3rd Meeting of EPReSC
42nd Meeting of WASSSC

30 November 2016

Agenda item EW 2.2
DS468  Draft Safety Guide on Remediation Process for Areas Affected by Past Activities and Accidents
– For Approval for submission to Member States

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Outline:

• Background
• Objectives of DS468
• Key issues being addressed
• How key issues are being addressed
  – Terminology
  – Residual materials and waste
  – Setting of Reference Levels
• Document structure
• Relationship of DS468 to other IAEA Safety Standards
• Resolution of Member State comments
• Plans and path-forward

WS-G-3.1 had been developed based on the Safety Requirements in WS-R-3 on *Remediation of Areas Contaminated by Past Activities and Accidents* (2003).

WS-R-3 was later superseded by the Safety Requirements now found in GSR Part 3 (Section 5) on Existing Exposure Situations, and applicable Safety Requirements from more recent waste safety standards.
Objectives of DS468:

To provide guidance on implementing the requirements on remediation of:

- **Areas contaminated by residual radioactive material arising from past activities that:**
  1) were never subject to regulatory control; or
  2) were subject to regulatory control but not in accordance with the requirements of the existing IAEA and national safety standards.

- **Areas affected by a nuclear or radiological emergency, after the release and deposition has finished and the radiological situation has been characterized.**

- **Areas affected by incidents, such as malicious acts, involving release of radioactive material.**
Process-based Document Structure:

- Preliminary evaluation (characterization)
- Planning
- Conduct (implementation)
- Post-remediation management
Structure of DS468:

1. INTRODUCTION
   - Background
   - Objective
   - Scope
   - Structure

2. NATIONAL FRAMEWORK FOR REMEDIATION
   - Governmental, legal and regulatory framework
   - National policy
   - National strategy
   - Site-specific remediation strategy
   - Site-specific remedial action plan
   - Regulatory oversight
   - Funding of remediation
   - Involvement of interested parties [covered throughout remediation process]

3. APPLICATION OF THE PRINCIPLES OF RADIATION PROTECTION
   - Reference Levels
   - Justification
   - Optimization

4. THE REMEDIATION PROCESS [flow diagram]

5. SITE EVALUATION
   - Preliminary site evaluation
   - Detailed site survey

6. PLANNING OF REMEDIATION
   - Selection of remedial options
   - Safety and environmental assessments
   - Justification, optimization and evaluation of remedial options
   - Site-specific remedial action plan
Structure of DS468:

7. IMPLEMENTATION OF REMEDIATION
   Radiation protection during remediation
   Monitoring and ongoing surveys during remediation
   Emergency preparedness
   Dealing with abnormal events
   Security in the area
   Release of areas
   Unrestricted use
   Restricted use
   Restricted access
   Final remediation report
   Record keeping and information management

7. MANAGEMENT OF RESIDUAL MATERIALS GENERATED DURING REMEDIATION
   General approach
   Clearance
   Recycling and reuse of residual materials
   Management of remediation radioactive waste

8. POST-REMEDIATION MANAGEMENT
   Removal of restrictions
   Record keeping and information management
   Interested parties aftercare and public communication
   Monitoring and surveillance programme

REFERENCES
Structure of DS468: ANNEXES (no Appendices)

ANNEX I: EXAMPLE TABLE OF CONTENTS FOR A SITE REMEDIATION PLAN

ANNEX II: DOSE ASSESSMENT FOR REMEDIATION PURPOSES

ANNEX III: OPTIMIZATION OF SITE REMEDIATION: PRACTICAL ASPECTS AND EXAMPLE [including example of establishment of Reference Levels]

ANNEX IV: SELF HELP

ANNEX V: RELEVANT LITERATURE
Interfaces with Existing Safety Standards:

- Fundamental Safety Principles (SF-1)
- General Safety Requirements (and underlying Safety Guides):
  - Part 2: Leadership and Management for Safety Radiation (DS456)
  - Part 4: Safety Assessment for Facilities and Activities, Rev. 1 (2016)
  - Part 6: Decommissioning of Facilities (2014) [*e.g., covers termination of activities, but with focus on decommissioning*]
  - Part 7: Preparedness and Response for a Nuclear or Radiological Emergency (2015)
- Disposal of Radioactive Waste (SSR-5).
- Release of Sites from Regulatory Control on Termination of Past Practices (WS-G-5.1).
Complementary Draft Safety Guidance:

- Safety Guide (SG) on *Radiation Protection of the Public and the Environment* (DS432)
- SG on *Occupational Radiation Protection* (DS453)
- SG on *Communication and Consultation with Interested Parties* (DS460)
- Draft TECDOC on *Management of large amounts of waste arising from a nuclear or radiological emergency* (see WASSC Report 38)
- SG on *Arrangements for the termination of a nuclear or radiological emergency* (DS474)
- Update to SG on *Application of the Concepts of Exclusion, Exemption and Clearance* (RS-G-1.7) (DS500).
Other Relevant (Draft) Safety Guides

• Generic aspects related to existing situations and residual materials in draft SG on *Management of radioactive residues from uranium production and other NORM activities* (DS459)
• Verification of consistency of DS468 with SG on *Radiation safety for consumer products* (SSG-36)
• Verification of consistency with generic aspects of SG on *Protection of the public against exposure indoors due to radon and other natural sources of radiation* (SSG-32)
Current Status:

• Step 7 – First Review of the Draft Publication by the Review Committees
• Being presented to WASSC, RASSC, EPReSC, and Nuclear Safety Guidance Committee (NSGC)
• 234 comments from 9 Member States (ARG, BEL, CZ, GER, JAP, PAK, RF, SWE, USA)
• A large proportion were clarification or editorial comments
• All comments have been systematically reviewed and addressed
Summary of Resolutions:

- 215 comments (92%) were accepted or accepted with modification
  - text has been updated in the draft document and both “blackline” and “clean” versions have been posted
- 22 comments (8%) were rejected
- Changes to posted version:
  - Acceptance to reference TECDOC on minimization of large volumes of radioactive waste in main text of DS468
  - Update of date on first page (to “2016-11-26”)
Proposed Changes to DS468:

• Clarification:
  – Editorial changes to text
  – Usage of terminology (e.g. “accidents” and “incidents”; “area” vs. “site” vs. “site area”)
  – Concepts (e.g., national policy and strategy vs. site-specific; establishment of reference levels vs. “specific reference levels”)

• Application of the principle of justification at different stages of remediation process (as opposed to only during the initial stages)

• Clearance of materials generated during remediation (e.g., in context of residual materials; usage of the concept of “specific clearance”)
Proposed Changes to DS468:

- **Updates to Figure 1**

- **Modification of order** (e.g., when Reference Levels should be developed during the process)
- **Relocation of arrow** to indicate that in cases where remediation is not deemed justified, a decision would be required regarding the need for restrictions.
- **Addition of footnote** to provide a general overview of factors to be considered as part of optimization.
- **Update of terminology** for consistency with current safety standards (i.e., changed “Stakeholder Involvement & Public Communication” to “Communication and Consultation with Interested Parties”
Themes of Rejected Comments:

• Clarification of definitions, terminology and intent of specific wording
  – e.g., clarifying that physical and non-radiological hazards or risks can be more significant than radiological
  – Rejection of minor suggested wording changes that may alter the intent of a sentence

• Balancing different MS comments
  – e.g. usage of “remediation programme” vs “remediation plan” vs “remedial action plan”

• IAEA publication rules (e.g. referencing external reports in safety standards)
Next Steps:

• Presentation of current status, Member State resolutions, and next steps in document development to WASSC and EPReSC for approval
  – NSGC has concluded that DS468 is not a Safety/Security interface document
  – RASSC has approved submission of DS468 to Member States.

• Modification of draft to address any additional comments raised by WASSC and EPReSC, as needed.

• Request for approval from WASSC and EPReSC to submit DS468 to Member States for review.
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Thank you!