R1 Opening of the Meeting

The meeting was opened by Mr P-S. Hahn, Director of the Division of Nuclear Safety and Radioactive Waste, Department of Nuclear Safety and Security (NSRW). Mr Hahn underlined the high priority given to the implementation of the Nuclear Safety Action Plan and the other important initiatives of the Agency in response to the Fukushima accident. Medium and longer term countermeasures are receiving increasing attention in Japan and Mr Hahn welcomed the distinguished experts invited to assist in discussions on remediation and rehabilitation of contaminated land. Mr Hahn also briefed the meeting on a number of other important past and upcoming events involving NSRW.

Mr Hahn introduced the new Section Head of Radiation Safety and Monitoring (RSM), Mr M Pinak and wished him success in his role, urging him to ensure that radiation protection receives the recognition and attention it deserves. Finally, Mr Hahn thanked Mr J. Loy (United Arab Emirates) for agreeing at short notice to chair the meeting in the absence of Mr Massera, who was unfortunately unable to attend.

In response, Mr Pinak thanked the Director and assured RASSC of his commitment to supporting its work. He underlined the importance of improving the quality of guidance developed to assist Member States and indicated that the full implementation of the Basic Safety Standards was one of his main priorities. Mr Pinak encouraged all members and observers of RASSC to bring forward ideas and to work in a cooperative manner with the Secretariat on behalf of Member States.

R2 Chairman’s Remarks

The Chairman thanked the Secretariat for the confidence placed in him as Chairman for the meeting. He noted the interesting and important items to be discussed, including exposure due to radon, the revised dose limit for the lens of the eye, the proposed Code of Conduct relating to scrap metal and the review of safety standards in light of the experience following the Fukushima accident.

The Chairman welcomed three newly-appointed RASSC members: Mr El-Fawaris (Libya), Ms. Mpete (South Africa) and Mr Leupin (Switzerland). Nominated replacements were present from the Republic of Korea (Mr Lee), South Africa (Mr Tselane), UNSCEAR (Mr Shannoun), WHO (Ms van Deventer), EC (Mr Mundigl) and WNA (Mr Townes). Apologies were received from Algeria, Australia, China, Croatia, Indonesia, Lithuania, Malaysia, Netherlands, New Zealand, Pakistan, Peru, Slovenia, Turkey, ISSPA and PAHO.

R3 Administrative Arrangements

The Secretariat drew attention to the location of the emergency exits, introduced the administrative support staff for the meeting and summarized the administrative arrangements.
R4 Adoption of the Agenda

The Chairman noted that item 10.1 would now be taken on Thursday morning and that item 10.3 would be taken in conjunction with items 13.2 and 13.3. The presentation on item 10.2 would be given by Mr Pröhl (in place of Mr Rowat), on item 13.1 by Mr Bevington (in place of Mr Caruso) and on item 15.2 by Ms Capadona (in place of Mr Stewart).

The Chairman indicated the need for some flexibility in the order of business to take account of the availability of members of the Secretariat. This was agreed and the amended agenda was adopted.

R5 Chairman’s Report of RASSC 31

No comments were received on the draft report posted on the RASSC website and there were no additional comments raised from the floor. The report of the RASSC 31 meeting was adopted.

R6 Actions arising from RASSC 31

Mr T. Colgan reported on the action items from the RASSC 31 meeting, including the joint session with WASSC. The four safety standards and four DPPs approved at RASSC 31 were all endorsed by the CSS at its meeting in March 2012. The three safety standards approved for submission to Member States have been issued for 120 day comment and the resolution of comments will be addressed during RASSC 33 in November 2012.

All other action items had been addressed and, where appropriate, will be considered at this meeting. The report on the BSS workshops in Malaysia and Costa Rica will be presented, along with the outcome of the BSS Workshop in the Ukraine, at RASSC 33.

R7 General Safety Standards Issues

R7.1 Feedback from the Commission on Safety Standards

Mr D. Delattre gave an overview of the items discussed at the 31st meeting of the Safety Standards Committee (CSS) held in March 2012, which is the first meeting of the new term under the chairmanship of Ms Dana Drabova. Mr Delattre noted that the target of finalizing all General Safety Requirements by 2013 and all Specific Safety Requirements by 2015 seems to be achievable. Four safety standards have been published to date in 2012 and a further 11 have been endorsed by the CSS and are now being prepared for publication. The CSS has prepared a list of 14 priority issues for its four-year term and has requested that progress in addressing each of these be addressed at meetings of the four chairs.

The Chairman noted that six of the CSS priorities are directly relevant to the work of RASSC, namely

(1) Exposure due to radon;
(2) Medical exposures;
(3) Application of the principle of justification;
(4) Harmonization of criteria for exemption and clearance;
(5) NORM-related issues; and
(6) Occupational radiation exposure, including its application to rescuers.
The discussions of the CSS in relation to the review of safety standards following Fukushima are addressed under agenda items 10.3 and 13.2.

**R7.2 Establishment of the Nuclear Security Guidance Committee**

Mr I. Barraclough reported on the Nuclear Security Series of documents, published by the Agency since 2006. The structure of the Series consists of fundamentals, recommendations, implementing guides and technical guides. The management and approval process for these documents is now being put on a more formal footing by the establishment of the Nuclear Security Guidance Committee (NSGC). The NSGC will report directly to the Deputy Director General. In the longer term, an integrated series of standards is envisaged with oversight by a new Safety and Security Series Commission, but progress in this direction will depend on experience with the NSGC.

For RASSC, there are two direct and immediate implications:

1. An Interface Group will be established, consisting of the four chairs of the Safety Standards Committees and four representatives of the NSGC. This Group will be responsible for the review of DPPs for both safety standards and documents in the Nuclear Security Series to determine if an interface exists between safety and security. Such documents will be developed in consultation; and
2. Where documents in the Nuclear Security Series have an implication for safety, the DPPs will be approved by the relevant Safety Standards Committees, who will also be involved in review and approval of the documents in a manner similar to what happens currently with safety standards.

Later in the meeting, Mr D. Delattre reported on the inaugural meeting of the NSGC which took place on 12-14 June 2012. The terms of reference have been agreed and these broadly follow those of the Safety Standards Committees. The Chair of the NSGC has been confirmed as Mr Geoffrey Emi-Reynolds of Ghana and the DDG has approved 53 nominees from Member States. In addition, the four members of the interface group have been agreed. Meetings of the NSGC would be scheduled in parallel with those of the Safety Standards Committees so as to streamline the approval process and minimize delays. The NSGC has proposed an independent review after three years to consider working practices and the interaction with the Safety Standards Committees.

An initial review of the 41 safety standards under development has indicated that up to 20 of these may have an interface with security and, as such, are relevant to the work of the NSGC. There are a further ten safety standards for which the safety-security interface is unclear. Of the documents under development in the Nuclear Security Series, eight have a safety-security interface with RASSC.

RASSC welcomed the development of the NSGC, underlining that safety and security issues should be seen as complementary. RASSC considered it desirable to move towards a more unified system of documents and suggested that integration should begin at the level of safety guides, possibly starting with those dealing with sealed sources.

**R7.3 Roadmap for the Development of Safety Standards**

Mr T. Boal summarized the current status of safety standards, including supporting documents such as safety reports and TECDOCs. The DPPs for two new safety guides will be developed for discussion
at the next meeting of RASSC and this will complete the suite of safety standards for which RASSC is the lead Committee. A summary document was circulated in advance of the meeting.

The deadline for Member States to comment on the safety guide “Application of the Principle of Justification to Practices, including Non-Medical Imaging” (DS401) has expired and 107 comments have been received from nine countries. These will be considered and the revised text submitted to RASSC 33 in November 2012.

To date five international organizations (FAO, ILO, NEA/OECD, UNEP and WHO) have confirmed their intention to jointly sponsor the BSS. Errors, including those arising following translation, are being corrected and it is hoped to publish the final version in 2013 once the EC and PAHO have completed their respective internal approval processes.

R7.4 Online Access to Safety Standards and Other Publications

At its previous meeting in December 2011, RASSC recommended that the online access to safety standards, and in particular to supporting documents such as safety reports and TECDOCs, should be improved. Ms K. Asfaw reported on the current status of work to improve accessibility of all Agency publications and demonstrated the different routes via the IAEA website of identifying individual publications or groups of publications. Ms Asfaw stressed that a number of publications that have been superseded can still be accessed if searches are carried out on other websites and urged caution in this regard.

RASSC expressed strong support for the on-going improvements to the IAEA website and welcomed the greater accessibility and easier identification of specific publications. The ILO recommended that all documents that have been superseded should be clearly identified as such to avoid confusion.

There was some discussion about the availability of the draft text of safety standards under development. The Secretariat confirmed that these could be made available to members of the Safety Standards Committees on request but were not openly available because of a concern that they might be regarded, or treated, as an agreed text. The Secretariat also confirmed that draft texts circulated to members of RASSC would clearly be indicated as being under development and care should be exercised if they are circulated to other individuals.

R8 Safety Standards under Development

R8.1 DS458: Radiation Protection and Regulatory Control for Consumer Products

Mr I. Gusev reported on the outcome of a recent Consultants Meeting to prepare text related to irradiated gemstones. He outlined the gemstone supply chain, noting where exposures can potentially occur and the components of the trade that might need to be regulated. The Consultants Meeting addressed the issue of justification, the frivolous use of radiation in relation to gemstones and the dose rates that could potentially be received by members of the public. A revised structure for the safety guide was also proposed.

In a lengthy discussion, the following points were discussed

(1) The BSS does not state that the irradiation of gemstones is a frivolous use and decisions in that regard should be left to the individual regulatory body;
(2) Even if gemstone irradiation is not considered frivolous, the issue of justification still needs to be addressed;

(3) Belgium and Brazil consider that the irradiation of gemstones is not justified. However, both also recognize that in a worldwide market it is not realistic to prevent their distribution;

(4) Irradiated gemstones such as black diamonds have uses other than in jewellery i.e. in industry or for ornamentation. The scope of the safety guide therefore needs to be clear;

(5) Although industry norms are to release the gemstones whose activity concentration has fallen to 74 Bq/g, the dose calculations should be based on the BSS exemption values of 10 Bq/g.; and

(6) There were no objections to the revised structure proposed by the consultants.

Mr Gusev undertook to develop the text in line with the comments received and to continue consultation with the EC, ISO and NEA. It is anticipated that the document will be presented to the next meeting of RASSC for approval for submission to Member States.

R8.2 DS419: Radiation Safety in Well Logging

R8.3 DS420: Radiation Safety for Nuclear Gauges

Mr I. Gusev reported that both safety guides have been developed in parallel because of the degree of overlap in technical issues that exist. A second Consultants Meeting, which involved industry representatives, was held in March 2012 to review previously drafted text and identify any further necessary additions or changes. The Office of Nuclear Security has been fully involved from the outset in discussions and took part in both Consultants Meetings. Mr Gusev confirmed that both documents will be presented to the next meeting of RASSC for approval for submission to Member States.

R8.4 Safe Use of X-Ray Generators and Sources Used in Inspection Purposes – Proposal on the Scope of a New Safety Guide

Mr T. Boal noted that there is potential overlap with the safety guide “Application of the Principle of Justification to Practices, including Non-Medical Imaging” (DS401) in that the procedures used in non-medical imaging can also be applied to the screening of cargo. Mr Boal noted that the screening of cargo can sometimes inadvertently result in the exposure of individuals who may be concealed in the vehicle being screened and that, in some instances, the drivers of the vehicles might also be exposed.

RASSC agreed that the scope of the document should include the screening of humans for non-medical purposes (i.e. category 1 and category 2 practices as discussed in DS401), as well as the screening of cargo. The safety guide should address the safe use of these procedures rather than their justification. It was noted that similar equipment can give very different doses depending on the design criteria and the operating procedures. RASSC asked that the IEC standard for equipment used in the screening of people should be taken into account when preparing the safety guide.

The ILO noted the serious concern that exists about the exposure of workers who regularly pass through checkpoints where vehicles are screened using sources of radiation. While welcoming the new safety guide, the ILO proposed that supporting data should be collected on the frequency of
screening and the associated doses and published as a safety report or TECDOC. ILO also offered to contribute to the drafting and development of the safety guide.

R8.5 DS427: Radiological Environmental Impact Assessment for Facilities and Activities

Mr D. Telleria reported on the scientific issues that underpin the safety guide and the progress in developing the document. Radiological Environmental Impact Assessment (REIA) is conceived as the application of requirements for safety assessment needs for environmental impact assessment during licensing processes. The safety guide supports the safety requirements in GSR Part 3 (BSS) and GSR Part 4 on safety assessments. There is also a direct link with the safety guides “Radiation Protection of the Public and the Environment” (DS432) and “Regulatory Control of Radioactive Releases to the Environment from Facilities and Activities” (DS442).

As a part of the prospective assessment for planned exposure situations, the safety guide considers normal releases from different types of activities and facilities and also potential accidental scenarios. An assessment scheme for normal operations has been developed that uses a similar approach for humans and for the environment. The approach for humans is based on dose limits and dose constraints aimed at protecting individuals; the parallel approach for the environment is based on reference levels aimed at protecting flora and fauna at the species level. Potential exposure considerations will also be presented in the safety guide.

RASSC noted the interest that exists among Member States in the topics addressed in the safety guide, as well as the complexity of the issues and the consistency with the approach outlined in ICRP Publications 103 and 108. The document will be presented to the next meetings of RASSC, WASSC and NUSSC for approval for submission to Member States.

R9 Safety Standards for Approval

R9.1 DS407 SG: Criticality Safety for Facilities and Activities Handling Fissionable Material

Mr G. Jones outlined the history of the development of the document, which is to be reviewed by all four Safety Standards Committees. A total of 593 comments were received from 12 Member States. These were resolved through a Consultants Meeting and the revised text was posted on the websites of all four Committees on 2 April 2012. On 26 April, an updated version, that included changes made by the technical editor, was posted.

A further 291 comments were received from the Safety Standards Committees. Of these, 227 have been accepted and 64 rejected. The only comments clearly attributed to RASSC were received from the United Kingdom and the United States. A revised text (version 8) was posted on the RASSC website prior to the meeting and members of the Committee were notified.

RASSC had no comment on the document and approved it for submission to the CSS for endorsement.

Action: Subject to approval by the other Safety Standards Committees, the Secretariat to submit DS407 to the CSS for endorsement.

R9.2 DS450 SR: Decommissioning (revision of WS-R-5)
Ms M. Wong reported on the revision of all safety standards dealing with decommissioning, indicating where DS450 fitted into the overall structure. The DPP was approved in May 2011 and the text was subsequently developed through two Consultants Meetings and one Technical Meeting. The two most important issues raised relate to entombment and decommissioning timeframes. A further Consultants Meeting will be held in August 2012 to develop guidance on entombment, but it is not anticipated that this will impact directly on the requirements in DS450.

Following posting on the website, a total of 146 comments were received from the Safety Standards Committees, of which 102 have been accepted and 44 rejected. Changes have been made in the text to clarify that safety culture is not directly related to radiation protection. Requests to change the funding requirements, including having these removed entirely from the document, have not been accepted.

RASSC had no comments on the document and approved it for submission to Member States for comment.

**Action:** Subject to approval by the other Safety Standards Committees, the Secretariat to submit DS450 to Member States for comment.

**R10 DPPs for Approval**

**R10.1 DS460 SG: Communication and Consultation with Interested Parties**

Mr J-R. Jubin introduced the proposed new safety guide, underlining the need to communicate and consult with interested parties in a transparent and open manner. Public scrutiny is considered important as a means of improving safety. In this respect, communication and consultation with interested parties, including the public, is addressed in the Safety Fundamentals (principle 2) and in GSR Part 1 (requirement 36). The need for this new safety guide has been highlighted in a number of IRRS missions and welcomed by Member States. The new safety guide will be particularly useful for Member States, such as those embarking on a nuclear power programme, who have little experience in public communication issues.

A total of 86 comments were received from the Safety Standards Committees, of which 36 were editorial. Of the total, 43 have been accepted in full, 28 have been accepted in a modified form and 15 have been rejected.

In response to questions, Mr Jubin confirmed that the scope of the safety guide will cover all practices, including those that involve medical exposures. For consistency with GSR Part 1, public consultation in the development of emergency arrangements and in the recovery phase will be included. However, “crisis management” issues are excluded but are covered elsewhere in the safety standards. RASSC strongly recommended that the expression “crisis management”, which is popular with and widely used by the media, was not appropriate for a safety standard and another term should be used.

RASSC approved the DPP for DS460 for submission to the CSS for endorsement.

**Action:** Subject to approval by the other Safety Standards Committees, the Secretariat to submit the DPP for DS460 to the CSS for endorsement.
Mr G. Proehl introduced the new safety guide, noting that some of the requirements previously contained in “Remediation of Areas Contaminated by Past Activities and Accidents” (WS-R-3) have been revised and are now included in section 5 of the BSS. DS468 will update the supporting guidance consistent with the new requirements in the BSS, experience gained following the Fukushima accident and ICRP Publication 111. In addition, the need for additional guidance on policies and strategies and the involvement of interested parties has been identified.

A total of 54 comments were received from the Safety Standards Committees addressing issues such as non-radiological hazards, the importance of monitoring to support and guide remediation and the need to take full account of the experiences following Chernobyl. All comments were accepted, with the exception of a proposal to amend the title of the safety guide.

In response to a question, Mr Proehl confirmed that the safety guide would address, to the extent that is appropriate, issues related to the transition from an emergency exposure situation to an existing exposure situation. RASSC underlined the importance of this issue and indicated that the guidance, which may be relevant also to other safety standards, is an important issue for Member States. Later in the meeting, RASSC asked that the presentations and subsequent discussions under agenda item 11 (The Role of Optimization in Remediation and Rehabilitation) should be considered in the development of the document.

RASSC approved the DPP of DS468 for submission to the CSS for endorsement.

**Action:** Subject to approval by the other Safety Standards Committees, the Secretariat to submit the DPP for DS468 to the CSS for endorsement.

This item was introduced by Mr D. Delattre and was taken together with items 13.2 and 13.3 of the agenda. The gap analysis undertaken following the Fukushima accident has so far identified a number of areas where the safety requirements could be strengthened by adding new requirements or modifying some existing ones. Following discussions at previous meetings of the Safety Standards Committees and the CSS, a procedure was agreed to allow a number of safety requirements from different safety standards to be updated at the same time.

The proposal contained in DS462 refers to the revision of five Safety Requirements. The draft text included in the annex to the DPP is provided for information only and is not for approval at this stage; it is the first draft of the proposed addenda to the Safety Requirements that will be submitted for review by the Committees at a later date. As GS-R-2 and GS-R-3 are currently undergoing separate revision, no requirements related to these safety standards have been included in DS462. Mr Delattre also indicated that, at this stage, no revisions to the BSS are proposed but RASSC was asked to keep this under review as more lessons from the Fukushima accident emerged.

RASSC raised the issue of consistency of terminology and asked that all safety standards being reviewed should be checked to ensure that terminology is used consistently throughout the document i.e. that the same definitions apply to new text and to existing text that is to remain unchanged. RASSC also underlined the importance of ensuring that all relevant international
organizations are fully consulted in the revision process so that they can continue as joint sponsors of
the revised safety standards.

RASSC approved the DPP of DS462 for submission to the CSS for approval.

**Action:** Subject to approval by the other Safety Standards Committees, the Secretariat to submit
the document outline for DS462 to the CSS for endorsement.

**R11 Code of Conduct for Scrap Metal**

*R 11.1 Development of a Code of Conduct on the Transboundary Movement of Radioactive Material
Inadvertently Incorporated into Scrap Metal and Semi-Finished Products of the Metal Recycling Industries*

The accidental melting of a Cs-137 source in 1998 in Spain resulted in an airborne release, the
production of 270 t of contaminated dust and an estimated $26M in clean-up costs. Subsequently, a
voluntary agreement (referred to as the “Spanish Protocol”) was established between national
authorities, relevant private companies, and trade unions to minimize the possibility of future similar
events. Scrap metal is widely traded internationally and many States feel that radioactive material
that has been incorporated into imported scrap metal is a significant and recurrent problem.
Furthermore, there are no legal instruments in place that address issues such as notifications that
radioactive material has been discovered, radiation monitoring and return of the consignment to the
country of origin. Such issues were discussed at an international conference held in Tarragona in
2009, which called for a “binding international agreement between governments to unify the
approach to trans-border issues concerning metal scrap containing radioactive material”.

Mr E. Reber described a series of General Conference resolutions, a Consultants’ Meeting and openended meetings of Member States that have developed a draft international Metal Recycling Code of
Conduct. While the proposal from the Tarragona conference was that such an agreement should be
binding, based on discussions during the open-ended meetings and, in line with relevant General
Conference resolutions, a non-binding instrument is now seen as more appropriate. The principal
components of the proposed Code of Conduct are

1. The establishment of radiological criteria based on the exemption and clearance values
   contained in the BSS;

2. Radiation monitoring of consignments and provision of a radiation monitoring report;

3. Actions to be taken following the discovery of radioactive material;

4. Establishment of a framework for the return of consignments; and

5. Training of individuals.

The draft Code of Conduct has been circulated to Member States with a deadline for receipt of
comments of 31 July 2012. Depending on the degree of consensus, further meetings and
consultations may be necessary.

A framework for designating what material is subject to regulatory control is established in the BSS.
However, since the application of this framework is undertaken by individual regulatory bodies there
will inevitably be differences in its application from State to State. In response to a question on this topic, Mr Reber indicated that the draft Metal Recycling Code of Conduct includes quantitative acceptance criteria for scrap metal that is based on the clearance and exemption values in the BS. Some RASSC members considered that the Code needed to be supplemented by technical support manuals.

There was also some discussion on whether or not the Code should also address finished products that contain radioactive material. Mr Reber stated that the recommendation from the Tarragona conference and the General Conference resolutions that called for the development of a Code of Conduct only address scrap metal; however, the scope of the Code could be extended in accordance with the wishes of Member States.

The fact that not all metal recycling facilities are regulated by the regulatory body was mentioned as a concern regarding the ultimate application of the draft Metal Recycling Code. Mr Reber indicated that the Metal Recycling Code, like the existing IAEA safety guide (SSG-17 published in 2012), are both designed to address gaps in the current system of radiation protection i.e. metal recycling facilities are entities that are often presented with radiation hazards and it is expected that they will implement radiation safety provisions. However, the operation of such facilities is not always governed by regulatory requirements. Mr Reber indicated that a voluntary approach may be used to implement the provisions in the Metal Recycling Code of Conduct and that such an approach is described within the text of the Code. He noted that such an approach was part of the basis for the “Spanish Protocol” and is also discussed in SSG-17.

Mr Reber indicated that the Secretariat would keep RASSC informed on further work towards the establishment of the Metal Recycling Code of Conduct.

R12 The Role of Optimization in Remediation and Rehabilitation

The Chairman introduced the agenda item by welcoming the invited experts to the RASSC meeting. He noted the importance of the discussions in supporting the government and people of Japan in reaching decisions on the management of areas directly affected by the Fukushima accident and asked RASSC to also consider the implications for review and revision of the IAEA safety standards.

R12.1 The ICRP Approach to Optimizing Protection of People Living in Contaminated Areas

Mr J. Lochard, Chairman of Committee 4 of the International Commission for Radiological Protection (ICRP), presented the application of the Commission’s recommendations for the protection of people in emergency exposure situations (ICRP Publication 109) and for those living in long-term contaminated areas following a nuclear accident (ICRP Publication 111). The content of the latter publication is extensively based on the experience in Belarus following the Chernobyl accident.

The presentation covered the following specific issues:

(1) Transition from an emergency exposure situation to an existing exposure situation;

(2) Living in contaminated territories;

(3) Justification and optimization of protection strategies;

(4) Implementation of protective actions;
(5) Self-help protective actions and stakeholder involvement; and

(6) Radiation protection culture.

Transition from an emergency exposure situation to an existing exposure situation

The ICRP considers that the emergency exposure situation applies to the early and intermediate phase after an accident, while the recovery phase is managed as an existing exposure situation. When considering moving from an emergency exposure situation to an existing exposure situation, it is important to fully characterize the situation as a first step to controlling it. There is no fixed timescale for this, and it will depend on the nature and seriousness of the accident. The authorities should not take this decision until they have sufficient information on where, when and how people are exposed and will be exposed in the future.

In the immediate aftermath of an accident, the radiation protection “target” is to keep individual doses, received either acutely or in a year, below 100 mSv - above this value, there is evidence of an increased likelihood of deterministic effects and a significant risk of cancer (ICRP 103, § 236). When moving to an existing exposure situation, a band of 1-20 mSv annual dose should be applied with the long term objective of maintaining individual annual doses at or below 1 mSv. While 1 mSv is the dose limit to be applied when the public is exposed as part of a planned exposure situation, in the recovery phase following a nuclear accident the same degree of control no longer exists. Consequently, compliance with the 1 mSv dose limit is no longer realistic. In managing an existing exposure situation, reference levels should be chosen based on the scale of the accident and local circumstances.

Living in contaminated territories

Living in a contaminated environment is a complex situation generating a lot of concern among the affected population. All aspects of their daily life – the value of their home, the ability to sell their products, their social life - tend to be affected. There are strong concerns about their future and their family, which can in turn give rise to significant stress and illness. Sometimes the residents of contaminated areas are discriminated against on a personal level.

Many individuals also face the dilemma of whether to leave or to stay. To make this decision, one needs to understand the risk, to have means to protect oneself and one’s family, and to evaluate the conditions for sustainable living conditions. Very often the advice received from the authorities and from experts is not understood, and may even be contradictory. This adds to the feeling of isolation and helplessness and loss of control over their daily lives.

In any given region there is likely to be large variability in deposition, but exposures are also driven by individual behaviour and the socio-economic situation. This makes generalized statements, and generalized solutions, inappropriate.

Justification and optimization of protection strategies

Decisions to allow people continue living in contaminated environments must be justified, doing more good than harm. While mandatory relocation may be necessary, voluntary relocation should always be possible. Subsequent optimization should be a transparent step-by-step process to reduce and maintain exposures as low as reasonably achievable.
Decisions on protective actions should be made jointly by a combination of local authorities, professionals and the local population. In Belarus, this joint approach has been found to be the key to successful programmes. People need to feel they are in control of their own destiny and they should be supported in this by the authorities.

**Implementation of protective actions**

In terms of the optimization process itself, as discussed in ICRP Publication 101, it should normally follow the following five basic steps: (1) evaluate the exposure situation – where, when and how are people exposed; (2) identify the possible protective actions; (3) select the best protective actions under the prevailing circumstances, prioritizing the protection of those receiving the highest exposures; (4) implement the selected actions; and (5) evaluate the effectiveness of the actions taken by monitoring individual exposures and on-going health surveillance of the population.

In general, there are two types of action that can be taken. The first is to mitigate the situation and the second is to prevent exposure. As time goes by, greater focus is given to preventing exposure rather than mitigation.

**Self-help protective actions and stakeholder involvement**

While some decisions may need to be implemented by the authorities, experience has shown that the most effective approach is to empower local communities to take their own decisions. It is important to establish (or re-establish) a strong relationship between local authorities and the affected population. The local authorities need to listen to the concerns that are expressed and take practical actions to address these concerns through provision of information, training and technical assistance, as appropriate.

An essential element of this relationship is that the local population fully understands the radiological situation in which it finds itself and the options that are available to them. In turn, the local authorities must provide the necessary information in an open and transparent manner. While the local authorities may be tempted to present information in terms of deposition, air concentration, effective doses etc., these technical terms are normally not well understood. The concerns of the public are driven by more basic societal concerns such as the possible health implications (especially for their children), the ability to consume local foodstuffs, the value of their property and the impact on their local infrastructure and lifestyle.

**Radiation protection culture**

Radiation protection must support the process rather than drive it. An annual dose of 1 mSv should not be seen as a target in itself but rather the focus needs to be on improving the quality of life. It is also important to recognize that a divisive relationship can develop between affected and non-affected areas. This can manifest itself in many ways, including social exclusion and economic exclusion. Those living in affected areas may also be seen as receiving “benefits”, which can lead to jealousy and isolation.

The ICRP is no longer using the term “risk communication” as people do not make decisions based on risk, but rather on perception.

*R12.2 Public Involvement in the Rehabilitation Process – Experience after the Chernobyl Accident*
Ms Z. Trafimchik, Director of the Belorussian Branch of the Russian-Belorussian Information Centre, reported on the on-going work programme in Belarus as a result of the Chernobyl accident aimed at the development and practical implementation of information and communication strategies focusing on the regeneration of local society. Long term rehabilitation started in Belarus in 2001 and is still on-going, with a programme in place up to 2020.

The 21 most affected districts have a population of more than one million who live a rural lifestyle based on local food production supplemented by hunting, fishing and the collection of berries and mushrooms from forests. Highly contaminated areas, mildly contaminated areas and non-contaminated areas are found in close proximity and the concerns of the local population are focused primarily on the impact on their lifestyle and understanding the variability that exists in for example, whole body measurements among the local population. Locally produced and sourced foodstuffs are the primary source of internal contamination and also the basis of economic sustainability.

Twenty five years after the Chernobyl accident, the local population consists of three distinct groups: (1) those who witnessed the accident and lived through it; (2) those who grew up after the accident and lived through its consequences; and (3) those who regard the accident as a part of history. A State Information System, including over 50 information centres where electronic information resources are available to all affected communities. The work is aimed at presenting the cultural heritage of the area, memory of the accident and its transmission through future generations. Attitudes are changing from being a “victim country” to an “experience country”. Documenting and retaining memories of the accident and the achievement in overcoming its impact are important for the local community and also have the added value of helping to raise awareness of the importance of safety culture.

R12.3 Radiation Protection Criteria for Japan's Remediation and Rehabilitation Programme

Mr M. Nagata, Director for Radiation Protection Policy in the Nuclear Safety Division of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), provided an overview of the current situation in Japan. The following main points were covered

1. Prior to the accident, the dose limit for emergency workers was 100 mSv. On 14 March 2011, this was raised to 250 mSv to allow workers respond to the Fukushima accident. On 1 November 2011, the dose limit for new workers working at the Fukushima site was reduced to 100 mSv;
2. Up to the end of April 2012, six TEPCO workers had exceeded the 250 mSv dose limit. A further 161 workers (140 TEPCO employees and 21 contract workers) had received doses between 100 mSv and 250 mSv;
3. Since January 2012, for workers involved in decontamination different levels of control have been established based on gamma dose rates. For doses less than 1 mSv (0.23 μSv/h; 24 hours per day for 365 days per year), no controls are necessary. For doses in the range 1-5 mSv (up to 2.5 μSv/h; 40 hours per week and 52 weeks per year), simple dose controls are applied. For doses in the range 5-50 mSv, more detailed dose control strategies are applied;
4. Criteria have been established for the disposal of waste. Where the waste contains less than 8000 Bq/kg, the responsibility lies with the local municipality but above this value, to a
maximum of 100,000 Bq/kg the responsibility is with the national government. Various categories of landfill sites have been established to receive the waste;

(5) An external dose rate of 100 µSv/h has been established as the maximum dose rate at 1 m from a vehicle transporting removed soil and waste;

(6) On 1 April 2012, new maximum concentrations for radiocaesium in foodstuffs were established. These are (1) 100 Bq/kg for vegetables, grain, meat, fish and eggs (previously 500 Bq/kg); (2) 50 Bq/kg for milk, dairy products (previously 200 Bq/kg); (3) a newly established value of 50 Bq/kg for infant foods; and (4) 10 Bq/kg for drinking water (previously 200 Bq/kg); and

(7) While Japan is applying the reference levels recommended by the ICRP, the public does not fully understand the differences between dose limits and reference levels. In addition, there is confusion about the different radiation protection criteria to be applied in emergency exposure situations and existing exposure situations. These have become key communication issues that are difficult to address.

R12.4 Discussion

RASSC noted that, at the time of the Fukushima accident, ICRP Publications 103 and 109 were relatively new and not well digested within the radiation protection community. It was accepted that, with more experience, some modifications to the new radiation protection concepts may become necessary. RASSC also agreed on the need to better explain the rationale behind the new ICRP recommendations, particularly with respect to the concept of degree of controllability. In this regard, the approach to dealing with contaminated land is comparable to that for dealing with radon in homes.

RASSC confirmed that 1 mSv was the appropriate dose limit for members of the public exposed as part of a planned exposure situation (e.g. as part of a programme of remediation) when the situation can be fully controlled. In an emergency or subsequent existing exposure situation, when the same degree of control no longer applies, society is forced to address a situation where compliance with an individual dose of 1 mSv may not be realistic: we have to do the best we can and a proper balance needs to be established between radiation protection and quality of life. In such circumstances a higher level of individual dose (up to 20 mSv) is considered appropriate, with the eventual long term aim of reducing this to 1 mSv.

RASSC stressed the importance of public communication on general radiation issues so that the public can fully understand the situation in the event of an accident. RASSC recommended the use of social media to establish a credible presence which will then be used by the public in the event of an accident. Experience has shown that, while certain credence may be given to certain extreme views in the immediate aftermath of an accident, in time the public places more confidence in the more mainstream opinions.

RASSC recognized the importance of addressing the contamination of foodstuffs as part of any remediation strategy so that local populations can continue to depend on locally produced food of a high quality. RASSC also considered that the current situation with several different national standards, which are different to the guideline levels established by the Joint FAO/WHO Codex Alimentarius Commission for international trade, is not helpful. It was also noted that, regardless of
what national and international standards are in place, consumers are likely to discriminate against
foodstuffs produced in a contaminated area if other options are available.

There was considerable discussion on the question of “volunteers” who may be involved in
decontamination work but are not employed and paid in this capacity. If the public dose limit of 1
mSv were to apply, the number of hours an individual could assign to such work would be extremely
limited. It is also difficult to see how the doses of “volunteers” could be monitored or controlled.
RASSC recognized the difficulty faced by Japan in dealing with this issue and recommended that
guidance be developed for inclusion in appropriate safety standards.

The Chairman thanked all speakers for their contribution and reminded RASSC that further discussion
would take place on the issues raised following the presentations from International Organizations
(agenda item 14) and the other Safety Standards Committees (item 15).


R13.1 Overview of the Nuclear Safety Action Plan

Mr L. Bevington described the Action Plan which arose from the Ministerial Conference in June 2012
and was subsequently endorsed by the General Conference in September 2011. The Action Plan
addresses 12 priority areas and has been sub-divided into sub-actions, activities and tasks directed at
the IAEA Secretariat, Member States and other relevant stakeholders. There are approximately 170
activities and 650 tasks to be addressed directly by the Agency.

Mr Bevington identified the progress and achievements to date under each of the 12 priority areas.
He highlighted the publication of the reports of IRRS missions that have taken place over the past ten
years, the strengthening of the relationship with WANO through its membership of NUSSC, the
addition of CTBTO as the sixteenth member and co-sponsor of the Joint Radiation Emergency
Management Plan of the International Organizations (JPLAN), the establishment of a network of
biological dosimetry laboratories, a new TSO forum to scientific and technical co-operation and the
work on review and revision of the safety standards. Nineteen milestones have been produced for
States embarking on a nuclear programme and considerable progress has been achieved in
capacity building for these countries as well as those with an established nuclear programme.

All information on the action plan is available on a web platform accessible by Member States and
updated information is regularly published on the IAEA public website.

R13.2 Overview of the IAEA Plan for the Review of Safety Standards

R13.3 Plan for the Review of Safety Guides

Mr D. Delattre reviewed the background to this work, which is an integral part of the Nuclear Safety
Action Plan, and is based on the General Conference resolution GOV/2011/59-GC(55)/14. The
prioritization of the review process is to firstly review the set of safety requirements, focusing
initially on those requirements applicable for nuclear power plants and to the storage of spent fuel.
Where the need for the strengthening of existing requirements or the addition of new requirements
is identified, the associated guidance to assist with their implementation will be developed in
parallel.
Mr Delattre reported that the safety standards contain approximately 450 overarching requirements and a complementary set of about 4000 associated requirements. A total of 106 “lessons learnt” have been reviewed but most of these have previously been incorporated in the safety standards. The analysis undertaken indicates there are no significant gaps in the overarching requirements. A process has been developed whereby the requirements from a number of safety standards can be revised at the same time through one document profile; this is equivalent to a DPP, but covers several existing safety standards. A priority list of safety guides for review has also been developed by the Secretariat.

Specific comments have already been received from RASSC members representing France and Japan. The review and revision process will continue as more lessons from the Fukushima accident are identified. The outcome of the forthcoming extraordinary meeting of the Convention on Nuclear Safety to be held 27-31 August 2012 will provide important input.

Mr Delattre asked that the discussions at this RASSC meeting relevant to the review and revision of safety standards should be summarized in a document to be submitted to the next meeting of the Commission on Safety Standards as one of the inputs into the subsequent report to the Director General. Mr Delattre also invited RASSC to prioritize the revision of GS-R-2 within its work programme.

R13.4 IEC Update

Mr R. Martincic updated the Committee on the review of the safety standard “Preparedness and Response for a Nuclear or Radiological Emergency” (GS-R-2), the DPP for which was approved by all four Safety Standards Committees in June 2011 and by the CSS in October 2011. The existing safety standard was published in 2002 and is now being reviewed. The revised safety standard will be fully consistent with the BSS and ICRP Publication 103 and will strengthen the co-ordination between the authorities responsible for safety and security and requirements for international preparedness and response, including international emergency assistance. It will also address initial lessons identified following the Fukushima accident. Other emergencies over the past ten years have been reviewed to identify lessons learnt that may need to be addressed in the revised safety standard.

A questionnaire issued to all Member States by the Incident and Emergency Centre received 61 responses, of which the vast majority indicated that the content of GS-R-2 fully or well met their expectations. In addition, the review of GS-R-2 in the light of the Fukushima accident indicated that there were no significant gaps, although some requirements will need to be edited.

Mr Martincic noted that 12 international organizations who are members of Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE) have indicated their intention to jointly sponsor

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1 Such an approval process was considered under agenda item 10.3
the revised safety standard. A series of Consultancy Meetings are planned over the next several months to further develop the text and a Technical Meeting will be held 12-16 November 2012.

RASSC noted that experience in the review and revision of the BSS would suggest that the amount of work required may be more than currently envisaged. RASSC also highlighted the need of adequately addressing the transition from an emergency exposure situation to an existing exposure situation in the revised safety standard and to develop supporting guidance material. Some international organizations, who also participate in IACRNE, underlined the importance of their formal involvement in the development of the text prior to its submission to the Safety Standards Committees for approval.

R13.5 Discussion

The Chairman deferred discussion until after the presentations under agenda items 14 and 15.

R14 Overview of the Work of International Organizations related to Fukushima and Key Issues for the Future

R14.1 International Atomic Energy Agency (IAEA)

Mr G Proehl described the on-going work in relation to the development of guidance on the implementation of remediation strategies in urban and rural areas to reduce public exposures. Guidance is also being developed on the development of monitoring programmes to guide the management and remediation of contaminated land. In support of these initiatives, an international meeting “Decommissioning and Remediation after a Nuclear Accident” will be held in Vienna in January 2013.

A new initiative entitled “Modelling and Data for Radiological Impact Assessment” (MODARIA) has been established by the Agency as an extension of the work previously undertaken in the period 2009 to 2011 under the project “Environmental Modelling for Radiation Safety” (EMRAS II). At this stage 142 participants from 42 Member States have indicated an interest in participating. The purpose of MODARIA is to support implementation of the BSS and supporting safety guides in relation to public exposure through improved technical capability, the development of harmonized assessment tools and the establishment of an international forum for scientific discussion. A preliminary list of nine technical issues has been prepared, the scope of which go beyond issues raised by the Fukushima accident.

R14.2 Food and Agriculture Organization of the United Nations (FAO)

Mr C. Blackburn reported on behalf of Mr D Byron. He provided an oral over-view of FAO work related to Fukushima and focused on key issues, including the contribution of the FAO to the WHO Preliminary Dose Estimation report and the on-going work of UNSCEAR on dose assessment following Fukushima. The FAO continues to review and compile food monitoring data from Japan and, as of 30 May 2012, its database consists of over 172,000 entries, for over 500 types of foodstuffs, showing that over 97% of all samples tested comply with national limits established in Japan. The FAO is working in collaboration with IAEA, WHO and UNSCEAR and other organisations in the dissemination and interpretation of international standards, the compilation of monitoring data and related information related to food and agriculture and has a role in the implementation of the IAEA Nuclear Safety Action Plan. The joint FAO/IAEA division has also been called upon to offer
technical assistance and policy advice on issues within its remit. There is renewed interest in determining radioactivity in food and agricultural commodities, which is evident through applications for technical cooperation and capacity building projects, an example is a regional project in Latin American and Caribbean countries where there is an initiative to establish a database providing baseline levels for radioactivity in food produced in this region of the world.

Mr Blackburn referred to guideline levels for radionuclides in foods contaminated following a nuclear or radiological emergency that have been established by the Joint FAO/WHO Codex Alimentarius Commission and are applicable to foods traded internationally. A proposal to initiate a review of these guideline levels was raised at the Sixth Session of the Codex Committee on Contaminants in Foods, held in Maastricht, The Netherlands in March this year. This is a key future issue, and the Committee agreed to establish a working group to review current guideline levels and develop clear guidance on the interpretation and application of guideline levels, subject to approval by the 35th Session of the Codex Alimentarius Commission in Rome, Italy in July. Mr Blackburn asked RASSC to support the participation of the Agency in any future review of these guideline levels.

RASSC noted that the guideline levels had previously been developed by the Agency on behalf of the Codex Alimentarius Commission and strongly supported the active participation of the Agency in any future review.

R14.3 International Labour Organization (ILO)

Mr S. Niu described the work of ILO following the Fukushima accident in relation to worker safety. He noted that the deaths following Fukushima were not directly related to radiation exposure and underlined the importance of developing a holistic approach to workplace safety. The Fukushima accident has highlighted important safety issues related to emergency workers, sub-contractors and itinerant workers and the ILO is working with the IAEA and other international organizations to develop appropriate guidance. Mr Niu also emphasized the importance of promoting and implementing the BSS with particular emphasis on education and training, safety culture and ensuring a safe working environment.

R14.4 United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

Mr F. Shannoun described the mandate and on-going work programme of UNSCEAR. One of the current priorities is to evaluate the radiation exposure due to the Fukushima accident. The UNSCEAR report will provide an assessment of exposures and effects using scientifically based and quality-assured information. Detailed, realistic dose assessments will be conducted for the first year and insight will be provided as to the variability of individual doses. Projections for indicative doses will be made for coming years. Uncertainties/sensitivity analyses will be made to allow UNSCEAR make qualitative statements on the confidence in its conclusions.

The UNSCEAR assessment is being carried out by four working groups with responsibilities for data evaluation and quality control; radionuclide releases and dispersion; dose and risk assessments; and worker doses and health effects. Formal requests for information have been submitted to the authorities in Japan and to 30 other Member States. The Interim Report was approved at the 59th session of UNSCEAR in May 2012 and the final report is expected to be available in 2013.

R14.5 World Health Organization (WHO)
Since the Fukushima accident in March 2011, the WHO has been actively involved in the preparation and dissemination of public information, focusing in particular on the public health issues. Ms E. Van Deventer described the nature of this work, including the co-ordination with other international organizations.

Ms Van Deventer provided a detailed overview of the Preliminary Dose Estimation published on 23 May 2012. The assessment started in June 2011 and was carried out in co-operation with the FAO and IAEA. Several international experts also took part and both UNSCEAR and the Government of Japan had observer status at all meetings.

The assessment considered only public doses received in the first year following the accident and included external doses (deposition and cloud shine), inhalation and ingestion. Calculations were carried out for four population groups: (1) locations within the Fukushima prefecture; (2) neighbouring prefectures; (3) the rest of Japan; and (4) the rest of the world. Doses received within the 20 km evacuation zone were not considered as it was assumed that all inhabitants had been relocated at the time of first release from the reactor.

The main conclusion is that the maximum doses were in the range 10–50 mSv and were received by those living closest to the reactor i.e. within the Fukushima prefecture. Thyroid doses to infants were at most 100 mSv. Sources of uncertainty are identified in the report and Ms Van Deventer stressed that the results are preliminary in nature and that UNSCEAR is preparing a longer term and more comprehensive assessment.

RASSC noted that the conservative nature of the dose calculations was likely to have overestimated the actual doses received. The fact that relatively low individual doses were received was attributed to prompt action by the Japanese authorities in line with accepted best practice as documented in the IAEA safety standards. In response to a question regarding the discharges of radionuclides directly to the marine environment and dose contribution from consumption of fish and shellfish, it was reported that the Japanese fishing fleet was severely damaged by the earthquake and tsunami; as a result, very little seafood from the locality was available for consumption.

RASSC recommended that, once more complete data on the range of public doses becomes available, the implications for all relevant safety standards should be considered.

R14.6 European Commission (EC)

Mr S. Mundigl described the work carried out by the EC in the immediate aftermath of the Fukushima accident. The ECURIE emergency notification system was immediately activated to provide information to all EU Member States and operated continuously for three weeks. A decision has since been taken to upgrade ECURIE to a web-based system. The emergency preparedness and response arrangements that operate within the European Union are also being reviewed with a view to improving harmonization.

In response to concerns from Member States, the EC issued binding requirements on import screening of food and feedstuffs. Guidelines were also published on the screening of transport containers and goods. The values for the activity concentrations of radionuclides in contaminated foodstuffs contained in Regulation 3954/87 were revised downwards to the values that applied in
Japan. Further revision took place when the Japanese authorities published lower values in April 2012 (see agenda item 12.3).

Mr Mundigl highlighted the need for practical guidance to be developed for ports and customs officers in the event of an emergency and for the provision of consistent advice to travellers. The Fukushima accident highlighted the different approaches to controlling the circulation of goods (including foodstuffs) in international trade and the EC is considering a review of the values in regulation 3954/87 to take account of the differences between nearby and distant events.

R14.7 International Commission for Radiological Protection (ICRP)

Mr C. Clement updated RASSC on the on-going work of the ICRP in response to the Fukushima accident. A new Task Group 84, reporting to the Main Commission, has been established to identify the initial lessons for the system of radiological protection and is expected to issue its report in October 2012. The ICRP has also facilitated the involvement of its members in assisting the authorities in Japan and has worked as a conduit for sharing information. In support of this, ICRP Publications 109 and 111, which were published shortly before the accident, were summarized and Publication 111 was made available for free download from the ICRP website.

The ICRP has also established a Fukushima Dialogue Initiative (FDI) to share ICRP recommendations directly with local communities in Japan. Journalists have been invited to take part in all meetings and a number of visits by experts from Belarus and Norway have been arranged to discuss the post-Chernobyl experiences. To date two meetings of the FDI have taken place and a third is planned for Date City in July 2012.

R14.8 Nuclear Energy Agency of the OECD (NEA)

Mr E. Lazo reported that the NEA has established an Expert Group on the Radiation Protection Aspects of the Fukushima Accident (EGRPF) to collect recovery lessons and to organize preliminary discussions on criteria for trade in food and commodities following a nuclear accident. Mr Lazo stated that the NEA would support the development of an international standard on this latter issue.

Through its existing committees the NEA is assessing the implications of the Fukushima accident for ICRP publications 109 and 111, collecting information on government decisions to identify areas of inconsistency and compiling data on occupational exposure management in severe accident situations.

The NEA is actively participating in the Fukushima Dialogue Initiative and is organizing its 3rd Science and Values Workshop in Tokyo, 6-8 November 2012. This workshop will address assessment and management of low dose exposures and public health, protection of children and self-help protection approaches and non-cancer effects and public health surveillance.

R14.9 Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE)

Mr R. Martincic reported that 16 international organizations are members of IACRNE and co-sponsors of the Joint Radiation Emergency Management Plan of the International Organizations (JPLAN). The IAEA is the focal point and coordinator for IACRNE and in the aftermath of the Fukushima accident several meetings were successfully organized by video conference. One area of joint work was in the coordination of public information to ensure that all Q&A’s on the various
websites were fully consistent. A number of joint statements were prepared and it was normally possible to receive in-house approval within each organization within a 24-hour timeframe. Mr Martincic also reported on the use of social media which proved to be very important and useful.

R15 International Standards

R15.1 Waste Issues following Fukushima

Ms G. Siraky reported on key issues in waste management. WASSC considers that the requirements in the existing waste safety standards are applicable not only to normal operation conditions but also to post-accident conditions, they do not need to be amended. A number of issues have been identified that need to be addressed at the safety guide level. These include the management of large volumes of lightly contaminated material; licensing procedures for new treatment and storage facilities; stress tests for radioactive waste management facilities under severe accident conditions; remediation criteria; policies and strategies (joint issue with RASSC); interim storage of spent fuel; and the management of damaged core material and material from damaged spent fuel storage ponds.

Ms Siraky noted that priority will be given to the review of the safety guides “Remediation Process for Areas with Residual Radioactive Material” (WS-G-3.1) (DS468) and “Storage of Spent Fuel” (SSG-15). Consultancy Meetings are being arranged to develop guidance on the other specific issues.

R15.2 Transport Issues following Fukushima

Ms N. Capadona reported that, while TRANSSC has not identified any issues that need to be urgently addressed, the priority issues in transport are the prevention of release/leakage of RAM under extreme accident conditions by package/facility design; having readily available mitigation measures under extreme accident conditions; and preparation of emergency and response measures that consider extreme situations.

Other issues identified following the Fukushima accident include the need for harmonized international approaches and standards for contaminated cargo and for water on ships, criteria for surface contamination, protection of transport workers such as aircrew and public reassurance through coordinated press releases. Ms Capadona noted that many of the transport issues stretch beyond radioactivity and there is a need for consistency with how we address other types of emergencies.

R15.3 Food and Food Products

No presentation was made under this item.

R15.4 Discussion

The Chairman opened the discussion on all issues raised under agenda items 12, 13, 14 and 15 and asked RASSC to focus in particular on issues with implications for the safety standards.

In relation to emergency workers, RASSC agreed that these could be considered to fall into three specific categories: (1) plant workers, including permanent and contract staff; (2) first responders; and (3) military personnel. Given that the nature of the work undertaken is different in all three
groups, specific guidance might be appropriate. The output from the ICRP Task Group 84 should also be considered.

In relation to volunteers, ILO noted that they should not be regarded as workers and, as such, be subject to dose limits. In the particular circumstances that currently apply in Japan, the differentiation between workers and volunteers is not always clear-cut and RASSC agreed that guidance on this matter would be useful.

In relation to the system of radiological protection, the ICRP noted that the system outlined in ICRP Publication 103 was still relatively new and the full implications were still not fully clear. The ICRP also agreed with comments that the system is complex and, with experience in its application, may need to be modified. RASSC agreed that the concepts of dose limits and reference levels, and how they should be used, needed to be better explained. In particular, RASSC stressed that 1 mSv was an appropriate dose limit to be applied in planned exposure situations but was a target value, and not a dose limit, in managing existing exposure situations.

RASSC also agreed that the many international initiatives currently under way needed to be completed for a fuller understanding of the issues to emerge. RASSC advised that decisions should not be made too early and advised that the Inter-Agency Committee on Radiation Safety (IACRS) should be actively involved in the co-ordination and reporting of international activities related to Fukushima.

In relation to review of safety standards, RASSC confirmed that at this stage a review of the BSS (GSR Part3) was not justified but that this should be reviewed in the future in light of changes to other safety requirements. Consistent with its role as the lead Committee, RASSC also agreed on the importance of reviewing GS-R-2 in the light of the Fukushima accident and undertook to actively manage the review process.

Clear and transparent communication with the public is seen as a key issue in the aftermath of a nuclear accident and needs to be addressed in safety guides. RASSC agreed that regulatory bodies and radiation protection organizations need to establish themselves through social media as a credible source of information to which people will refer in the event of an accident. RASSC asked that guidance should be developed on this issue, taking into account the communication strategies used successfully in relation to other hazardous materials.

An extensive discussion took place in respect of reference levels for foodstuffs and RASSC noted that the combination of radioactivity and food is an emotive issue. Several different sets of reference levels for radioactivity in food, feedstuffs and drinking water are in use around the world. These are variously applied in emergency exposure situations, in existing exposure situations and in international trade. The reasons for having different values of activity concentration, and the basis on which they are derived, are not always clear.

RASSC agreed that the radiation protection dose criteria on which these reference levels are set need to be transparent and better communicated to the public. RASSC agreed that a more harmonized approach would be desirable and there was some support for the establishment of a range of values rather than single values for individual foods or groups of foods. RASSC also advised that the priority should be to eliminate inconsistencies in the current system.
Noting that a decision is likely to be taken by the Joint FAO/WHO Codex Alimentarius Commission to review its guideline values for foodstuffs, RASSC asked the IAEA Secretariat to establish a Working Group with other interested international organizations to document the various reference levels that are in existence, the basis on which they have been derived and the circumstances in which they are intended to be used. A discussion document, which identifies possible ways to improve the transparency and consistency of the current situation, including the possibility of improving harmonization, should be developed and submitted to RASSC for consideration. This document should also address the generic radiation protection criteria to be applied.

**Action:** The IAEA Secretariat to develop a discussion document on generic radiation protection criteria for radioactivity in foodstuffs, including the current international standards that are in existence, the basis on which they have been derived and the circumstances in which they are intended to be used.

**Action:** The IAEA Secretariat to prepare a report on the opinion of RASSC in relation to the review of IAEA and related international safety standards based on experience following the Fukushima accident.²

**R16 Implementation of the New Dose Limits for the Lens of the Eye**

**R16.1 Report from the ISEMIR Working Group on Interventional Cardiology**

Mr J. LeHeron provided information on the potential doses that could be received by cardiologists to the lens of the eye. Measurements of scattered radiation indicate that doses per intervention are likely to be of the order of 100-400 µSv per intervention and, on the basis of 300 interventions per year, the annual dose could exceed the new 20 mSv annual dose limit. However, the use of protective screens or lead glasses has been shown to reduce the dose per procedure to about 10 µSv and in such circumstances the dose limit can be complied with easily. In terms of further steps, the ISEMIR Working Group highlighted the importance of making such protective measures available, of better training of staff and the need for better dosimetry to accurately determine doses.

Mr Le Heron also reported on recent discussions in relation to industrial radiographers who have also been identified as a group of workers liable to exceed the new dose limit. Eye doses are not routinely monitored but, in a homogeneous radiation field it is likely that effective dose can be used as a reasonable surrogate. However, industrial radiography is characterized by a high frequency of accidents and overexposures where effective dose cannot be used as a surrogate for dose to the lens of the eye. There seems to be no obvious means available to specifically protect the lens of the eye, and the same issues of monitoring, dosimetry and awareness exist as in medical applications.

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² The final agreed text entitled “Review of the IAEA Safety Standards Based on Experience following the Fukushima Accident - Opinion of RASSC” is added to the meeting report as an appendix.
In response to comments from RASSC members, Mr LeHeron agreed that several other professionals involved in interventional medical procedures may also potentially exceed the new dose limit. It was also noted that certain workers handling irradiated gemstones may receive high doses to the lens of the eye.

*R16.2 Existing Work in Member States*

Mr T. Boal reported on a review undertaken by Canada to assess potential doses to the lens of the eye and the extent to which the new dose limit might be exceeded. The report from Canada suggested that, in the absence of direct evidence, it may be sufficient to demonstrate compliance with the eye dose limit by showing compliance with the whole body effective dose limit.

Data from one dosimetry service showed that from over 71,000 monitored workers over a three-year period from 2010 to 2012, 41 exceeded the whole body dose limit of 20 mSv. Those receiving the highest doses worked in mining and milling, well logging and medical applications. A separate data-set from a different dosimetry provider showed that 167 from approximately 15,500 monitored workers received head doses above 20 mSv between 2007 and 2011. Most of these were medical workers and in many cases they were likely to have received non-uniform doses. No data were available on the use of protective glasses by these workers.

Belgium reported that the number of procedures carried out by cardiologists each year can sometimes be as high as 1,000 or more and that the occupational doses received in interventional orthopaedic medicine, particularly lumbar spine procedures, may be considerably higher than in cardiology.

*R16.3 Plans for an IAEA Technical Meeting*

The ICRP statement on tissue reactions was published in April 2012 and the recommended new dose limits for the lens of the eye were incorporated in the Interim Edition of the BSS approved by the IAEA Board of Governors in September 2011. Mr T. Boal noted that very little time had been available to consult with Member States on the new dose limits and, for this reason, the IAEA intended to hold a Technical Meeting “New Dose Limits for the Lens of the Eye: Implications and Implementation” in Vienna in October 2012.

Mr Boal summarised the requirements in the BSS that are directly applicable and indicated that the following provisional list of topics had been prepared for the meeting:

1. Which categories of workers are at risk of elevated doses to the lens of eye;
2. Actions required by the regulatory body;
3. Instrumentation, personal protective equipment and workplace design;
4. Operational rules in workplaces;
5. Education and training of workers;
6. Health surveillance programmes; and
7. Additional technical issues associated with monitoring of doses to the lens of the eye.
R16.4 Discussion

RASSC strongly supported the decision to hold a Technical Meeting, noting that this was consistent with the advice of the current and former Chairs of RASSC and the decision of the CSS. There was strong support for any advice subsequently developed by the Agency to be “evidence based” and RASSC advised that all relevant entities, including medical professional organizations and trades unions, should be formally invited to attend.

ICRP noted that it had not identified any risk-based justification to reduce the dose limit to the lens of the eye for the public. However, along with a number of RASSC members, the ICRP suggested that this general issue be considered during the Meeting as a basis for developing guidance on optimization. The Secretariat stated that it would be inappropriate to consider changing the dose limit for the public unless this was initiated by the ICRP, but recognized the value in devoting some discussion time to the issue of optimizing public exposure.

RASSC agreed that the Technical Meeting should address primarily the implementation of the new occupational dose limit to the lens of the eye with particular focus on issues such as staff training, use of protective equipment and dosimetry. RASSC agreed that advice should be developed and published in advance of its incorporation in the relevant safety guides.

R17 Topical Session: Risks from Indoor radon

R17.1 Lung Cancer Risk from radon and its Progeny, including the Synergy with Smoking

Mr D. Chambers, of Senes Consultants, Canada provided an overview of the available epidemiological data on the risks from exposure due to radon. In relation to occupational exposure, radon is of concern not only in uranium and thorium mining but also in other mineral extraction environments such as coal mines, gold mines and the rare earth industry. Until recently, the only evidence of an increased risk of lung cancer following exposure due to radon and its progeny came from epidemiological studies on miners, but more recently a number of studies of exposure in homes have been published. Despite the differences between the two populations, the derived risks per unit exposure are in close agreement, differing by about a factor of two. This is less than the variability observed between individual studies of exposed miners.

The aerosol conditions within any given indoor environment can have a significant impact on the conversion factor from Bq/m³ to mSv. Recently, the ICRP increased its dose conversion by a factor of two for homes i.e. assuming an occupancy rate of 7000 h per year and an equilibrium factor F = 0.4, an average radon concentration of 300 Bq/m³ would result in an annual dose of about 10 mSv. Emerging dosimetric evidence suggests that this value is too low, and the annual dose may be closer to about 18 mSv. In mining environments, where there is disequilibrium between radon and its progeny, radon gas cannot be used as a surrogate for dose and direct measurements of progeny, and their variability with time, need to be made.

Smoking remains the largest cause of lung cancer in the general population. Most of the risk due to radon accumulates in smokers, who are 25 times more at risk from radon than never-smokers. The mechanisms of interaction between radon and tobacco smoke are still not well understood. In general, the percentage of the population that smokes, and the amount that each individual smokes, are both decreasing worldwide, with some exceptions. These changes in smoking habits will also
influence the baseline risk of lung cancer and the contribution from exposure due to radon to the total number of lung cancer cases.

While the residential studies of radon exposure are a sound basis for estimating risks to the general population, it is important that the studies of miners continue as these constitute the most reliable basis for evaluating the importance of confounding effects, such as the influence of dose rate or accumulated dose since the start of exposure.

R17.2 ICRP Draft Publication: Radiological Protection against Radon Exposure

Mr J.-F. Lecomte, Chairman of ICRP Task Group 81, introduced the most recent ICRP thinking on controlling the risks from radon as outlined in its draft publication “Radiological Protection against Radon Exposure” recently available for comment on the ICRP website. The new document clarifies the application of ICRP publication 103 and the ICRP Statement on Radon to the control and reduction of exposure due to radon indoors.

Mr Lecomte confirmed that exposure due to radon in homes should be managed as an existing exposure situation and the principles of justification and optimization apply. As the source of exposure already exists and cannot be removed, only the pathways into the building can be modified or controlled, normally through appropriate building codes. As the global public health risk is primarily due to low or moderate exposures, rather than the small percentage of the population exposed to high concentrations, strategies need to take this fully into account.

The ICRP is now recommending that the same value of reference level be adopted for homes and workplaces, rather than different reference levels based on the occupancy rates. This would mean that the national reference level would apply to all indoor environments. The chosen value of reference level should correspond to an annual dose of no more than 10 mSv; previously the corresponding indoor radon concentration was 300 Bq/m$^3$ but, in line with the evidence that the dose conversion factor is currently too low (see paragraph 2 in 17.1 above), the ICRP now believes that a lower value of reference level is appropriate.

In terms of prioritization, national action plans should first address the situation in homes. This should be extended to dual-use buildings with high occupancy rate by members of the public, such as schools, hospitals and public buildings. At a later stage “ordinary” workplaces, where exposure to radon is adventitious, should be included. Exposure to radon in workplaces where such exposure is not adventitious should be managed as a planned exposure situation.

In certain “ordinary” workplaces it may not be possible to reduce the radon concentration sufficiently to ensure that annual doses are below 10 mSv. In such circumstances, the ICRP recommends that the workers be regarded as being occupationally exposed and national authorities should decide whether or not dose limits are to be applied.

R17.3 Discussion

There was general support for the ICRP approach to controlling exposure due to radon, in particular the recognition of the importance of low and moderate exposures and the balancing of radiation protection and public health concerns. RASSC stressed the importance of applying a graded approach, consistent with the requirements in the BSS.
Some speakers underlined that recent scientific evidence has not changed the risks associated with long term exposure due to radon; it is only the relationship between effective dose and measured radon concentration that is being revised. In these circumstances, a reference level based on dose, but expressed in units of air concentration (Bq/m$^3$), was supported. It was noted that the use of one national reference level for all indoor environments provided greater protection for workers, because of the lower number of hours spent at work compared to in the home.

On the question of the synergy with smoking, RASSC advised that any campaigns to measure and reduce indoor concentrations of radon were more likely to be effective if they were linked to campaigns to stop smoking. RASSC also supported an approach whereby radon reduction was seen as one component of a strategy for improving indoor air quality. Particular attention should also be given to the possibility of increasing exposure due to radon when constructing energy-efficient homes or retro-fitting existing homes to improve energy efficiency.

RASSC welcomed the increased interest by Member States in taking steps to reduce exposure due to radon in homes, noting that sometimes this has arisen because of a concern about occupational exposure due to mining activities and NORM industries. RASSC welcomed the development of the safety guide “Protection of the Public against Exposure Indoors due to Natural Sources of Radiation” and supported the Agency in its work to encourage Member States to fully implement the new requirements in the BSS. RASSC also encouraged the Agency to continue to coordinate its work in this area with the WHO.


**R18.1 Report of the 4th Review Meeting**

Ms G. Siraky reported on the outcome of the 4th Review Meeting of the Joint Convention which took place in Vienna in May 2012. The Convention is potentially relevant to all Member States as the scope covers all types of waste. Ms Siraky noted that the Convention does not contain any sanctions and its purpose is to stimulate improvement through peer-review and discussion. Presently there are 63 Contracting Parties to the Convention.

For the 4th Review Meeting, the entire review process involved a total of written 3247 questions received by Contracting Parties for written response prior to the meeting. As a result of the Fukushima accident, there was particular interest in the on-site storage of spent fuel in pools. The main conclusions addressed the need for continuing development and improvement in the national regulatory framework, the development of long-term strategies for all aspects of waste management, increased efforts to identify, train and retain qualified staff, the need for adequate controls for disused sources and the importance of public consultation. Proposals were also discussed to improve the effectiveness of the Review Meetings, including coherence between the review process for the Joint Convention and the Convention on Nuclear Safety.

The Summary and President reports from the 4th Review Meeting, as well as the main documents covering the Joint Convention, are available at [http://goto.iaea.org/JointConvention](http://goto.iaea.org/JointConvention). The 5th review Meeting is planned for May 2015.

**R19 Reports from International Organizations**
Mr J. Townes (WNA) summarized the key issues for the nuclear industry, namely the implications for radiation protection standards of emerging information on tissue reactions and non-cancer effects; the risks from radon in the uranium mining industry; emergency preparedness and response; and the control of radioactive discharges from new-build. Mr Townes noted that dose constraints for nuclear power sites are set at a fraction of the public dose limit of 1 mSv value, thereby creating an obstruction to the addition of new capacity without affording any additional protection to the public.

Mr S. Myazaki (WNA) noted that the issue of non-cancer effects is broader than just the lens of the eye and has the potential to impact the system of radiological protection as a whole. He noted that the biological mechanisms are complicated and are not fully understood and advised that careful deliberation is required before changes are made to the system of radiological protection.

There were no comments or questions on the other reports from international organizations.

R20 Any Other Business

The Chairman noted the long delay in entering the VIC at the security checkpoint at gate 1 on the morning of 14 June with the queue stretching to the exit from the underground station. He considered that this placed unacceptable demands on those attending the Agency as invited experts and asked that the matter be raised with those responsible for security within the VIC. The meeting supported the Chairman in having this matter addressed.

R21 Dates of Future Meetings

The 33rd meeting of RASSC will take place in Vienna during the week commencing 26 November 2012. The meeting will include a joint session with WASSC.

R22 Closing of the Meeting

Mr M. Pinak (SH-NSRW) thanked the Chairman for agreeing to chair the meeting at such short notice and for his excellent management of the meeting. This was fully endorsed by the Committee and some individuals spoke in person to add their thanks and congratulations. Mr Pinak reminded RASSC that he remained available at all times to offer assistance and encouraged them to continue to contribute to the work of the Agency.

The Chairman closed the meeting.

ENDS
APPENDIX

REVIEW OF IAEA AND RELATED INTERNATIONAL SAFETY STANDARDS BASED ON EXPERIENCE FOLLOWING THE FUKUSHIMA ACCIDENT

OPINION OF RASSC

At its 32nd meeting from 11 to 14 June 2012, the Radiation Safety Standards Committee (RASSC) considered the on-going work to review the IAEA safety standards in light of the initial lessons learnt following the Fukushima accident. RASSC noted that at its previous meeting it had supported the prioritization process\(^3\) for the review of the safety standards proposed by the Secretariat and subsequently endorsed by the Commission on Safety Standards.

The following agenda items were used as input to discussions:

1. Presentations by experts from Belarus, Japan and ICRP on “The Role of Optimization in Remediation and Rehabilitation” (agenda item 12);
2. Presentations by eight international organizations (IAEA, FAO, ILO, UNSCEAR, WHO, EC, ICRP and NEA/OECD) on their current and future work related to Fukushima (agenda item 14);
3. IAEA Secretariat report on the revision of the safety standard “Preparedness and Response for a Nuclear or Radiological Emergency” (GS-R-2) (agenda item 13.4);
4. WASSC report on waste management issues following Fukushima (agenda item 15.1);
5. TRANSSC report on transport issues following Fukushima (agenda item 15.2); and

RASSC noted that lessons are still being learnt from the Fukushima accident, and will continue to be learnt for several more years. While RASSC did not identify any matters in need of urgent attention, a number of issues were identified that are likely to require revision of existing safety standards and the development of additional guidance material in the future. RASSC recognized that some of these are already being considered by the IAEA Secretariat and within other international organizations and strongly advised that this work be fully coordinated, where it is appropriate to do so.

RASSC has agreed the following:

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\(^3\) This prioritization involves (1) review of the safety requirements with particular focus on those requirements related to nuclear power plants and the storage of spent fuel, followed by (2) review of safety guides. Where existing requirements are to be amended or new requirements added, the associated guidance needs to be developed in parallel.
**Safety Requirements**

*Preparedness and Response for a Nuclear or Radiological Emergency (GS-R-2)*

As the lead Safety Standards Committee for emergency preparedness and response, RASSC has primary responsibility for overseeing and approving the development of GS-R-2. While the feedback received from Member States and the analysis undertaken by the IAEA Secretariat to date suggests that there are no serious gaps in the existing set of requirements, RASSC will maintain oversight of the document throughout its development. RASSC also noted the involvement of several international organizations in the review and revision of GS-R-2 through their membership of the Inter Agency Committee on Radiological and Nuclear Emergencies (IACRNE); many, but not all, of these international organizations are also observers at RASSC.

*International Basic Safety Standards (BSS) (GSR Part 3)*

RASSC does not consider that a detailed review of the BSS is required at this time. However, as other safety requirements are revised, the implication of these revisions for the BSS should be evaluated and any necessary changes identified.

**Safety Guides**

*Transition from an Emergency Exposure Situation to an Existing Exposure Situation*

Existing safety standards state that this is a decision to be taken by government. However, guidance is required on the factors to be taken into account in reaching such a decision, including the implications for subsequently managing occupational exposure of workers and exposure of the public.

RASSC believes that this issue should be considered during the review of GS-R-2 and guidance developed for inclusion in the safety guide “Remediation Process for Areas with Residual Radioactive Material” (DS468 for the revision of WS-G-3.1). This guidance should be consistent with ICRP Publications 109 and 111.

*Emergency Workers*

There can be different groups of workers involved in responding to a nuclear or radiological emergency. These include workers (both full-time employees and contract staff) at the facility in question, first responders and, in some instances, military personnel. These all have different skill sets and responsibilities and it may be appropriate to differentiate between them in terms of radiological protection.

This matter is currently being considered by the ICRP Task Group TG84 looking at the initial lessons for the system of radiological protection based on the experiences in Japan following the Fukushima accident. Any new guidance developed by the IAEA should be included in the safety guide “Occupational Radiation Protection” (DS453) currently under development.

*Volunteers*

Normally, remediation and rehabilitation work is carried out by the authorities as part of a planned exposure situation and the workers involved are subject to dose limits. In Japan, some of this work is
carried out by volunteers, such as parents who decide to remove contamination from a schoolyard so that their children can return to school. The question has been raised as to whether the doses received by such volunteers should be controlled, and if so, what standards should be applied and how the exposures should/can be monitored.

Dose Limits and Reference Levels

The public dose limit of 1 mSv for planned exposure situations has come to be regarded as the “safe” level. The public does not understand the concept of reference levels (1-20 mSv) to be applied in existing exposure situations, including those following emergencies; it is interpreted as a lowering of standards in a situation where the public is at greater risk.

RASSC recognized that the radiation protection community is still gaining experience on how to effectively apply the system of radiological protection outlined in ICRP Publication 103 and applied in Publications 109 and 111 and, as time passes, some amendments to the system might be seen to be necessary. However, in the meantime RASSC confirmed that 1 mSv was the appropriate dose limit for members of the public exposed as part of a planned exposure situation (e.g. as part of a programme of remediation) when the situation can be fully controlled. In an emergency or subsequent existing exposure situation, when the same degree of control no longer applies, society is forced to address a situation where compliance with an individual dose of 1 mSv may not be realistic: we have to do the best we can and a proper balance needs to be established between radiation protection and quality of life. In such circumstances a higher level of individual dose (up to 20 mSv) is considered appropriate, with the eventual long term aim of reducing this to 1 mSv.

Guidance needs to be developed on the application of these concepts and should be included in the safety guide “Radiation Protection of the Public and the Environment” (DS432), as well as other appropriate safety guides.

Communicating with the Public

Communication with the public in the aftermath of a nuclear accident is not directly addressed by the IAEA Nuclear Safety Action Plan. The public does not understand the system of radiological protection and its values are based more on subjective judgements linked to quality of life and protecting the health of their children. Authorities need to work with the public as an equal partner in developing and implementing criteria to be applied in the aftermath of an emergency.

RASSC agreed that the best means of communicating with the public in the aftermath of an emergency is to be already established as a credible source on social media. There is a need to develop guidance for Member States on how to establish a presence on social media and how to develop and maintain credibility.

These issues should be addressed in appropriate safety guides, including “Communication and Consultation with Interested Parties” (DS460) and “Remediation Process for Areas with Residual Radioactive Material” (DS468), both of which are currently under development.

Dose Assessments

The initial global dose assessment carried out by the WHO indicates that the highest individual doses in the first year after the Fukushima accident are in the range 10-50 mSv. Further work is currently
being carried out by both the WHO and UNSCEAR to better assess the radiological impact of the Fukushima accident. Once these further assessments are available, the safety standards should be reviewed to determine if, in light of the range of doses received, any criteria need to be amended or further guidance developed.

**International Standards for Foodstuffs**

Several different sets of international standards for radioactivity in food, feedstuffs and drinking water are in use around the world. These are variously applied in emergency exposure situations, in existing exposure situations and in international trade. The reasons for having different values of activity concentration, and the basis on which they are derived, are not always clear. Further confusion is caused as some Member States have established a different set of numerical values for specific radionuclides, for example due to different food production and consumption patterns.

The BSS establishes a dose criterion of "about 1 mSv" for the annual average individual effective dose to the representative person (para. 5.22) and a set of activity concentrations for use in the aftermath of an emergency can be found in "Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency" (GSG-2). Guideline levels for radionuclides in foods contaminated following a nuclear or radiological emergency and applicable to foods traded internationally have been established by the Joint FAO/WHO Codex Alimentarius Commission (CODEX STAN 193-1995). These are based on an intervention level of 1 mSv and assume, among other conditions, that ten percent of the foodstuffs consumed come from an affected area or country. The Codex guideline levels may be reviewed in the near future.\(^4\)

RASCC provided its support for the IAEA to be involved in any review of the Codex guideline levels. In addition, RASCC has asked the IAEA Secretariat to establish a Working Group with other interested international organizations to document the various international standards that are in existence, the basis on which they have been derived and the circumstances in which they are intended to be used. A discussion document, which identifies possible ways to improve the transparency and consistency of the current situation, including the possibility of improving harmonization, should be developed and submitted to RASCC for consideration. This document should also address the generic radiation protection criteria to be applied.

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\(^4\) A proposal to initiate a review of these guideline levels was raised at the Sixth Session of the Codex Committee on Contaminants in Foods, held in Maastricht, The Netherlands in March this year. The Committee agreed to establish a working group to review current guideline levels and develop clear guidance on the interpretation and application of guideline levels, subject to approval by the 35th Session of the Codex Alimentarius Commission in Rome, Italy in July.
ANNEX I

LIST OF ACTIONS

Action: Subject to approval by the other Safety Standards Committees, the Secretariat to submit DS407 to the CSS for endorsement.

Action: Subject to approval by the other Safety Standards Committees, the Secretariat to submit DS450 to Member States for comment.

Action: Subject to approval by the other Safety Standards Committees, the Secretariat to submit the DPP for DS460 to the CSS for endorsement.

Action: Subject to approval by the other Safety Standards Committees, the Secretariat to submit the DPP for DS468 to the CSS for endorsement.

Action: Subject to approval by the other Safety Standards Committees, the Secretariat to submit the document outline for DS462 to the CSS for endorsement.

Action: The IAEA Secretariat to develop a discussion document on generic radiation protection criteria for radioactivity in foodstuffs, including the current international standards that are in existence, the basis on which they have been derived and the circumstances in which they are intended to be used.

Action: The IAEA Secretariat to prepare a report on the opinion of RASSC in relation to the review of IAEA and related international safety standards based on experience following the Fukushima accident.
## DRAFT AGENDA

**10:00 – Monday 11 June 2012**

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<td>Opening of Meeting</td>
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<td>Chairman’s Comments</td>
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<td>Adoption of the Agenda</td>
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<td>Administrative Arrangements</td>
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<td>5</td>
<td>Chairman’s Report of RASSC 31</td>
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<td>Actions Arising from RASSC 31</td>
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### General Safety Standards Issues

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<tr>
<td>7.1</td>
<td>Feedback from the Commission on Safety Standards (CSS 31)</td>
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<td>7.2</td>
<td>Establishment of the Nuclear Security Guidance Committee</td>
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<td>7.3</td>
<td>Roadmap for the Development of Safety Standards (document circulated in advance)</td>
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<td>7.4</td>
<td>Online access to Safety Standards and other publications</td>
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### Safety Standards under Development

_The Secretariat will update the meeting on the current status of safety guides being planned and under development_

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<tbody>
<tr>
<td>8.1</td>
<td>DS458: Radiation Protection and Regulatory Control for Consumer Products</td>
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<td>8.2</td>
<td>DS419: Radiation Safety in Well Logging</td>
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<td>8.3</td>
<td>DS420: Radiation Safety for Nuclear Gauges</td>
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<td>8.4</td>
<td>Safe Use of X-ray Generators and Sources used for Inspection Purposes - proposal on the scope of a new safety guide</td>
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8.5 DS427: Radiological Environmental Impact Assessment for Facilities and Activities  
*For information*  
D. Telleria

9. **Safety Standards for Approval**

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<tr>
<th>Section</th>
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<th>Approver</th>
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<tr>
<td>9.1</td>
<td>DS407 SG: Criticality Safety for Facilities and Activities Handling Fissionable Material</td>
<td><em>For approval for submission to the CSS</em></td>
<td>G. Jones</td>
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<tr>
<td>9.2</td>
<td>DS450 SR: Decommissioning (revision of WS-R-5)</td>
<td><em>For approval for submission to Member States for comment</em></td>
<td>M. Wong</td>
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10. **DPPs for Approval**

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<tr>
<td>10.1</td>
<td>DS460 SG: Communication and Consultation with Interested Parties</td>
<td><em>For approval for submission to the CSS</em></td>
<td>J-R. Jubin</td>
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<td>10.2</td>
<td>DS468 SG: Remediation Process for Areas with Residual Radioactive Material (revision of WS-G-3.1)</td>
<td><em>For approval for submission to the CSS</em></td>
<td>G. Proehl</td>
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<td>10.3</td>
<td>DS462 SR: Revision through addenda of GSR Part 1, NS-R-3, SSR-2/1, SSR-2/2 and GSR Part 4</td>
<td><em>For approval for submission to the CSS</em></td>
<td>D. Delattre</td>
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11. **Code of Conduct for Scrap Metal**

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<tr>
<td>11.1</td>
<td>Development of a Code of Conduct on the Transboundary Movement of Radioactive Material Inadvertently Incorporated into Scrap Metal and Semi-Finished Products of the Metal Recycling Industries</td>
<td><em>For information/discussion</em></td>
<td>E. Reber</td>
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09:00 – Tuesday 12 June 2012 and Wednesday 13 June 2012

**ITEMS RELATED TO FUKUSHIMA**

12. **The Role of Optimization in Remediation and Rehabilitation**

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<th>Section</th>
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<tr>
<td>12.1</td>
<td>The ICRP Approach to Optimizing Protection of People Living in Contaminated Areas</td>
<td>J. Lochard, ICRP</td>
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<tr>
<td>12.2</td>
<td>Public Involvement in the Rehabilitation Process – Experience after the Chernobyl Accident</td>
<td>Z. Trafimchik, Belarus</td>
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<tr>
<td>12.3</td>
<td>Radiation Protection Criteria for Japan's Remediation and Rehabilitation Programme</td>
<td>M. Nagata</td>
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<tr>
<td>12.4</td>
<td>Discussion</td>
<td>J. Loy</td>
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13.1 Overview of the Nuclear Safety Action Plan  
L. Bevington

13.2 Overview of the IAEA Plan for the Review of Safety Standards  
For information  
D. Delattre

13.3 Plan for the Review of Safety Guides  
For information  
D. Delattre

13.4 IEC Update  
For information  
R. Martincic

13.5 Discussion  
J. Loy

14. **Overview of the Work of International Organizations related to Fukushima and Key Issues for the Future**

Each organization will provide a 5-10 min. overview of current work directly related to Fukushima. The discussion will focus on future priorities for RASSC.

14.1 International Atomic Energy Agency (IAEA)  
G. Proehl

14.2 Food and Agriculture Organization of the United Nations (FAO)  
D. Byron

14.3 International Labour Organization (ILO)  
S. Niu

14.4 United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)  
F. Shannoun

14.5 World Health Organization (WHO)  
E. van Deventer

14.6 European Commission (EC)  
S. Mundigl

14.7 International Commission on Radiological Protection (ICRP)  
C. Clement

14.8 Nuclear Energy Agency / Organization for Economic Co-operation and Development (NEA/OECD)  
E. Lazo

14.9 Report of IACRNE Meetings  
R. Martincic

14.10 Discussion  
J. Loy

15. **International Standards**

15.1 Waste Issues following Fukushima  
For discussion  
G. Siraky

15.2 Transport Issues following Fukushima  
For discussion  
N. Capadona

15.3 Food and Food Products  
For discussion  
D. Byron, FAO

15.4 Discussion  
J. Loy

09:00 – Thursday, 14 June 2012
### 16. Implementation of the New Dose Limits for the Lens of the Eye

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<tr>
<td>16.1</td>
<td>Report from the ISEMIR Working Group on Interventional Cardiology</td>
<td>For information</td>
<td>J. Le Heron</td>
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<tr>
<td>16.2</td>
<td>Existing Work in Member States</td>
<td>For information</td>
<td>T. Boal</td>
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<td>16.3</td>
<td>Plans for an IAEA Technical Meeting</td>
<td>For information</td>
<td>T. Boal</td>
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<td>16.4</td>
<td>Discussion</td>
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<td>J. Loy</td>
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### 17. Topical Session: Risks from Indoor Radon

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<tr>
<td>17.1</td>
<td>Lung Cancer Risk from Radon and its Progeny, including the Synergy with Smoking</td>
<td>D. Chambers, SENES</td>
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<td>17.2</td>
<td>ICRP Draft Publication: Radiological Protection against Radon Exposure</td>
<td>J-F. Lecomte, ICRP</td>
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<td>17.3</td>
<td>Discussion</td>
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<td>18.1</td>
<td>Report of the Fourth Review Meeting</td>
<td>For information</td>
<td>G. Siraky</td>
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### 19. Reports from International Organizations

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<td>Food and Agriculture Organization of the United Nations (FAO)</td>
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<td>International Labour Organization (ILO)</td>
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<td>United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)</td>
<td>F. Shannoun</td>
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<td>World Health Organization (WHO)</td>
<td>E. van Deventer</td>
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<td>European Commission (EC)</td>
<td>S. Mundigl</td>
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<td>19.7</td>
<td>International Commission on Radiological Protection (ICRP)</td>
<td>C. Clement</td>
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<td>19.8</td>
<td>International Radiation Protection Association (IRPA)</td>
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<td>19.9</td>
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<td>19.10</td>
<td>Nuclear Energy Agency / Organization for Economic Co-operation and Development (NEA/OECD)</td>
<td>E. Lazo</td>
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<td>19.11</td>
<td>European Nuclear Installation Safety Standards Initiative (ENISS)</td>
<td>B. Lorenz</td>
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<td>World Nuclear Association (WNA)</td>
<td>J. Townes</td>
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### 20. Any other business

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### 21. Dates of Future Meetings

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<td>T. Colgan</td>
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### 22. Closing of the Meeting

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<tr>
<td>33rd WASSC &amp; 33rd NUSSC Meeting</td>
<td>2-6 July 2012</td>
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<td>24th TRANSSC</td>
<td>16-20 July 2012</td>
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<td>32nd CSS</td>
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<td>25th TRANSSC</td>
<td>29 October-2 November 2012</td>
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<td>33rd RASSC</td>
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<td>34th NUSSC</td>
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<tr>
<td>34th WASSC</td>
<td>26-30 November 2012</td>
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ANNEX III

Participants

The Committee

L. Van Bladel, Belgium
M.H. Marechal, Brazil
L. Katzarska, Bulgaria
P-A. Thompson, Canada
K. Petrova, Czech Republic
M. Ohlenschlaeger, Denmark
A. Hamed Osam, Egypt
J-L Godet, France
M. Helming, Germany
L. Koblinger, Hungary
D. Pollard, Ireland
J. Koch, Israel
M. Nagata, Japan
B. El Fawaris, Libya
G. Saxebol, Norway
A. Merta, Poland
S. Mikheenko, Russian Federation
V. Jurina, Slovakia
T. Tselane, South Africa
C. Alvarez, Spain
A. Hägg, Sweden
A. Leupin, Switzerland
J. Loy, United Arab Emirates (Chairman)
C. Temple, United Kingdom
B. McDermott, United States of America

Advisors

P. Bérard, France
J-F Lecomte, France
A. Schmitt-Hannig, Germany
H. Kimura, Japan
T. Iimoto, Japan
H. Tachikawa, Japan
I. Yamaguchi, Japan
S-Y. Lee, Rep. of Korea
S. Chekin, Russian Federation
S. McCready-Shea, United Kingdom
United Nations Organizations
C. Blackburn, Food and Agriculture Organization of the United Nations (FAO)
D. Byron, Food and Agriculture Organization of the United Nations (FAO)
S. Niu, International Labour Organization (ILO)
T. Zodiates, International Labour Organization (ILO)
F. Shannoun, United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)
E. van Deventer, World Health Organization (WHO)

International Organizations
S. Mundigl, European Commission (EC)
E. Lazo, Nuclear Energy Agency of the Org. for Economic Co-operation and Development (NEA/OECD)

Other Organizations
B. Lorenz, European Nuclear Installation Safety Standards Initiative (ENISS)
C. Clement, International Commission on Radiological Protection (ICRP)
M. Sasaki, International Commission on Radiological Protection (ICRP)
M. Shinichiro, World Nuclear Association (WNA)
J. Townes, World Nuclear Association (WNA)