



Rev. 001
File# 2.01
E-Docs# 3239203

APPROVED FOR INTERNAL USE

STAFF REVIEW PROCEDURE:
Application for Licence to Prepare Site
For a New Nuclear Power Plant
SRP-2.01-SP-11NNNN-004

Rev. 001

General Plant Description - Description of Exclusion Zone
and Proposed Layout of Structures Within the Zone

Directorate of Regulatory Improvement and Major Projects Management
New Major Facilities Licensing Division



Preface

Staff Review Procedures have been developed by the CNSC staff, as internal working documents, to be used by CNSC staff to assist them in the conduct of regulatory reviews of a potential licensee's (proponent) application for a Licence to Prepare Site (LTPS) for a new nuclear power plant in Canada. They are not regulatory documents, although their respective topics of assessment and criteria are based on regulations under the Nuclear Safety and Control Act, General Nuclear Security and Control Regulations, Class I Nuclear Facilities Regulations and/or Nuclear Security Regulations.

The initiative to develop Staff Review Procedures was undertaken in order to ensure a consistent application of the internal processes for the review of licence applications for new nuclear power plants, and to improve the efficiency and effectiveness of such reviews.

Staff Review Procedures are considered by CNSC staff to be "living documents", which will evolve based on the experience gained from licensing reviews.

Context

An application for a *Licence to Prepare Site* for a new nuclear power plant is submitted by a proponent pursuant to Section 24(2) of the *Nuclear Safety and Control Act* (NSCA), in order to initiate the licensing process for the preparation of a site for the future construction and operation of a facility regulated under the NSCA.

The application for a *Licence to Prepare Site*, in concert with the submission of a Project Description, triggers an environmental determination (as per Section 5 of the *Canadian Environmental Assessment Act*), which in turn triggers the Environmental Assessment (EA) process.

As part of CNSC's licensing process, an application for a *Licence to Prepare Site* will be reviewed against the "Application for *Licence to Prepare Site*" Staff Review Procedures. The Procedures represent CNSC expectations and guidance supporting the assessment of each application by CNSC staff, and are intended to augment and support licensing recommendations by staff to the Commission tribunal.

Effective Date	Rev. #	Description of Revisions Made to Document	
		Section	Changes Made
2008-10-21	000	All	New Document issued under Document Change package (DCP) 3297778
2009-03-02	001	2.2	Technical Change: Added paragraph to section (where marked) to coincide with text contained in Section 4.2.1 of RD-337 (November 2008) - DCR 3345259 contained in DCP 3345308.

Part	Area of Review ¹	Applicable Regulation under the Nuclear Safety and Control Act ** Note: Bolded regulations are considered to be key regulations for this topic area**		
---	Description of Exclusion Zone and proposed layout of structures within the zone.	GNSCR ²	3(1)(d)	<i>A description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence;³</i>
		Class I ⁴	3(a)	<i>a description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone;</i>
			3(b)	<i>plans showing the location, perimeter, areas, structures and systems of the nuclear facility;</i>
		Nuclear Security Regulations	3(b)	<i>An application for a licence in respect of Category I or II nuclear material, other than a licence to transport, and an application for a licence in respect of a nuclear facility referred to in paragraph 2(b) shall contain the following information in addition to the information required by section 3 of the Nuclear Substances and Radiation Devices Regulations or sections 3 to 8 of the Class I Nuclear Facilities Regulations, as applicable:</i> <i>the site plan referred to in section 16.</i>

¹ Topics are defined, for both Environmental Assessment and Licence to Prepare Site in E-DOCS# 3217469.

² General Nuclear Safety and Control Regulations

³ Text that has been struck through does not imply that that portion of the regulation does not apply, but rather that that portion of the regulation is not the focus of this Staff Review Procedure.

⁴ Class I Nuclear Facilities Regulations

1. Topic of Review

This review focuses on the adequacy of the descriptions of:

- The site of the activities to be encompassed by a *Licence to Prepare Site*;
- Proposed exclusion zones; and,
- The location, perimeter, areas, structures and systems of the nuclear facility.

2. Criteria and Objectives

2.1 General Criteria

Using information from the applicant's Environmental Impact Statement (EIS) and site preparation licensing submissions, for each proposed plant design and proposed layout(s) of areas, structures and systems of the nuclear facility(ies), the description in the submission(s) includes:

- Satellite photographs of the site and surrounding region, with a resolution scale of 1:1440 or better, including the proposed exclusion zones and site boundaries;
- Topographical map(s) for each location in 1/50,000 to no greater than 1/250,000 scale for all structures and associated infrastructure;
- All drawings are to be to scale and include a legend;
- Proposed layouts of structures (all labeled) including but not limited to:
 - Power Block, Turbine-Generator Block, Auxiliary Power Buildings (e.g., diesels) and related fuel storage;
 - Switchyard;
 - Where applicable, cooling tower structures, water intakes and outlets;
 - Large structures (e.g. shops or parts stores) in the immediate vicinity to the proposed NPP;
 - Proposed conventional and radiological waste transfer and storage areas;
- Layouts of all site roads and proposed transmission corridors;
- Locations of transportation corridors in the vicinity of the site. (e.g., rail lines, shipping lanes, roads, proximity to airports if applicable)

Note: Map and photograph resolution criteria are driven by security needs, however submissions are not considered, at this stage, to be *Prescribed Information* under the *Nuclear Safety and Control Act*.

2.2 Additional Criteria Concerning the Proposed Boundary of the Exclusion Zone

Per Section 1 of the *Class I Nuclear Facilities Regulations*:

“exclusion zone” means a parcel of land within or surrounding a nuclear facility on which there is no permanent dwelling and over which a licensee has the legal authority to exercise control.

The case for the extent of the proposed exclusion zone boundary clearly considers the following criteria:

- The committed whole-body dose for average members of the critical groups who are most at risk, at or beyond the site boundary⁵ is calculated in the deterministic safety analysis for a period of 30 days after the analyzed event.
- The proposed boundary is 914 m from the outer wall of the reactor building⁶;
- Under normal operating conditions, the effective dose at the exclusion zone boundary to a person who is not a nuclear energy worker does not exceed 1 mSv over the period of one calendar year⁷;
- Under Anticipated Operational Occurrence (AOO) conditions, the effective dose at the exclusion zone boundary to a person who is not a nuclear energy worker does not exceed 0.5 mSv over the release time due to the AOO⁸;
- Under Design Basis Accident (DBA) conditions, the effective dose at the exclusion zone boundary to a person who is not a nuclear energy worker does not exceed 20 mSv over the release time due to the DBA⁹.

The applicant has clearly demonstrated they have the legal authority to exercise control over activities conducted inside the exclusion zone.

Case 1: Where the exclusion zone is inside site lands owned by the applicant: This case is reviewed under a separate site preparation review Procedure where submissions were examined against Section 3(c) of the *Class I Nuclear Facilities Regulations*.

Case 2: Where the exclusion zone extends outside site lands owned by the applicant, the submissions present legal evidence of the authority to exercise control over those lands outside the ownership boundaries and this proof has passed CNSC legal counsel scrutiny.

⁵ Site Boundary in this case shall be interpreted as the Exclusion Zone boundary.

⁶ A technical case supporting a smaller exclusion zone can be submitted for CNSC Staff review and consideration.

⁷ Source: Section 13(1) *Radiation Protection Regulations*

⁸ Source: RD-337 *Design of New Nuclear Power Plants*

⁹ Source: RD-337 *Design of New Nuclear Power Plants*

3. Review Procedure

The Review Lead, as identified in the project-specific Assessment Plan, verifies that the information criteria listed in Section 2 has been satisfied and is credible.

The review, documentation of assessment results and report approval will be conducted in accordance with the project-specific Assessment Plan. Results of the review will be presented in a Review Report template that is included in the project-specific Assessment Plan. The report is to be approved by the appropriate signing authorities. The approved report will be assigned an E-DOCS number under File 2.01 for the appropriate facility.

4. Evaluation Conclusions and Recommendations

The review report shall contain a statement of whether the information submitted by the applicant has met the requirements of the regulations quoted prior to Section 1.

If a requirement has not been met, the review report shall contain recommendations for how the applicant can resolve the gap in information. The review report will contribute to the basis for licensing recommendations to the Commission.

5. References

1. RD-337 *Design of New Nuclear Power Plants*.
2. *Radiation Protection Regulations, SOR/2000-203*.
3. *Class I Nuclear Facilities Regulations*.