8 June 2005

DOCUMENT PREPARATION PROFILE FORM

1. IDENTIFICATION

Category:	Safety Guide
Working ID:	351
Proposed action:	New document
Existing Series number(s):	None
Published title/date:	None
Proposed title:	The Use of a Graded Approach in the Application of the Safety Requirements for Research Reactors
Review Committee(s):	NUSSC
Technical Officer:	Heriberto José BOADO MAGAN

2. INTRODUCTION

The safety requirements related to the design and operation of research reactors are covered in NS-R-4. Additional recommendations on the application of these requirements are contained in a number of additional publications dedicated to specific topics related to operation, like utilization and modification, commissioning, maintenance and periodic testing, staffing and training of the operating personnel, and others. A specific document deals with the safety assessment of research reactors and the preparation of the SAR.

A wide range of safety related publications developed mainly for nuclear power plants may also be used in connection with research reactors. They cover a wide range of subjects such as regulatory supervision, siting, QA programmes, emergency preparedness, and others.

It follows that a large volume of safety literature has to be consulted when dealing with a particular reactor project and the applicable requirements have to be properly implemented.

The idea of providing some guidance on grading (or ranking) the requirements and recommendations included in the IAEA's voluminous safety literature is not new. Already in the 1970's it was thought that a graded approach may be helpful to inexperienced users of this literature in deciding which of the safety requirements are more important and which ones are less so for a particular installation, system, service, or activity. This grading would be based on the experience gained in Member States with a long and successful nuclear programme.

While the documents specifically developed for research reactors have already been "graded" in a sense, as they are directly applicable for research reactors, the other more general documents have to be evaluated in order to determine the degree or extent of their applicability to a particular research reactor installation.

Even the dedicated RR documents leave room for RR designers and operators to decide how to apply the requirements. It is recognized that research reactors vary greatly in type, size, utilization and other characteristics so that judgement has to be exercised on the measure of applicability of particular requirements to a specific installation.

It is, therefore, proposed to develop a special document that will guide knowledgeable but inexperienced users of the IAEA Safety Standards how to adapt general safety requirements, not specifically related to RRs, and how to handle the embedded flexibilities in the RR-specific requirements for use in connection with a specific RR installation. The document will deal with all the phases of a research reactor's life and cover also the special topic of regulatory supervision.

A grading process will be used in the document for classifying the various systems, components and services in accordance with their importance to safety. Criteria will be provided for determining the extent of applicability of a particular requirement to a given situation.

3. INTERFACES

The document will support and facilitate the use of NS-R-4 and the other safety guides dedicated to research reactors and indicate how to apply the general or grade NPP related requirements for use in connection with RRs.

Identified interfaces are:

1. GS-R-1: Legal and Governmental Infrastructure for Nuclear, Radiation, Radioactive Waste and Transport Safety, 2000.
2. 35-G1; Safety Assessment of Research Reactors and Preparation of the Safety Analysis Report (1994)
3. 35-G2; Safety in the Utilization and Modification of Research Reactors (1994)
4. DS 260; Maintenance, Periodic Testing and Inspections of Research Reactors
5. DS259; Commissioning of Research Reactors
6. DS261; Operational Limits and Conditions for Research Reactors
7. DS325; The Operating Organization and the Recruitment, Training and Qualification of Personnel for Research Reactors.
8. DS340; Operational Radiation Protection at Research Reactors
9. Safety Report on: Safety Analysis of Research Reactors
10. Safety Report on: Safety of new and existing research reactor facilities in relation to external events.
11. Safety Report on Source Term Derivation and Radiological Consequences (DRAFT)
12. GS-G-1.1; Organization and Staffing of the Regulatory Body for Nuclear Facilities (2002).
13. GS-G-1.2; Review and Assessment of Nuclear Facilities by the Regulatory Body (2002).
14. GS-G-1.3; Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body (2002).
15. GS-G-1.4; Documentation for use in Regulating Nuclear Facilities, (2002)
16. GS-R-2; Preparedness and Response for a Nuclear or Radiological Emergency (2002) (Jointly sponsored by FAO, ILO,OECD/NEA, PAHO,OCHA,WHO)
17. Safety Series No.: 50-C/SG-Q: Quality Assurance for Safety in Nuclear Power Plants and other Nuclear Installations, 1996.

18. DS113; Management Systems for Regulatory Bodies
19. DS336; Management Systems for the Treatment, Handling and Storage of Radioactive Waste
20. DS338 Management Systems for the Safety of Nuclear Facilities and Activities Involving the Use of Ionizing Radiation
21. DS339; Management Systems Implementation (to combine and supersede Safety Guides.50-SG/Q1 to Q7)
22. DS341; Management Systems for Development of Safety Culture
23. DS105; Preparedness for Nuclear and Radiological Emergencies (to combine and supersede 50-SG-G6, 50-SG-O6 and 98)
24. DS44; Criteria for Use in Planning Response to Nuclear and Radiological Emergencies (to supersede 109)

4. CONTENTS

5. PRODUCTION, New provisional schedule:

1.	NUSSC to CSS for further discussion/approval	27-29 October 2004
2.	CSS for discussion/approval	6-8 June 2005
3.	Issue first draft to SC for initial review	August 2005
4.	Issue draft to NUSSC for initial review	August 2005
5.	Discuss at NUSSC meeting	October 2005
6.	CS meeting (Final)	Feb 2006
7.	Review by SC	March 2006
8.	Issue to NUSSC for approval to send to MSs	March 2006
9.	NUSSC approval to send to MS	April 2006
10.	Issue to MS for comment	April 2006
11.	Receive Member State comments	August 2006
12.	CSM meets to address comments, if needed	September 2006
13.	Issue to SC for review	September 2006
14.	Issue to NUSSC for final review	December 2006
15.	Approval by NUSSC	April 2007
16.	Submit to CSS for review	April 2007
17.	Approval by CSS	June 2007
18.	Internal review by technical editor	August 2007
19.	Submission to publication committee	September 2007
20.	Target publication date	December 2007