

Document Preparation Profile (DPP)

1. IDENTIFICATION

Document Category **Safety Guide**

Working ID:

Proposed Title: **Site Survey and Site Selection for Nuclear Installations**

Proposed Action: **Revision of an existing Safety Guide**

Published Title/Date **Site Survey for Nuclear Power Plants/1984**

Safety Series No.: **50-SG-S9**

SS Committee(s): **NUSSC (Lead Committee), WASSC/RASSC.**

Technical Officer(s): **A. Godoy/ISSC/NSNI**

2. BACKGROUND

In the 1980's when the first set of Nuclear Safety Standards (the NUSS series) was prepared, five categories were considered: Governmental Organization, Siting, Design, Operation and Quality Assurance. The siting series included one Safety Code and fourteen Safety Guides. One of these Safety Guides was the 50-SG-S9 –published in 1984- dealing with the Site Survey for Nuclear Power Plants. This Safety Guide provided guidance on the data to be collected and the methods for the selection of a nuclear power plant site. The criteria used were related to safety and the environment. Other important factors such as economic, socio-economic, strategic and public acceptance factors were provided in an Annex which, formally speaking, were not considered part of the Safety Guide.

During the same period of time, and as feedback collected from a number of Site Safety Review Missions conducted, a need was identified to introduce the concepts of Quality Assurance in the Siting of Nuclear Power Plants. As a first step in this direction TECDOC-416 was prepared in 1987 with the title "Manual on Quality Assurance for the Survey, Evaluation and Confirmation of Nuclear Power Plant Sites". This TECDOC provided information in the preparation of the safety Guide on 50-SG-Q9 Quality Assurance in Siting (1996).

In 2003, the NS-R-3 was published for the site evaluation of nuclear installations. This safety standard was dealing with the requirements for the full characterization of the site for a nuclear installation from the safety point of view, covering the entire process of the site evaluation, i.e. the selection, assessment, pre-operational and operational stages. Thus, NS-R-3 does not cover the initial stage of the siting investigations –the site survey- when studies and investigations at regional scale are performed to identify and select candidate sites on the basis of safety and other considerations.

There is now the need to update the old 50-SG-S9 to streamline it with the NS-R-3 covering the first stage of the siting process for safety related aspects only. It is recognized that other aspects may also be important in the site selection process and the Department of Nuclear Energy is simultaneously starting a document covering these, e.g. technological, economic and management systems. It is intended to prepare these two documents (i.e. the NE document and this Safety Guide) in a similar format and at a similar level of detail in order to facilitate their use by the Member States in the initial stages of the siting process.

3. OBJECTIVE AND JUSTIFICATION

- *The primary objective is to update and revise the existing Safety Guide 50-SG-S9, issued in 1984, so that it can provide recommendations for the site selection activities for all types of nuclear installations. Especially with the “new build” project requests for NPPs that the IAEA is receiving, this has become high priority.*
- *The second objective is to provide the necessary links of this document with concepts such as safety, environmental protection, management system considerations, and the demonstration of the feasibility of emergency planning.*
- *The third objective is to update the information and the recommended methodologies in the Safety Guide in line with NS-R-3 and the suite of Safety Guides in the “Site Evaluation” series, as well as with the DS424 under development.*
- *The fourth objective is to bring new guidance for the site selection of nuclear installations other than NPPs.*

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

The document will be part of the set of safety guides under the NS-R-3 Safety Requirements on site selection and evaluation for nuclear installations, for using during the initial stages of the siting process.

This revised document should interface with the following:

- NS-R-3 Requirements for Site Evaluation for Nuclear Installations (including the six Safety Guides related to Site Evaluation)
- DS379 International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources
- DS 424 Establishing a Safety Infrastructure for a National Nuclear Power Programme.
- RS-G-1.8 Environmental and Source Monitoring for Purposes of Radiation Protection
- DS427 Radiological Environmental Impact Analysis for Facilities and Activities
- NE Series Publication NG-G-3.1 Milestones in the development of a National Infrastructure for Nuclear Power

5. OVERVIEW

It is intended to produce a document that can be useful to all Member States in the process of site selection for all nuclear installations. Aspects related to safety, security, environmental impact and the feasibility of emergency planning will be considered. Other considerations will be the subject of a parallel document to be prepared by the NE Department. These two activities will be coordinated.

The proposed Table of Contents is as follows:

1. INTRODUCTION

- 1.1 Background
- 1.2 Objective
- 1.3 Scope
- 1.4 Structure

2. GENERAL CONSIDERATIONS FOR THE SITE SELECTION OF NUCLEAR INSTALLATIONS

2.1 Basis for the Screening Criteria

2.2 Basis for the Ranking Criteria

3. SITE SURVEY FOR NUCLEAR POWER PLANTS

3.1 Safety and security Related Criteria (including the feasibility of emergency plans)

3.2 Other Criteria

3.3 Phases of Site survey for Nuclear Power Plants

3.4 Information and Investigations Necessary for Different Phases of Site Survey (Database)

3.5 Screening Process

3.6 Ranking Process

3.7 Graded Approach for the Management System for the Site Survey for a Nuclear Power Plant

4. SITE SURVEY FOR NUCLEAR INSTALLATIONS OTHER THAN NUCLEAR POWER PLANTS

4.1 Safety and security Related Criteria (including the feasibility of emergency plans as applicable)

4.2 Other Criteria

4.3 Phases of Site survey for Nuclear Installations Other than Nuclear Power Plants

4.4 Information and Investigations Necessary for Different Phases of Site Survey (Database)

4.5 Screening Process

4.6 Ranking Process

4.7 Graded Approach for the Management System for the Site Survey for Nuclear Installations Other than Nuclear Power Plant

REFERENCES

GLOSSARY

6. PRODUCTION:

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

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|----|------------------------------------------------|--------------|
| 1. | Approval of DPP by the Coordination Committee: | July 2009 |
| 2. | Approval of DPP by NUSSC and WASSC/RASSC: | October 2009 |
| 3. | Approval of DPP by CSS | April 2010 |

Development of revised document:

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| 4. | First CSs to prepare Preliminary 1st draft: | February 2010 |
| 5. | Second CSs to prepare Final 1 st draft (After CSS): | April 2010 |
| 6. | Approval of draft by the Coordination Committee: | May 2010 |
| 7. | Approval of Draft by NUSSC/WASSC | June 2010 |
| 8. | Submission to Member States for comments | July 2010 |
| 9. | Approval by NUSSC/WASSC for submission to CSS | June 2011 |
| 10. | Endorsement by CSS | October 2011 |
| 11. | Editing and Submission to the Publications Committee: | November 2011 |
| 12. | Target publication date: | February 2012 |

7. RESOURCES

Secretariat: 1 P staff (0.30 Myears) + 3 CSs (15 Mweeks of non-staff)

MSs: review process: 2 Mweeks/MS * 30 Member States = 60 Mweeks