

Document Preparation Profile (DPP)

1. IDENTIFICATION

Document Category	Safety Requirements
Working ID:	DS450
Proposed Title:	Decommissioning and termination of activities
Proposed Action:	Revision of “Decommissioning of Facilities Using Radioactive Material”, 2006, Safety Requirements, IAEA Safety Standards No. WS-R-5
Review Committee(s) or Group:	WASSC (Lead); NUSSC; RASSC; TRANSSC;
Technical Officer(s):	<u>M. Wong, NSRW</u> and V. Ljubenov, NSRW

2. BACKGROUND/RATIONALE

The current version of the Safety Requirements, “Decommissioning of Facilities Using Radioactive Material” (WS-R-5), was published in 2006. The Safety Requirements cover the protection of workers, the public and the environment; responsibilities of the major parties associated with decommissioning; developing a decommissioning strategy and the resulting decommissioning plan; decommissioning funding; managing of decommissioning; conduct or implementation of decommissioning activities; and determination of when decommissioning has been completed, including surveys to support the termination of decommissioning activities.

However, since WS-R-5 was published, additional experience has been gained from decommissioning activities around the world and from the application of the IAEA Safety Standards related to decommissioning. Organizations such as the Nuclear Energy Agency and the U.S. Nuclear Regulatory Commission have documented such experience and lesson learnt. The experience of regulators and operating organizations has been presented and broadly discussed at different venues, including the Conference on Lessons Learned from the Decommissioning of Nuclear Facilities and the Safe Termination of Nuclear Activities, held in Greece in December 2006. In addition, there have been additional complimentary IAEA Safety Standards which were developed since the publication of the Safety Requirements.

During the consultancy meetings to revise other IAEA Safety Standards related to this Safety Standard (e.g., Decommissioning of Nuclear Power Reactors and Research Reactors (WS-G-2.1); Decommissioning of Medical, Industrial and Research Facilities (WS-G-2.2); and Decommissioning of Fuel Cycle Facilities (WS-G-2.4)), consultants have identified areas where the Safety Requirements might be improved. Additional feedback is provided in the Feedback Analysis Report, which also outlines areas where WS-R-5 should be revised. Therefore, the Secretariat agrees with the consultants and has concluded that the subject areas need to be revised.

As a result of the activities mentioned above, WS-R-5 should be revised, specifically in the areas identified in Annex I. Based on the IAEA “Strategies and Processes for the Establishment of IAEA Safety Standards (SPESS),” WS-R-5 will be revised to be consistent with the new format for Safety Requirements. Also consistent with guidance in SPESS, WS-

R-5 will be revised in parallel with the revision of the implementing Safety Guides, while will streamline and improve the efficiency of the revision process for this set of Safety Standards.

3. OBJECTIVE

The objective of this Safety Standard is to establish the basic safety requirements that must be satisfied during the planning and implementation of decommissioning for the termination of activities and for the unrestricted or restricted release of materials, buildings and sites. The document is relevant to all activities associated with decommissioning and for all types of nuclear facilities excluding disposal facilities for radioactive waste and Naturally Occurring Radioactive Materials (NORM). The publication will primarily deal with facilities that terminate operations in a normal manner.

4. JUSTIFICATION

This Safety Standard is intended to update and revise the existing Safety Requirements on decommissioning, issued in 2006. It will help ensure a clear and safe implementation of decommissioning activities and release of materials, buildings and sites, ensuring decommissioning is performed in a systematic and comprehensive manner. Consideration will also be given to the other Safety Standards published since 2006.

5. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS

This Safety Standard will be Part 6 of the IAEA “General Safety Requirements (GSRs),” addressing decommissioning. It will establish a clear path from fundamentals to guidance on decommissioning. Due account will be given to the new Safety Fundamentals (SF-1), as well as newly developed (or underdevelopment) GSRs and Specific Safety Requirements (SSRs). For example, DS450 will be harmonized with “GSR Part 1: Governmental, Legal and Regulatory Framework for Safety;” “GSR Part 3: Radiation Protection and Safety of Radiation Sources;” “GSR Part 5: Predisposal Management of Radioactive Waste;” “SSR 5: Disposal of Radioactive Waste” and “SSR 6: Regulations for the Safety Transport of Radioactive Material.”

Supersedes: This Safety Standard is a revision of WS-R-5, published in 2006, and will supersede it.

6. OVERVIEW

This Safety Standard deals with all phases of decommissioning and also establishes requirements for the period from the design of a facility, after its permanent planned shutdown, at the end of its operational lifetime, and until completion of decommissioning. Many of the provisions contained in this Safety Standard can also be applied to decommissioning after an abnormal event that has resulted in serious damage to or the contamination of a building, or simply after an unanticipated shutdown. It applies to all types of nuclear facilities, including nuclear power plants, research reactors, other fuel cycle facilities (e.g., uranium recovery facilities, processing and storage facilities (or predisposal facilities), NORM facilities, manufacturing plants, medical facilities, industrial, and research

facilities. It does not apply to disposal facilities for waste and for NORM. The closure of these facilities is discussed in other IAEA Safety Standard publications.

In summary, the document will provide safety requirements on:

- (a) the graded approach to decommissioning safety;
- (b) the responsibilities of the government, regulatory body and operating organization during decommissioning, and the involvement of interested parties;
- (c) the selection of the decommissioning strategy;
- (d) decommissioning planning during the facility lifecycle;
- (e) consideration of funding for decommissioning including financial assurance;
- (f) the management of decommissioning activities;
- (g) the conduct of decommissioning (including inventorying, treating, and disposing of the resulting waste); and
- (h) the determination of completion of decommissioning.

A proposed table of contents is attached in Annex II. The requirements will be presented in a format consistent with the new Safety Requirements format. Each requirement or group of requirements will be preceded by introductory text and be followed by explanatory text setting out the implications of meeting the requirements.

7. PRODUCTION SCHEDULE: Provisional schedule for preparation of the document, outlining realistic expected dates for:

STEPS	TARGETED DATE
STEP 1: Preparing a DPP	DONE
STEP 2: Approval of DPP by the Coordination Committee and by the Safety Standards Committees	October 2010
STEP 3: Approval of DPP by the Safety Standards Committees or the relevant group where appropriate	December 2010
STEP 4: Approval of DPP by the CSS	2Q 2011
STEP 5: Preparing the draft	2Q 2011
STEP 6: Approval of draft by the Coordination Committee	3Q 2011
STEP 7: Approval by the Safety Standards Committees for submission to Member States for comments or the relevant group where appropriate	4Q 2011
STEP 8: Soliciting comments by Member States	2Q 2012
STEP 9: Addressing comments by Member States	3Q 2012
STEP 10: Approval of the revised draft by the Coordination Committee Review in NS-SSCS	3Q 2012
STEP 11: Approval by the Safety Standards Committees for submission to the CSS or the relevant group where appropriate	4Q 2012
STEP 12: Endorsement by the CSS	2Q 2013
STEP 13: Establishment by the Publications Committee and Board of Governors (for SR only)	3Q 2013
STEP 14: Target publication date	4Q 2013

8. RESOURCES

Estimated resources involved by the Secretariat (person-weeks) and the Member States (number and type of meetings)

Staff: 26 staff weeks

Consultant: 15 consultant weeks

ANNEX I:

This is a summary of issues to be included in the revision of Safety Requirements as identified:

1. during the several appraisals and peer reviews applying the IAEA Safety Standards;
2. in the course of completing IAEA international projects related to safe decommissioning, and at various workshops and conferences including the Conference on Lessons Learned from the Decommissioning of Nuclear Facilities and the Safe Termination of Nuclear Activities, held in Greece in December 2006;
3. in soliciting from WASSC/NUSSC members feedback on the content and application of the Decommissioning Safety Guides; and
4. while reviewing Western European Nuclear Regulators' Association safety reference levels, which are based on the IAEA Safety Standards.

The Safety Requirements need to be updated:

1. to be consistent with recent revised IAEA Safety Standards, such as the revised Basic Safety Standards and Management System requirements;
2. to elaborate on the selection of a decommissioning strategy, preferences between the three strategies (e.g., if deferred dismantling is chosen, a detailed justification must be provided), and the overall interdependency of the facility's decommissioning strategy with other onsite facilities in multi-facility sites (specifically in the case of shared resources and infrastructure);
3. to clarify the timing of preparing and submitting the decommissioning related documents during the lifecycle of facility;
4. to consider the decommissioning preparatory tasks to be performed during the transition phase between operations and decommissioning;
5. to elaborate on the graded approach to decommissioning during a facility lifecycle;
6. to clarify the content of the final decommissioning reporting documents (formerly called final decommissioning report); and
7. to align with the new format for the Safety Requirements.

ANNEX II:

The proposed Table of Contents is the same as the WS-R-5 Table of Contents. While new sections, subsections and appendices could be added, it would be premature to change the Table of Contents at this time. In future drafting sessions, the Table of Contents will be revised. The proposed Table of Contents is as follows:

1. INTRODUCTION
(includes Background, Objective, Scope, and Structure)
2. PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT
(includes Graded approach to decommissioning safety, Consequences of the graded approach, Radiation protection programme, and Environmental protection programme)
3. RESPONSIBILITIES ASSOCIATED WITH DECOMMISSIONING
(includes Government, Regulatory body, Operating organization, and Interested parties)
4. DECOMMISSIONING STRATEGY
(includes Definition of decommissioning strategies, Selection of decommissioning strategy, and Factors influencing the selection of a decommissioning strategy)
5. DECOMMISSIONING PLANNING DURING FACILITY LIFECYCLE
(includes Design, construction and commissioning, Facility operation, Transition from operation to decommissioning and Decommissioning)
6. FUNDING
(includes Financial Assurance)
7. DECOMMISSIONING MANAGEMENT
(includes Management system, Safety management, Organization and administrative controls, Staffing and qualification, Project management, Documentation and recordkeeping, and Subcontractors involvement).
8. CONDUCT OF DECOMMISSIONING
(includes Preparation for decommissioning and Decommissioning tasks such as inventorying, treating, and disposing of the resulting waste)
9. COMPLETION OF DECOMMISSIONING
(includes Final radiological Survey, Final decommissioning reporting documents, Record retention system, and License termination)

REFERENCES