Document Preparation Profile (DPP)

1. IDENTIFICATION

Document Category	**Safety Guide**
Working ID:	**DS 435**
Proposed Title:	**Safety of Small/Medium, Transportable and Floating Nuclear Power Plants**
Proposed Action:	**new document**
Published Title/Date	
Safety Series No.:	
SS Committee(s):	**NUSSC, TRANSSC**
Technical Officer(s):	**Marco Gasparini**

2. BACKGROUND

An increasing number of countries with limited grid capacity have expressed interest in building small nuclear power plants, the desire of some countries to install and operate plants for long periods of time between or without refuelling in potential remote areas, and the desire for constructing and operating mobile floating plants are posing new challenges to the safety evaluation and licensing because of the lack of existing applicable experience.

The IAEA Safety Standards for the site evaluation, NPPs design and safety assessment are adequate to address most safety aspects related to these reactors. The requirements are applicable, although a graded approach may be appropriate. However, the current Safety Guides are technology-dependent to a large extent and do not address specific aspects related to these new reactors such as integrated systems (core and steam generators inside the vessel), transportable reactors, “nuclear battery” type reactors, or other features associated with their transportability.

3. OBJECTIVE AND JUSTIFICATION

A number of Member States are developing/constructing reactors of the types mentioned above, have expressed their interest in the early establishment of a Safety Standard dealing with these NPPs. The IAEA has accepted the task to prepare a Safety Guide that will address the safety aspects connected to their non conventional features, although there is no consolidated practice or operating experience for these NPPs,. The objective of the new Safety Guide is to provide a set of recommendations that will facilitate the compliance of the designs with the existing Safety Requirements. The Safety Guide will cover the assessment of the safety aspects of the design, and the recommendations provided will be mainly aimed at achieving compliance with the fundamental safety principles and the requirements of NS-R-1 and GS-R-4.

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

The new Safety Guide will be included in the series of the design of NPPs and will mainly interface with the Safety Standards below:

Safety of Nuclear Power Plants: Design - NS-R-1, and related Safety Guides

Site Evaluation for Nuclear Installations - NS-R-3, and related Safety Guides

Safety Assessment for Facilities and Activities - GS-R-4, and related Safety Guides

Governmental, Legal and Regulatory Framework for Safety - GS-R-1, and related Safety Guides

5. OVERVIEW

The Safety Guide will address nuclear power plants with the following types of reactors:

1) Integrated system reactor

2) “modular” type reactors

3) Transportable and barge-mounted reactors

For each of the addressed reactor types, the Safety Guide will identify the features that are relevant to safety and substantially innovative or different from those of existing reactors, and for which the current Safety Standards could be inadequate. Taking into account these features, the safety guide will provide recommendations for the compliance of the designs with the safety requirements in the areas of design basis definition, reactor control and stability, reactor cooling, confinement of radioactivity and response to failure and accidents.

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6. PRODUCTION: Provisional schedule for preparation of the document, outlining expected dates for:

Approval of DPP by the Coordination Committee: August 2009	
Approval of DPP by the Safety Standards Committees:	October 2009
Approval of DPP by the CSS:	April 2010
Approval of draft by the Steering Committee:	July 2010
Approval by the Safety Standards Committees for submission to Member States for comments:	October 2010
Approval of the revised draft by the Steering Committee:	February 2011
Approval by the Safety Standards Committees for submission to the CSS:	June 2011
Review in NS-SSCS:	July 2011
Endorsement by the CSS:	October 2011
Submission to Publications Committee	November 2011
Target publication date	January 2012

7. RESOURCES

Estimated resources involved by the Secretariat and the Member States:

Drafting: 3 CSs with 3 experts each, 1 Technical Meeting
Resolution of Comments by NUSSC: 1 CS with 3 experts
Resolution of Comments by MS: 1CS with 3 experts
Finalization of the draft: 1CS with 3 experts