward the achievement of the long term structure of the Safety Requirements. The CSS also notes the implementation of the long term structure of the Safety Guides that implements the criteria approved in 2009 with a total number of safety standards being now stabilized.
- The IAEA Action Plan on Nuclear Safety in response to the accident at TEPCO’s Fukushima Daiichi nuclear power plant includes an action headed: “Review and strengthen IAEA Safety Standards and improve their implementation”. This action called upon the Commission on Safety Standards (CSS) and the IAEA Secretariat to review, and revise as necessary using the existing process in a more efficient manner, the relevant IAEA safety standards in a prioritized sequence. On the review of the Safety Requirements, the CSS’s conclusion remains as stated in my letter dated 29 November 2012 that “the review has confirmed so far the adequacy of the current Safety Requirements. The review revealed no significant areas of weakness, and just a small set of amendments were proposed to strengthen the requirements and facilitate their implementation. The CSS believes that the IAEA Safety Standards should be enhanced mainly through the well-established review and revision process that has been in use for some years. At the same time, CSS members highlighted that the basis for the review and revision of the IAEA Safety Standards should not be limited to the lessons of the Fukushima Daiichi accident. This basis should also include other operating experience from elsewhere as well as information gained from advances in research and development. The CSS also stressed that greater attention needs to be paid to the implementation of IAEA safety standards by and in Member States”.
- With regard to safety-security integration, the CSS welcomes the establishment in March 2012 of the Nuclear Security Guidance Committee and the Interface Group. The CSS also note that the result of the consultation of the Interface Group shows that almost 80% of the Safety Standards under development have some sort of interface with nuclear security that need to be review by NSGC and more than 80% of the Nuclear Security Guidance under development have an interface with safety that needs to be reviewed by at least one Safety

Standards Committee. With regard to the review and approval process, a procedure, very similar to the one in place since 1996 for the IAEA Safety Standards, was also adopted for the Nuclear Security Guidance. Having in mind the renewal of the terms of the Safety Standards Committees for 2014-2016, the CSS also welcomes the effort made in 2013 to harmonize the Terms of Reference of the Safety Standards Committees and the Nuclear Security Guidance Committee for their next term. In summary, the CSS notes the progress achieved so far and wishes to encourage further work toward integration of safety and security. In this regard, the CSS notes with interest that an independent audit of the "intermediate Committee structure" will be organized in 2014 and wishes to be informed regularly on the preparation of such an audit and of its conclusions and recommendations.

- Finally, the CSS supports the proposal made by the Secretariat at the last CSS meeting that a more efficient approach be adopted for the future review, revision and publication of the safety standards with in particular the key objectives (1) to ensure that the review and revision of published standards is based on a systematic feedback collection and analysis process, (2) to ensure that any revision of the safety standards or part of the safety standards is justified and (3) to maintain the technical consistency among the standards through a management of the standards as a complete collection.

The Commission recommends the following actions for the second half of the term:

- Finalize DS462, with a view to its submission to the Board of Governors for final approval at the end of 2014
- Continue to review the Safety Guides in the light of lessons learned from the Fukushima Daiichi accident and implement a revision process not limited to this feedback but taking into account all other elements
- Further develop, in a step by step approach with regular progress report to the CSS, the proposed IT platform and the various options for the future review/revision and approval process
- Encourage further progress towards enhancing the safety/security integration while supporting continued development of the Nuclear Security implementing guides and wishes to be informed regularly on the preparation of the independent audit of the "intermediate Committee structure" and of its conclusions and recommendations

It will be my pleasure to continue to report regularly to you on the progress achieved by the Commission during this fifth term.

Please accept, Sir, the assurances of my highest consideration.

Dana Drábová



Chairperson of the Commission on Safety Standards

Commission on Safety Standards

Fifth Term (2012 to 2015)

Mid-term report

1. BACKGROUND

At the end of the fourth term of the Commission on Safety Standards (CSS), in December 2011, the Chairman of the Commission, Mr André-Claude Lacoste, provided a report to the Director General indicating the progress achieved in the four years from 2008 to 2011. His report highlighted major achievements during the fourth term, including the approval in May 2008 of the Roadmap for the long term structure of IAEA safety standards; the issue of the document on Strategies and Processes for the Establishment of IAEA Safety Standards (SPESS); the progress toward addressing synergies and interface between the Safety Standards Series and the Nuclear Security Series as elaborated by the Joint Task Force of the Advisory Group on Nuclear Security (AdSec) and the CSS; and the initiation of the review of standards following Fukushima Daiichi accident.

At the beginning of the fifth term, therefore, two significant new aspects of the work of the CSS had been established: a new committee structure for the review and approval of publications in the Safety Standards Series and the Nuclear Security Series; and the process relating to the analysis of feedback from the Fukushima Daiichi accident in the light of its potential implications for the safety standards. The first half of the fifth term of the CSS has continued and built upon the work of the first four terms, and has delivered a number of achievements, as highlighted below.

2. MAIN ACHIEVEMENTS DURING THE FIRST HALF OF THE TERM

The CSS met four times in 2012 and 2013. At its 34th meeting, the CSS reviewed the progress made at these meetings, which constitute the first half of its fifth term, and is proud to report on its achievements so far.

a. Long term structure of the IAEA Safety Standards

During its previous term, the Commission approved a Roadmap for the long term structure of IAEA Safety Standards with a set of General Safety Requirements applicable to all facilities and activities, complemented by a series of facility and activity specific Safety Requirements. For General Safety Requirements and Specific Safety Requirements, a new format was also adopted with a discrete set of overarching requirements followed by requirements of associated conditions to be met, both expressed as “shall” statements. The Commission also approved during its previous term criteria for the optimization of the Safety Guides structure, which resulted in a reference list of Safety Guides for the long term structure approved in 2009.

The Commission welcomes the good progress toward the achievement of the long term structure of the Safety Requirements, with the following situation for the General Safety Requirements and the Specific Safety Requirements:

- GSR part 1: published
- GSR Part 2: draft submitted to MS consultation
- GSR Part 3: established by the BoG in Sep. 2011 (Interim version published)
- GSR Part 4: published

- GSR Part 5: published
 - GSR Part 6: endorsed by the CSS Nov. 5, 2013
 - GSR Part 7: draft submitted to MS consultation
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- SSR 1: DPP approved by the CC. To be submitted to the RCs in IIQ 2014
 - SSR 2.1: published
 - SSR 2.2: published
 - SSR 3: DPP submitted to the RCs
 - SSR 4: DPP submitted to the RCs
 - SSR 5: published
 - SSR 6: published

The commission also notes the implementation of the long term structure of the Safety Guides that implements the criteria approved in 2009 with a total number of safety standards being now stabilized.

b. Approval of standards and DPPs

The CSS endorsed 13 new safety standards (two Safety Requirements publications and 11 Safety Guides) for publication. This included an addendum of two new appendices to NS-R-5, establishing specific safety requirements for reprocessing facilities and for fuel cycle research and development facilities. NS-R-5 (Rev.1), as the full standard will be known, is currently being prepared for publication, and it will be issued in English and in the other official languages of the IAEA. With that, all Safety Requirements publications will be available in all official languages. The second Safety Requirements publication endorsed by the CSS was DS450 on Decommissioning of Facilities, a revision of the previous edition, WS-R-5.

The CSS also approved 14 DPPs (document preparation profiles) and 2 revised DPPs. Of these, 10 were for revisions and sometime combination of 19 existing safety standards, while the remainder were for new safety standards. The CSS noted the increase in DPPs for revisions of existing standards, and recognized that this is a clear reflection of a process of stabilization of the overall collection of safety standards, as set out in the Road Map for the long-term structure for the standards established in the CSS's fourth term in 2008. Among these DPPs, the DPP DS462, discussed hereafter in this report, relates to the revision of five safety requirements in the light of lessons learned from the Fukushima Daiichi accident.

c. The review of standards in the light of lessons learned from the Fukushima Daiichi accident

Review/revision of the IAEA Safety Requirements

The IAEA Action Plan on Nuclear Safety, which was developed in response to the accident at TEPCO's Fukushima Daiichi nuclear power plant following the Great East Japan Earthquake and Tsunami of 11 March 2011, and which was approved by the International Atomic Energy Agency's (IAEA's) Board of Governors and endorsed by the IAEA General Conference in September 2011, includes an action headed: "Review and strengthen IAEA Safety Standards and improve their implementation".

This action called upon the Commission on Safety Standards (CSS) and the IAEA Secretariat to review, and revise as necessary using the existing process in a more efficient manner, the relevant IAEA safety standards in a prioritized sequence.

In 2011 the Secretariat started a review of Safety Requirements publications in the IAEA Safety Standards Series on the basis of information that was available on the Fukushima Daiichi accident, including two reports from the Government of Japan issued in June and September 2011, the report of the IAEA International Fact Finding Expert Mission conducted in Japan from 24 May to 2 June 2011, and a letter from the Chairman of the International Nuclear Safety Group (INSAG) dated 26 July 2011. As a first priority, the Secretariat considered the Safety Requirements applicable to Nuclear Power Plants and to the storage of spent fuel.

The comparative review consisted first of a comprehensive analysis of the findings of these reports. In the light of the results of this analysis, the Safety Requirements publications were then examined in a systematic manner in order to decide whether amendments were desirable to reflect any of these findings. A status report on the review by the Secretariat and its subsequent consideration by the four Safety Standards Committees early in 2012 was submitted to the CSS at its meeting in March 2012.

On that basis, the CSS approved, at its meeting in October 2012, a document outline (equivalent to a DPP) DS462 to initiate a revision process by amendment for the following five Safety Requirements publications: Governmental, Legal and Regulatory Framework for Safety (IAEA Safety Standards Series No. GSR Part 1, Vienna, 2010), Site Evaluation for Nuclear Installations (IAEA Safety Standards Series No. NS-R-3, Vienna, 2003), Safety of Nuclear Power Plants: Design (IAEA Safety Standards Series No. SSR-2/1, Vienna, 2012), Safety of Nuclear Power Plants: Commissioning and Operation (IAEA Safety Standards Series No. SSR-2/2, Vienna, 2011), and Safety Assessment for Facilities and Activities (IAEA Safety Standards Series No. GSR Part 4, Vienna, 2009). The revising of several publications simultaneously is a new approach, which aims improve the efficiency of the process while maintaining the consistency of these five Safety Requirements.

Additional inputs were considered in preparing the draft text of the proposed amendments to these five safety standards in 2012 and 2013, including the findings of International Experts' Meetings and presentations made at the Second Extraordinary Meeting of the Contracting Parties to the Convention on Nuclear Safety in August 2012. Several national and regional reports were also analysed.

On the review of the Safety Requirements, the Commission's conclusion, reflected in the letter from the CSS Chair to the Director General dated 29 November 2012, is that "the review has confirmed so far the adequacy of the current Safety Requirements. The review revealed no significant areas of weakness, and just a small set of amendments were proposed to strengthen the requirements and facilitate their implementation. The CSS believes that the IAEA Safety Standards should be enhanced mainly through the well-established review and revision process that has been in use for some years. At the same time, CSS members highlighted that the basis for the review and revision of the IAEA Safety Standards should not be limited to the lessons of the Fukushima Daiichi accident. This basis should also include other operating experience from elsewhere as well as information gained from advances in research and development. The CSS also stressed that greater attention needs to be paid to the implementation of IAEA safety standards by and in Member States.

The proposed draft amendments have been reviewed in consultants' meetings, as well as by all the Safety Standards Committees at their meetings in the first half of 2013 and they are currently at the stage of soliciting Member State comments. They were also presented for information to the Nuclear Security Guidance Committee.

For GSR Part 1, the proposed revisions relate to the following main areas:

- Independence of the regulatory body
- Prime responsibility for safety
- Emergency preparedness and response
- International obligations and arrangements for international cooperation
- Liaison between the regulatory body and authorized parties
- Review and assessment of information relevant to safety
- Communication and consultation with interested parties

For NS-R-3, the proposed revisions relate to the general criteria for site evaluation and, in particular, to flood hazards.

For SSR-2/1, the proposed revisions relate to the following main areas:

- Preventing severe accidents by strengthening the plant design basis
- Preventing unacceptable radiological consequences for the public and the environment
- Mitigating the consequences of severe accidents to avoid long term contamination

For SSR-2/2, the proposed revisions relate to the following main areas:

- Periodic safety review
- Emergency preparedness
- Accident management
- Fire safety
- Feedback from operating experience

For GSR Part 4, the proposed revisions relate to the following main areas:

- Scope of the safety assessment
- Scope of the safety analysis
- Assessment of defence in depth
- Maintaining the safety assessment

This revision process is being carried out in conjunction with the revision of Preparedness and Response for a Nuclear or Radiological Emergency (IAEA Safety Standards Series No. GS-R-2, Vienna, 2002) (DS457) and of The Management System for Facilities and Activities (IAEA Safety Standards Series No. GS-R-3, Vienna, 2006) (DS456), for which consultation of Member States is being organized in parallel to that for DS462.

With a view to also taking into account lessons learned from the Fukushima Daiichi accident for other facilities, and particularly for research reactors and fuel cycle facilities, two DPPs were initiated in 2012 for the revision of the Safety Requirements NS-R-4 and NS-R-5. The DPPs are submitted to the Review Committees for approval before submission to the Commission, which is expected early in 2014. A DPP for the revision of NS-R-3 on Site Evaluation for Nuclear Installations has also been initiated and will be submitted to the Committees for approval in 2014.

The review by the Safety Standards Committees of other Safety Requirements led to the conclusion that, at this stage, there is no need to revise the requirements on the Predisposal Management of

Radioactive Waste (GSR Part 5) and on the Disposal of Radioactive Waste (SSR-5). The revision of the Safety Requirements on Preparedness and Response for a Nuclear or Radiological Emergency (DS457) and actual experience from the remediation activities after the Fukushima Daiichi accident will probably result in a future proposal to revise, only through specific amendments, the Safety Requirements GSR Part 3 on Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards. Finally, certain specific aspects related to transport safety are also considered for the Regulations for the Safe Transport of Radioactive Material, 2012 Edition, SSR-6.

Review/revision of the IAEA Safety Guides

With regards to the review/revision of the Safety Guides, a first step was to analyze as to whether the methodology adopted for the Safety Requirements would also be appropriate for the Safety Guides and to prioritize the review of the Safety Guides, i.e. a prioritization of the review of the Safety Guides based on same the list of lessons learned as identified for the above mentioned review of the Safety Requirements.

A pilot study was conducted in 2012 for the review of three Safety Guides applicable to nuclear power plants, namely NS-G-1.9 on Design of the Reactor Coolant System and Associated Systems in Nuclear Power Plants (2004), NS-G-1.10 on Design of Reactor Containment Systems for Nuclear Power Plants (2004) and NS-G-2.15 on Severe Accident Management Programmes for Nuclear Power Plants (2009).

It was concluded that the methodology was appropriate but that any revision would not be restricted to taking into account lessons learned from the Fukushima Daiichi accident, as other aspects, and particularly guidance on meeting the new Safety Requirements SSR-2/1 and SSR-2/2 issued respectively in 2012 and 2011 also need to be addressed, together with the guidance on meeting the amendments proposed to SSR-2/1 and SSR-2/2 as part of the draft DS462 mentioned above. Three DPPs were then prepared for the revision of these three Safety Guides and submitted to the Review Committees before their submission early in 2014 to the Commission.

For NS-G-1.9 on Design of the Reactor Coolant System and Associated Systems in Nuclear Power Plants, the revision will ensure consistency with SSR 2/1 and the style of the Safety Standards Series. It will also reflect current terminology and requirements on plant conditions, e.g. design extension conditions, defence in depth and the design basis. The appendix and the annexes will also be updated (new plant design aspects, removal of safety classification in the main text and an annex).

For NS-G-1.10 on Design of Reactor Containment Systems for Nuclear Power Plants, the revision aims at providing recommendations and guidance on how to comply with the requirements established SSR-2/1 amended by the addendum DS462. Particular attention will be paid to the role of the containment systems in the prevention of severe accidents and mitigation of the consequences of a core melt accident taking into account that the objectives in terms of protection of the public and the environment have been enhanced.

For NS-G-2.15 on Severe Accident Management Programmes for Nuclear Power Plants, it was found that there are opportunities to further strengthen the safety guide. NS-G-2.15 needs to extend its guidance to core/debris cooling, removal of decay heat and long-term cooling, and maintaining containment integrity. Additional guidance is provided for cooling with sources that have not been qualified, run-off of contaminated water, threats from the cooling of spent fuel, and large-scale natural events at multi-unit sites. Shutdown conditions are also considered. It includes conditions where command and control for the event have been lost, where there is large-scale damage on the site, where major safety functions such as control of reactivity, removal of heat from the core and from spent fuel, confinement of radioactive material and limitation of radioactive releases have been lost,

and either must be repaired under difficult circumstances or must be replaced by portable equipment, which is either stored in on-site storage or brought in by road or by air transport from an off-site storage location.

A complementary pilot study was also performed in 2013 with the review of three additional Safety Guides - NS-G-1.5 on External Events Excluding Earthquakes in the Design of Nuclear Power Plants (2003), NS-G-1.6 on Seismic Design and Qualification for Nuclear Power Plants (2003), and SSG-2 on Deterministic Safety Analysis for Nuclear Power Plants (2009) - for which it was also concluded that a revision was needed. Two additional Safety Guides, SSG-15 on Storage of Spent Nuclear Fuel and NS-G-1.4 on Design of Fuel Handling and Storage Systems for Nuclear Power Plants are being reviewed.

Other Safety Guides were proposed for revision as a result of lessons learned from the Fukushima Daiichi accident, for example WS-G-3.1 on Remediation Process for Areas Affected by Past Activities and Accidents (2007), and the DPP for this revision was approved at the CSS meeting in October 2012.

New Safety Guides were also proposed in this context such as DS474 on Arrangements for the Termination of a Nuclear or Radiological Emergency and DS475 on Arrangements for Public Communications in Preparedness and Response for a Nuclear or Radiological Emergency, for which DPPs were approved at the CSS meeting in November 2013.

d. The safety-security integration

At the end of its fourth term, the Commission reported on the progress and recommendations of the Joint AdSec CSS Task force on the establishment of an intermediate structure with the new Nuclear Security Guidance Committee (NSGC) and the Interface Group.

The NSGC was established in March 2012 as a standing body of senior representatives in the area of nuclear security, open to all Member States, to make recommendations to the Deputy Director General, Head of the Department of Nuclear Safety and Security on the development and review of the Nuclear Security Series publications. The NSGC Terms of Reference indicates that the objective is to significantly contribute to greater transparency, consensus, quality, coherence and consistency by engaging more Member States in the development of international publications for nuclear security. The NSGC held its first meeting in June 2012.

The Interface Group was also established, immediately following the first meeting of the NSGC. It is composed of eight members with a balanced representation of the Safety Standards Committees and the NSGC. The initial composition consists of the Chairs of the Safety Standards Committees (NUSSC, RASSC, TRANSSC, WASSC) and four representatives of the NSGC. Its function is to review all DPPs for Safety Standards and Nuclear Security Series publications - excluding those for Technical Guidance - and, after considering the recommendations of the Coordination Committee, to identify whether there is a safety/security interface, to document the nature of the interface and to refer the DPP to the appropriate Committee(s) for review and approval.

With a view to initiating the cross-consultation process and deciding on how to address the drafts already being developed, the Interface Group met in September 2012 and reviewed all DPPs for draft Safety Standards and draft Nuclear Security Series publications under development. 60 DPPs were examined, of which 33 of the 44 draft Safety Standards and 13 of 16 draft Nuclear Security Guidance were identified as being 'interface documents'. As an exception during the initial phase and for the drafts close to final approval, the Interface Group recommended transitional measures with a view to avoiding undue delays.

The Interface Group was then consulted essentially through electronic consultation (a dedicated web page was established and a consultation process by email put in place). 21 new or revised DPPs (for 12 safety standards and 9 nuclear security guidance) were submitted to the Interface Group with a recommendation from the Coordination Committee. All proposals from the Coordination Committee were accepted. Only one DPP was not considered as an interface document. With these consultation, it appears that almost 80% of the Safety Standards under development have some sort of interface with nuclear security that need to be review by NSGC and more than 80% of the Nuclear Security Guidance under development have an interface with safety that needs to be reviewed by at least one Safety Standards Committee.

With regard to the review and approval process, a procedure, very similar to the one in place since 1996 for the IAEA Safety Standards, was also adopted for the Nuclear Security Guidance. The main difference is that the Commission is not involved (unless for information on a case by case basis) in the final approval of the draft before their submission for publication. The meeting of the Committees are also synchronized with a view to avoiding undue delays in the process. The general working methods, in term of deadline for submission of drafts and resolution of comments, were also harmonized between the five Review Committees. The detailed process is now reflected in a revision issued in March 2013 of the SPESS B document on the “Step by Step Preparation and Review Process” that is now applicable for both the Safety Standards and the Nuclear Security Series. The SPESS A document on “Strategies and Processes for the Establishment of IAEA Safety Standards” was also updated in March 2013 to reflect the establishment of the NSGC and the Interface Group.

During the first half of this fifth CSS term, 16 draft safety standards and 12 draft DPPs for safety standards have been submitted for review to the NSGC. Although some difficulties arose during this review proves for a limited number of these drafts, the experience was beneficial in term of better identifying how to address the interface with security in safety standards. Similarly, draft Nuclear Security Series publications and DPPs for Nuclear Security Series publications were submitted to one or more of the Safety Standards Committees, and sometime to all of them, in order to review the interface aspects and verify that the appropriate cross-references to Safety Standards were indicated. With the experience of these first two years, it is expected that detailed guidelines for the Technical Officers on how to address the interfaces between safety and security when preparing the drafts safety standards and nuclear security guidance will be issued soon and incorporated in the SPESS C document.

In this regard, the Commission wishes to draw the attention to the fact that the scope of the review by the Committees should not be restricted to a review of what is considered and already identified as an interface aspect, but also to ensure that the text on safety recommendations in the draft safety standards does not compromise security and that the text on security recommendations in the draft nuclear security guidance does not compromise safety, thus allowing a systematic analysis of all interface and potential interface aspects.

The coordination that has occurred so far between the Safety Standards Committees and the Nuclear Security Guidance Committee provides an early indication of the feasibility of integrating safety and security. To date, no barriers have been identified that would preclude this integration at some point in the future. Indeed, the coordinated reviews have confirmed the importance of close integration on several important aspects, including digital instrumentation and controls, management system, and radiation source controls.

Finally, having in mind the renewal of the terms of the Safety Standards Committees for 2014-2016, an effort was also conducted in 2013 to harmonize the Terms of Reference of the Safety Standards Committees and the Nuclear Security Guidance Committee for their next term.

The Commission therefore notes the progress achieved so far and wishes to encourage further work toward integration of safety and security. In this regard, the Commission notes with interest that an independent audit of the “intermediate Committee structure” will be organized in 2014 and wishes to be informed regularly on the preparation of such an audit and of its conclusions and recommendations.

e. Future review, revision and publication process

After more than 50 years of history of the IAEA Safety Standards and after having a nearly complete set of standards covering all main safety areas, the Commission also discussed the proposal from the Secretariat that a more efficient approach be adopted for the future review, revision and publication of the safety standards, with the following key objectives:

- To ensure that the review and revision of published standards is based on a systematic feedback collection and analysis process
- To ensure that any revision of the safety standards or part of the safety standards is justified by the above mentioned feedback process, therefore also ensuring stability of the parts of the standards that remain valid
- To maintain the technical consistency among the standards through a management of the standards as a complete collection rather than by individual management of individual standards
- To enhance semantic consistency through systematic use of harmonized terminology
- To ensure the completeness of the collection through a systematic top-down development approach complemented by topical gap analyses
- To support harmonized use and application of the safety standards by enhancing their user-friendliness and by providing tools for user to easily navigate within the whole collection.

During its fourth term, back in 2010, the Commission already started discussion on the first objective in order to further improve the existing mechanisms to collect, analyse and use the feedback from the use of the IAEA Safety Standards for their future revision. A modular approach was presented whereby the set of overarching requirements could be used to categorize the information, store it and retrieve it for analysis on a topical basis. In 2011, a pilot study was presented showing the feasibility of that approach at the occasion of the revision of the Safety Requirements WS-R-5 (DS450) on decommissioning and the associated Safety Guides.

Moreover, based on that experience, the approach of topical oriented review/revision of the IAEA Safety Standards was selected by the Committees and the CSS for the review and revision of the IAEA Safety Requirements in light of lessons learned from the Fukushima accident (DS462), as mentioned above in this report.

One particular advantage of this approach is that it addresses the second and third above mentioned objectives. The topical oriented review/revision process allows focusing, during a revision, on those aspects for which there is a strong justification for amending the standards, thus ensuring at the same time both a rigorous justification process for their revision and the stability of those parts that remain valid. A second, also important advantage is to permit the synchronous revision of several standards for the parts that relate to the selected topics thus ensuring the maintenance of the consistency between the standards, which is impossible with a document by document and sequential revision process.

This CSS discussion continued during the first half of its fifth term and expanded on the need for electronic publications of the IAEA Safety Standards. In particular, as a result of the 32nd meeting

held in October 2012, the Commission requested the Secretariat “to investigate issues relating to issuing safety standards essentially as electronic versions and the Safety Standards Committees to be consulted on future challenges on the publication process and use of electronic versions of safety standards, noting the support for the CSS on moving from a document by document revision process to a feedback based, topical oriented revision and addendum process.” It was noted in particular in this context that the easiest mechanism for the users to identify which are the valid safety standards was to refer to the electronic publications made available and to other tools such as web pages that include an overall status of the IAEA Safety Standards and the whole collection of established and valid safety standards.

Further significant development was achieved during the year 2013 that were presented at the last meeting of this first mid-term in November 2013. The framework proposed is composed of the following key concepts:

- A content management system to manage the whole collection, the feedback mechanism, the content of the safety standards and the relationships between the standards
- A electronically supported review, revision and approval process management system
- An electronic publication system

For the content management system a set of topical areas are identified (essentially using the overarching requirements as a tool to identify the main topical areas covered by the safety standards) to categorize any feedback. Relationships between the safety standards are also managed in this approach through:

- a. Topical relationship, i.e. relationship between Safety Requirements addressing a similar topic
- b. Hierarchical relationship, i.e. relationship between the safety requirements and the safety guides, which also includes topical relationship, indicating which safety guides or part of safety guides cover a specific topical area addressed in a safety requirements
- c. Semantic relationship, i.e. relation with the IAEA Safety Glossary for harmonized use of the definitions and concepts

On the electronically supported review, revision and approval process management system, the concept is to support the feedback collection and allocation to topical areas, then to analyse the information accumulated for each topical areas so as to implement a decision making process on the justifications for the revision. The concept is also to support the revision process by managing electronically the versions of the drafts, the comments submitted to the Secretariat and the resolution of these comments. The objective is also to keep complete electronic continuity of the successive versions throughout the whole review/revision/approval and publication process.

The electronic publication system aims at facilitating the update and fast availability of electronic versions of the revised safety standards after they have been revised using a topical oriented approach. It can also significantly enhance user friendliness with insertion of dynamic links for the above mentioned three types of relationship. The issue of user friendliness being not restricted to user friendliness of individual standards, but to user friendliness of the whole collection, an additional advantage of the approach proposed is to facilitate the production and automatic updates of “by-products”, such as web pages using material from the central database containing the basic modules of the IAEA Safety Standards. Furthermore, other types of publications or tools are necessary for user-

friendliness in addition to the individual safety standards, published as books, pdf versions and, in the future, other electronic format. With a top-down development system, the standards can only indicate the bottom-up relationship (each Safety Guide indicates which requirement it implements) and it is therefore necessary to complement these publications by other information, such as the overall status file, availability of the whole collection of IAEA Safety Standards, mapping tools, and other web pages on the content of the IAEA Safety Standards that can include all types of relationships (horizontal topical relationship, hierarchical top-down and bottom-up relationship and semantic relationship). This can easily be achieved when using a content management system based on a central storage principle and by operating an IT system that is primarily content oriented instead of format oriented.

Finally, when these different outputs are available, any single part will de facto be linked to a specific topical area in the central database. This creates an easy mechanism to then channel any comment submitted on that part to the corresponding topical area and therefore also to the associated parts of the IAEA Safety Standards, thus streamlining the feedback collection and storage process and expanding the possibilities by providing an opportunity to get feedback from any product linked to the IAEA Safety Standards.

f. Uses of safety standards in Member States

As a regular agenda item, CSS members have continued to report on the use of IAEA safety standards, and in this fifth term half of the members of the CSS have now reported on the situation in their State. Many members have reported that the structure of their national regulations and the development process used mirror those of the IAEA safety standards. Several trends in the use of the standards can be identified:

- Indirect use of the standards:
 - as a basis for the development and review of national regulations
 - as a reference for the regulatory body in assessing licensing applications
 - via the recent EU directives on nuclear safety and on waste safety
 - as a benchmark for harmonization, e.g. via WENRA reference levels
- Direct use of the standards:
 - adoption of the IAEA Transport Regulations into national law
 - for the safety assessment and licensing of nuclear power plants for which national regulations are not applicable
 - for issue as general guidance to operators, but which is not legally binding
 - in connection with Agency safety review missions

g. Priorities for the fifth term

At its first meeting of the fifth term, in March 2012, the CSS identified 14 topics to be addressed as priorities for its fifth term. These topics, and the status of each, are set out in the table below.

#	Main topics	Status/action
1	Finalization of the General Safety Requirements (including	One of the three remaining General Safety Requirements was approved

	review following the Fukushima Daiichi accident)	at this last CSS meeting, while the two other are submitted to MS for comments
2	Initiation of the revision of the remaining Specific Safety Requirements (including review of other Specific Safety Requirements following the Fukushima Daiichi accident)	DS462 (NS-R-3, SSR-2/1 and SSR-2/2) submitted to MS for comments. DPP for the revision of NS-R-4 and NS-R-5 submitted to the Committees and DPP for the revision of NS-R-3 to be submitted to the next meetings of the Committees
3	Enhancing the feedback process	Used for the above activities; database being designed with MTIT
4	Exposure to radon	Draft DS421 approved by the CSS
5	Medical exposure	DS399 being drafted
6	Application of the justification principle	DS401 approved by the CSS
7	Harmonization of exemption, clearance criteria and other radionuclide specific criteria	DS458 on consumer products submitted to MS for comment; work on other topics to be initiated
8	NORM related issues	DS459 being drafted
9	Occupational radiation protection, including its application to rescuers	DS453 providing general guidance being drafted; guidance for rescuers in DS457
10	Knowledge management	DS456 (revision of GS-R-3) and DS462 (revision of GSR-Part 4) submitted to MS for comments
11	Regulatory oversight of human and organizational factors	DS462 (revision of GSR Part 1) submitted to MS for comments
12	The safety/security interface	Nuclear Security Guidance Committee established, similar review and approval process in place, Interface Group regular consultation on interface documents, harmonization of the TORs of the Committees, guidance for drafter being developed
13	Usefulness of standards for countries embarking on nuclear power programmes	Difficulty to identify a precise indicator, but overall positive feedback
14	The need for more detail in standards on PSA and severe	DPP for the revision of NS-G-2.15

	accident management	submitted to the Committees
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3. RECOMMENDATION FOR THE SECOND HALF OF THE FIFTH CSS TERM

The CSS recommends the following actions for the second half of the term:

- Finalize DS462, with a view to its submission to the Board of Governors for final approval at the end of 2014
- Continue to review the Safety Guides in the light of lessons learned from the Fukushima Daiichi accident and implement a revision process not limited to this feedback but taking into account all other elements
- Further develop, in a step by step approach with regular progress report to the CSS, the proposed IT platform and the various options for the future review/revision and approval process
- Encourage further progress towards enhancing the safety/security integration while supporting continued development of the Nuclear Security implementing guides and wishes to be informed regularly on the preparation of the independent audit of the “intermediate Committee structure” and of its conclusions and recommendations