NUCLEAR SAFETY STANDARDS COMMITTEE

(NUSSC)

Report of the 27th Meeting

16 to 18 June 2009

International Atomic Energy Agency
Vienna
1. GENERAL ISSUES

1.1 Opening of the Meeting

Mr. Jamet, DIR-NSNI, welcomed the NUSSC members to their 27th meeting. He made some remarks on issues that he considered important to be conveyed to the Committee.

He explained that there is an increasing interest in new nuclear power programmes and the rapid expansion of existing programmes. Nearly 70 countries are considering or have expressed interest in developing nuclear power programmes. On the other hand, recent projections by the IAEA had shown that, optimistically, there may be up to 20 new countries using nuclear power by 2030. According to Mr. Jamet it is very important that these new countries adequately use the IAEA Safety Standards and that they join the Global Nuclear Safety and Security Regime.

He emphasized that the IAEA is very committed to adapting and continuously improving its existing standards, guidelines and safety services to better meet the needs of its Member States. In that regard, the IAEA appreciates the NUSSC support for this commitment. NUSSC and subsequently the CSS should continue to consider ways to further facilitate the processes for establishing and applying safety standards.

Regarding the embarking issue he in particular mentioned the draft safety guide DS424 *Establishing a Safety Infrastructure for a National Nuclear Power Programme* and pointed out that for the work of his Division it is of utmost importance that this safety guide be available for use by Member States as soon as possible. Mr. Jamet made a suggestion asking CSS at its meeting in October to make a recommendation for the immediate use of a mature draft of this safety guide in order to support embarking countries, without inferring with the preparation process.

Mr. Jamet then drew the attention to the Working Group Meeting dealing with the *Feedback from IRS Topical studies and IRS events to Safety Standards*, which took place in May 2009. He informed NUSSC that the objective of the meeting was to review the recommendations raised in the IRS topical studies and selected events in IRS database against all the IAEA Safety Standards in order to enhance the quality of the standards. This review was necessary in order to give feedback in the revision of the safety standards.

One of the results of the meeting, according to Mr. Jamet, was of particular interest to the safety standards and lead to a recommendation for the preparation of a new safety guide on the management of the construction of nuclear facilities. This issue was indentified as a gab in the IAEA Safety Standards Series and the DPP for this new guide will be submitted to NUSSC in due time.

Mr. Jamet then drew the attention of NUSSC to the issue of safety and security synergy and its full coverage in the safety standards, which he considered to be a global challenge.

He informed NUSSC that at its twenty-fourth meeting, CSS discussed the synergy and integration between safety and security, with particular consideration of the IAEA Fundamental Safety Principles, stating that safety measures and security measures must be designed and implemented in an integrated manner so that security measures do not compromise safety and vice versa.

According to Mr. Jamet, during the last meeting of the CSS a joint session between the CSS and AdSec was conducted on 23 April 2009 in order to discuss the matter further.

For the purpose of obtaining further progress on the issue, it was agreed to establish a joint task force to be co-chaired by the Chairman of AdSec and the Chairman of the CSS, with equal participation of members from both groups and with full supports from the Secretariat. This joint task force should pursue at the same time short term and long term objectives.

Mr. Jamet then turned to the issue of the role of industry in the IAEA Safety Standards development process. Recent discussions at CSS meetings had identified the need to clarify
the role of industry and the public in this process. He pointed out that the discussions, in principle, focused on providing the opportunity for industry and the public to review and comment on the development of new/revised IAEA Safety Standards, and the opportunity for industry and the public to participate directly in the IAEA development process meetings and activities. CSS determined that clarity was needed to assure that the IAEA safety standards development process appropriately included opportunities for industry and public involvement.

Mr. Jamet then informed NUSSC on some important international events:

- A Senior Regulators Meeting will take place during the GC on 18 September 2009.
  
  Session I: *Coordination of International Regulatory Support to New Comers and Countries Expanding their Nuclear Power Programme*
  
  Session II: *Long term Management Strategies for disused Radioactive Sources."
- An INSAG Forum 2009 will take place during the GC on 14 September 2009 discussing the *Responsibility for Safety in a Globalized Nuclear Environment.*
- Convention on Nuclear Safety (CNS)
  
  1st Extraordinary Meeting on 28 September 2009
  
  5th Organizational Meeting 29-30 September 2009

Finally, Mr. Jamet informed NUSSC on the reorganization of his NSNI Division (Division of Nuclear Installation Safety).

1.2. Chairman’s introduction

Mr. Vaughan thanked Mr. Jamet for his address and welcomed all Committee members and gave a short introduction how he would like to conduct the meeting. Some members sent their apologies for not coming to Vienna. Several NUSSC members did not sent a reply at all. He reminded the Members that NUSSC is now half way through the 5th term.

1.3 Adoption of the agenda of 27th Meeting

Mr. Feige informed NUSSC that the draft agenda of the 27th meeting was put on the website prior to the meeting. There were no additional subjects mentioned.

► NUSSC approved the proposed agenda for the 27th Meeting (Appendix I).

1.4 Approval of the minutes of the 26th Meeting

Mr. Feige informed the members that draft 1 of the minutes of the 26th meeting had been posted on the website. NUSSC members had submitted their comments prior to the meeting. The comments had been implemented in the current draft 2. There were no additional comments raised by the Committee.

► NUSSC approved the minutes of the 26th Meeting.

1.5 Action of the 26th NUSSC Meeting
Mr. Feige presented the status of the actions that followed the last NUSSC meeting. The actions were all carried out with the exception of action 26.11: *Prepare a few examples on the practicability of merging safety guides* and action 26.15: *Provide NUSSC with examples of safety classification exercises*. As for 26.11, the Secretariat had decided to postpone this action after the consolidation of the new list of safety guides for 2015. As for 26.15, Mr. Feige informed NUSSC that the development of the practical examples on safety classification of SSCs using the methodology described in DS367 for different designs, was started in January 2009. According to Ms. Toth, so far four examples were developed on different new designs: EPR, PBMR and for the Japanese ABWR and APWR. During the last consultancy meeting from 9-12 June 2009, the detailed description of the safety classification process referring to the examples and the review of the examples was finished and the results will be presented soon (by email and on the website).

Mr. Vaughan thanked Mr. Feige for the update on the previous actions.

### 1.6 Dates of the next meetings

The following dates for the next meetings of NUSSC were proposed by the Secretariat:

- 28th NUSSC from 20 to 23 October 2009
- 29th NUSSC from 28 June to 2 July 2010.

► **NUSSC agreed on the proposed dates for the next meetings.**

► **NUSSC approved to have a joint meeting with WASSC for 1 or ½ day during the 29th Meeting. The exact date will be determined by the Secretariat in due time.**

### 1.7 NUSSC working methods

Mr. Feige presented a list of items regarding the working methods that emerged after the last NUSSC meeting. His main concern was again that the deadlines for comments by NUSSC and MS comments were not respected (delays up to 3 months!), which make it almost impossible for the TO keeping his schedules.

Comments on drafts were often not uploaded on the website by the NUSSC members. In addition, comments were sent (or if uploaded) in “pdf” and not in “word” format, which makes the handling for the TO more difficult.

Mr. Feige reminded the NUSSC members when communicating with the Scientific Secretary, Ms. Balsam Al-Madhi should be copied, in order to avoid emails not recognized and dealt with.

Another concern was that NUSSC members don’t register in response to the invitation letter, which would lead later to difficulties with security at gate 1.

Japan had sent a proposal regarding the working methods:

- NUSSC working method should be explicitly described in SPESS, such as draft submission to be performed 2 months before meeting, comment submission 3 weeks before meeting, comment resolution tables 2 weeks before meeting.

- Almost all of the paragraphs of each draft standard submitted to 25th CSS for approval were modified. The technical officer said in the CSS meeting there were no technical modifications, but there were too many modifications for CSS member to confirm if each modification is editorial or technical. These modifications should be confirmed in SSCs.

- In the case of DS393 and DS394 which were approved at 26th NUSSC Meeting and then 25th CSS meeting, the sentence which was included in “background” was moved to
“purpose” in Section 1. This movement might be editorial modification from the viewpoint of technical officer; meanwhile this modification was change of the purpose approved in DPP from the viewpoint of DPP. The purpose of the standards is a vital element of the standard. This kind of modification should have been discussed in NUSSC meeting. In this context, among NUSSC members, the contents of DPP should be reconfirmed when modification of purpose or scope described in DPP would be needed to be modified.

The working method applied to post-MS commenting procedure should be applied also to pre-MS commenting procedure so that the NUSSC member can understand how their comments to the draft standard “For approval for submission to MS” were dealt with in producing revised draft version for MS comment.

The Japanese proposal was discussed by the Committee. There was agreement that major changes as well as many modifications in a draft or a DPP should be discussed by the Committee(s). NUSSC suggested enhancing the role of the DPP and considering a process for dealing with modifications (see also agenda item 2.2).

Mr Vaughan pointed out that the reason for the large number of editorial changes in the draft standards referred to in the second bullet was that the editorial check, which had previously been carried out after submission to CSS, had now been brought forward before CSS saw the document. He had been able to see the document and was content that the changes were editorial. Developing the standards would become an almost impossible task if each editorial change had to be returned to the SSC for approval. The changes to DS393 and DS394 were to meet IAEA editorial policy and, therefore, it was not considered necessary to revise the DPP – they were again editorial not technical.

After a long discussion on the matter of applying the post-MS commenting procedure also to the pre-MS commenting procedure, NUSSC decided not to do so as it would be not be cost-beneficial.

Mr. Vaughan closed the discussion by emphasizing that a disciplined approach by the NUSSC members regarding the deadline is essential to the process.

- NUSSC agreed that keeping the deadlines for commenting is of utmost importance to the development process of the safety standards.
- NUSSC did not agree on the Japanese proposal to apply the post-Member States comments approach to the pre-Member States comments.

1.8 Feedback on regulatory arrangements and current developments in NUSSC Member States

This is a new permanent agenda item as it was agreed in the previous meeting. NUSSC members from Austria, Belgium, Brazil, Canada, Finland, India and Poland gave short presentations on their national situation regarding the regulatory arrangements and current developments, as well as their future involvement in the work of NUSSC. The representatives of Iran and Mexico, who volunteered last meeting to give a presentation on their countries, did not attend the meeting. They will be asked by the Secretariat if they will give their presentation at the next NUSSC meeting.

The presenters concentrated on the five issues that had been agreed in the last NUSSC meeting:

1. Nuclear facilities and plans in the Member State
2. Outline of regulatory structure and approach in the Member State
3. How IAEA safety standards are used in the Member State
4. Arrangements/intentions for input to development of safety standards by the Member State
5. Specific areas where NUSSC can assist the Member State

Thus the presentations were very informative and well received by the Committee, and it was agreed that the Secretariat collects these presentations and also the future ones. Just to mention an interesting detail, India for instance reported that it had implemented the DPP concept of the IAEA in their processes for establishing rules and regulations.

For the meeting in October 2009, Germany, Czech Republic, Slovenia, Spain, Sweden and the EC volunteered to make presentations.

► NUSSC agreed that the Secretariat retains the various presentations as a kind of archive on the website.

1.9 Report of the 25th CSS Meeting

Mr. Delattre summarized the results of the 25th Meetings of CSS held from 22 to 24 April 2009. He informed NUSSC on the safety standards that had been endorsed by the CSS:

• DS394, Development and Application of Level 1 Probabilistic Safety Assessment for Nuclear Power Plants
• DS393, Development and Application of Level 2 Probabilistic Safety Assessment for Nuclear Power Plants
• DS395, Deterministic Safety Analyses and their Application for Nuclear Power Plants
• DS387, Schedules of Provisions of the IAEA Regulations for the Safety Transport of Radioactive Material
• Safety Framework for Nuclear Power Source Applications in Outer Space.

CSS had also approved the following new DPP:

• DPP DS427 for a new safety guide on Radiological Environmental Impact Analysis for Facilities and Activities

Mr. Delattre then briefly reported on the Commission’s discussion of policy issues:

• Revision of the BSS
  Ms. Amaral, Director NSRW, gave a short presentation on the status of the revision. Mr. Lacoste emphasized that priority is to be given to the quality over the production time. It was further concluded that the Member States should be consulted on a draft that implements the new format for the requirements. All changes made to SS115 will be made also available to the Safety Standards Committees and sufficient time will be given for the review of the draft prior to Member States consultation. Current and potential cosponsors will continuously be involved in the process, including on the implementation of the new format.

• Safety/Security
  Mr. Delattre informed NUSSC that for the first time a joint session of CSS and AdSec was held on 23 April 2009. Ms. A. Nilsson, Director of the Office of Nuclear Security, presented conceptual issues and options for the future of the safety and security series. AdSec and CSS concluded that the organization of a joint AdSec/CSS session was an excellent initiative. It was also considered a unique opportunity to further exchange, with equal involvement of both groups, on the issues related to safety and security synergies and interfaces, and on the feasibility of working towards the establishment of Nuclear Safety and Security Standards, that would have full coverage of nuclear safety and security.
  AdSec/CSS agreed to establish a joint task force to be co-chaired by the Chairman of AdSec and the Chairman of the CSS with equal participation of members from both groups and with full supports from the Secretariat. The joint task force should pursue at the same time short term and long term objectives:
For the short term: Further exploration to clarify the legal basis for the IAEA activities on Nuclear Security Standards, to strengthen the process for the review and approval of the Nuclear Security Series publications, and to progressively establish practical steps, within the present regime of developing nuclear safety standards and security guidance, for the necessary cross-verification of safety and security related draft publications, followed by selected examples of full coverage of safety and security issues in facility specific documents.

For the long term: The task force should study the feasibility of the establishment of a *Nuclear Safety and Security Standards Series* that would have full coverage of nuclear safety and nuclear security.

• Stakeholder involvement

CSS discussed two aspects, firstly stakeholder involvement practices in Member States and secondly stakeholder involvement in the preparation of safety standards. For the practices in Member States, papers and presentations were made by Brazil, Canada, Finland, France, Japan, UK and USA. Other CSS members were invited to make presentations at the next CSS meeting.

For the stakeholder involvement in the preparation of safety standards, a presentation from M. Brach (Chairman of TRANSSC) on behalf of the four Committees’ Chairs was discussed. During the discussions, three guiding principles were identified that needed to be established and maintained when considering the role of industry and the public in the IAEA Safety Standards Development process:

1. Maintain appropriate separation between the “regulator” and the “regulated”;
2. Maintain a mechanism for learning from operational experience and use of the IAEA safety standards; and
3. Maintain a mechanism for receiving input from interested parties, including both industry and the public.

Mr. Delattre noted that the issue on who attends the Safety Standards Committees meetings as part of a national delegation is the responsibility of the Member States. A paper on criteria, role and guidelines for the involvement of stakeholders in the Safety Standards Committee meetings to be prepared jointly with the Committee Chairs and in cooperation with OLA, EXPO and DGO on 3 July 2009.

• Harmonization of terminology

With regard to the policy a paper presented by M. Brach on behalf of the four Committees Chairs suggesting that individual publication could have a section listing related definitions CSS agreed provided such definitions are extracted from the safety glossary, which can be revised, as necessary, with involvement of the Safety Standards Committees.

• Timeline optimization for the review and approval process

Mr. Delattre gave a presentation to CSS on how the schedule of meetings could be optimized. According to him, it is possible to save on average 10 months in the drafting and review/approval process, moving from an average duration of 36 months in the previous sequence to an average duration of 26 months in the future. The optimum sequence that the CSS recommended to implement is as follows:

− CSS meetings at the beginning of March and beginning of October
− SSCs meetings at the end of June and beginning of November.

He emphasized the importance of MS to comply with the 120 days deadline. Technical editors in NS-SSCS will be reviewing the drafts, in particular draft Safety Requirements,
as soon as possible after resolution of the Member States comments and at the latest in parallel to the final submission to the Committees for approval for submission to the CSS.

There were no additional issues raised by the Committee. Mr. Vaughan thanked Mr. Delattre for his presentation.

1.10 Report of the 4th INSAG Meeting

Mr. Bastos, Scientific Secretary for the International Nuclear Safety Group (INSAG), gave a presentation on the last INSAG meeting. Since there were many new NUSSC members, he started his presentation with an overview on INSAG (website address http://goto.iaea.org/insag).

He explained that INSAG is a group of experts with high professional competence in the field of safety working in regulatory organizations, research and academic institutions and the nuclear industry. INSAG shall have at least 11 and no more than 18 members, including a chairperson and two vice-chairpersons. Members shall participate in INSAG in their personal capacity and shall not represent their governments or organizations. There shall also be a balance between regulatory authorities, industry and academy. The INSAG members are appointed by the IAEA Director General for a term of four years.

As for the scope of the INSAG discussions, INSAG shall address fundamental safety issues as well as current and emerging matters of importance relevant to the safety of nuclear installations (NPP, RR and FCF). INSAG shall address issues relevant to nuclear security insofar as they relate to nuclear safety. INSAG gives advice to the IAEA and the nuclear community in general. The group meets twice a year. It provides also an annual assessment letter to the IAEA Director General. According to Mr. Bastos, so far 23 INSAG reports are available.

Every year during the General Conference of the IAEA a so called INSAG FORUM is organized to discuss certain nuclear safety related issues in more detail. This year’s topic is: Responsibility for Safety in a Globalized Nuclear Environment.

Since there is always some confusion, Mr. Bastos drew the attention of the Committee to the relationship of IAEA Safety Standards and INSAG Reports.

According to him, the IAEA Safety Standards cover a wide range of topics and are consensus documents. They reflect good and best practices to achieve and maintain a high level of safety. Safety standards are not binding to Member States but binding to Agency’s activities. There is a robust and complex approval process in place to establish these documents.

As for the INSAG Reports, Mr. Bastos emphasized that unlike the IAEA Safety Standards, the INSAG documents are of innovative nature and focus only on new safety issues (e.g. safety/security synergism). Most important, according to him, is that INSAG Reports should deal with subjects where consensus is not likely to be achieved and give directions for the future. In practice, the INSAG Reports establish principles upon which new safety standards could be (and have been) based on.

Mr. Bastos then informed NUSSC on the recently published Reports INSAG-22 (Nuclear Safety Infrastructure for a National Nuclear Power Programme Supported by the IAEA Fundamental Safety Principles) and INSAG-23 (Improving the International System for Operating Experience Feedback).

Finally Mr. Bastos informed NUSSC on the current activities, in particular:

• INSAG-24: On the relationship Between Safety and Security
• 2009 Edition of the Annual assessment letter to the IAEA Director General
• Summary of the main INSAG messages from previous INSAG reports
• Working document on Leadership and Management for Safety
• Draft paper on Risk Informed Decision Making
• Living document on “Emerging Trends for More World-Wide Dependence on Nuclear Power and the Potential Safety Challenges“

Mr. Vaughan thanked Mr. Bastos for his presentation.

1.11 Report on international activities

Mr. Reig, Director of the Nuclear Safety Installations Division of the OECD/NEA, gave presentations on the NEA’s activity in the Multinational Design Evaluation Programme (MDEP) and on the CNRA Working Group on the Regulation of New Reactors (WGRNR). Currently, Canada, China, Finland, France, Japan, Korea, Russian Federation, South Africa, United Kingdom and the United States are members of MDEP. The IAEA takes also part in the work.

According to Mr. Reig, the expected outcomes of this programme is setting up an enhanced cooperation among regulators to improve the effectiveness and efficiency of regulatory design reviews, raise the safety assessment quality and the safety level, and to facilitate convergence of regulatory requirements.

Mr. Reig explained to NUSSC that the MDEP Organization consists of 5 technical working groups (WG) - two design specific WGs and three more generic ones:

1. EPR Design Specific Working Group
   The goal of the WG is to share and cooperate on specific design evaluations and construction oversight, as well as general exchange on project status, review and construction. The WG cooperates on design reviews, in particular digital I&C, PSA, containment and accident analysis and severe accidents. Members of this WG are Finland, France, US, UK, China, and Canada.

2. AP1000 Design Specific Working Group
   The goal of the WG is to share and cooperate on specific design evaluations and construction oversight, as well as general exchange on project status, review and construction. The WG cooperates on design reviews, in particular squib valves, civil and structural engineering, and control rod drive mechanism.

3. Vendor Inspection Cooperation Working Group
   The goal of the WG is to benefit from other regulators’ inspections of vendors to support new reactor reviews, vendor inspections and manufacturing oversight and comparison of regulatory practices, in particular quality assurance requirements (comparison table ongoing). Mr. Reig stated that several trial joint inspections were carried out in 2007 and 2008 with regard to sharing of vendor inspections results and production of a joint inspection protocol.

4. Codes & Standards Working Group
   The goal of the WG is to achieve convergence of regulatory requirements and practices related to nuclear component design as well as identification of similarities and differences among codes and standards, particularly working with standard development organizations to compare pressure vessel codes and understanding the technical and regulatory basis for differences identified.

5. Digital Instrumentation and Controls Working Group
   The goal of the WG is to achieve convergence of regulatory requirements and practices related to digital I&C standards for reactor safety systems and identification of main differences among codes and standards with regard to defence-in-depth and diversity,
data communications, identification and proposition of convergence, software common cause failure, and software tools.

With regard to the issue of safety goals, Mr. Reig emphasized that MDEP has identified the work that is ongoing in this area by other organizations. A subgroup of technical experts has further explored the issue and worked towards establishment of programme plans and goals for a potential working group. As for the next steps, Mr. Reig informed NUSSC that it is intended to expand on the roles of others involved in related efforts, in particular WENRA. A framework will be developed before March 2010.

Finally, Mr. Reig drew the attention of NUSSC to some important events:

- MDEP Policy Group meeting in Washington, 12 March 2009, which discussed MDEP progress and programme of work, membership and programme, and MDEP Interaction with the CNRA working group on the regulation of new reactors (WGRNR).

- MDEP Steering Technical Committee in Paris, 3-5 June 2009, which discussed the MDEP programme of work, the MDEP Library, and the MDEP Conference.

- MDEP Conference to be held in Paris from 10 to 11 September 2009, which will deal with MDEP activities, industry and other related activities. The objective is to report on MDEP activities and results and look for ways to interact with other related activities. The conference is open to regulators, technical support organizations, and the industry, e.g. vendors, manufacturers, licensees. Approximately 200 attendees are expected. (http://www.nea.fr/mdep/events/conf_sept_2009/agenda.html).

Mr. Reig then gave a presentation on the CNRA Working Group on the Regulation of New Reactors (WGRNR). Current Members of the group are Canada, Czech Republic, Finland, France, Hungary, Japan, Korea, Russia, Slovakia, Spain, Switzerland, UK, USA, IAEA, EC, and China, South Africa and Italy as observers.

Mr. Reig then explained the mandate of WGRNR. He stated that the WG shall be responsible for the programme of work in the CNRA dealing with regulatory activities in the primary programme areas of siting, licensing and oversight for new commercial nuclear power reactors (Generation III+ and Generation IV reactors). The working group shall constitute an international forum for exchanging information and experience and with the agreement of CNRA and will plan its work to ensure improvements in nuclear safety through more effective and efficient regulation.

According to Mr. Reig, the programme of work consists of four main topics:

1. Construction Experience (ConEx) Database
   He explained that this ConEx database will include findings and deficiencies related to design and construction of new NPPs and experience from construction of other nuclear facilities. It will also include information of past construction experience if the lessons learned are applicable to new reactors, in particular existing records from France, Finland, Japan, Korea and USA. IT infrastructure to support the database is currently under development at the NEA.

   Mr. Reig informed NUSSC that an ‘evaluation and clearinghouse group’ is established to provide the means for assessing the findings in order to extract and share construction experience lessons learned; develop a qualitative assessment scheme on the safety significance and assess further refinement of the database; as well as assure compatibility of the database with the IRS.

2. Regulation of Nuclear Sites Selection and Preparation
   According to Mr. Reig, this report is based on a survey that has been developed and is under review by the member countries, covering the evaluation and selection of sites for a new NPP, and the preparation of the selected site for a new NPP. In particular, to review
practices used by regulators in NPP siting, such as seismicity, security, multi-units. The report also considers the regulatory practices on sites where a mixture of activities is taking place, e.g. operating units and decommissioning. Further considerations shall focus on public consultation/involvement, definition of construction, site preparation, and impact of the site on the design.

3. Licensing Structure of Regulatory Staff and Regulatory Licensing Process

Mr. Reig explained that recent regulatory experience describes three subjects: the licensing structures; the number of regulatory personnel and the skill sets needed to perform reviews, assessment and construction oversight; and the types of training needed for these activities. There will be a comparison report on the licensing processes for each Member State sharing experiences associated with the level of detail of design information needed for regulatory authorization at the various stages of licensing.

4. Construction Experience Database

According to Mr. Reig, a synthesize report of the current information available on construction experience, underlying causes and lessons learned behind the construction problems that are know from previous experiences, as well as from current experience from Olkiluoto 3, Flamanville 3, and experience from Japan and Korea will be made available.

Mr. Vaughan thanked Mr. Reig for his comprehensive presentation.

1.12 IEC/SC45A - I&C for nuclear facilities digital technology aspects

Mr. J.P. Bouard gave a presentation on the work of IEC. He explained that the IEC at international level is one of the oldest standard body founded in 1906. Currently 67 countries are members representing 80% of the world’s population and 95% of electrical energy production/consumption. He informed NUSSC that IEC has among others collaboration agreements with the IAEA and OECD (MDEP project).

As for the IEC-IAEA relationships, Mr. Bouard informed the Committee that an IEC IAEA agreement was signed in 1981 to eliminate the overlap between the two organizations to cover the I&C issues. He pointed out that the IAEA is responsible for developing safety principles, whereas the IEC/SC45A implements them technically in detail in their industrial standards. More than 30 IEC/SC45A standards have implemented the IAEA Safety Guide NS-G 1.3 (Instrumentation and Control Systems Important to Safety in NPP). IEC/SC45A standards use the IAEA Safety Glossary.

He then focused briefly on the IEC standards development process. The process is transparent, traceable, and like the IAEA Safety Standards, consensus based. All the stakeholders (e.g. operators, vendors) are represented in the IEC/SC45A technical debate. The national IEC committees vote and comment on the drafts. According to Mr. Bouard, it takes four years in average to develop a standard.

As for digital technology, Mr. Bouard pointed out that eight IEC/SC45A standards have implemented NS-G-1.3:

- IEC 60987, HW for systems important to safety (2007)
- IEC 6880, SW for safety systems (2006)
- IEC 61500, Data communication for safety systems (in revision)
- IEC 61772, Screen use (2009)
- IEC 62138, SW for safety related systems (2004)
- IEC 62340, Defence against CCF (2007)
- IEC 62566, Complex HW (under development)
- IEC 62XXX, Cyber security (under development)

In IEC/SC45A a special Working Group, WGA3, application of digital processors to safety in nuclear power plants, deals with this issue. The group consist of 40 experts from 20
countries. They have a continuous debate to keep up with a pervading and galloping technology. The group meets twice a year and develops three new standards and reviews/revises four standards per year.

Mr. Vaughan thanked Mr. Bouard for his presentation.

2. STRATEGY FOR FUTURE DEVELOPMENT AND APPLICATION OF THE IAEA SAFETY STANDARDS

2.1 Proposed list of safety guides for 2015

Mr. Delattre informed the Committee about the work done on the reference set of safety guides for the long term. The issue was discussed several times by NUSSC. He briefly reiterated the milestones in the development of the reference set of safety standards. A first proposal by the IAEA was discussed in 2007; the roadmap on the long term structure of safety standards was approved by the CSS in May 2008. The criteria for safety guides (i.e. for optimization of the current set of safety guides and for the addition of new safety guides) were approved by the CSS in September 2008.

In a meeting with the four Committees Chairs on 5 September 2008, the proposed list was discussed and 36 questions/proposals from the Chairs were noted for consultation of the Safety Standards Committees in IVQ 2008. A concise table reflecting the Committees views on these proposals was established in November 2008. In January 2009, the four Chairs met again to discuss the Committees views. The final table on the conclusions of the Chairs and the revised reference set were posted on the website in March 2009.

Mr. Delattre emphasized that DPPs in the future must be based on this reference list. Changes compared to this reference list remain possible to adjust to the Member States needs, to incorporate results of any further gap analysis and to take into account in depth analysis in terms of feasibility and user-friendliness. However, a new DPP has to justify appropriately any proposed changes in the context of the whole structure of safety guides, and, in addition, has to implement the criteria for the long term set of safety guides approved at the 24th CSS meeting. He pointed out that the titles and the content are indicative and will be discussed in details when reviewing each corresponding DPPs.

Mr. Delattre pointed out that a transition table is included in annex to the reference set. The transition to the long term structure may in some cases be implemented in two steps.

Mr. Vaughan thanked Mr. Delattre for his presentation and opened the floor for discussion.

The Committee (again) discussed briefly the issue of merging documents, in particular the possible difficulties to combine RR guides with those for NPPs. Some of the NUSSC members argued that one should keep a pragmatic approach. They feared that thick documents are not user-friendly and in addition difficult to revise, which could lead to a reduction of quality. Moreover, “multiple” documents need confirmation.

2.2 Strategies and Processes for the Establishment of Safety Standards (SPRESS) — Status

Mr. Delattre gave a presentation on the document with the title Strategies and Processes for the Establishment of Safety Standards, SPRESS (previously called MANSYS). The first document was prepared following a Secretariat’s initiative in January 2007. A draft table of content was prepared in March 2007 and CSS was informed in June 2007. In February 2008 draft 0.1 has been submitted to the Committees for comment. These comments were incorporated in draft 0.2. Policy issues discussions in May 2008 and September 2008 resulted in the draft 0.3. Draft 0.3 was discussed at a meeting with the four Chairs of the Committees in January 2009. He stated that the comments of the Chairs and other changes
(Coordination Committees and revised DPP template for example) were incorporated and resulting in the draft 1.0. After the approval by the Coordination Committee on 17 April 2009, the draft that has been submitted to the Safety Standards Committees prior to their meetings in June/July 2009. Progress reports were presented at all CSS meetings in 2007, 2008 and 2009.

Mr. Delattre reiterated that the objective of this document is to describe the strategies, the processes and associated responsibilities for the planning, development, review and revision, approval and establishment of the IAEA Safety Standards.

Finally, Mr. Delattre explained in brief the structure of the SPESS document:

Section 1: Mandate of the IAEA with regards to the safety standards, historical perspective, vision on the future of the safety standards, need for this document and history of its development

Section 2: Basic strategy to achieve this vision

Section 3: Main processes involved and the related responsibilities and functions

Section 4: Process for keeping this document up-to-date, including through the self assessment of its application

Annexes: Most important policy papers

The SPESS document will be accompanied by an application manual with a detailed step by step process, detailed guidelines, instructions and examples.

Mr. Vaughan thanked Mr. Delattre for his presentation and opened the floor for discussion.

The Committee in general was pleased that the Secretariat is going to achieve the effort of having such a management tool. There was a brief discussion on the role of the DPP. The Committee agreed with the Japanese comment that substantial modifications should be discussed in the Committee. However, NUSSC agreed on the other hand that the DPP cannot cover everything in the beginning and should be treated more like a guideline document, but addressing important issues while they immerge. TO and drafters should have a certain degree of freedom to get the job done.

The chairman stressed that the distinction between review and revision seemed to get lost so that each time a standard came up for review it was rewritten. This was unnecessary and he proposed that the review should be conducted before the DPP was produced which should clearly state which parts of the standard needed revision and which did not. This would reduce the effort needed by drafters, TOs and the SSC. This proposal was discussed and NUSSC agreed that the Secretariat should consider establishing a small review group as part of the process.

NUSSC agreed that the Secretariat considers to establish a small group to review safety guides as a standing part of the process (Action 27.5).

3. REVIEW OF DRAFT SAFETY STANDARDS

3.1 DS 371 Storage of Spent Fuel

Mr. Louvat, on behalf of Mr. Metcalf, gave a presentation on the draft safety guide on storage of spent fuel. The draft had been sent to MS for comment. He had received a total of 535 comments (Argentina 2, Australia 5, Belgium 72, France 118, Germany 96, India 22, Japan 13, Pakistan 1, South Africa 6, Spain 56, Switzerland 14, UK 78, and USA 52). After dealing with the MS comments, the draft had been uploaded to the Committees website prior to the meetings for comments.
He then informed NUSSC on the 10 major comments made by MS and by WASSC in its 26th Meeting that were accepted as they were or modified a bit. The resolution of comments was done in a consultancy meeting (5 experts +TO) in April 2009. The document was restructured according to the MS proposals. Many MSs did not follow instructions for resolution sheets (comments in PDF format, modified tables, no resolution suggestions, etc.).

The revised draft was uploaded on the Committees website prior to the meeting in June/July 2009. Mr. Louvat informed NUSSC that he received a total of 237 comments from WASSC and NUSSC. In some cases he had received comments from Committee members but no indication regarding the Committee (Argentina 9, Brazil 1, Canada 29, France 20, Japan 10, Pakistan 5, Spain 7, UK 35 NUSSC/HSE/British Energy, India 3/WASSC, USA 118/WASSC/RASSC/TRANSSC). As for the resolution of comments, there were no conflicting comments and no substantial disagreements. The main focus of the comments was on clarification. Detailed discussions related to these new comments will be carried out during the next WASSC meeting.

Finally, Mr. Louvat asked the Committee for its approval for submitting the draft to CSS.

Mr. Vaughan thanked Mr. Louvat for his presentation and opened the floor for discussion.

The Committee felt that there had been significant changes of the document and thus wanted to hold back the draft for the next NUSSC meeting in October 2009, while waiting for the discussion in WASSC. Moreover, a resolution table of the NUSSC comments was not available and thus a discussion with the TO was not possible. Some of the members felt that the draft was not mature enough to be approved for CSS and needed some extra time for discussion. In response to a question, Mr. Louvat stated that there was no urgency for the Secretariat to put the draft forward beyond the normal process, but from the Member States that wanted this guide published as soon as possible.

Finally, Mr. Vaughan concluded the discussion by stating that NUSSC supports the draft but wants some extra time for discussion. He asked Mr. Louvat to provide NUSSC with a new draft together with a new resolution table after the WASSC meeting.

- NUSSC agreed that safety guide DS371 Storage of Spent Fuel could not be submitted to CSS.
- NUSSC asked the Secretariat to provide a new draft and a new resolution table implementing the comments from NUSSC and WASSC for the 28th NUSSC meeting on October 2009.

At the four chairs meeting on 3rd July 2009 the WASSC/RASSC chairs proposed to send DS371 to CSS without further discussion at NUSSC.
After a short discussion this proposal was overturned.

3.2 DS388 Chemistry Programme for Water Cooled Nuclear Power Plants

Mr. Renev gave a presentation on the chemistry programme for water cooled NPPs. He reiterated that the DPP was approved by CSS in June 2007. The first draft had been prepared in May 2006; a new chapter on “chemistry aspects of dose exposure minimization” was added in 2007. The draft had been approved by NUSSC, RASSC and WASSC for submission to Member States in March/May 2008.

Mr. Renev informed NUSSC that he received a total of 330 (70 editorial) comments from 10 Member States on draft 2 (Bulgaria 37, Canada 28, Finland 25, France 83, Japan 4, Pakistan 8, Russia 31, Slovakia 7, Spain 5, and UK 102).
As for the resolution of the comments, Mr. Renev pointed out that he accepted and incorporated 248 and rejected 82, because they were too detailed/TECDOC level (33), misunderstandings (27), inconsequential (explanation, paragraph location, same meaning etc. 11), and out of the objective and scope of approved DPP (3). Some other comments were too prescriptive, too general, required title changes etc (8).

The draft has been amendment based on the comments made by the Member States in the first quarter of 2009. The draft 3 and the resolution table were uploaded prior to the Committee meetings for comments.

Mr. Renev informed the Committee that he had received a total of 189 (64 editorial) comments from six NUSSC members on draft 3 (France 13, Germany 27, Japan 10, Pakistan 9, UK 112, and USA 18).

As for the comments resolution, Mr. Renev pointed out that he had accepted and incorporated 160 comments and rejected 34, in particular because they were misunderstandings (13), too detailed/specific or TECDOC level (5), because of no broad consensus on including radiochemistry into the chemistry programme (6), out of scope/covered by other standards (2). Other comments (8).

Mr. Renev then focused on the rearrangement of Chapter 4 Chemistry Control which now consists of the following sub-chapters:

- General issues
- Water chemistry control at BWR power plants
- Water chemistry control at RBMK power plants
- Primary water chemistry control at PWR and WWER power plants
- Primary and moderator water chemistry control at PHWR power plants
- Secondary water chemistry control at PWR, WWER and PHWR power plants

Finally, Mr. Renev asked for the approval by NUSSC to submit the guide to CSS. Approval by RASSC and WASSC is to be sought in two weeks time at their joint meeting.

Mr. Vaughan thanked Mr. Renev for his presentation and opened the floor for discussion. The Committee was quite satisfied with the draft and the presentation and thus no further issues were raised.

▶ NUSSC agreed that safety guide DS388 Chemistry Programme for Water Cooled Nuclear Power Plants could be submitted to CSS.

### 3.3 DS412 Ageing Management for Research Reactors

Mr. Shokr gave a presentation on the ageing management of research reactors. He informed NUSSC that this safety guide supplements and elaborates on the safety requirements for ageing management for RR in NS-R-4. The objective of the DS412 is to provide practical guidance and recommendations on ageing management for the safety related structure, systems, and components for RR.

The DPP was approved by NUSSC in April 2007 and by the CSS in November 2007. A first draft was developed in March 2008 and approved by the Steering Committee in August 2008. Draft 1 was approved by NUSSC for submittal to Member States at its 26th Meeting (October 2008). Deadline for MS comments was 29 March 2009.

Mr. Shokr pointed out that he had received comments from 9 MSs (Canada, Finland, Mexico, Romania, Russia, and USA). Comments from France, India, and Indonesia were received after the deadline. He explained that the resolution of the late comments from MS was made together with the NUSSC comments.

Mr. Shokr informed NUSSC that draft 2 was uploaded together with the MS comments resolution table on the website prior to the NUSSC meeting. He pointed out that he received comments from four NUSSC members (France, India, Pakistan, and USA).
According to him, all these comments were carefully considered and most of them were accepted. The incorporation of these comments resulted in a number of refinements (wording clarity, improvements to flow of the text of some chapters, editorial corrections, improvements to cross-references). According to Mr. Shokr, there was no unresolved issue.

He finally asked NUSSC for approval to submit the safety guide to CSS.

Mr. Vaughan thanked Mr. Shokr for his presentation and opened the floor for discussion.

The Committee discussed an issue raised by Brazil (late comment) with regard to the screening methodology. In particular, risk informed methods should be mentioned. The agreed proposal was to extend the first sentence in chapter 5.6 with “such as the use of PSA as a complementary approach to the deterministic approach”.

Mr. Vaughan closed the discussion and agreed with the NUSSC members that the guide was ready for submission to CSS.

► NUSSC agreed that safety guide DS412 Ageing Management for Research Reactors could be submitted to CSS.

3.4 DS415 Governmental and Regulatory Framework for Safety

Mr. Caruso gave a presentation on the revision of the requirement manuscript governmental and regulatory framework for safety. He reiterated the chronology of production of DS415. The DPP was approved by the four Safety Standards Committees in October 2007 and endorsed by the CSS in November 2007. The first draft had been approval by all Safety Standards Committees for submission to Member States for comments in April 2008. Comments from MS were received in August 2008 and a revision of the draft taking into account the Comments by the MS was prepared in December 2008. The draft as of 16 April 2009 was posted on the website together with the MS comments resolution table prior to the SSCs meetings.

Mr. Caruso pointed out that he received 49 comments from NUSSC members and observers (Austria 3, EC 6, France 11, Germany 5, Japan 4, Pakistan 3, Sweden 2, UK 5, USA 9 and WNA 1) and 5 comments from the Argentinean WASSC member.

As for the resolution of NUSSC comments, Mr. Caruso informed the Committee that from the 49 comments received from NUSSC, 27 comments were of editorial nature. 26 NUSSC comments had been accepted.

He then focused on examples of non-editorial comments and their resolution.:

• **Comment by USA on clarification: “Government” vs. “State”**
  IAEA ACCEPTED: After consultation with OLA, the following statement has been added at the beginning of section 2: “Member States have different legal structures, and therefore the term ‘Government’ in this document is to be understood in a wide sense and is accordingly interchangeable with the term ‘State’.”
  The text is now consistent with SF-1

• **Comment by USA: To change the text of requirement 14 to be less “binding”.**
  IAEA ACCEPTED: OLA had decided to keep requirement 14 as it is: “The government shall fulfill the relevant international obligations, shall participate in appropriate international arrangements including international peer reviews…”.

• **Comment WNA on Para 3.2: Add a new item after the 5th bullet: “- Multinational cooperation for the safety review of new nuclear power plant designs and for sharing best practice in licensing and harmonization of certification processes, so as to address the licensing of standardized reactor designs for new models of reactors, which allow sharing of experience and lessons learned and can lead to significant benefit for safety.”**
IAEA REJECTED because: Too specific; would fit better in a facility/activity related safety standard.

- **Comment by USA** on Para 4.3: Modify 5th bullet as “The authorized party has the human, organizational, financial and technical capability to operate the facility safely or to conduct activities safely”.

IAEA REJECTED because: Verification of financial capability is a requirement in some cases, but not for operation of all facilities and activities.

- **Comment by Pakistan** on Para 4.14: Add “The fourth purpose is to control the documents and records generated within regulatory body through the development and implementation of documents control procedure and record systems”.

IAEA REJECTED because: Document control is one of the management system processes, but not in itself a purpose of the management system.

- **Comment by Austria** on Para 2.2: Add a new bullet item: “The provisions for an independent regulatory body that is free from any undue pressure from interested parties”.

IAEA REJECTED because: Para 2.2 is related to the national policy and strategy. Establishment of independent regulatory bodies and is addressed in detail in subsequent requirements (Req. 2, 3 and 4).

- **Comment by several members**: To add paragraphs in different locations on security culture and aspects related to the interface between safety and security.

IAEA REJECTED because: The proposed security related material would better fit in a related Guide.

Finally, Mr. Caruso asked the Committee for the approval to submit the draft safety requirements to CSS.

Mr. Vaughan thanked Mr. Caruso for his presentation and suggested to go through the specific comments and their resolutions one by one before having a more general discussion on the draft. NUSSC agreed with the proposals made by the Secretariat.

He then opened the floor for discussion. Some of the Committee members pointed out that the resolution table of MS and NUSSC comments was not available and thus they could not agree that the draft moves forward to CSS. Mr. Caruso in return emphasized that he received comments from Committee members until Monday 15th June 2009. However, he would be able to provide NUSSC with a mark-up version of the draft so that NUSSC would have an opportunity to look at the changes. The Chairman agreed on this proposal.

There was also a brief discussion on graded approach, in particular graded approach being restricted to assessment and this seemed too narrow. Some members were missing a definition for ‘conflict of interest’; however, the majority of NUSSC was of the opinion that a specific definition was not necessary.

At a later stage of the meeting, the Chairman asked NUSSC if they had any further comments after having read the changed draft. This was not the case and thus he concluded that the draft could be send to the Commission.

 ► **NUSSC agreed that safety requirements DS415 Governmental and Regulatory Framework for Safety could be submitted to CSS.**

### 3.5 DS416 Licensing Process for Nuclear Installations

Mr. Calpena gave a presentation on DS416 Licensing Process for Nuclear Installations. He reiterated that the objective of this safety guide is to provide guidance for the processes to be applied by regulatory bodies. The new guide had implemented and enhanced parts of the
existing GS-G-1.2; GS-G-1.4, WS-G-2.3, WS-G-5.1, and the appendix of GS-R-1. New parts were prepared, which took into account international feedback experience and also new challenges or contexts faced by the nuclear industry, as well as issues for launching new nuclear power programmes and new build of NPPs, as was requested by several Member States. The DPP had been approved by the Committees in October 2007 and by the Commission in November 2007. A first draft was produced in January 2008. The draft was approved by all Committees in April/May 2008 to be sent to Member States for comments.

Mr. Calpena informed the Committee that the draft had been submitted to Member States for comments in September 2008 (deadline December 2008).

He informed NUSSC that he had received 644 MS comments from 17 countries (United Kingdom 152, France 112, Switzerland 27, Sweden 12, Australia 8, Malaysia 20, Japan 46, Hungary 2, Russia 36, India 37, USA 26, Spain 46, Slovakia 6, Romania 39, Finland 11, Morocco 5, Mexico 53) and 204 comments from two observers (CORDEL 116 and ENISS 88).

The comments had been implemented in the text and a new draft 2.2 had been prepared. This draft was then uploaded on the website together with the MS comments resolution table prior to the Committees meetings.

As for the resolution of comments, Mr. Calpena mentioned that he had the impression that the new rules on post-member states comments were somehow overlooked by Committee members. However, he had received 279 Committee members’ comments from: Argentina (1); Germany (42); Austria (1); UK (71); Pakistan (29); USA (25); Hungary (46); Japan (11); ENISS (4); Switzerland (7); EC(21); France (21). 205 comments addressed editorial aspects, paragraph position, etc. There had been 66 proposals or additional details dealing, in particular, with the possibility for the public or interested parties to challenge the licence, some more details about public involvement and combining of licence aspects. Some comments were related to DS415, PSR issues and definition aspects. Finally, there was one consideration simplifying a paragraph and seven additional references to other safety guides.

Mr. Calpena then focused on suggestions and comments that were rejected by the Secretariat:

- The regulatory body “should approve” rather than “may approve” …
- To turn “release from regulatory control” into “clearance”…
- To delete “Licenses should state explicitly, or should impose by reference or attachment, all conditions as determined by the regulatory body”
- “The Safety analyses are typically not performed by the licensee, but by the vendor”
- “Re-word this paragraph by a native English speaker could make it easier to understand…”

He then presented a list of major comments and suggestion that were accepted by the Secretariat:

- Replace “adequate level of safety” by “highest level of safety that can reasonably be achieved” (SF1);
- More reference to latest version of DS415
- Some reference to latest DS, e.g.: waste and spent fuel, PSR…
- Conflicting pieces of advice due to definition concepts, furthermore, some members want more details, some want to deal with less details…
- Consolidated guide dealing with regulatory functions will help a lot sorting out some general comments.

Mr. Calpena summarized his presentation by stating that NUSSC members went sometimes into details and exceeded the deadline, but most of the comments were very useful and would be taken on board but the table of resolutions will be put on the web later on.

Finally, he asked the Committee for approval to submit the draft to CSS.
Mr. Vaughan thanked Mr. Calpena for his presentation and suggested to go through the rejected and approved comments one by one before having a more general discussion on the draft. NUSSC agreed with the proposals made by the Secretariat.

One member was of the opinion that the guide was too broad and covers issues that may be better covered in other IAEA standards. The guide is not giving enough strong requirements on the actual licensing process.

Mr. Calpena in return explained that the draft’s objective is to give some guidance rather than some requirements; therefore, such a guide should be flexible and open to different possibilities. In addition, one has to bear in mind that there is no requirement on which regulatory approaches a regulatory body should have and hence one cannot have always the same regulatory process. Mr. Vaughan stated that the Committee had agreed on the preparation of the guide and that the Committee knew that this was going to be a difficult task to accomplish. Then Mr. Vaughan asked Member States willing to embark on nuclear power whether the guide was of use already. Member states underlined that the draft was already very useful to help drafting regulations dealing with the licensing process for nuclear installations and that the guide should move forward to the CSS.

Mr. Vaughan closed the discussion by stating that the draft has to go also to the other Committees and thus he wanted to see the version after their meetings. He suggested that the Secretariat provides NUSSC with a final version with the comments from the Committees implemented (mark-up version) as well as a new resolution table by the beginning of July. He suggested that the Committee has a chance to comment on the final draft until the end of July (Action 27.4). NB.: Mr. Vaughan came to Vienna on 02/07/2009 and screened the comments of NUSSC members and the resolutions taken in the text and helped editing the text so that all NUSSC members’ issues are properly addressed.

It was concluded that without any strong argument going against the submittal to the CSS of this draft before the end of July, DS416 should move forward to the CSS in October 2009; such a decision will be taken by the four Chairs in July as appropriate. NB.: The English, style, formatting and consistency with other guides will be reviewed and enhanced by an IAEA specialist in August 2009 before being put on the Web for the CSS.

- NUSSC agreed that the Secretariat provides a final draft implementing the comments of all Committees together with a new resolution table by the beginning of July.

- NUSSC agreed to send comments to the Secretariat by end of July. The four Chairs will eventually decide in the light of some potential additional NUSSC members’ comments whether the guide can move forward to the CSS.

3.6 DS422 Evaluation Seismic Hazard for Nuclear Installations

Mr. Godoy gave a presentation on DS422, the revision of NS-G-3.3. He reiterated that the current version NS-G-3.3 “Evaluation of Seismic Hazards for Nuclear Installations”, also previous versions, were issued in 2002 and extensively used and recognized by the Member States. The DPP DS422 for the revision was approved by NUSSC and WASSC in April and May 2008. The draft was approved by NUSSC and WASSC for Member States comments in October/November 2008. The draft was sent to Member States for comment (deadline April 2009). He is now asking NUSSC for approval to send the draft to the Commission for the meeting in October 2009.

The new draft together with the comments resolution table had been uploaded on the website for comment by the NUSSC members prior to this meeting. Mr. Godoy had received a total of 291 Member States comments (Austria 9, Finland 2, Germany 26, Hungary 3, Indonesia 5, Japan 20, Lithuania 8, Mexico 1, Morocco 3, Romania 22, Russian Federation 57, Spain
Mr. Godoy pointed out that many MS Comments were focused on the minimum recommended value of seismic hazard, because the recommended value for the minimum seismic hazard (pga tied to an appropriate response spectrum) was raised from 0.1g to 0.15g. He received comments on this particular issue ranging from (a) being supportive of the change, (b) against the change/not necessary, and (c) against the change/should be considered in the design related safety standards.

Mr. Godoy informed NUSSC that the issue was resolved with the introduction of a revised paragraph. This was discussed at a Technical Experts Meeting in Tokyo, last February, which was held specifically to discuss thoroughly the MS comments on this safety guide which gave the Secretariat the opportunity to receive and discuss many substantive comments.

He then presented to NUSSC the old and new versions of this particular paragraph. Paragraph 2.14 (before MS comments):

“Uncertainties that cannot be reduced through site investigations (e.g. use of ground motion attenuation relationships derived for other parts of the world) does not permit hazard values to decrease below certain threshold values, in particular, considering the low annual exceedance frequency required for the earthquake levels adopted for design basis. For this reason and regardless of any lower apparent exposure to seismic hazard, and as good safety practice, a minimum of 0.15g peak horizontal ground acceleration should be adopted for the design of all new nuclear power plants as a value to scale the appropriate ground motion response spectra that corresponds to the seismic level 2 (SL-2) earthquake, as determined in Section 9 (see also Ref. [5]). For same reasons, a minimum value of peak horizontal ground acceleration may be specified when the seismic hazard for existing nuclear power plants is re-assessed as recommended in Ref. [6], but not lower than 0.10g…”

Paragraph 2.10 (with comments incorporated):

“Uncertainties that cannot be reduced through site investigations (e.g. use of ground motion attenuation relationships derived for other parts of the world) does not permit hazard values to decrease below certain threshold values. For this reason and regardless of any lower apparent exposure to seismic hazard, a minimum level should be recognized as the lower bound to any seismic hazard study performed for a nuclear power plant using this Safety Guide. Generically this level should be represented by a horizontal free field standardized response spectrum anchored to a peak ground acceleration value of 0.1g. It should also be recognized that when geological and seismological data have deficiencies in comparison to what is recommended in Chapter 3, the value of 0.1g will not represent a sufficiently conservative estimate of the hazard. This should be properly represented in defining the design basis and re-evaluation parameters in References [5] and [6], respectively.”

Mr. Godoy then informed NUSSC on the comments he received prior to this 27th NUSSC Meeting. He had received a total of 81 comments from the NUSSC members (Austria 5, France 28, Japan 12, Pakistan 7, Switzerland 7, UK 16, and USA 6) of which he had accepted 57 and rejected 24 comments.

He presented, in particular, a summary of the main issues which were resolved:

Issue 1: FRANCE-ASN suggested during the 1st round of review, to delete the graded approach for nuclear installations other than NPPs because this is not the practice in the country. It is proposed to delete Section 10.

IAEA proposal: To keep Section 10 as decided by NUSSC and CSS, according to approved DPP and the following phrase is added in Para 1.8 to take account of the French comment:

“The recommended direction of grading is to start with nuclear power plant related attributes and to grade down to installations associated with lesser radiological
consequences. Therefore, if no grading is performed the recommendations related to nuclear power plants are applicable to other nuclear installations.”

There were some minor comments on this issue from France and it is now considered resolved. A comment from ASN regarding the request to delete para. 6.3 will be resolved with the French representative.

**Issue 2: GERMANY** indicated, during the 1st round of review, “that the logic tree” approach was suggested to represent epistemic uncertainties and this was not appropriate. However, they have suggested the deletion of all paragraphs that referred to epistemic uncertainty, i.e. the uncertainties that are extrinsic or modelling in nature and that arises due to differences in interpretation by informed experts. It is not suggested any methodology to deal with this problem.

**IAEA proposal:** Epistemic uncertainties are important in SHA and deleting recommendations concerning their treatment would be contrary to the tendencies of specific current MS practices. Specific references to the logic tree approach as well as others (such as the Monte Carlo method) are mentioned only in two places (para 2.10) and provided clearly as examples.

According to Mr. Godoy, the issue was resolved. No further comments were received from Germany in relation to the last version of the draft.

**Issue 3: JAPAN** has provided very useful material to be included in the SG regarding the use of source simulation for ground motion prediction models. This represents the current methodology in Japan and can be applied in regions where high quality seismic records are available in large quantities and for nearby fault that can contribute significantly to the seismic hazard.

**IAEA proposal:** In order to reflect this practice the following paragraph has been added to the SG: “. . . 5.14 In seismically active regions where data from ground motion caused by identifiable faults are available in sufficient quantity and detail, simulation of the fault rupture as well as the wave propagation path is a recommended procedure to follow. In cases where nearby faults contribute to the hazard significantly; this procedure may be especially effective. The parameters needed include fault geometry (location, length, width, depth, dip, and strike), macro parameters (seismic moment, average dislocation, rupture velocity, average stress drop), micro parameters (rise time, dislocation, and stress parameters for finite fault elements) and crustal structure, such as shear wave velocity, density and damping on wave propagation (i.e. the wave attenuation Q value). . . .”

According to Mr. Godoy, the issue was resolved. No further comments from Japan on this point. Other comments related to this issue have been accepted.

**Issue 4: ENISS AND FINLAND** suggested that the increase from 0.10g to 0.15g (para 2.12), for global pga minimum value for designing of new NPPs, has no grounds, particularly for lower apparent exposure to seismic hazard.

**IAEA proposal:** To keep the recommendation, adding the justification as follows: “Uncertainties that cannot be reduced through site investigations (e.g. use of ground motion attenuation relationships derived for other parts of the world) do not permit hazard values to decrease below certain threshold values, in particular considering the low annual exceedance frequency required for the earthquake levels adopted for design basis. For this reason and regardless of any lower apparent exposure to seismic hazard, and as a good safety practice, a minimum of 0.15 g peak horizontal ground acceleration should be adopted for the design of all new nuclear power plants as . “

According to Mr. Godoy, an optimal wording was suggested in the new draft that reflected both the best MS consensus and technical adequacy. Further comments (only from Austria and Switzerland) on this paragraph were rejected on this basis.
Mr. Godoy concluded his presentation by stating that all comments received from Member States (until 20 March 2009) and NUSSC Members (until 2 June 2009) have been resolved and reported in the corresponding resolution tables, which were available on the website. The revised version of the draft safety guide, i.e. rev 6, including all accepted comments (from MSs and NUSSC) were also available on the website.

Mr. Vaughan thanked Mr. Godoy for his presentation and concluded, in agreement with the NUSSC members that had made the comments and dealt with, that the guide could be sent to CSS.

► NUSSC agreed that safety guide DS422 Evaluation Seismic Hazard for Nuclear Installations could be submitted to CSS.

3.7 DS396 Safety Assessment for Research Reactors and Preparation of Safety Analysis Report

Mr. Boogaard gave a presentation on DS396 Safety Assessment for Research Reactors and Preparation of Safety Analysis Report. He reiterated to NUSSC that this guides is an update of SS35-G1 and supplements and elaborates on the safety requirements for safety analyses and the preparation of the safety analyses report for RRs which are presented in the Safety requirements for Research reactors NS-R-4. The objective of the DS396 is to provide practical guidance and recommendations to the operating organization on the performance of safety analyses and the preparation of the safety analyses report for RRs.

As for the development process, Mr. Boogaard informed NUSSC that the DPP was approved by NUSSC and CSS in 2005. The first draft was developed in two CSMs (September 2006 and December 2008). The main changes and adaptations according to him were related to the consistency with NS-R-4, the other safety guides for RR and other relevant safety standards. Appropriate references were made to corresponding guides for RR, NPPs, Legal and Governmental Infrastructure and to the new guides for management systems. The manuscript was approved by the Coordination Committee in April 2009.

The draft had been uploaded to the NUSSC website prior to the meeting. Mr. Boogaard had received comments from five NUSSC members (Algeria, Brazil, India, Israel and USA). All comments were carefully considered and the majority of the comments have been accepted. Mr. Boogaard pointed out that the comments resulted in a number of refinements (clarity of the text, consistency in the terminology used, improvements of the text of some chapters, improvements to cross-references and editorial corrections) and contributed to a further improvement of the document. The table of resolution was also uploaded at the NUSSC internet page prior to the meeting.

Mr. Boogaard then asked NUSSC for the approval to send the draft to MSs for comments.

Mr. Vaughan thanked Mr. Boogaard for his presentation and opened the floor for discussion.

Some members had commented on considering some input for operating experience in the draft. Mr Boogaard proposed to address this comment either in A1 “Introduction and general description” between historical overview and comparison with other facilities, because in this paragraph for an existing reactor, the operational experiences gained over the last decade could be presented or in A13 “Conduct of operations” were guidance could be given to describe the process to evaluate the operational experiences to improve safe operation. It was concluded by the meeting to address the comment both in A1 as well as in A13.

Some members asked why the manuscript consisted of 80% appendices. The reasons according to Mr. Boogaard were very simple: Firstly, they were in the previous text and secondly, they were considered useful, because they provide more detailed information.

Mr. Vaughan concluded the discussion by stating that the draft could be sent to MS for comment.
NUSSC agreed that safety guide DS396 Safety Assessment for Research Reactors and Preparation of Safety Analysis Report could be submitted to MS for comment.

3.8 DS405 Volcanic Hazards in Site Evaluation for Nuclear Installations

4.1 DPP DS405 Volcanic Hazards in Site Evaluation for Nuclear Installations

Mr. Godoy made a double presentation on DS405. He started with a presentation (agenda item 4.1) on the DPP for DS405 Volcanic Hazards in Site Evaluation in order to keep the sequence of approval (i.e. DPP approved before draft’s consideration). After that he continued with the draft DS405.

Mr. Godoy explained how the Secretariat ended up having a draft prepared before the approval of a DPP. He pointed out that since 2006 the draft was prepared following a decision by NUSSC in its 19th Meeting in May 2005 to promote the former Provisional Safety Standard Series No 1, published in 1997 to a safety standard. The background and status of development of the draft was presented to NUSSC in November 2008 with the decision that the draft should be submitted in June 2009.

Meanwhile, the Secretariat had realized that no DPP was requested and so a DPP was prepared (in parallel with the draft) to be compatible with the formal process. Mr. Godoy emphasized that the main concern expressed in all previous NUSSC meetings — in which the subject was discussed — was related to the contents and objectives of the guide, and the review of the draft assured that the preparation was done following the instructions and comments from NUSSC members. The DPP is compatible with the draft.

The DPP draft had been placed at the website prior for the NUSSC meeting. Mr. Godoy has received comments on the DPP only from Japan regarding the reference to volcanic events of last decade and probabilistic hazard assessment examples provided for the Yucca Mountain repository. Mr. Godoy pointed out that both comments were resolved and implemented into the new version of DPP.

With regard to the title of the DPP, the following title “Volcanic Hazards in Site Evaluation for Nuclear Installations” was proposed, according to the current scope of updated versions of the group of IAEA Safety Guides for Site Evaluation, under revision.

Mr. Godoy then drew the attention of NUSSC to the objectives of the guide. According to him, the guide provides recommendations and guidance on assessing the volcanic hazards at a nuclear installation site, so as to enable the identification and characterization in a comprehensive manner of all potentially hazardous phenomena that may be associated with future volcanic events. These volcanic phenomena may affect the acceptability of the selected site during the survey and selection process and some of which may determine corresponding design basis parameters for the installation.

The scope of the guide is the site evaluation for nuclear installations using a graded approach. The safety guide is included in the proposed long term structure of safety standards. In a future revision (2015), the scope will be extended to nuclear facilities.

Mr. Godoy then explained the document structure as follows:

1. Introduction
2. Overview of volcanic hazard assessment
3. General recommendations
4. Necessary information and investigations (Database)
5. Screening volcanic hazards
6. Site-specific volcanic hazard assessment
7. Nuclear installations other than power plants
8. Monitoring and preparation for response
9. Management of volcanic hazards evaluation

Appendix 1: Description of types of volcanic phenomena
Annex 1: Volcanic hazard scenarios
Annex 2: Worldwide sources of information

Glossary

Finally, Mr. Godoy asked NUSSC for approval of the DPP for sending it to the Commission.

Mr. Vaughan queried why the title did not extend to Nuclear Facilities as Yucca Mountain, being a repository was not covered by the term Nuclear Installations” yet was quoted. Mr. Godoy explained that Yucca Mountain was just mentioned as an example where the draft had been used. Mr. Vaughan thanked Mr. Godoy for his presentation and opened the floor for discussion.

NUSSC agreed on the content and structure of the DPP. However there was a discussion on the fact that — not for the first time — a draft had been prepared before the endorsement of a DPP. Certain members of NUSSC pointed out that this had happened before and that it had been said the procedure would be followed in future. Despite accepting the special reasons that were presented on that matter by the Secretariat, NUSSC strongly advised the Secretariat that a repeat of the situation will not be tolerated.

Mr. Godoy then presented the first draft of the safety guide DS405 Volcanic Hazards in Site Evaluation for Nuclear Installations as proposed to NUSSC in the 26th Meeting (item 3.10). He reiterated to NUSSC that the guide is the revision and upgrade of the former Provisional Safety Standard Series Nº 1, published in 1997. NUSSC in its 19th Meeting (2005) approved that the Provisional Safety Standard Series No.1 "Volcanoes and Associated Topics in relation to NPP Siting” be promoted to a safety standard. The safety guide is included in the proposed long term structure of the safety standards aimed to provide guidance on one of the requirements established in NS-R-3 Site Evaluation Requirements for assessing the potential volcanic hazards. The scope has been extended to the site evaluation for nuclear installations — instead of nuclear power plants — using a graded approach to put it in line with the NS-R-3 which is dealing with the site evaluation for nuclear installations.

He then gave an overview of volcanic phenomena. He pointed out that a detailed guidance is essential, because volcanic processes are complex and varied, and volcanic hazard assessment requires expertise and specialist knowledge. The safety guide provides a graded approach for assessing these complex volcanic hazards and allows also the hazard assessment to focus on phenomena that represent credible hazards to the site, rather than require an equivalent level of investigation and support for all types of volcanic phenomena and their hazards. In addition, the approach recognizes also the need for increasing levels of information, for increasing levels of potential hazard, and that sites located far from potentially active volcanoes may need to consider only a limited subset of potential volcanic hazards, whereas sites located closer to potentially active volcanoes may need to consider a full range of potential hazards. Mr. Godoy concluded that this safety guide is intended to recommend specific procedures and propose the investigations required for assessing the potential volcanic hazards. Finally, he pointed out that the draft safety guide is already being used by Armenia, Japan, Philippines, USA, Indonesia, and Italy for various kinds of applications.

As a summary, this safety guide will provide guidance on assessing the volcanic hazards at a site of a new or existing installation. It will be a key tool during the siting process providing advice on scientific and comprehensive criteria and methodologies to avoid that nuclear installations are sited or located close to volcanoes which can generate hazards. No such guidance is available and there is real needs for that, particularly, for those countries embarking in new nuclear power programmes.
Mr. Godoy then focused on the major developments in the guide preparation. Four consultancy meetings with a team of international experts from varied tectonic and volcanic regions of the world were held in March and Nov 2006, August 2007/2008. Draft 05 was prepared in Nov 2008 and review by a panel of highly qualified experts (France, Claude Jaupart; UK, Stephen Sparks and USA, Chris Newhall). In a fifth CS meeting the comments of the three experts was considered and the final draft 06 was prepared on 20 March 2009.

Draft version 6 had been uploaded on the website prior to the 27th NUSSC Meeting. He received a total of 27 comments on the draft (Austria 4, Japan 1, Pakistan 3 and USA 19) of which 25 were accepted and 4 were rejected. Mr. Godoy emphasized that all comments and remarks from NUSSC members were duly considered in the prepared draft. The resolution tables and new the version of the draft had been uploaded to the website.

Mr. Godoy asked NUSSC to approve the draft to be sent to MS for comments.

Mr. Vaughan thanked Mr. Godoy for his comprehensive information and opened the floor for discussion.

NUSSC agreed to not hold up the document unnecessarily and that the draft could be sent to MS for comments, and the DPP taken at its next meeting in October: should CSS reject the DPP, the commenting process would have to be curtailed. There were no additional issues raised.

- **NUSSC agreed that the DPP for DS405 Volcanic Hazards in Site Evaluation for Nuclear Installations safety requirements could be submitted to CSS.**

- **The Secretariat accepted that the procedure should be allowed and that, in future, DPPs will be produced and endorsed by CSS before drafting of standards begins.**

- **NUSSC agreed that safety guide DS405 Volcanic Hazards in Site Evaluation for Nuclear Installations could be submitted to MS for comments.**

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The meeting of the four Chairs on 3rd July 2009 decided that the draft DS405 has to be submitted also to WASSC for approval at its next meeting in November 2009. After the WASSC approval, the document could be sent to MS for comments. The DPP has to be endorsed by CSS.

The Chair of WASSC agreed to send the DPP to CSS and inform them that the DPP has not been submitted to WASSC and request CSS approval to proceed with the document preparation subject to the addressing of the WASSC comment to be provided at the November 2009 WASSC meeting.

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### 3.9 DS414 Safety of Nuclear Power Plants: Design

Mr. Gasparini gave a presentation on DS414 the design requirements for NPPs. The DPP was approved by CSS in November 2007. He reminded that the main issues for the revision of NS-R-1 were to ensure consistency with the new safety fundamentals and other new requirements, as well as taking into account the feedback provided by its users.

Mr. Gasparini explained that the concept of “Design Entity” (Design Authority) was introduced in the new draft. Repetitions of requirements formulated in general for all SSCs and again for specific systems were eliminated. However, specific requirements for auxiliary systems were introduced. For easier reading and comparison with the published previous requirements, the original numbering was kept in addition to the new one. Finally, the draft was written in the new format for requirements (key requirement (“shall”) and supporting requirements “is”, “are”).

Mr. Gasparini informed the Committee that draft (rev. 14) of the revision was submitted to NUSSC prior to this meeting. He had received a total of 360 comments from NUSSC 14 NUSSC members, 23 received after the deadline (Austria 43, Brazil 5, Canada 4, France 18, Germany 88, Italy 15, Japan 36, Pakistan 14, Sweden 18, Switzerland 5, UK 13, USA 49, EC 10 and ENISS 26). According to Mr. Gasparini, the comments in general were very clear, focused and supported by good explanations. They addressed maintaining stability of NS-R-1, improving clarity, completeness, and consistency of the text.

He then focused on the resolution of the comments. According to him, all comments had been carefully considered and a table with details of the resolution of each comment had been posted on the website. The large majority of the proposals had been accepted. Proposals that introduced repetitions, were considered to be more appropriate for a safety guide, were not in line with the new format for requirements, were already addressed in other safety standards, tried to introduce numerical values and targets, addressed “Cyber Security”, and suggested a text with a pure tutorial content were rejected. A new draft (rev.15) considering the comments had been prepared for NUSSC approval for submission to MS and posted on the website.

Mr. Gasparini in particular drew the attention of the Committee to some specific comments he had rejected:

1. Comment on numerical values and targets:
   - Replace “very low probability”, “extremely low”, “very low probability of occurrence” with “less than 10^-7 per year”
   - Replace “likely to occur during the service lifetime of the NPP” with “having an estimated mean frequency of 10^-2 per year or higher”
   - Replace “credible events” in 5.12 with “events having an estimated mean frequency of occurrence of at least 10^-6 provided that failure of safety systems in response to the initiating events results in a severe accident scenario frequency of less than 10^-7 per year”.

The Committee, after a short discussion, agreed on the decision of the Secretariat not to introduce numbers in the requirement. However, there was a short discussion on severe accidents. Some of the members were of the opinion that severe accidents were not appropriately covered the term Beyond Design Basis Accidents (BDBA). The Secretariat in return stated that one has to distinguish between Design Basis Accidents (DBA) and Design Basis which also includes BDBAs. One member suggested introducing ‘design basis envelope of the plant’. Finally, NUSSC agreed to keep the wording given in 5.21.

2. Comment on cyber security:
   - Comment: reword 1.7/8 in the Scope as below
     - This publication does not address nuclear security requirements, with exceptions for cyber security as outlined in Section 5 or 6"
     - “Consideration of cyber security is included in the design process at an early stage and continues throughout the entire process.”

The Secretariat had rejected the comment in order to avoid making an exception. In addition, the issue is addressed by the requirements 5.93. [5.65] Unauthorized access to, or interference for any reason with, structures, systems and components important to safety, including computer software and hardware, shall be prevented. Some NUSSC members were of the opinion that cyber security is an increasingly important issue and should be addressed; however, they admitted that it is not easily dealt with. Some members suggested this issue should be included in the new I&C DPPs (DS430 and DS431).

Mr. Vaughan thanked Mr. Gasparini for his presentation. There were no further issues raised by the Committee and thus he concluded the discussion by stating that the draft could be sent to MS for comment subject to the agreement of the other Committees.
NUSSC agreed that safety guide DS414 Safety of Nuclear Power Plants: Design could be submitted to MS for comment.

3.10 DS424 Establishing a National Nuclear Installation Safety Infrastructure

Mr. Graves gave a presentation on DS424. He informed NUSSC that the concepts of ‘Infrastructure’ and ‘Phases’ were introduced by the Nuclear Power Support Group (NPSG), an IAEA inter-departmental group with participants from across the Agency, whose objective is to provide a coordinated “one-house” assistance on infrastructure issues. The phased approach consists of three main phases, which end with a milestone:

Phase 1
Milestone 1: Ready to make a knowledgeable decision to launch a nuclear programme.

Phase 2
Milestone 2: Ready to issue the call for tenders for the NPP.

Phase 3
Milestone 3: Ready to commission and operate the NPP.

Mr. Graves informed NUSSC that the “Safety Infrastructure” concept was first introduced by INSAG. Accordingly, nuclear safety infrastructure is the set of institutional, organizational and technical elements and conditions established in a Member State to provide a sound foundation for ensuring a sustainable high level of nuclear safety. Safety infrastructure is the entire set of the safety-related elements of the national infrastructure necessary for implementing a nuclear power programme. Due to the importance of safety, those safety-related elements have requirements which they shall comply with. These requirements are stated in the IAEA Safety Standards. Thus, the “Safety Infrastructure” guide is a bridge between the milestones and the safety standards collection.

Mr. Graves then explained the role of the main entities throughout the establishment of a National Safety Infrastructure and the structure of each “element” of the safety infrastructure. The safety guide explains the responsibilities of each organization and actions to be taken in Phase 1 to 3 and which IAEA Safety Requirements to be complied with and which IAEA Safety Guides and other safety key-publications (INSAG…) are to be considered. According to Mr. Graves the text format for each phase consists of actions (“should statements”) and are listed and numbered.

As for the production of the guide Mr. Graves reiterated that the DPP had been approved by the Committees in May 2008 and by the CSS in September 2008. After several consultancy meetings, the scope had been enlarged (Phase 3 and additional areas were added). After internal coordination a first draft had been prepared and uploaded on the NUSSC website prior to the meeting.

Mr. Graves received a total of 201 comments by the NUSSC members Algeria 3, Brazil 5, European Commission 3, France 101, Germany 3, Italy 4, Japan 34 and United States 48 (last comments received Monday 15 June). All comments have been addressed and the resolution table was uploaded to the website. The majority of 110 comments were technical comments, followed by 72 editorial and 19 conceptual/general comments. 72 comments were editorial. According to him, 143 comments were accepted as they were, 32 were accepted with modifications and 26 were not accepted.

He presented in particular three significant comments that helped to clarify the text:

1. “Security is not addressed in this guide.”
   IAEA comment: The interfaces between safety and security are addressed in the guide (internal agreement within the Department of Safety and Security of the Agency).

2. Need for consistent use of “Government”/“State”.
IAEA comment: Will use the same wording as in DS-415 (GS-R-1), which has been discussed and agreed with IAEA Office of Legal Affairs) i.e. “government”).

3. “It should be noted that IAEA mandate rests with the ionizing radiations but that conventional risks (chemical…) are also generated by NPPs and should be regulated by the state, although it is not the purpose and scope of the guide.”
IAEA comment: True! This clarification has been added in the introductory part of the guide.

He then focused on seven comments that had been rejected for discussion within the Committee:

1. “This guide should consider cases where the country already has a regulatory body in place…”
   IAEA comment: This guide assumes little or no previous nuclear experience so as to be applicable even in countries with no nuclear infrastructure.

2. “…time should be allocated in the development timeline to allow successful completion of …developing a minimum national pool of expertise immediately following the decision to initiate a nuclear programme…but before any other action is taken.”
   IAEA comment: Staff development should be continuous and at the appropriate time to support the needs. Too early, and you lose the staff and/or the skills.

3. “Strengthen those parts of the standard that addresses the preparatory work to determine whether embarking on a nuclear programme is a good idea (financial capability, trained management and technical staff, national infrastructure)…”
   IAEA comment: Not necessarily safety-related, and this guidance is covered by other Agency documents.

4. “The regulatory body should specify the codes and standards which provide acceptable reference for design and construction of the plant.”
   IAEA comment: Too prescriptive. This might be done according to the national preference.

5. “Add a supplemental phase after phase 3 for maintaining and enhancing operational safety.”
   IAEA comment: Phase 4 is out of the scope. Moreover, in phase 4, all the existing IAEA Safety Standards apply as such.

6. “… or initially adopt a prescriptive regulatory approach and progressively moves to a performance-based approach as experience is gained.”
   IAEA comment: Too prescriptive. In this guide, we try to refrain from recommending a particular approach.

7. “Although safety research is a topic not to be forgotten, is it a major task to initiate for a state embarking on a nuclear power programme?”
   IAEA comment: The idea of this guide is to develop domestic research capabilities, including research for regulatory purposes, since international/foreign support cannot be expected to last forever.

Finally, Mr. Graves asked NUSSC for their approval to send the draft to Member States for comment.

Mr. Vaughan thanked Mr. Graves for his presentation and suggested to go through the seven rejected comments and their resolutions one by one before having a more general discussion on the draft. NUSSC agreed with the rejections and proposals made by the Secretariat. However, with regard to No. 7 it was suggested to define a little more what capabilities are really needed.

Mr. Vaughan then opened the floor for discussion. The Committee was of the opinion that the guide can be used as a roadmap for newcomers and is a useful document. The guide
outlines the elements that are needed to go nuclear, but does not establish a timeline; as such it is also very flexible. Some of the members emphasized that there is a need for a strong and independent regulatory body to avoid pressure by vendors or utilities. DS424 is a good approach and a good initiative in that regard. NUSSC agreed that the milestone document is lacking on safety issues. Only in combination with DS424 can the user see what safety issues should be addressed at a certain stage of the programme development.

Mr. Jamet, as already mentioned in his welcome address, wanted to make a proposal with regard to DS424. He stated that the safety guide is important for the work of NSNI. It is, therefore, essential that this safety guide be made available as soon as possible for use by Member States in a few pilot services for self assessments. He also informed NUSSC that he will address CSS at its meeting in October to make a recommendation for the immediate use of a mature draft of this safety guide (after MS) in order to support embarking countries, without interfering with the preparation process.

NUSSC approved this approach. Mr. Vaughan concluded the discussion that the draft could be sent to MS for comments subject to the agreement of WASSC, TRANSSC and RASSC.

► NUSSC agreed that safety guide DS424 Establishing a National Nuclear Installation Safety Infrastructure could be submitted to MS for comment.

3.11 DS379 International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources Draft Safety Requirements (Revision BSS)

Mr. Boal gave a presentation on the status of the BSS revision. He reminded NUSSC that the Secretariat had guidance from RASSC and the BSS Secretariat. One of the major goals was to retain BSS’s role as the international benchmark for radiation safety standards across all fields and recognize the need for stability in international standards, thus being conservative and justify proposed changes. The revised BSS has now the following structure:

- Section 1: Introduction
- Section 2: General Requirements for Protection and Safety
- Section 3: Planned Exposure Situations
- Section 4: Emergency Exposure Situations
- Section 5: Existing Exposure Situations
- Schedules:
  - Schedule I: Exemption and Clearance
  - Schedule II: Categorization of Radioactive Sources
  - Schedule III: Dose Limits for Planned Exposure Situations
  - Schedule IV: Criteria for Use in Emergency Preparedness and response

According to Mr. Boal, the interface between safety and security is currently being reviewed by NSNS to assure a link with the security guidance.

Mr. Boal informed NUSSC that draft 1.0 of the revised BSS was put on the website for comments. He had received more than 1200 written comments on the draft, which had all been considered and implemented into the next draft version. The draft had been reviewed by the Safety Committees in November 2008 to seek advice on specific comments and substantive issues. All comments from the last Committees meetings were addressed. A decision on addressing the radon reference levels will be made after the November meeting of the ICRP. The justification of non-medical imaging was also discussed but it needs review by the legal staff.

The Secretariat and the BSS secretariat had approved the move into the new format for safety requirements and proposed a process to achieve that goal.
Mr. Boal informed NUSSC that draft 2.0 was sent to IAEA Safety Standards Committees at the beginning of May 2009 for comments (deadline for comments 15th June). He now asked for the approval by all the Committees of version 2.0 in the current format and to start working in the new format. There will be continuous work of the Secretariat together with cosponsors on the “new format” document.

As for how to move into the new format, Mr. Boal pointed out that the identification of the “overarching requirements” by the IAEA Secretariat and the subsequent agreement with cosponsors was the first and most important task to achieve. There will be several drafting meetings with the cosponsors and the presentation of the proposed “overarching requirements” to the RASSC/WASSC was scheduled for November 2009. After the approval by RASSC/WASSC the “overarching requirements” and the text of some chapters of the document in November 2009, the complete draft in the new format will be submitted to all Committees in June 2010 for approval to send the draft to MS. A progress report to the CSS will be given in March and October 2010. The final approval of the BSS is tentatively foreseen in 2011.

Finally, Mr. Boal pointed out that some relevant assumptions were made that had been agreed also by CSS:

- Schedule on the revision process will have a delay of one or two years to assure a movement into the new format with all involvement of cosponsors and without losing quality and
- MSs will receive a draft only once the BSS is already in the new format; however, a document with all tracking and justification changes will be made available.

He then asked NUSSC to agree on the technical content and to transform the draft into the new format for safety requirements.

Mr. Vaughan thanked Mr. Boal for his presentation and opened the floor for discussion. NUSSC agreed that BSS should be written in the new format like all other safety requirements. However, the Committee requested a report on the discussions in the upcoming WASSC/RASSC meeting at the next NUSSC meeting in October 2009. In addition, it was requested that the Secretariat provides NUSSC with the “overarching requirements” with regard to nuclear installations by 20th September 2009 as well as a progress report at the 28th Meeting in October (Action 27.7). There was no further discussion.

► NUSSC looks forward to seeing the “overarching requirements” with regard to nuclear installations by 20th September 2009 as well as a progress report at the 28th Meeting in October (Action 27.7).

3.12 DS351 Use of a graded approach in the application of safety requirements for Research Reactors – Status

Mr. Winfield gave a presentation on the status of the preparation of the safety guide DS351 Use of a graded approach in the application of safety requirements for Research Reactors.

He informed NUSSC that the DPP was approved by NUSSC, in October 2004 and by CSS in June 2005. A first version had been prepared and is currently under internal review.

He briefly addressed the table of contents of the manuscript:
1. Introduction
2. Basic elements of the approach to grading
3. Regulatory supervision
4. Management and verification of safety
5. Site evaluation
6. Design
7. Operation  
8. Decommissioning  

Finally, he stated that it is planned to submit the draft to NUSSC in October 2009.  
Mr. Vaughan thanked Mr. Winfield for his presentation.  

 ► NUSSC looks forward to seeing the draft for review at the next meeting.  

3.13 DS413 Safety of Nuclear Power Plants: Operation – Status  
Mr. Kearney gave a presentation on the status of the preparation of DS413 Safety of Nuclear Power Plants: Operation. He reminded NUSSC that the DPP had been approved by NUSSC in April 2007 and by CSS in November 2007. The drafting had commenced in September 2007. A first draft was approved by the Committees in May 2008 for sending it to Member States for comments.  
According to Mr. Kearney, 434 comments by the Member States were received. A Consultants Meeting is planned for the 22 to 26th June 2009 to incorporate those comments.  
As for the future activities, he informed NUSSC that in parallel to addressing the MS comments, the document is being amended to be put in the new format for safety requirements. It is planned to submit the updated version together with the resolution table to NUSSC in October 2009 and then to the CSS in 2010.  
Mr. Vaughan thanked Mr. Kearney for his presentation. In order to enhance the review of the new format version, Mr. Vaughan suggested to Mr. Kearny that a table is prepared to indicate the changes made to the current version. Thus it would be easier for NUSSC to compare both versions.  

 ► NUSSC looks forward to seeing the draft in the new format for review at the next meeting.  

4. REVIEW OF DOCUMENT PREPARATION PROFILES (DPPS)  
4.1 DPP DS405 Volcanic Hazards in Site Evaluation for Nuclear Installations  
See agenda item 3.8.  

4.2 DPP DS429 External Expert Support on Safety Issues  
Mr. Philip gave a presentation on the DPP for DS429 External Expert Support on Safety Issues. He reminded NUSSC that the issue was already discussed during the 26th NUSSC Meeting. The Committee at that time had identified the following areas related to the regulatory body to be covered in a guidance documents:  
• The need for external expertise,  
• Criteria for choosing external expertise,  
• The role of external expertise in regulation,  
• Specifying the work to be done by external expertise.  
In that regard, the issue was not to choose between the options 1 and 2 as requested by CSS (stand alone document or implementing in an existing guide), but was how to ensure external expertise in all areas to fulfil the regulatory functions if there is insufficient internal expertise available. It had been pointed out that when using external expertise it must be ensured that regulatory decisions are made solely by the regulatory body, i.e. no outsourcing of regulatory decisions.
NUSSC had emphasized that it is important to have criteria and procedures to identify appropriate sources of expertise. These sources could be an organization, academia, research centres, nominated specialists etc. and the expertise may, if necessary, be obtained from other countries.

As for the role of external expertise in regulation it was of importance that the relationship between the regulatory body and the source of external expertise must be clearly defined to avoid conflict of interest. In addition the regulatory body must have sufficient internal expertise to both define the work required and to evaluate the results of the work of the external expertise to make the regulatory decision. Finally, when identifying and specifying the work required from external expertise, the regulatory body should take account of the scope, the criteria, and the time scale available for doing the work.

Mr. Philip informed NUSSC that a consultancy meeting was held in December 2008 to implement the comments made in particularly by NUSSC. The focus of the DPP was on the support needed/provided rather than on the entity providing that support.

He then focused on the table of contents of the proposed safety guide:

1. Introduction
2. Concept of external expert support
3. Characteristics of external support
   • Fundamental characteristics
   • Task-related characteristics
4. Process to select and use external expert support
5. Interactions of external expert support with stakeholders

Mr. Philip had informed the Committee that the DPP had been uploaded to the website prior to the meeting. He had received comments from Committee members of Brazil, Canada, EC, India, Japan, Pakistan, UK and USA. According to him, the majority of the comments were related to the scope/title of the guides suggesting to limiting to regulatory bodies and inclusion of security issues. Some other comments proposed to separate the guide or integration into existing document. Reference to the requirement DS415 was mentioned. Mr. Philip in return stated that the suggestion of the consultancy was to draft a stand alone guide and integrate it later into the new structure of standards. Details like confidentiality, security, same source being used by regulator and others which will be considered in the drafting of the safety guide.

Finally, Mr. Philip asked NUSSC for the approval to submit the DPP to the Commission.

Mr. Vaughan thanked Mr. Philip for his presentation and opened the floor for discussion.

NUSSC agreed that the issue should be dealt with in a separate future safety guide. The Committee discussed the scope of the guide, because some of the members wanted to limit the scope to regulatory bodies. Other members were of the opinion that the focus of the guide was mainly regulatory bodies and that it could be useful to have also some guidance for organizations other than regulatory bodies. However, they would not fight the limitation of the scope. Thus NUSSC agreed to ask the Secretariat to limit the scope to regulatory bodies. NUSSC after a brief discussion also agreed that security should not be part of the DPP. The Chair concluded the discussion by stating that the DPP could be sent to the Commission subject to the approval by the other Committees.

► NUSSC agreed that the DPP DS429 External Expert Support on Safety Issues could be submitted to CSS.

The other Committees had decided not to limit the scope of the guide. Thus the issue was brought forward to the meeting of the four Chairs on 3<sup>rd</sup> July 2009. The Chairs decided that the scope of the guide should not be limited to regulatory bodies. The DPP
4.3 DPP DS430 Design of Electric Power Systems for NPP

Mr. Johnson gave a presentation on a new DPP for DS430 Design of Electric Power Systems for NPP. The main indication for the new guide was that the formal scope of the current guide (NS-G-1.8) is limited to emergency power systems. Normal power systems and coordination with offsite power are also important to safety. They are addressed to some extent in existing guide, but not always easy to find. In addition, the role of these systems in minimizing challenges to emergency systems, and in limiting the effects of internal events (e.g. fire) and external events (e.g. grid upsets) should be more clearly addressed. Moreover, the role of electrical system design in coping with electromagnetic interference and lightning has become more important with the wide deployment of digital I&C in the plants. Certain topics, like cable & raceway systems and grounding, that apply to all electrical power systems (and I&C systems) important to safety are now addressed only in the context of emergency power systems.

The objective of this safety guide is to provide recommendations for design and implementation of electrical power systems important to safety. The guidance will be broadly applicable to nuclear power plants and are intended for application to both the design of new electrical power systems and the modernization of existing systems. Guidance will be provided for classifying electrical power systems by their importance to safety and on the application of design requirements to systems and components of different safety classification. Mr. Johnson then focused on the table of contents:

- Introduction
- Electrical Power Systems Important to Safety
- Safety Classification
- Design Basis
- Design Guidelines for Offsite Power
- Design Guidelines for Onsite Power
- Electromagnetic Compatibility and Lightning Protection
- Raceway and Cable Systems
- Design Confirmation and Documentation.

Mr. Johnson informed NUSSC that the DPP was uploaded on the NUSSC website prior to the meeting for comments. He received a total of 22 comments from NUSSC members (EC 4, France 2, IEC 2, Japan 2, Pakistan 2 and USA 10). According to Mr. Johnson, the comments covered the outline of the DPP (too high level), made recommendations for coordination with a wider range of other standards and discussed the scope of the guide, i.e. NPP versus nuclear installations. A table showing response to all comments was posted on NUSSC website.

He then focused on the resolution of the comments. Mr. Johnson pointed out that all comments on detailed topics were accepted and a more detailed outline had been developed.

Mr. Johnson drew the attention of NUSSC to three comments with regard to the scope of the guide:

1. Comment France: Why limiting the scope to NPP? Much of the draft outline is not really NPP specific. Some topics are however very much specific to NPP (see comment 2).

TO’s resolution: Expanding the scope would create a unique situation within the guides supporting NS-R-1. A cohesive set of guides under NS-R-1 should be retained. The guide will be very specific to NPP.
2. Comment France: Requirements for Protection Systems were reduced in the safety guide NS-G-1.3. The risk to further weaken these requirements is significant in a new safety guide (DS 431) with a broader scope. This concern is also relevant to DS 430 and argues further for retaining the scope as only NPP.

3. Comment IEC: Extending the scope of the standard to nuclear installations or facilities as to be considered cautiously and justifications have to be given that it will neither weaken the requirements when trying to encompass a wider scope nor jeopardize the revision process (time schedule or level of resource needed to master the extended scope).

**TO’s resolution:** Agree. A broader scope guide would have significant potential for weakening NPP guidance and would result in a complex document.

Finally, Mr. Johnson asked NUSSC for the approval to submit the DPP to the Commission.

Mr. Vaughan thanked Mr. Johnson for his presentation and opened the floor for discussion, in particular with regard to the scope. The majority of the Committee was of the opinion that extending the scope, which means mixing requirements for NPP, RR and FCF, would indeed weaken the document. Moreover, some members pointed out that some of the requirements for NPP don’t apply for FCF, for instance FCF have no complicated grid connections.

Mr. Vaughan concluded the discussion by stating that the Committee wants to keep the scope limited to NPP. No discussion took place on how to fill in the gap in the standards on Design of Electrical Power Systems for other nuclear installations.

**► NUSSC agreed that the DPP DS430 Design of Electric Power Systems for NPP could be submitted to CSS.**

### 4.4 DPP DS431 Design of I&C Systems for NPP

Mr. Johnson gave a presentation on new DPP for DS431 Design of I&C Systems for NPP. The main indications for the new guide was to address recently developed consensus and experience of Member States, e.g. recent IAEA reports, USNRC Standard Review Plan Update, Reg. Guide revisions and Interim Staff Guidance on digital I&C or HSE Safety Assessment Principles & Technical Assessment Guides and to address new technology and emergent design issues, such as complex electronics (e.g. FPGA), soft control of safety devices from non-safety workstations, highly integrated control rooms and computer security. In addition, the software guidance from NS-G-1.1 is reviewed and incorporated in the new guide and consistency with other new IAEA requirements and guides is ensured.

The objective is to combine the existing safety guides into a new updated guide that deals with both topics and to update the recommendations for I&C system design and software development to reflect consensus that has emerged in several areas since the original publication of NS-G-1.3 and NS-G-1.1. The guidance of NS-G-1.1 is outdated and covers in detail approaches to software life-cycle activities that are now common in high quality commercial development environments. The existing guidance of NS-G-1.1 needs to focus on issues of particular significance to nuclear power plant applications. The resulting guidance will then be merged with the updated content of NS-G-1.3 to produce one guide that gives a unified view of the design guidance for nuclear power plant I&C systems, hardware, and software important to safety.

Johnson then focused on the table of contents:

- Introduction
- I&C Functions and Systems Important to Safety
- Safety Classification
- Design Basis
• General Design Guidelines
• System Specific Design Guidelines
• Computer-Based Systems and Software
• Human-Machine Interface
• Design Confirmation and Documentation

Mr. Johnson informed NUSSC that the DPP was uploaded on the NUSSC website prior to the meeting for comments. He received a total of 38 comments from NUSSC Members (Belgium 1-11 parts, EC 4, France 6, IEC 3, Japan 3, Pakistan 2, UK 6 and USA 13). According to Mr. Johnson, the comments covered the outline of the DPP (too high level), made recommendations for coordination with a wider range of other standards, the merger of NS-G-1.2 and NS-G-1.3 and discussed the scope of the guide, i.e. NPP versus nuclear installations. A table showing response to all comments was posted on NUSSC website.

He then focused on the resolution of the comments. Mr. Johnson pointed out that all comments on detailed topics were accepted and a more detailed working outline had been developed and contains the topics identified in the comments.

Mr. Johnson drew the attention of NUSSC to the comments with regard to the merger of NS-G-1.1 & 1.3 and scope of the guide:

Comment (merger) 1: Some reviewers strongly supported the merger, some offered no objection, and others strongly opposed it.

Comment (merger) 2: The proposed merger is consistent with the strategy for establishment of safety standards, reduces number of standards, combines guidance where need can be fulfilled by expanding the scope of one guide and integrates as far as possible what relates to the design. It is acknowledged that software is a very important issue and the intent is not to reduce the importance of software guidance but to emphasize the most important points.

1. Comment France: Why limiting the scope to NPP? Much of the draft outline is not really NPP specific. Some topics are however very much specific to NPP (see comment 2).

TO’s resolution: Expanding the scope would create a unique situation within the guides supporting NS-R-1. A cohesive set of guides under NS-R-1 should be retained. The guide will be very specific to NPP.

2. Comment France: Requirements for protection systems were reduced in the safety guide NS-G-1.3. The risk to further weaken these requirements is significant in a new safety guide (DS 431) with a broader scope…

3. Comment IEC: Extending the scope of the standard to nuclear installations or facilities as to be considered cautiously and justifications have to be given that it will neither weaken the requirements when trying to encompass a wider scope nor jeopardize the revision process (time schedule or level of resource needed to master the extended scope).

TO’s resolution: Agree. A broader scope guide would have significant potential for weakening NPP guidance and would result in a complex document. As for the consequence of the merger on guidance on software, it is not a priori intended to reduce the level of guidance.

Finally, Mr. Johnson asked NUSSC for the approval to submit the DPP to the Commission.

Mr. Vaughan thanked Mr. Johnson for his presentation and opened the floor for discussion, in particular, with regard to the proposed merger of the two safety guides and the scope of the new guide.

The majority of the Committee agreed on a merger on the condition that the safety critical software issues are fairly considered and the requirements are clearly defined in the merged guide. NUSSC also agreed that the scope should be limited to NPP for obvious reasons discussed under agenda item 4.4.
Mr. Vaughan concluded the discussion by stating that the Committee agrees that the Safety Guides NS-G-1.1 & 1.3 are merged under the mentioned condition but wants to keep the scope of the guide limited to NPP. No discussion took place on how to fill in the gap in the standards on Design of I & C Systems for other nuclear installations.

- NUSSC agreed that the **DPP DS431 Design of I&C Systems for NPP** could be submitted to CSS.

### 5. MISCELLANEOUS

#### 5.1 Application of “graded approach” – Results of the Questionnaire

Mr. Vaughan gave a presentation on the results of the questionnaire an attempt to consolidate the responses. He reminded NUSSC that during the discussions on DS351 Application of the Graded Approach to Research Reactors and later on DS422 Evaluation Seismic Hazard for Nuclear Installations the issues on how to apply a graded approach had been raised. The Committee at that time felt that this issue should be discussed in more depth and decided to prepare a short questionnaire on the use of a graded approach in the Member States, which would be helpful for further decisions about the need for a safety guide with an extended scope (installations rather than RR).

According to Mr. Vaughan, seven members responded; six providing detailed answers to the questions. He then went through the questionnaire:

1. *(a) is a different depth and scope used in the regulation (e.g. review and assessment, inspection) of different facilities and activities by the regulatory body? (b) are the legal/regulatory requirements on the licensee/operator subject to a graded approach?*

   All respondents agreed that use is made of a graded approach both in terms of depth and scope and legal/regulatory requirements.

2. *Assuming such an approach is used:
   (a) what considerations are used in making a decision? (b) what factors are used?*

   All respondents consider risk, hazard, and consequence: Many making explicit the range from normal exposures to accidents and the effects on workers and the public. The type of installation and the activity carried out are the main factors.

3. *Is there any flexibility in applying these considerations? If so, how is it done?*

   In general, flexibility is allowed based on (engineering) judgement. One respondent said that after the initial decision the requirements are in the law.

4. *How is the approach justified and applied?*

   Responses were a mixture of use of resources and regulatory practices of assessment and inspection.

5. *At what stage of design/siting is the approach used?*

   No clear view emerged but there seems to be general agreement that the Graded Approach is used throughout the lifetime of the facility or activity.

6. *How is this approach explained to the public in the context of: a) site with a mixture of facilities? b) in relation to non-nuclear facilities?*
There is general agreement that the public is told about the approach but less consensus as to whether they are really aware. There is little experience of non-nuclear facilities though one respondent said that licensing was a more resource intensive form of regulation than is used in other contexts.

7. Would it be useful to develop a safety guide or other level document on this topic?

The response was varied but the majority was in favour of developing a SG, though two felt a lower tier document would be sufficient. One respondent said no, the approach should be embedded in all the safety standards.

Finally, Mr. Vaughan drew a conclusion by stating that it seemed to him that there was a consensus for some form of document, with the majority in favour of a safety guide, building on and extending DS351 Application of the Graded Approach to Research Reactors.

However, a way forward might be to initially develop a lower tier document (e.g. a TECDOC) with the intention of upgrading it or combining with DS351 as the new structure of safety standards is developed.

The Committee discussed the conclusion briefly and agreed with the Chairman that the task to prepare such a document was a very difficult one. Nevertheless, NUSSC members deemed it necessary, because the term “graded approach” is mentioned throughout the safety standards.

NUSSC agreed that the Secretariat considers preparing a TECDOC on the application of “graded approach” for nuclear installations/facilities (Action 27.6).

5.2. Revision of the IAEA Safety Glossary — Status


A CD-ROM was issued in October 2008 with the Safety Glossary and the Safety Fundamentals, both in six languages. More detailed information from the Introduction to the IAEA Safety Glossary and the Safety Glossary itself could be found at http://www-ns.iaea.org/standards/safety-glossary.htm.

Mr. Delves reiterated that the Safety Glossary defines terms and explains their usage. The objective is to clarify and harmonize terminology and usage in the safety standards and its purpose to provide a clear and consistent terminology for an integrated system of standards, with the aim of a ‘top down’ approach (i.e. prescriptive or leading) rather than ‘bottom up’ (i.e. descriptive or following) in drafting/revision, with terms and meanings to be verified against the Safety Glossary.

As for the review/revision of the Safety Glossary, Mr. Delves mentioned again action 12 of the 24th CSS Meeting in September 2008, which requested the Secretariat to prepare, in consultation with the Chairs of the Committees, a procedure for the review/revision of the Glossary and to submit the Glossary to the Committees for review. In October/November 2008 the approved “Review/Revision of the IAEA Safety Glossary: Draft Procedure” was submitted to all Committees as well as the Glossary itself (in six languages) for comment.

Committee members were to provide comments on the Glossary by 31 March 2009. According to Mr. Delves, he received comments from Germany, IEC, USA, World Nuclear Transport Institute, Japan, Spain, UK, ISO, Canada and India.

Mr. Delves pointed out that the Glossary will not be revised before the BSS has been issued (2012). The Secretariat has done some IT work for a Wiki-based Glossary and with regard to
an automatic search programme, to search for glossary terms in all the safety standards. He informed NUSSC that a Word file will be retained of the version under revision.

Mr. Vaughan thanked Mr. Delves for his presentation. There were no further issues raised.

6. CLOSURE OF THE MEETING

6.1 Actions following 27th NUSSC Meeting

Mr. Feige presented a list of actions following the 27th NUSSC Meeting (Appendix II). NUSSC approved the list.

6.2 Conclusions

Mr. Vaughan concluded the meeting of NUSSC by stating that despite this meeting being again a very busy one, all agenda items were dealt with. He thanked the Committee for their contributions and the highly professional discussions.

Mr. Jamet, Director of NSNI, concluded the NUSSC meeting and thanked Mr. Vaughan and the Committee. He appreciated that there was an open discussion on the working methods and on his proposal regarding the use of DS424 in pilot missions for embarking countries.
PARTICIPATION

NUSSC Members and Consultants

Mr. D. Merrouche               Algeria
Mr. G. Le Cann                 Australia
Mr. S. Sholly                  Austria
Mr. B. De Boeck                Belgium
Mr. A. Gromann De Araujo Góes  Brazil
Mr. A. Muzumdar                Canada
Mr. G. Rzentkowski             Canada
Mr. J. Peng                    China
Mr. I. Valcic                  Croatia
Mr. M. Svab                    Czech Republic
Mr. M. Ibrahim                 Egypt
Mr. P. Salminen                Finland
Mr. F. Feron                   France
Mr. D. Wattrellos              France
Mr. A. Atger                   France
Mr. J. Reckers                 Germany
Ms. C. Wassilew                Germany
Mr. F. Adorjan                 Hungary
Mr. K. K. Vaze                 India
Mr. H. Hirshfeld               Israel
Mr. G. Bava                    Italy
Mr. H. Ikedaoo                 Japan
Mr. T. Kanda                   Japan
Mr. H. Nakata                  Japan
Ms. H. Tezuka                  Japan
Mr. M. Demčenko                Lithuania
Ms. Azlina Mohammad Jais       Malaysia
Mr. M. A. Habib                Pakistan
Mr. M. Jurkowski               Poland
Mr. P. Uhrik                   Slovakia
Mr. D. Vojnovič                Slovenia
Mr. W. Leotwane                South Africa
Mr. J. Yllera                  Spain
Mr. J. Zarzuela                Spain
Mr. A. Hallman                 Sweden
Mr. S. Özdemir                 Turkey
Mr. S. Popov                   Ukraine
Mr. M. Bassett                 United Kingdom
Mr. A. George                  United Kingdom
Mr. G. Vaughan                 United Kingdom (Chairman)
Mr. M. Mayfield                USA

International Organizations

Mr. S. Vigne                   EC
Ms. V. Ranguelova              EC
Mr. W. Zaiss                   ENISS/FORATOM
Mr. B. Fourest                 ENISS/EDF
Mr. J.P. Bouard                IEC/SC45A
Mr. J. Reig                    OECD/NEA
Ms. I. Borysova                WNA
Mr. Th. Fröhmel, WNA

**IAEA Staff Members**

- Mr. Ph. Jamet, DIR-NSNI
- Mr. G. Feige, NSNI/Policy and Programme Support Section (NUSSC Scientific Secretary)
- Mr. T. Boal, NSRW/Radiation and Transport Safety Section
- Mr. J. Boogaard, NSNI/Research Reactor Safety Section
- Mr. St. Calpena, NSNI/Regulatory Activities Section
- Mr. G. Caruso, NSNI/Regulatory Activities Section
- Mr. D. Delattre, NS/Nuclear Safety and Security Coordination Section
- Mr. D. Delves, NS/Nuclear Safety and Security Coordination Section
- Mr. A. R. Godoy, NSNI/Engineering Safety Section
- Mr. M. Gasparini, NSNI/Engineering Safety Section
- Mr. D. Graves, NSNI/Regulatory Activities Section
- Mr. G. Johnson, NSNI/Engineering Safety Section
- Mr. M. Kearney, NSNI/Operational Safety Section
- Mr. D. Louvat, NSRW/Waste Safety Section
- Mr. G. Philip, NS/Nuclear Safety and Security Coordination Section
- Mr. A. Renev, NSNI/Operational Safety Section
- Mr. A. Shokr, NSNI/Research Reactor Safety Section
- Mr. D. Winfield, NSNI/Research Reactor Safety Section
APPENDIX I

AGENDA
27th Meeting of the Nuclear Safety Standards Committee (NUSSC)
16-18 June 2009, Vienna
Room C021, 09:30 a.m.

<table>
<thead>
<tr>
<th>1.</th>
<th>GENERAL ISSUES</th>
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</table>
| 1.1 | Opening of the Meeting | Mr. Ph. Jamet  
DIR-NSNI |
| 1.2 | Chairman’s Introduction | Mr. G. Vaughan |
| 1.3 | Adoption of the Agenda of 27th Meeting | For approval | NUSSC Members |
| 1.4 | Approval of the minutes of the 26th Meeting | For approval | NUSSC Members |
| 1.5 | Actions of 26th NUSSC Meeting | For information | Mr. G. Feige |
| 1.6 | Dates of the next meetings:  
- 28th NUSSC: 20 – 23 October 2009  
- 29th NUSSC: 28 June – 2 July 2010 | For approval | NUSSC Members |
| 1.7 | NUSSC Working Methods Issues | For information and discussion | Mr. G. Feige  
NUSSC Members |
| 1.8 | Feedback on Regulatory Arrangements and Current Developments in NUSSC Member States:  
Austria, Belgium, Brazil, Canada, Finland, India, Iran, Mexico, Poland | For information | NUSSC Members |
| 1.9 | Report of the 25th CSS meeting | For information | Mr. D. Delattre |
| 1.10 | Report of the 4th INSAG Meeting | For information | Mr. J. Bastos |
| 1.11 | Report on international activities:  
MDEP and WGRNR by OECD/NEA | For information | Mr. J. Reig |
| 1.12 | IEC/SC45A - I&C for Nuclear Facilities Digital Technology Aspects | For information | Mr. J.P. Bouard |

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<tr>
<th>2.</th>
<th>STRATEGY FOR FUTURE DEVELOPMENT AND APPLICATION OF THE IAEA SAFETY STANDARDS</th>
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<tbody>
<tr>
<td>2.1</td>
<td>Proposed List of Safety Guides for 2015</td>
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<tr>
<td>2.2</td>
<td>&quot;Strategies and Processes for the Establishment of Safety Standards&quot;</td>
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</table>
3. **REVIEW OF DRAFT SAFETY STANDARDS**

| 3.1 | DS 371 Storage of Spent Fuel | For approval for submission to CSS | Mr. D. Louvat |
| 3.2 | DS388 Chemistry Programme for Water Cooled Nuclear Power Plants | For approval for submission to CSS | Mr. A. Renev |
| 3.3 | DS412 Ageing management for Research Reactors | For approval for submission to CSS | Mr. A. Shokr |
| 3.4 | DS415 Governmental and Regulatory Framework for Safety | For approval for submission to CSS | Mr. G. Caruso |
| 3.5 | DS416 Licensing process for nuclear installations | For approval for submission to CSS | Mr. S. Calpena |
| 3.6 | DS422 Evaluation of Seismic Hazards for Nuclear Installations | For approval for submission to CSS | Mr. A. Godoy |

3. **REVIEW OF DRAFT SAFETY STANDARDS**

| 3.7 | DS396 Safety Assessment for Research Reactors and Preparation of Safety Analysis Report | For approval for submission to MS | Mr. J. Boogaard |
| 3.8 | DS405 Volcanic Hazards in Site Evaluation for Nuclear Installations | For approval for submission to MS | Mr. A. Godoy |
| 3.9 | DS414 Safety of Nuclear Power Plants: Design | For approval for submission to MS | Mr. M. Gasparini |
| 3.10 | DS424 Establishing a National Nuclear Installation Safety Infra-structure | For approval for submission to MS | Mr. D. Graves |
| 3.11 | DS379 International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources | For information before proceeding to new format | Mr. T. Boal |
| 3.12 | DS351 Use of a Graded Approach in the Application of Safety Requirements for Research Reactors – Status | For information | Mr. D. Winfield |
| 3.13 | DS413 Safety of Nuclear Power Plants: Operation – Status | For information | Mr. M. Kearney |

4. **REVIEW OF DOCUMENT PREPARATION PROFILES (DPPs)**

| 4.1 | DS405 DPP Volcanic Hazards in Site Evaluation for Nuclear Installations | For approval for submission to CSS | Mr. A. Godoy |
| 4.2 | DS429 DPP External Expert Support on | For approval for | Mr. G. Philip |
| 4.3 | DS430 DPP for Design of Electric Power Systems for NPPs | For approval for submission to CSS | Mr. G. Johnson |
| 4.4 | DS431 DPP for Design of I&C Systems for NPPs | For approval for submission to CSS | Mr. G. Johnson |

### 5. MISCELENIOUS

| 5.1 | Application of “graded approach” – Results of the Questionnaire | For information and discussion | Mr. G. Feige |
|     | Conclusions drawn from Questionnaire |                         | Mr. G. Vaughan |
| 5.2 | Revision of Safety Glossary | For information and discussion | Mr. D. Delves |

### 6. CLOSURE OF THE MEETING

| 6.1 | Actions following 27th NUSSC Meeting |                         | Mr. G. Feige |
| 6.2 | Conclusions                         |                          | Mr. Ph. Jamet  
|     |                                    |                          | DIR-NSNI |
|     |                                    |                          | Mr. G. Vaughan  
|     |                                    |                          | NUSSC Chairman |
## ACTIONS FOLLOWING 27\textsuperscript{TH} NUSSC MEETING

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
<th>Who</th>
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<tbody>
<tr>
<td>27.1</td>
<td>Prepare a few examples on the practicability of merging safety guides – former 26.11.</td>
<td>GF</td>
<td>ASAP</td>
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<td>27.2</td>
<td>Provide NUSSC with examples of safety classification exercises – former 26.15.</td>
<td>CT/GF</td>
<td>ASAP</td>
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<td>27.3</td>
<td>Regulatory arrangements and developments and using the IAEA safety standards. Presentations by Germany, Czech Republic, Slovenia, Spain, Sweden, EC. Presentations to be sent to Secretariat prior to the meeting.</td>
<td>GF/NUSSC members</td>
<td>Next NUSSC Meeting</td>
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<tr>
<td>27.4</td>
<td>DS416: Upload final new text (track mode) and resolution table implementing NUSSC, WASSC, RASSC comments before sending it to CSS.</td>
<td>SC</td>
<td>Beginning of July</td>
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<td></td>
<td>DS416: Send comments to Secretariat.</td>
<td>NUSSC members</td>
<td>End of July</td>
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<tr>
<td>27.5</td>
<td>Consider to establish a small group to review Safety Guides as a standing part of the process.</td>
<td>Secretariat</td>
<td></td>
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<td>27.6</td>
<td>Consider to prepare a TECDOC on the application of “graded approach” for nuclear installations/facilities.</td>
<td>Secretariat</td>
<td></td>
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<td>27.7</td>
<td>DS379 (BSS): Provide NUSSC with the overarching requirements with regard to nuclear installations addressed in the BSS.</td>
<td>TB</td>
<td>End of September 2009</td>
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<td>DS379: Brief report on the results of the RASSC/WASSC meeting.</td>
<td>TB</td>
<td>Beginning of July</td>
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<td>DS379: Send comments to Secretariat</td>
<td>NUSSC members</td>
<td>Not later than end of July</td>
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<td>27.8</td>
<td>Report back on DS405 and DS424 after WASSC/RASSC</td>
<td>Chairman</td>
<td>ASAP</td>
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Expected items for next meeting:
IRS Feedback, BSS, DS351, DS44, DS413, DS371, DS367, DPP DS432, Report on lessons learned in the construction of the new EPRs in France and Finland.