43rd Meeting of the Radiation Safety Standards Committee (RASSC)
44th Meeting of the Waste Safety Standards Committee (WASSC)

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(Agenda Item)


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Outline:

• Background
  – Brief history and current status

• Summary of key issues raised and how they are being addressed

• Next steps

• Request for endorsement of co-sponsorship of DS468.
Background:
Brief History and Current Status

• DS468 was sent out for MS review on 22 December 2016 (Step 8)
  – MS comments were due 2 June 2017
• A total of 255 comments were received from 15 MS, including:
  – Armenia
  – Australia
  – Belgium
  – Finland
  – France
  – Germany
  – Hungary
  – Japan
  – Mexico
  – Russian Federation
  – Sweden
  – Switzerland
  – Tajikistan
  – United Kingdom
  – USA
Background:
Brief History and Current Status

• Independent Consultancy Meetings and Home-Based Assignments were set up to resolve MS comments

Objective of Presentation:
• To provide summary of key MS comments.
• To provide overview of approach taken to address them.
Summary of Key MS Comments:

- **Update of Figure 1** depicting the Remediation Process.
- **Need for additional guidance on** recovery of communities.

**Additional comments:**

- More “prominence” on physical, non-radiological risks and other factors, as part of justification and optimization (and clarification of Annex III on how to set reference levels).
- Need to highlight knowledge management for remediation and recovery.
- Need for a glossary of terms.
- Suggestion to add case studies about how to apply the Remediation Process for different types of existing exposure situations (e.g., post-accident, “legacy”, nuclear weapons testing sites).
- Clarification of text, usage of terminology and editorial changes.
Update of *Figure 1* on the Remediation Process

- *Figure 1* has been updated to include “Detailed Investigation”, as an additional step.
- More clarification has been provided on when to set Reference Levels within the Remediation Process.
- The example in *Annex III* on how to apply the principles of justification and optimization in setting Reference Levels was clarified, in accordance with MS comments.
Remediation Process:

- Step-wise process-based approach:
  - Preliminary screening-level evaluation (characterization)
  - Detailed investigation (characterization, monitoring and modelling)
  - Planning of Remediation (including establishment of a “realistic” Reference Level)
  - Implementation of Remediation (including comparison of prevailing circumstances against the Reference Level)
  - Post-remediation management
Establishment of Criteria:

- Criteria need to be developed at key decision points during the remediation process.
- Characterization of the situation and corresponding dose assessment then needs to be done to determine:
  - Whether or not remediation is needed; and
  - If needed:
    - To what extent?
    - What types of remedial options could be applied?
Remediation Process:

**Preliminary Evaluation:**

- Preliminary Evaluation (screening)
  - Characterization and Dose Assessment
    - Are Screening Criteria met?
      - YES
      - NO
        - Detailed Investigation

**Implementation**

For existing exposure situations, it is necessary to:

- Conduct *characterization* of the situation to determine key exposure pathways and the corresponding doses;
- Decide on *screening criteria* that can be used to determine whether there *may be an issue* that requires further assessment.
- Determine *next steps*, which may include:
  - More detailed investigation to determine the scope of the issue and possible next steps to address it; or
  - A decision to leave the situation “as is”, applying restrictions to minimize dose; or
  - A decision to leave the situation “as is”, without the application of restrictions.
Remediation Process:

- In cases where *Preliminary Investigation* indicates that “significant” impacts may occur (based on a screening-level assessment):
  - More *Detailed Investigation* of the situation is needed;
  - This involves conducting a **detailed site survey**, which can then be used to:
    - Verify the situation
    - Gain more detailed information
    - Identify priorities for remediation, as applicable
  - In doing so, detailed site data need to be compared to screening criteria, as input into the evaluation of potential remedial options, as part of *Planning*.
  - In cases where Screening Criteria are ‘met’, a decision will need to be made regarding whether or not **restrictions** would need to be applied, as part of *Implementation*. 
Remediation Process:

- If initial characterization data, preliminary screening-level evaluation, subsequent detailed site investigation, and the corresponding dose assessment indicate the possible need for remediation, Remediation Planning will need to be initiated.

- This will involve the need to:
  - Establish the Reference Level;
  - Determine whether or not remediation is justified; and
  - If so, to balance relevant factors to identify a set of optimized remedial options to address the situation.

- This will then need to be captured in the Remediation Plan.

- This plan will require authorization by the Regulatory Body.

- In implementation, the effectiveness of the remedial actions will then need to be determined by comparing doses or exposure levels to the Reference Level.

... and a key aspect of planning involves the selection of an appropriate Reference Level, with consideration of the prevailing circumstances and the practicalities.
Remediation Process:

- Once the Remediation Plan has been developed and authorized:
  - *Implementation* of the plan needs to be undertaken.
  - This involves:
    - **Conducting remediation**, in accordance with the authorized Remediation Plan
    - Assessment of the effectiveness of remedial actions
    - Determination of whether or not restrictions may be needed to meet the Reference Level (as identified during Planning)
    - In cases where restrictions are deemed necessary, to determine whether further optimization could be beneficial, and if so, to re-evaluate remedial options through further Planning.
Remediation Process:

• Once Implementation has been completed and it is determined that the Reference Level and other criteria have been met, as applicable:
  
  – Post-remediation Management is initiated.
  
  – This involves:
    
    • Establishing institutional controls, as needed, for the long-term situation (including restrictions, as applicable)
    • Establishing a long-term surveillance and monitoring program
    • Periodic review of the institutional controls program, and surveillance and monitoring program, and adjustment, as needed.
Recovery of Communities:

• It was noted that the Remediation Process is only one part of the Process of Recovery of Communities.
• The need for more guidance on recovery, involving the process of rebuilding, restoring and rehabilitating affected communities, was highlighted.

Additional Considerations:

• Remediation is only one aspect of the broader recovery process.
• Recovery tends to focus on post-accident situations, whereas DS468 covers a broader range of existing exposure situations.
Recovery of Communities
Proposed Level of Detail in DS468

• **KEY QUESTIONS:**
  - Given that:
    • The focus of DS468 is on the remediation process covering a range of existing exposure situations;
    • Although related, the process of recovery is a broader process relevant to post-accident situations; and
    • Inclusion of an additional process within DS468 may “dilute” both the guidance on remediation and the guidance on recovery.

  **How much focus should be placed on recovery within DS468?**

**Proposed Path-forward within DS468:**

  - Additional paragraphs be strategically added within DS468 to present the remediation process within the broader context of the recovery process, where relevant (IEC has agreed to provide input).
  - Focus be placed on post-accidents in this context.
  - The Scope of DS468 be clarified with respect to what will be covered and what will be out of scope with respect to recovery.
  - Definition of ‘recovery’ be provided in DS468.
  - Relevant references on recovery be added to Annex V on ‘Relevant Literature’
Recovery of Communities
Proposed Level of Detail in DS468

KEY QUESTIONS (continued):

• **Volume 5** of the Report on the *Fukushima Daichii Accident on Post-Accident Recovery* states:

  “Recovery means the achievement of an acceptable level from which society can again fully function.”

  “Recovery entails:
  – The remediation of contaminated areas [DS468];
  – The stabilization of the damaged reactors, and preparations for their eventual decommissioning;
  – The effective and safe management of the resulting contaminated material and radioactive waste leading to their ultimate disposal [DS468];
  – The reestablishment of infrastructure and the revitalization of communities.”

• Given the international recognition of the importance of recovery planning:

  – Is adequate international guidance being provided on the post-accident recovery process, and if not, what is needed?
  – What level of detail would be considered adequate within the IAEA Safety Standards (i.e., is a Safety Guide needed on the recovery process, or is this better addressed in supporting technical reports and documentation?)

Some potentially relevant initiatives:

  – Safety Report on *Living and Working in Areas Affected by Past Nuclear or Radiological Events and Activities: Experiences from affected areas* (with Olga German)
  – TECDOC on *Decision-aiding Tools for Planning and Implementation of Remediation* (IAEA Modelling and Data for Radiological Impact Assessments, MODARIA II, programme)
Proposed Resolutions to Additional Member State Comments

- Guidance on **accounting for “other factors”** (e.g., non-radiological contaminants, physical hazards, etc.) as part of justification and optimization:
  - The level of detail needed to appropriately address this comment is being considered.
  - Additional references being added to Annex V containing “Relevant Literature” with more detailed examples on how to apply the justification and optimization processes, taking account of prevailing circumstances.

- Need to highlight the importance of **knowledge management**:
  - Text is being added to Para. 2.6 on Governmental, Legal and Regulatory Framework to capture the importance of knowledge management.
Proposed Resolutions to Additional Member State Comments

• Inclusion of a **Glossary** of terms:
  – In general, it is agreed that including definitions of key terminology, as appropriate, is beneficial.
  – In general, DS468 and other Safety Standards are intended to be used with the IAEA Safety Glossary.
  – Therefore, key definitions are being included in text or in footnotes, as appropriate, using direct quotes from the IAEA Safety Glossary (2016), wherever possible.

• Inclusion of examples on how to apply the Remediation Process to a range of existing exposure situations:
  – A new Annex has been added including Case Studies on:
    • Post-accident site
    • Legacy site (phosphate mining)
    • Site impacted by past nuclear weapons testing

• **Clarification** of text, usage of terminology and **editorial changes**.
Next Steps:

• Finalization of text to incorporate comments from Safety Standards Committees received during this week’s joint RASSC/WASSC meeting.

• Submission of DS468 for editing.

• Formal presentation of resolutions to Member State comments, and next steps in document development to Safety Standards Committees.
Request for Endorsement:

- Due to the broad international interest in remediation, a number of international organizations are developing recommendations and guidance on this topic.
- It would, therefore, be beneficial to receive input from other international organizations during the development of DS468.
- This approach will ensure cohesiveness, harmonization between recommendations and guidance provided to Member States by international organizations.
- Possible international organizations with mutual interests in DS468, e.g.:
  - UNEP
  - ICRP
  - OECD/NEA
  - ICRU

Therefore, endorsement is kindly requested for the co-sponsorship of DS468.
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Thank you!