e-DOC: 3991764
File: 2.01

OPGN-CNSC PROTOCOL FOR THE CONDUCT OF THE INTEGRATED SAFETY REVIEW (ISR) THROUGH TO THE INTEGRATED IMPLEMENTATION PLAN (IIP) FOR THE REFURBISHMENT OF DARLINGTON NGS 'A'

REV. 001

August 18, 2012

Revision History:

Effective Date	Rev. #	Protocol e-DOC #	Section(s) changed	Description of the Changes	Justification E-DOCS #
October 4, 2010	000	3600161	N/A	Original Document	N/A
August 18, 2012	001	3991764	4.3.2 Appendix A, Attachment 1 Appendix B, Steps 1, 2, 4 Appendix B, table	Representatives changed Status of activities updated, additional activities added, submission dates for IIP changed Position titles changed Representatives changed	3935698 3992020

Table of Contents

This protocol is effective on the date of signature

BETWEEN
ONTARIO POWER GENERATION INC.
889 Brock Road
Pickering, Ontario
L1W 3J2
(referred to in the Protocol as "OPGN")

AND
THE CANADIAN NUCLEAR SAFETY COMMISSION
280 Slater Street
P.O. Box 1046, Station "B"
Ottawa, Ontario
K1P 5S9
Canada
(referred to in the Protocol as "CNSC")

A1 Understanding

Schedule and scope certainty are critical parts of OPGN's refurbishment project for the life extension of the Darlington Nuclear Generating Station (DNGS). With regards to the regulatory interaction applicable to this protocol, both schedule and scope certainty are dependent on the production of deliverables by the licensee to acceptable quality and their review by CNSC staff in a timely manner.

The following documents and any amendments relating thereto, which will be dealt with through formal correspondence between designated representatives, form the agreement between OPGN and the CNSC:

1. Article A1 to Article A4, both inclusive;
2. Appendix A - Statement of Technical Scope and Schedule; and
3. Appendix B - Issue Resolution Process.

In the event of discrepancies in the wording of different parts of this protocol, the wording that first appears in the protocol shall prevail over wording that appears later.

This protocol details the administrative process to be used between the CNSC and OPGN, to manage the regulatory interaction for the DNGS Integrated Safety Review (ISR) through to the Integrated Implementation Plan (IIP) as described by CNSC regulatory document *RD-360 Life Extension of Nuclear Power Plants, February 2008*. It will follow existing regulatory requirements without compromising the CNSC's independence and ability to enforce the *Nuclear Safety and Control Act* (NSCA) and comply with the *Canadian Environmental Assessment Act* (CEAA) and their associated applicable regulations. It specifically applies to

timely completion of the ISR, IIP and licensing submissions as outlined in Attachment 1 to Appendix A. This protocol addresses four key items to facilitate schedule adherence for both participants as follows:

1. Progress of activities to a specific schedule;
2. Use of a defined process to resolve issues;
3. Identification of points of contact for communication; and
4. Controlling changes to the agreed protocol.

A2 Date of Completion of Activities and Description of Activities

2.1 Subject to this Protocol, CNSC staff shall perform and complete the activities that are described in Appendix A – Technical Scope and Schedule within the timeframes indicated on the high-level schedule in Attachment 1 to Appendix A. The ability of CNSC staff to complete the reviews within the allocated time is dependent on the quality of the deliverables submitted by OPGN; reviews will be performed in accordance with the *Staff Review Guide for Integrated Technical Assessment of Licensee's ISR Submissions SRG-2.01-ISR-116500-010.2*.

2.2 Changes to the schedule in Appendix A will be managed by formal correspondence in accordance with the *CNSC Protocol Governing Correspondence between the CNSC Power Reactor Regulatory Program Staff and Power Reactor Licensees Rev. 3.1* as amended from time to time.

2.3 The description of the steps and deliverables to be undertaken by OPGN is described in the CNSC regulatory document *RD-360 Life Extension of Nuclear Power Plants, February 2008*. Any additions or deviations to these requirements, such as implementation of lessons learned from previous or concurrent refurbishment projects or a revised RD-360, will be agreed upon through formal correspondence.

2.4 Any disputes shall be resolved at the working level or by escalation per Appendix B.

A3 Fees for Regulatory Effort

3.1 CNSC cost recovery for this regulatory effort shall be through licence fees that will accord with the Canadian Nuclear Safety Commission Cost Recovery Fees Regulations. All efforts by CNSC staff in reviewing the ISR deliverables and IIP will be included in the normal cost recovery fees collection process and will be identified separately.

A4 Representatives

4.1 The representatives are responsible for all matters concerning the activities under this Protocol. Any proposed changes to the scope of the activities are to be discussed and authorized by means of formal correspondence.

4.2 For the purposes of the Protocol, the CNSC shall be represented by the following representatives:

4.2.1 The Director General, Directorate of Power Reactor Regulation (position currently held by Dr. G. Rzentkowski), for general matters related to this Protocol; and

4.2.2 The Director, Darlington Regulatory Program Division (position currently held by Mr. P. Webster), for matters related to the Technical Scope and Schedule.

4.3 For the purposes of the Protocol, OPGN shall be represented by the following representatives:

4.3.1 The Senior VP Refurbishment (position currently held by Mr. D. Reiner), for general matters related to this Protocol

4.3.2 The Manager, Regulatory Affairs – Refurbishment Licensing Support (position currently held by D. Macdonald) and the Director of Nuclear Safety – Refurbishment (position currently held by R. Martin), for matters related to the Technical Scope and Schedule.

Either participant hereto may, by formal correspondence, change any of its appointees mentioned above.

This Protocol has been executed on behalf of OPGN and on behalf of CNSC by their duly authorized representatives:

FOR OPGN	FOR CNSC
Signature:	Signature:
Original signed by	*Original signed by*
T.N. Mitchell President and CEO Ontario Power Generation Inc.	M. Binder President and CEO Canadian Nuclear Safety Commission
October 4, 2010	*October 4, 2010*
Date:	Date:

Appendix A – Technical Scope and Schedule

Technical Scope

The technical scope includes effort to review the deliverables of the ISR, culminating in the issue of a final statement by CNSC staff on the acceptability of the DNGS ISR and safety upgrades to extend the operating life of DNGS, as proposed by OPGN's Integrated Implementation Plan (IIP).

The licensing requirements for the life extension of DNGS are set out in CNSC regulatory document *RD-360 Life Extension of Nuclear Power Plants, February 2008*. These requirements include conducting and producing the deliverables for:

1. Environmental Assessment (EA);
2. Integrated Safety Review (ISR); and
3. Global Assessment (GA).

The results of these assessments are compiled into the IIP which, once accepted by the Commission, will form the regulatory basis for the scope of work to be performed by OPGN for the life extension of DNGS. The accepted IIP, other reliability enhancing improvements, and necessary infrastructure projects make up the entire scope of refurbishment.

The technical scope includes:

1. Review of documents submitted by OPGN as detailed in Attachment 1, and such other documents that may be necessary for the review;

2. Issuance of formal correspondence documenting the results of the reviews in 1 above;

3. Discussion and resolution of issues affecting whether there are barriers that would prevent safe long term operation of DNGS;

4. Set-up and exercise of an issue resolution mechanism on the technical issues associated with the deliverables identified in this Protocol;

5. Periodic reporting of technical and schedule progress in the review, percentage of activities completed;

6. Issuance of a statement by CNSC staff on the acceptability of the IIP. The statement will not constitute a licence and will not guarantee that a licence would necessarily be granted. Nothing in this Protocol shall impose any obligation on CNSC staff as to the content of the statement. CNSC staff may deliver the statement at its discretion, qualified or not, at any time on or before the end of the review.

The following guiding principles will be followed for the successful completion of the ISR process and IIP:

1. The Protocol applies from the date of signature and ends when CNSC staff has issued its final statement on the acceptability of the IIP. This is to establish regulatory scope and predictability to allow for planning and scheduling as per OPGN governance and CNSC requirements;

2. A licence amendment will be requested by OPGN to change the current DNGS Power Reactor Operating Licence (PROL) expiry date to December 2014;

3. The ISR/IIP process will be risk informed and will apply cost benefit approach taking into consideration new requirements related to improvements in public, worker, and environmental safety as well as security;

4. All formal commitments made will be tracked to minimize the risk of being overlooked and to ensure timely completion;

5. CNSC staff will provide regulatory oversight of the production of deliverables by OPGN to facilitate the production of quality deliverables; and

6. All activities performed for the ISR process described in RD360 will be based on CNSC requirements that are current at the time of the accepted Code Effective Date (CED), with additional requirements documented in formal correspondence.

Schedule

1. OPGN shall provide deliverables to the CNSC on or before the date stated in Attachment 1 for each document and any changes to the schedule in Attachment 1 will be managed through formal correspondence at the Senior VP and Director General level.

2. CNSC staff will issue formal correspondence documenting the findings of their reviews at a date which is consistent with its review plan and which is subject to the availability of resources with due consideration to the ISR/IIP timelines.

    - The schedule and scope certainty are critical parts of the ISR/IIP. Both of these are dependent on the production of deliverables by the licensee to acceptable quality and its review by CNSC staff in a timely manner. To aid in this, CNSC staff will perform initial sufficiency reviews and provide the results to OPGN.

    - The critical deliverables and dates for the interaction between OPGN and CNSC staff are listed in Attachment 1.

    - These may be subject to update as agreed to by OPGN and CNSC staff.

Appendix A - Attachment 1
OPGN and CNSC Activity Schedule

Activity	Date	Status
OPGN submission of proposed CED for the ISR	Jul. 10, 2008	Complete
CNSC staff decision on CED	Jul. 22, 2008	Complete
OPGN submission of ISR procedure, N-PROC-LE-0005	Jul. 27, 2009	Complete
CNSC staff acceptance of ISR procedure, N-PROC-LE-0005 and other documents forming the ISR Basis	Dec. 22, 2010	Complete
OPGN submission of Project Description for the EA	April 28, 2011	Complete
OPGN submission of EIS & TSDs	Dec. 1, 2011	Complete
OPGN request to extend licence to end of 2014	June 28, 2011	Complete
OPGN submission of Final ISR Report	Oct 27, 2011	Complete
CNSC staff issues Final ISR Report sufficiency review	Feb. 6, 2012	Complete
CNSC staff issues EA Draft Screening Report for Public Comment	June 4, 2012	Complete
EA and PROL renewal hearing	November 2012	
CNSC and OPGN staff reach agreement on major ISR findings	December 31, 2012	
CNSC staff issues ISR Final Assessment Report	Jul. 5, 2013	
OPGN submits application for licence renewal	Dec. 2, 2013	
OPGN submission of IIP	Dec. 2, 2013	
OPGN submits Emerging Issues Additional Review	March 2014	
CNSC staff opinion on IIP	April 3, 2014	

Abbreviations used:

CED: Code Effective Date
ISR: Integrated Safety Review
EIS: Environmental Impact Statement
TSD: Technical Support Documents
EA: Environmental Assessment
IIP: Integrated Implementation Plan

Appendix A - Attachment 2
Scope of Regulatory Response

PART A – TECHNICAL ASSESSMENT REPORTS

The technical assessment report(s) will summarize the reviews performed by CNSC staff as follows:

List the reviews carried out by CNSC staff and, for each review, summarize the conclusions reached.

CNSC staff will perform a technical assessment of the submitted ISR Safety Factor Reports and will provide its findings to the licensee for disposition or resolution. For effective assessment by CNSC staff, the licensee's ISR Safety Factor reports should be as self-contained as practicable, avoiding excessive referencing. Where a standard or practice addresses more than one Safety Factor, results of such reviews should be cross-referenced. A cross-reference mapping the Safety Factor Reports to the CNSC Safety and Control Areas is required.

The CNSC ISR Final Assessment Report will convey to the licensee CNSC staff's assessment of the adequacy of the licensee's conclusions reached in their ISR Final Report, especially the results of applying the global assessment methodology to the findings and their disposition.

The report from CNSC staff will form the basis for necessary information that would be used by the Commission on making a decision with respect to life extension.

PART B – COMMISSION DECISIONS

Based upon its statutory mandate, the evidence presented to it and which it considers relevant, CNSC staff assessment and recommendation, the adequacy of the proposed measures in meeting the objectives of the *Nuclear Safety and Control Act*, the Commission will decide on:

1. The Environmental Assessment (EA) for DNGS;
2. The Integrated Implementation Plan (IIP) for DNGS; and
3. OPGN requests for licence amendment and or licence renewal.

Appendix B – Issue Resolution Process

CNSC staff will review the ISR deliverables prepared by OPGN to determine whether there are fundamental issues to extending the operating life of DNGS that will culminate in a CNSC staff position on the acceptability of the IIP. Disagreements may arise during the review. A review and issue resolution mechanism will be used during the ISR/IIP review to facilitate timely completion.

Nothing in this issue resolution process seeks to bind, or has the effect of binding, the Commission.

Step 1: Identification of the Issue & Resolution at the Working Level

1. Monthly OPGN/CNSC staff review meetings will be held to review progress on the ISR/IIP and highlight any potential major issues. Minimum attendance at these review meetings will be the Project Manager, Darlington Regulatory Program Division (CNSC), and the Manager, Regulatory Affairs – Refurbishment Licensing Support (OPGN).
2. It is the intention of both parties to resolve issues at this level.
3. If an issue cannot be resolved at this level, it will be documented (typically, a brief factual summary of the issue and a paragraph representing the view of each organization) by the individuals in Para. 1 within two weeks of failure to resolve, and forwarded to the Director Level (Step 2).

Step 2: Resolution at the Director Level

1. A Step 1 issue, once documented, will be provided to the Director, Darlington Regulatory Program Division (CNSC), the Manager, Regulatory Affairs – Refurbishment Licensing Support (OPGN) and the Director of Nuclear Safety, Refurbishment (OPGN). A meeting will be called, normally within 30 days, to resolve the issue, and the resolution documented.
2. Issues which cannot be resolved at this level will be referred to the Senior Management Level (Step 3) within two weeks, supported by the original or revised documentation from Step 1.

Step 3: Resolution at the Senior Management Level

1. A Step 2 issue, once documented, will be provided to the Director General, Directorate of Power Reactor Regulation (CNSC), the Director General, Assessment and Analysis (CNSC), the Vice-President Refurbishment Engineering (OPGN) and the VP of Regulatory Programs (OPGN). A meeting will be called, normally within 30 days, to resolve the issue, and the resolution documented.
2. Issues which cannot be resolved at this level will be referred to the Executive Level (Step 4) within two weeks, supported by the original or revised documentation from Step 2.

Step 4: Resolution at the Executive Level

A Step 3 issue, with documentation, will be sent to the Executive Vice-President and Chief Regulatory Operations Officer (CNSC) and the Executive Vice-President, Nuclear Projects (OPGN). A meeting will be called, normally within 30 days, to resolve the issue, and the resolution documented.

ISR/IIP MEETINGS

Working Level	Frequency	Representatives
Review schedule status and identify technical issues for resolution.	Every month	OPGN: Donna MacDonald John Peters (for EA issues only) Horst Paetzold (for ISR issues) CNSC: Daniel Desjardins Andrew McAllister (for EA issues only)
Management Level	**Frequency**	**Representatives**
Unresolved issues at the working level will be provided to the managers for resolution	Every quarter or as issues are raised	OPGN: Roy Martin Donna Macdonald CNSC: Phil Webster
Senior Management Level	**Frequency**	**Representatives**
An unresolved issue at the Management Level will be sent to: - CNSC Director General, Directorate of Power Reactor Regulation or delegate; and - OPGN Senior Vice President, Nuclear Refurbishment or delegate	As needed A meeting will be called, normally within 30 days, to resolve the issue, and the resolution documented.	OPGN: Neil Mitchell Laurie Swami CNSC: Greg Rzentkowski Gerry Frappier
Executive Level	**Frequency**	**Representatives**
An unresolved issue at the Senior Management Level will be sent to: - CNSC Executive Vice-President and Chief Regulatory Operations Officer or delegate; and - OPGN Executive Vice President, Nuclear Refurbishment, Projects & Nuclear Support or delegate	As needed A meeting will be called, normally within 30 days, to resolve the issue, and the resolution documented.	OPGN: Albert Sweetnam Dietmar Reiner CNSC: Ramzi Jammal Greg Rzentkowski