

**Project Management Plan**

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**Revision Summary**

<b>Revision Number</b>	<b>Date</b>	<b>Comments</b>
R000	2020-12-07	Initial issue.
R001	2022-04-01	Comprehensive update to reflect revised Program governance structure, and support documents.

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## 1.0 PROJECT OVERVIEW

As part of the Darlington New Nuclear Project (DNNP), Ontario Power Generation (OPG) intends to develop small modular reactor (SMR) technology for a proposed facility at the Darlington new build site, located on OPG lands, east of the existing Darlington Nuclear Generating Station (DNGS).

The primary objectives of this program are listed in [NK054-PCH-01210-00002, Darlington New Nuclear Project Charter](#).

This Program Management Plan describes the overall program required to design, construct, and bring an SMR online. In many cases, the details of individual projects or program requirements refer to sub-documents that will be updated as the program progresses. The terms ‘program’ and ‘project’ are used interchangeably in this plan document when referring to the overall DNNP.

## 2.0 PROGRAM GOVERNANCE, STRUCTURE, AND PLANNING

### 2.1 DNNP Governance Structure

The DNNP Governance structure is shown in Appendix A. The top tier document in the DNNP governance is [NK054-PCH-01210-00002, Darlington New Nuclear Project Charter](#), and is also supported by this document. The second tier consists of the DNNP Program Management Plans and the DNNP Project Management Plans. The third tier includes documents such as manuals, guides, instructions, plans, contractor/owner interface requirements (COIRs), and forms, which are considered process support controlled documents

### 2.2 DNNP Program Management Plans

The Program Management Plans (PgMPs) describe how DNNP is managed to meet the intent of OPG’s Nuclear Management System while establishing program-specific requirements. The PgMPs are designed to provide assurance that all aspects of the program (e.g. engineering, procurement, construction, turnover, and program life cycle phases) will be conducted in accordance with the requirements of:

- Canadian Standards Association Standard N286-12, Management System Requirements for Nuclear Facilities.
- N-CHAR-AS-0002, Nuclear Management System; and
- OPG Corporate and Nuclear governance.

DNNP Program Management Plans may also refer to key implementing documents as required. In cases where no specific DNNP program requirements apply, the program will default to the program documents under [N-CHAR-AS-0002, Nuclear Management System](#).

### 2.3 DNNP Project Management Plans

The Project Management Plans (PMPs), describe aspects related to specific projects or project bundles within the program. This includes specific requirements for resourcing, contracting, Indigenous engagement, stakeholder management, etc.

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## 2.4 Revision Cycle Requirements

Program owners shall review their PgMPs annually and revise as required.

PMPs are reviewed and revised as required when the project goes through each gate.

Revisions may be required to support business planning or significant project milestones. Support for content of PgMPs is provided in Appendix B – Program Management Plan Section Requirements.

## 3.0 PROGRAM SCOPE

The scope of DNNP will be defined and controlled in accordance with the, [OPG-MAN-00120-0011](#), Project Scope Management manual.

As a First-Of-A-Kind (FOAK) deployment of a reactor technology, the scope of the project is expected to evolve through the development phase. External stakeholders and factors, as well as internal decisions on the direction of the project, will mold the scope to meet the objectives set out for DNNP. OPG Engineering has developed a Nuclear Facility Site Requirements Document, which will form the basis of the OPG design requirements.

A DNNP scope review and approval process has been developed and is described in [NK054-PLAN-01210-00100 Sheet 0015](#), DNNP Project Controls Management Plan.

The scope of the Darlington New Nuclear Project consists of all the work required to design, procure, construct, commission an on-grid SMR. Additionally, work is required to ensure successful start-up and operation, which is included in the project scope. The scope is broken down into bundles of work that include the projects and activities required for successful execution of the program. These bundles include:

- Program Management
- Site Preparation
- Nuclear Island
- Balance of Plant
- Commissioning & Start-up

## 3.1 Program Management

The Program Management bundle contains program activities and costs that are programmatic in nature, and not included in other bundles. This includes managing scope, budget, schedule, risks, and stakeholder communications.

The Program Management bundle is broken down into three distinct projects to manage activities and costs. These projects include Program Management & Support, EA& Licensing, and Engineering.

### 3.1.1 Program Management & Support

The Program Management & Support project contains program activities and costs that are programmatic in nature. This includes: Project staffing & expenses, DNNP governance

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development, training, stakeholder management, Indigenous engagement and capacity funding, utilities and site expenses, decommissioning plans and financial guarantees, and project Insurance.

### 3.1.2 Environmental Assessment (EA) & Licensing

Includes activities related to licensing requirements of the facility. This includes licence applications, licence fees, managing regulatory commitments, Environmental Assessment related activities and follow-up monitoring. Further information related to this project may be found in NK054-PMP-01210-00005, Darlington New Nuclear Project EA& Licensing.

### 3.1.3 Engineering

OPG Engineering activities and funding is captured in its own project within the Program Management bundle. In addition to the required oversight of design, OPG Engineering will be developing engineering programs to support the project and eventual operation of the facility. The DNNP Engineering Program is described in [NK054-PLAN-01210-00100 Sheet 0004](#), Darlington New Nuclear Project Engineering Program Management Plan.

## 3.2 Site Preparation

This bundle includes the work authorized to be performed under the Nuclear Power Reactor Site Preparation Licence (PRSL 18.00/2031).

As described in the Licence, site preparation activities include:

- (a) Construction of site access control measures;
- (b) Clearing and grubbing of vegetation;
- (c) Excavation and grading of the site to a finished elevation of approximately +78 metres above sea level;
- (d) Installation of services and utilities (domestic water, fire water, sewage, electrical, communications, natural gas) to service the future nuclear facility;
- (e) Construction of administrative and support buildings inside the future protected area;
- (f) Construction of environmental monitoring and mitigation systems; and,
- (g) Construction of flood protection and erosion control measures.

It also allows possession and use of prescribed information that is required.

The Site Preparation bundle is broken down into 3 main projects: Early Works, Main Site preparation, and Geotechnical Surveys & Studies.

### 3.2.1 Early Works

Early works scope includes the scope that may be performed at a very early state of nuclear facility design. It is planned to be the first construction activities on the site, and includes: Modification of existing roads, installation of domestic and fire water, IT duct banks, Public Announcement system, sanitary lines, construction power, trailer complex, temporary parking, and laydown areas. This project is described in NK054-PMP-01210-00036, DNNP - Site Services and Infrastructure Project Management Plan.

## Project Management Plan

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### 3.2.2 Main Site Preparation

The Main Site Preparation scope includes: Site excavation, grubbing, leveling of the site to meet design specifications of the planned nuclear facility, construction of an administrative building which will also house a full scope simulator, storage of soil spoils, site drainage, and tie-in of utilities that were installed in the Early Works phase. This project is described in NK054-PMP-01210-00006, Main Site Preparation Project Management Plan.

### 3.2.3 Geotechnical Surveys & Studies

This work includes a series of onshore and offshore core drillings and testing to provide the required data for site characterization and design of the power block, buildings, intake structure. It also involves construction of groundwater monitoring wells. This scope is carried under the Main Site Preparation project scope.

### 3.3 Nuclear Island

The Nuclear Island bundle includes the design, procurement, and construction of the Power Block of the Nuclear Facility. It also includes the project that develops and implements the Digital Strategy for the project lifecycle and the operating plant.

#### 3.3.1 Power Block

The Power Block is defined as the Reactor Building, Turbine Building, Control Building, and Radwaste Buildings and the corresponding structures, systems, and components (SSCs) within these buildings. Additionally, this project includes the Protected Area (PA) fence and yard, security systems within the PA, and the cooling water building and related SSCs. This project is further described in [NK054-PMP-01210-00002, Darlington New Nuclear Project - Power Block Project Management Plan](#).

#### 3.3.2 Digital Strategy

The Digital Strategy project includes development and implementation of digital processes and tools for the project lifecycle including design, testing, installation, and commissioning. This project encompasses both Information Technology (IT) systems that support business activities, and Operational Technology (OT) systems that are envisioned to support operational decision making at the facility. This project is further described in [NK054-PMP-01210-00001, Darlington New Nuclear Project – Digital Systems Project Management Plan](#).

### 3.4 Balance of Plant

#### 3.4.1 Switchyard & Grid Connection

This project scope includes design and construction of a site switching station (switchyard) to connect the unit to the electrical grid. The scope beyond the site switchyard that connects to the electrical grid, including transmission lines and any required connections to a transmission station, is being implemented by Hydro One with support and oversight by this project team. This project is described in [NK054-PMP-01210-00004, Darlington New Nuclear Project \(DNNP\) Grid Connection - Project Management Plan](#).

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### 3.4.2 Cooling Water & Shoreline Protection

This Project scope includes design and construction of a cooling water intake and discharge that will provide lake-water cooling to the condensers as well as any other loads. This project also involves design and construction of shoreline protection to prevent erosion of the shoreline of Lake Ontario in proximity to the nuclear facility. This project is described in NK054-PMP-01210-00003, Darlington New Nuclear Project (DNNP) Intake, Outfall, and Shoreline Protection - Project Management Plan

### 3.5 Commissioning & Start-up

This bundle includes activities to train staff, develop operating procedures, and plan and execute turnover, commissioning and start-up of the nuclear facility.

#### 3.5.1 Commissioning & Start-up

Although commissioning and start-up doesn't occur until much later in the project, planning for is required to start early as it touches most other projects and can have a significant impact on program success. This area is described in the Program Management Plan [NK054-PLAN-01210-00100](#) Sheet 0019, Darlington New Nuclear Project Turnover and Commissioning Program Management Plan.

#### 3.5.2 Operational Readiness & Training

This area of operational readiness and training includes activities that support operation of the facility during start-up and operation. It includes staffing the facility for operation, training of those staff that will be supporting the operating unit. In accordance with the memo Accounting Treatment of Darlington New Nuclear Project Program Expenditures, March 2022, operational and training costs related to the operational readiness or ongoing maintenance of an asset will be treated as OM&A. As a result, this project will be separate from the capital projects related to operations and training supporting design and construction of the facility.

### 4.0 PROCUREMENT AND CONTRACT MANAGEMENT

Procurement activities to support materials and services required during the project will be completed in accordance with [OPG-PROG-0009](#), Items and Services Management.

The selection of Development Partner(s) is considered to be a business development process, not a procurement process, which is documented in the associated Contract Order approvals.

Commercial Management and Supply Chain will provide unified support to assist in developing procurement requirements and contracting support for contract requirements, contract scope, and contracting methodology and terms and conditions. The Darlington New Nuclear Project Contract Program Management Plan [NK054-PLAN-01210-00100 Sheet 0016](#), describes the program as it relates to DNNP.

### 5.0 CONSTRUCTION MANAGEMENT

A description of how the DNNP Construction program will be managed is documented in [NK054-PLAN-01210-00100 Sheet 0009](#), Darlington New Nuclear Project Construction Program Management Plan.

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**6.0 OPERATIONS & MAINTENANCE**

[NK054-PLAN-01210-00100 Sheet 0005](#), Darlington New Nuclear Project – Operations & Maintenance Program Management Plan details how DNNP will be managed under the Operations & Maintenance programs.

A separate DNNP Program Management Plan exists for turnover and commissioning – tightly linked to the Operations and Maintenance programs. This plan is issued as [NK054-PLAN-01210-00100 Sheet 0019](#), Darlington New Nuclear Project Turnover and Commissioning Program Management Plan.

**7.0 SAFETY**

**7.1 Nuclear Safety**

[N-POL-0001](#), Nuclear Safety & Security Policy governs the overall treatment of Nuclear Safety at OPGN facilities. It recognizes that nuclear power poses unique hazards, and that protection of workers, public and the environment from these hazards is the overriding priority. This policy states that nuclear safety shall have clear priority over schedule, cost and production.

N-PROG-MP-0014, The Reactor Safety Program for DNNP is owned by Engineering under [NK054-PLAN-01210-00100 Sheet 0004](#), Darlington New Nuclear Project Engineering Program Management Plan.

**7.2 Safety and Environment**

The safety program as it applies to DNNP is described in [NK054-PLAN-01210-00100 Sheet 0012](#), Darlington New Nuclear Project Health and Safety Program Management Plan,

The Environmental Program is described in [NK054-PLAN-01210-00100 Sheet 0014](#), Darlington New Nuclear Project – Environmental Program Management Plan.

**7.3 Radiological Safety**

The Radiation Protection Program for DNNP is described in [NK054-PLAN-01210-00100 Sheet 0006](#), Darlington New Nuclear Project - Radiation Protection Program Management Plan.

**8.0 SECURITY**

Security programs for DNNP are described in [NK054-PLAN-01210-00100 Sheet 0020](#), Darlington New Nuclear Project Nuclear Security Program Management Plan.

**9.0 EMERGENCY PREPAREDNESS, BUSINESS CONTINUITY & FIRE PROTECTION**

Emergency Preparedness, Business Continuity and Fire Protection programs for DNNP are described in [NK054-PLAN-01210-00100 Sheet 0011](#), Darlington New Nuclear Project Emergency Management, Business Continuity, and Fire Protection Program Management Plan.

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## 10.0 LICENSING

Nuclear Regulatory Affairs activities will be governed by [N-PROG-RA-0002](#), Conduct of Regulatory Affairs. Regulatory requirements and commitments with the CNSC and other regulatory agencies are currently documented in the DNNP Power Reactor Site Preparation Licence (PRSL), [PRSL-18.00/2031](#), and associated DNNP Licence Conditions Handbook. Future requirements include a Licence to Construct (LTC) prior to nuclear facility construction, and a Licence to Operate (LTO) prior to nuclear operation.

[NK054-PLAN-01210-00100 Sheet 0008](#), Darlington New Nuclear Project – Licensing Program Management Plan includes a description of how the Licensing program will be managed.

Compliance with the IESO Market Rules and engagement of stakeholders through the IESO Connection Assessments and Approval process is a critical part of this project. Corporate Regulatory Affairs is supporting the project and communications with the IESO to inform the status of the project and discuss the requirements. A System Impact Assessment is planned as part of the initiation phase. Details of the project that will connect to the electrical grid can be found in Darlington New Nuclear Project (DNNP) Grid Connection Project, NK054-PMP-01210-00004.

## 11.0 NUCLEAR WASTE

The program supporting nuclear waste is documented in [NK054-PLAN-01210-00100 Sheet 0010](#), Darlington New Nuclear Project Nuclear Waste Program Management Plan.

## 12.0 STAKEHOLDER AND INDIGENOUS RELATIONS

[NK054-PLAN-01210-00100 sheet 0013](#), Darlington New Nuclear Project Stakeholder Relations and Indigenous Relations Program Management Plan describes the programs as applied to the life-cycle of DNNP. Project bundles may also have specific Indigenous engagement plans that speak to particular areas of the various projects.

## 13.0 DECOMMISSIONING

[NK054-PLAN-01210-00100 Sheet 0021](#), describes Darlington New Nuclear Project Decommissioning Management Plan.

## 14.0 QUALITY MANAGEMENT

[NK054-PLAN-01210-00100 Sheet 0003](#), describes Darlington New Nuclear Project Quality Management Plan.

### 14.1 Quality Assurance & Corrective Action Program

[NK054-PLAN-01210-00100 Sheet 0002](#), DNNP Project Assurance Program Management Plan, describes the program assurance model for DNNP.

DNNP related adverse conditions should be identified in the OPG SCR system using Line Management Codes (LMCs) which have been created under a Darlington New Nuclear category in the SCR database. This will allow search and trend analysis in the project. The following existing codes may be used, or new codes initiated:



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DNNP – PM (Program Management)  
DNNP – ENG (Engineering)  
DNNP – EA&L (EA & Licensing including Regulatory Affairs)

In some cases partners and vendors may use their own corrective action management programs to which OPG will have visibility. In addition, ePMX tools will be used to track actions and issues documented during execution of the project.

### 15.0 DOCUMENT MANAGEMENT

The document management program as applied to DNNP is detailed in [NK054-PLAN-01210-00100 Sheet 0018](#), Darlington New Nuclear Project Document Management Program Management Plan.

### 16.0 PROJECT CONTROLS

[OPG-PROG-0039](#), The Project Management Program governs DNNP to ensure successful integration and control each of the projects within the program.

Specific aspects of Project Controls for DNNP is detailed in [NK054-PLAN-01210-00100 Sheet 0015](#), Darlington New Nuclear Project Controls Program Management Plan. This includes management of scope, schedule, cost, change, decisions, reporting, risk, and lessons learned.

### 17.0 RESOURCE MANAGEMENT

Staffing and resourcing needs vary over the life cycle of a project. DNNP will be staffed with a combination of permanent OPG and temporary, augmented, or seconded staff to fulfill project needs throughout its lifetime. OPG resource management and planning is reviewed and reconfirmed on an annual basis as part of the business planning cycle. Onboarding of staff onto the project is done in accordance with established OPG HR processes.

Training requirements are to be consistent with that of OPG's Project and Engineering organizations. The DNNP training program is described in [NK054-PLAN-01210-00100 Sheet 0007](#), Darlington New Nuclear Project Training Program Management Plan.

#### 17.1 Project Organization Map

The DNNP project organization map is based on a matrix organization, with many interfaces to existing OPG functional groups supporting the DNNP objectives. Key project personnel are identified in Table 7, with the current DNNP organization chart shown on [Darlington New Nuclear Reporting SharePoint](#).

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## DNNP Key Role Identification and Description

Role	Role Description for DNNP
Chief Projects Officer	Sponsor for the Darlington New Nuclear Project
Chief Nuclear Engineer	DNNP Licence holder
VP SMR Execution	Overall accountability for successful execution of the Darlington New Nuclear Project.
DNNP Project Director(s)	Accountability for successful execution of their respective areas of the Darlington New Nuclear program. Primary responsibility for Scope/Schedule/Cost development, project reporting, risk management, contract management, decisions related to strategic direction, resourcing, stakeholder relations, and management of program contingency within given authority.
DNNP Manager(s) – Projects	On behalf of the DNNP Project Director, accountable for developing scope, schedule, cost through all phases of the project(s) under their responsibility. Accountable for project monitoring to ensure cost/schedule/scope stays within the approved envelope. Working with Engineering, develop SoWs for contracts, and provide oversight of staff and of vendors to ensure safety and quality.
Project Controls Director	Overall accountability for Project Controls, including cost, risk, estimating, gating, change control, schedule management, Reporting and ensure the enterprise project management systems are updated with quality for DNNP to meet the requirements of the Project Management Program.
Project Controls Manager	Responsible to lead and provide project controls support in cost, risk, estimating, gating, change control, schedule management, Reporting and ensure the enterprise project management systems are updated with quality for DNNP to meet the requirements of the Project Management Program.
VP Enterprise Commercial Management	Overall accountability to develop contracting strategies for partnerships and vendor services, negotiating contracts, providing project with advice for managing contracts, and leading contract disputes. This position works closely with Law and Supply Chain on behalf of projects for major contract awards.
Operations & Maintenance Director - DNNP	Overall accountability for Operations & Maintenance programs as they apply to the DNNP project through the project lifecycle. This includes design reviews for operability and maintainability, oversight of training, operations and maintenance staffing, and development of programs for operation of the site. As the senior license owner of the operating plant, accepts turnover from construction and accountable for ensuring the systems and processes are in place to safely operate the plant.
Turnover & Commissioning Manager - DNNP	Accountability for the turnover and commissioning aspects of the program. Matrixed to Director Ops & Maintenance
Training Manager - DNNP	Accountability for training programs for DNNP. Matrixed to Director Ops & Maintenance
Engineering Director	Accountable for Engineering aspects of OPG's New Build programs, and OPG Design Authority for aspects of Darlington New Nuclear. Provides design direction and guidance for the scope related to DNNP and site. Includes development of owners' requirements and engineering scope. Responsible to ensure adequate qualified resources for the OPG design and engineering support activities. Responsible to ensure all design-related regulatory requirements, applicable design standards, and OPG policies and procedures are met. Responsible to develop the Management Systems Plan for Construction and O&M phases.
Engineering Programs & Oversight Manager	Prepare and direct the Overall Management System and QA requirements for DNNP. Accountable to develop the Engineering Oversight Model, Engineering Contract Management, and Engineering Quality Oversight Plan. Accountable for execution and oversight of design engineering and technical acceptance of Engineering products and service through the owners Engineers.
Corporate Relations Senior Manager - DNNP	Provide strategic advice to maintain relationships with the public and local government (Host Communities). Accountable to ensure regulatory requirements with respect to public information are met. Responsible to develop public and stakeholder management plans. Leads public and OPG messaging for DNNP. Supports Indigenous community relations planning and activities.
Manager, Projects EA & Licensing	Project Management accountability for the EA & Licensing Project which primarily includes management of activities supporting Licensing and Permits. Working closely with Regulatory Affairs Licensing Manager, supports licence application activities, licence hearings, and other related requirements. In addition to licensing, this role includes managing commitments related to the licensing process and planning and oversight for permits required.
Manager, Regulatory Affairs DNNP Licensing	Accountable to ensure licence and other regulatory requirements are met. Strategic planning and advice to strengthen relationships with the CNSC and manage issues related to regulatory concerns. Overall accountability for communications with CNSC related to DNNP.

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Role	Role Description for DNNP
	Responsible to develop licensing protocols with CNSC. Working closely with Manager, Projects EA & Licensing, to plan and manage licensing process, licence application activities, licence hearings, and other requirements.
Nuclear Environment, Director Environment Operations Support	Responsible for supporting completion of Environment commitments for DNNP Site Preparation, including supporting various permits required prior to the start of site preparation activities. Provides support to the project regarding the Environmental Assessment and licensing applications. Provide environmental support for site preparation and construction activities.
Construction Director – Construction Centre of Excellence	Overall accountability for Construction programs and execution oversight for the project, including expectations for safety, quality, cost and schedule.
Construction Manager - DNNP	Accountable for the implementation of the DNNP Project with respect to Construction, ensuring that the DNNP work program is executed in accordance with expectations for safety, quality, cost and schedule.
Director Nuclear Waste NSS	Overall accountability for Nuclear Waste aspects of the project.
Nuclear Waste Manager - DNNP	Accountable for aspects of the project related to Nuclear Waste, including waste minimization, handling, storage, and licenses.
Director Security & Emergency Services	Overall accountability for Emergency Preparedness, Security, and Fire programs.

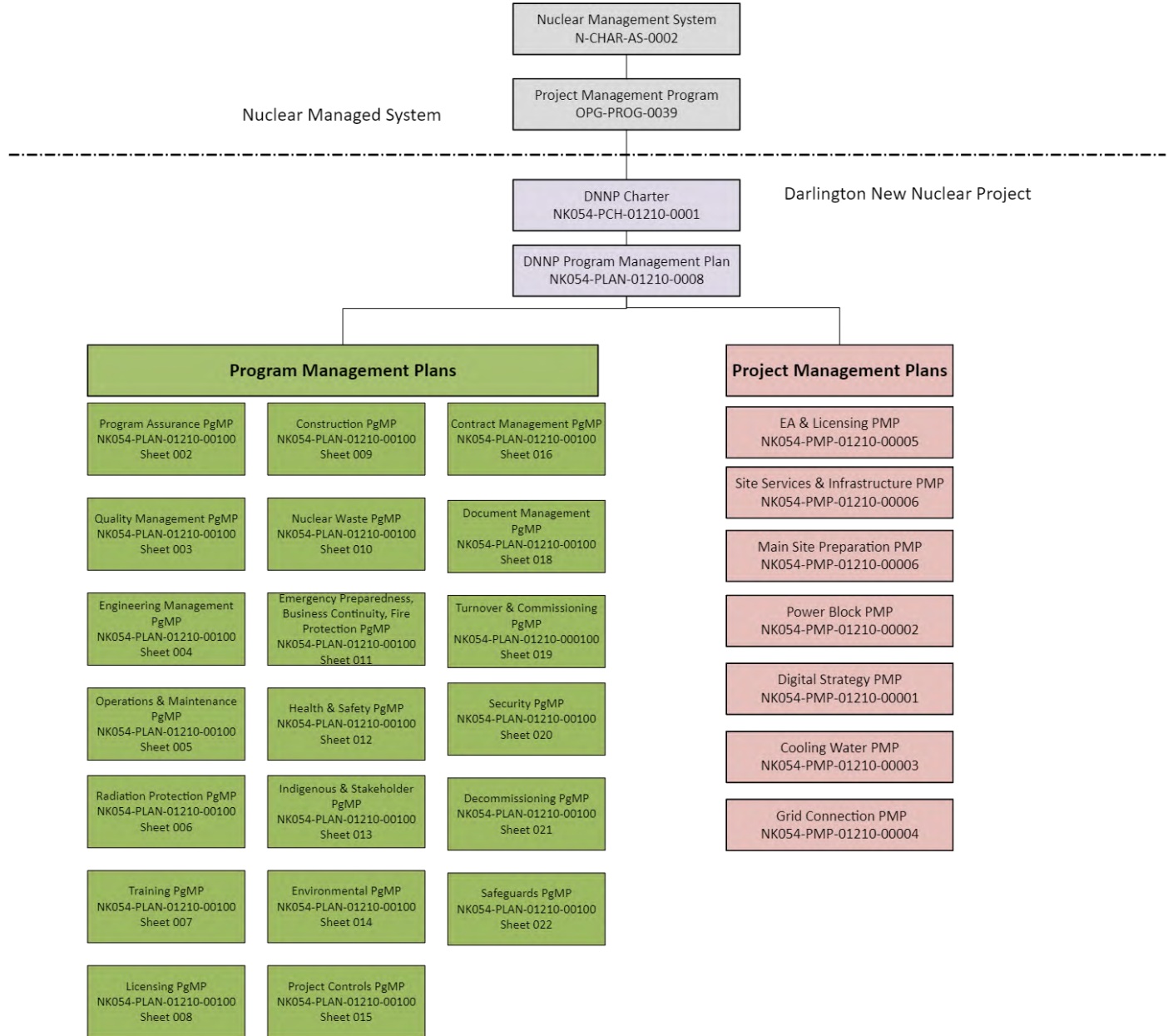
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## 18.0 APPENDIX A – DNNP GOVERNANCE DOCUMENT STRUCTURE

Figure 1. DNNP Governance Structure



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### 19.0 APPENDIX B - PROGRAM MANAGEMENT PLAN SECTION REQUIREMENTS

The Darlington New Nuclear Project (DNNP) follows OPG's Nuclear Management System as documented in [N-CHAR-AS-0002](#), Nuclear Management System. DNNP PgMPs describe how program requirements and processes support project execution while meeting the intent of existing OPG's Management System.

Different from Program Management Plans, the Project Specific Management Plans (PMPs) will describe how each project will plan and execute the work. DNNP teams developing or revising PMPs should reference relevant sections from applicable PgMPs (information should not be duplicated). PMPs follow the requirements of [OPG-PROG-0039](#), Project Management, and the associated governance.

#### **Program Management Plan Section Requirements**

PgMPs describes how program requirements and processes support project execution while meeting the intent of existing OPG's Management System for DNNP. The structure and minimum content requirements for PgMPs are as follows:

##### Section 1.0, Purpose

This section:

- Provides a clear and concise description of the fundamental intent or focus of the PgMP.
- Outlines high-level rationale, background, and process details.

##### Section 2.0, Program Requirements

This section provides a "roadmap" that conveys how the program will meet DNNP requirements.

- Briefly describe any nuclear, corporate, or other business unit governance, governance support, and non-governance documents that provide implementing details for requirements, activities, and processes described by the PgMP.
- State requirements that have been mandated by functions for projects to follow as part of contract development and project execution.
- Illustrate (through figures or flowcharts) the entire PgMP framework, implementing and interfacing documents.
- Metrics/Reporting Requirements

##### Section 3.0, Roles and Accountabilities

This section provides a high-level summary of accountabilities for manager level (Stratum IV) or higher positions or roles concerning the accomplishment of activities related to the implementation of the document, in accordance with the standards outlined in [OPG-STD-0001](#), Requirements for Administrative Governance Documents.

##### Section 4.0, Definitions and Acronyms

This section lists definitions and acronyms in accordance with the standards outlined in [OPG-STD-0001](#).

##### Section 5.0, References

This section lists the documents required to be used in conjunction with the PgMP.

Identifies each document in accordance with the standards outlined in [OPG-STD-0001](#)

**Enclosure 2**

**DNNP Licence to Construct Management System Report**  
**NK054-REP-08130-00004 R001**  
**October 12, 2022**

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**DNNP Licence to Construct Management System Report**

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### DNNP Licence to Construct Management System Report


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2022-10-07

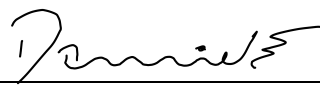
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Report

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R000	2022-09-16	Initial issue
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### 1.0 INTRODUCTION

The Darlington New Nuclear Project (DNNP) is a large-scale project to construct a General Electric-Hitachi (GEH) BWRX-300 Small Modular Reactor (SMR) facility on the Ontario Power Generation (OPG) Darlington site. The DNNP is governed by specified programs under the existing OPG Nuclear Management System (NMS) established by its NMS Charter [R-1]. The specified programs comply with clauses applicable to site preparation activities within Canadian Standards Association (CSA) N286-12, Management system requirements for nuclear facilities [R-2]. OPG currently holds a Power Reactor Site Preparation Licence (PRSL) [R-3] with accompanying Licence Condition Handbook (LCH) [R-4] that documents the NMS details for the scope of work that has been licensed.

The DNNP is currently preparing a Licence to Construct (LTC) application in accordance with Canadian Nuclear Safety Commissions (CNSC) Regulatory Document (REGDOC)-1.1.2 [R-5], Licence Application Guide: Licence to Construct a Reactor Facility. The scope of licensed activities for the DNNP LTC phase for the BWRX-300 SMR facility include the completion of any remaining activities under the existing site preparation licence, the construction of one reactor nuclear generating facility and the support structures for up to four reactors, and the completion of fuel-out commissioning. It is important to note that the LTC application scope will not include possession, transportation, storage, or use of nuclear substances. Use of any construction-related tooling containing nuclear substances will be under the authority of separate licences issued to vendors responsible for their use.

The DNNP will continue to use the existing OPG NMS for the LTC phase and enhance associated governing documents to ensure DNNP applicability while maintaining compliance to CSA N286-12 [R-2] clauses applicable to construction activities. This decision allows the DNNP to leverage significant experience and expertise to ensure governance utilized by the DNNP maintains the highest levels of quality and safety focus and is suitable for LTC activities. The NMS governance will meet the needs of the LTC phase without requiring incorporation of BWRX-300 technology information. As the project progresses towards the Licence to Operate (LTO), OPG will analyze the best approach to address the technology and ultimately support the operational management system.

This report documents the programmatic details for the continued use of the NMS for the DNNP LTC phase and identifies required actions to ensure compliance with NMS requirements.

#### 1.1 Project Contract Model

The DNNP will utilize a contract model for the LTC phase that will maximize integration and collaboration with contract partners. The contract partners involved with this project model include an Owner-OPG, Designer-GEH, Constructor, and Architect Engineering Firm. Following OPG's Items and Services Management Program (OPG-PROG-0009), it is a requirement that these contract partners be approved on OPG's Approved Supplier List (ASL). This approval ensures they have quality assurance programs that comply with clauses of CSA N286-12 [R-2] applicable to their defined scope of work. This ASL approval is audited by OPG to ensure continued compliance.

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For the DNNP, each contract partner will be required to follow their quality assurance program and management system. OPG will continue to use its NMS for oversight and ultimate accountability as the licensee. Integration between the quality assurance programs and management systems of OPG and the contract partners may be required for which project specific documentation may be produced to clarify such integration details. Any documentation created to support this collaborative effort will be referenced within the DNNP project governance structure described in Section 2.4. A simplified graphic representation of the governance integration can be seen in Figure 1.

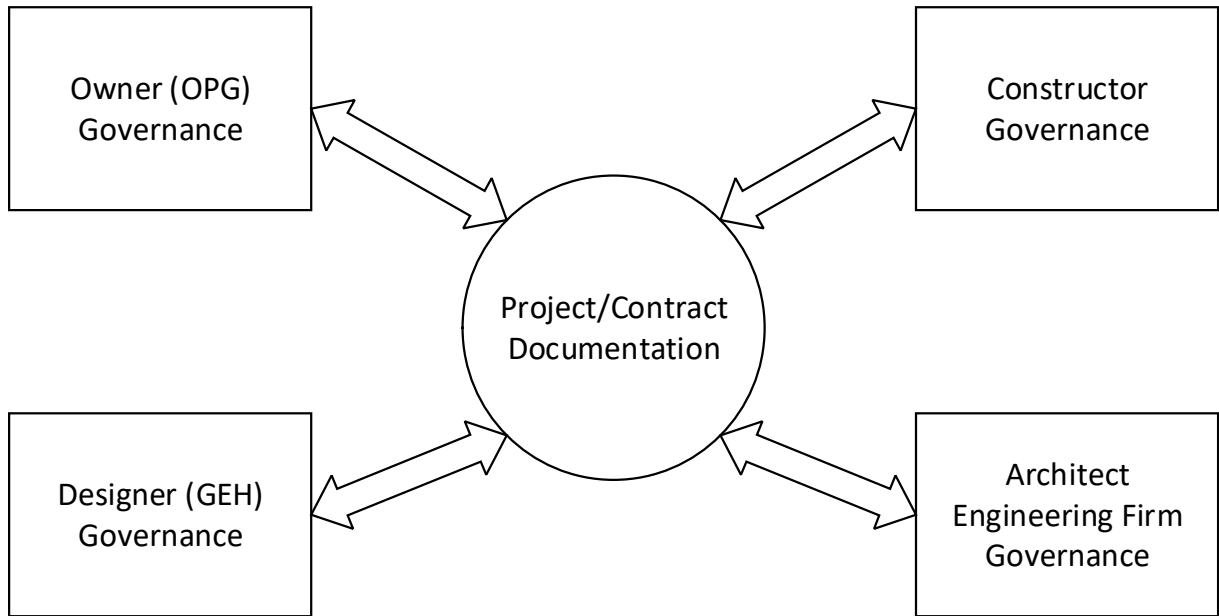


Figure 1: Simplified Graphical Representation of DNNP Governance Integration

**2.0 NMS GOVERNANCE APPLICABLE FOR THE DNNP LTC PHASE**

**2.1 NMS Program Selection**

The DNNP is currently a nuclear project governed by the OPG NMS and is not yet classified as an operating nuclear facility. Therefore, the DNNP will use a graded approach to programs within the NMS as applicable for the completion of the project. The objective of this report is to establish the final list of NMS programs that would be required to support the LTC phase of the DNNP. As the project progresses, the needs of the LTC phase may change as we collect and apply lessons learned, advance our knowledge about the design and construction processes, and gain experience working with the contract partners. This section describes the process used to define program applicability and to identify required changes to support the current needs of the LTC phase.

To define the NMS program selection, programs were reviewed for their applicability to the DNNP LTC phase with respect to the CNSC Safety and Control Areas (SCAs). The specific

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areas listed against each SCA in Appendix B, Table B.1 of REGDOC-1.1.2 [R-5] were mapped to one or more NMS programs for the scope of work applicable to this phase of the project.

During this review, the operational aspects of the Fitness for Service SCA were identified to be covered by the programs that support the operation of the future nuclear facility. These programs will be addressed under a future operating licence. The design aspects of this SCA, that will ultimately impact the associated operational programs, are being driven by the Designer-GEH and their management system. OPG maintains oversight throughout the design process and will drive the coordination of programmatic/governance requirements to incorporate the BWRX-300 technology into the future management system.

Additionally, as described in Section 1.0, OPG will not request permission to possess, transfer, use, or store nuclear substances, or use tooling containing nuclear substances under the LTC. Other companies who may use construction-related tooling containing nuclear substances in support of the DNNP will have separate licences for this purpose. As a result, the Radiation Protection and Packaging and Transport SCAs are not applicable to this phase and will also be covered under a future licence. Appendix A summarizes the results of the SCA review.

A review of CSA N286-12 [R-2] clauses applicable to the DNNP LTC scope described in Section 1.0 was also performed. This review concluded the following section applicability:

- Section 4, Generic requirements for the management system was identified as applicable to the LTC phase in its entirety.
- Sections 5 and 6 were deemed not applicable as they detail requirements for uranium mines and mills, uranium processing and fuel manufacturing facilities that are not included in the scope of the DNNP LTC application.
- Section 7, Specific requirements for high energy reactor facilities, was identified as partially applicable to the LTC phase. This phase will conclude with fuel-out commissioning that will be controlled by the Constructor until it is turned over to OPG to run under its NMS. OPG retains ultimate accountability and will provide oversight following its NMS during this phase. The turnover will be accomplished using a phased approach that will be addressed as part of the future LTO application. As a result, clause 7.9, Operating was deemed as not applicable to the DNNP for the LTC phase.
- Sections 8 and 9 were deemed not applicable as they detail requirements for other processing and waste management facilities that are not included in the scope of the DNNP LTC application.

For applicable sub-clauses in CSA N286-12 [R-2], one or more NMS programs were identified as an example of compliance with the Standard. It should be noted that there is not a one-to-one relationship between sub-clauses and NMS programs. Compliance with the Standard is demonstrated through the implementation of the NMS. The result of this review is presented in Appendix B.

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To further support the selection of NMS programs for use by the DNNP, OPG performed a program analysis that reviewed REGDOC requirements deemed applicable for a Class I nuclear facility and mapped those requirements to existing NMS governance at the program and implementing document level. The mapped governance was reviewed for DNNP applicability and to identify any required actions to support the DNNP LTC phase. Additional details of the intent of this analysis are described in the Management System Plan to Support DNNP Licence to Construct (LTC) Phase [R-6].

During this analysis, DNNP representatives and NMS program owners were consulted for program applicability and usage for the LTC phase, and to provide or confirm any recommended changes to the existing NMS programs and processes needed for inclusion of the DNNP. This analysis also considered pending changes to applicable governance by looking at active Document Change Requests (DCRs) at the time of the review.

The result of this analysis is considered a snapshot of the documents that were issued at the time of the review. It is acknowledged that the NMS is being continuously improved. The impact on DNNP due to any future changes to NMS governance is expected to be assessed as part of the normal change process for governing documents.

Section 2.2 presents the final list of NMS programs and required actions to support the DNNP LTC phase supported by the analysis described above.

## 2.2 NMS Program Governance

The final list of programs applicable for the DNNP LTC phase is presented in Table 1. A graphical representation of these programs within the NMS is presented in Appendix C.

There are other programs within the NMS not specified within this report as well as the enterprise-wide management system that may be utilized by the DNNP organization. They are not applicable to govern DNNP LTC activities but are considered company best practices and have established processes within OPG.

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**Table 1: List of NMS Programs Applicable for the DNNP LTC Phase**

<b>Document Title</b>	<b>Document Number</b>
Nuclear Management System Administration	N-PROG-AS-0001
Human Performance	N-PROG-AS-0002
Design Management	N-PROG-MP-0009
Reactor Safety Program	N-PROG-MP-0014
Consolidated Nuclear Emergency Plan	N-PROG-RA-0001
Conduct of Regulatory Affairs	N-PROG-RA-0002
Performance Improvement	N-PROG-RA-0003
Independent Assessment	N-PROG-RA-0010
Nuclear Security	N-PROG-RA-0011
Safeguards and Nuclear Material Accountancy	N-PROG-RA-0015
Training	N-PROG-TR-0005
Information Management	OPG-PROG-0001
Environmental Health and Safety Managed Systems	OPG-PROG-0005
Items and Services Management	OPG-PROG-0009
OPG Business Planning	OPG-PROG-0037
Project Management	OPG-PROG-0039
Cyber Security	OPG-PROG-0042
Decommissioning Program	W-PROG-WM-0003

Descriptions of program applicability for use by the DNNP and any required actions for each program listed in Table 1 are presented in the following sub-sections. It is important to note that programmatic changes required to incorporate the GEH BWRX-300 technology specific details will be addressed as part of the LTO application.

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### 2.2.1 Nuclear Management System Administration (N-PROG-AS-0001)

The Nuclear Management System Administration Program, N-PROG-AS-0001, remains applicable for the execution of the DNNP for the LTC phase and its use of specified programs of the NMS. The specific programs of the NMS being utilized for the DNNP LTC phase are outlined in this report. The CSA N286-12 to OPGN Governance Cross-Matrix [R-7] is credited under this program to provide a full mapping of the generic and specific CSA N286-12 [R-2] requirements and the corresponding NMS governing document(s) that fulfill each requirement. The cross-matrix produced to support the current PRSL [R-8] has been updated to reflect the required changes for the DNNP LTC phase and is presented in Appendix B.

The DNNP will be transitioning to an operating nuclear facility after the completion of the LTC phase. Until this time, there will not be any nuclear fuel on-site and therefore no nuclear hazards will be caused by the licensed activities of the project during this phase. This program implements a standard for nuclear safety oversight that applies to all aspects of nuclear operations and to work supporting nuclear stations. For the DNNP during the LTC phase, this standard will be applied to support management system oversight and the nuclear safety culture. Such oversight may include that of external organization reviews as applicable for the project. The execution of this standard for the DNNP is addressed throughout subsequent program descriptions within Section 2.2.

### 2.2.2 Human Performance (N-PROG-AS-0002)

The Human Performance Program, N-PROG-AS-0002, will continue to be utilized for work completed by OPG in support of the project for the LTC phase. As the majority of the LTC phase scope will be completed by contract partners, this program has a framework that utilizes a graded approach commensurate with the risks and level of complexity of activities. Contract partners that will perform activities during the LTC phase must meet the applicable requirements of this program or applicable regulatory requirements for their scope of work.

### 2.2.3 Design Management (N-PROG-MP-0009)

The Design Management Program, N-PROG-MP-0009, is being utilized by the DNNP to control design aspects for the LTC phase. As described in CNSC REGDOC-2.5.2, Design of Reactor Facilities [R-9], formal design authority rests with the organization that has overall responsibility for the design. The design activities of the future BWRX-300 facility have been contracted to the Designer-GEH to be completed under their approved quality program. GEH will control all aspects of the design as the responsible Design Authority (DA) for their defined scope of work which includes the power block, intake structure, cooling water, and switchyard. OPG will maintain oversight to monitor and assess design activities as required under the Design Management Program. Prior to plant start-up, the GEH DA role will be transferred back to OPG. OPG will also be the DA for any work designated outside of GEH scope.

The current language in governance under the Design Management Program regarding DA role is associated with OPG's existing nuclear facilities but does not exclude the transfer of the role to an external organization for the design and construction of a new nuclear facility. This language will be enhanced within applicable governance taking authority from the program to provide clarity on the DA role being fulfilled by an external organization. This enhancement has

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been documented in DCR# 161998 and will be incorporated prior to the start of construction activities. There are no other actions at this time to modify this program to support its use by the DNNP for the LTC phase.

**2.2.4 Reactor Safety Program (N-PROG-MP-0014)**

The Reactor Safety Program, N-PROG-MP-0014, is the program that establishes a process for managing contracted Nuclear Safety Services. In the case of the DNNP LTC phase, OPG has contracted safety analysis scope to external organizations and will continue to perform oversight of this scope as the licensee. In the event in-house safety analysis is needed, OPG reserves the capability to implement this program which meets CSA N286-12 [R-2] and other scope specific regulatory, code and standard requirements.

This program and selected associated governance will be reviewed and revised, as required, to ensure DNNP applicability and associated requirements are documented in advance of applicable LTC activities. This has been initiated by DCR# 161753 to be completed by the next revision of each document following the governance review cycle (not tied to the start of construction activities).

**2.2.5 Consolidated Nuclear Emergency Plan (N-PROG-RA-0001)**

The Consolidated Nuclear Emergency Plan (CNEP), N-PROG-RA-0001, is OPG’s Nuclear Emergency Management Program. A portion of the DNNP site is located within the exclusion zone of the existing Darlington Nuclear Generating Station (DNGS). As a result, the DNNP site is subject to the requirements of this program. In the event of a nuclear emergency at the DNGS, DNGS will maintain the legal authority to exercise control within the DNGS exclusion zone.

For the DNNP, OPG has also developed the DNNP Nuclear Emergency Preparedness Plan [R-10] which takes authority from the CNEP. This plan provides a written basis to document the concepts, roles, and resources required to implement and maintain emergency response on the DNNP site to protect employees, visitors, and contract partners in the event of a nuclear emergency or event impacting the Darlington site. The document describes different phases of the DNNP (site preparation, construction, commissioning, and operations) and how the emergency management program will transition from construction to fuel-in commissioning.

During construction and fuel-out commissioning, there is no potential for a radiological emergency originating from the DNNP site. The emergency preparedness management program for DNNP will adhere to the requirements of CNSC REGDOC-2.3.1, Conduct of Licensed Activities: Construction and Commissioning Programs [R-11].

OPG and contract partners will manage the health and safety of all workers associated with the DNNP as per the Darlington New Nuclear Project (DNNP) Health and Safety Plan [R-12]. This plan establishes the framework for the management of worker health and safety and includes emergency response and fire protection controls. OPG will use this plan for the construction phase to guide the contractors involved in the construction activities, and to prepare their emergency response and fire protection plans. Given the proximity of the Darlington Nuclear Generating Station (DNGS) and the Darlington Waste Management Facility (DWMF) to the area



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where DNNP construction activities will occur, OPG has taken into consideration potential risks that may arise in the event of an accident or malfunctions at these facilities.

### 2.2.6 Conduct of Regulatory Affairs (N-PROG-RA-0002)

The Conduct of Regulatory Affairs Program, N-PROG-RA-0002, will be used during the LTC phase. Applicable activities governed by the program include preparation and submission of licence deliverables in accordance with CNSC Regulatory Documents and reporting to and communicating with the CNSC and the public. Implementation of this program will ensure OPG meets CNSC requirements and demonstrates regulatory due diligence throughout the DNNP LTC phase.

Under this program, the OPG Documents Referenced in OPG Nuclear Licences and Licence Condition Handbooks list [R-13] will be required to be updated. This update will include the addition of applicable OPG documents referenced in the DNNP LTC and accompanying LCH. An action will be created to track the update to this list upon issuance of the DNNP LTC and LCH documents.

### 2.2.7 Performance Improvement (N-PROG-RA-0003)

The Performance Improvement Program, N-PROG-RA-0003, will be utilized for work completed by OPG in support of the project activities for the LTC phase. The DNNP will employ processes within this program using the general "Nuclear" designation until such time that the DNNP is designated as its own facility within the performance improvement processes.

Processes include condition reporting, incident investigation, operating experience development and communication, self-assessment and benchmarking and nuclear safety culture assessment which will allow OPG to identify, communicate and continuously improve performance during the LTC phase.

### 2.2.8 Independent Assessment (N-PROG-RA-0010)

The Independent Assessment Program, N-PROG-RA-0010, identifies processes and roles and responsibilities for conducting independent assessments of OPG's compliance to management systems. This program will be utilized by the DNNP for work completed by OPG during the LTC phase. Internal NMS oversight and effectiveness assessments will be performed by Nuclear Oversight. External independent assessment of the DNNP will not be required by the Nuclear Safety Review Board (NSRB) until the DNNP is an operating facility initiated at the LTO phase.

### 2.2.9 Nuclear Security (N-PROG-RA-0011)

The Nuclear Security Program, N-PROG-RA-0011, exists to ensure a state of security readiness for safe and secure operation of OPG stations and facilities. This program will be used to meet the requirements of CNSC REGDOC-1.1.2 [R-5] and establishes appropriate security measures for the DNNP site during the LTC phase.

A graded approach will be implemented to ensure that requirements are met based on the activities and risks throughout the LTC phase of the DNNP lifecycle. For the site preparation phase, the Site Specific Threat and Risk Assessment - New Nuclear at Darlington [R-14] was

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developed to identify credible risks to the site and if warranted, provide focus in the development of any mitigating measures throughout the project. This assessment will be revised for the construction phase and will be included in Package #3 of the LTC application. Nuclear Security Regulations require licensees to carry out annual threat and risk assessments. As a result, this DNNP threat and risk assessment will be reviewed annually and updated as required as the project proceeds to reflect changes in risks, and corresponding security measures will be reviewed annually and updated as required to reflect changes in risks and corresponding security measures via AR #28245581.

The DNNP has also established the DNNP Site Security Plan [R-15] and the DNNP Contract Partner Site Access and Security Protocol [R-16]. These two documents communicate the process, resources, training, and roles required by OPG and its contract partners to implement its security measures for the safety of personnel and protection of assets associated with DNNP activities. The current revision of the DNNP Site Security Plan is specific to DNNP site preparation activities and will be revised via AR #28250778 to account for activities during the LTC phase. The DNNP Site Security Plan will be reviewed annually and updated as required prior to and in association with DNNP milestones and phase changes.

**2.2.10 Safeguards and Nuclear Material Accountancy (N-PROG-RA-0015)**

The Safeguards and Nuclear Material Accountancy Program, N-PROG-RA-0015, will be used to complete DNNP LTC phase activities. There will be no nuclear substances or controlled nuclear components encompassed by the requested DNNP construction licence. Therefore, this program will be used to support the implementation of nuclear safeguards and to facilitate access by International Atomic Energy Agency (IAEA) inspectors, as required.

While construction-related tooling containing nuclear substances may be used, as stated previously, these will be under the authority of separate CNSC licences issued to the vendors responsible for their use. Additionally, OPG has a number of import and export licences for DNNP that allow for the transfer of nuclear prescribed information relating to the BWRX-300, as listed in Section 2.2.1 “Permits, Certificates and other Licences” of the DNNP LTC Application.

OPG Safeguards and Nuclear Material Accountancy Requirements [R-17] documents the safeguards and nuclear material accountancy requirements for the establishment and maintenance of a safeguards program. This document will be revised via DCR# 161641 to include DNNP safeguard requirements, roles and responsibilities, and guidance references to ensure applicability to the LTC phase. This revision will be addressed during the normal governance change management process, prior to construction activities.

**2.2.11 Training (N-PROG-TR-0005)**

The requirements and processes set out in the Training Program, N-PROG-TR-0005, are applicable and will be used during the DNNP LTC phase. The development, revision, and delivery of training for OPG staff including temporary, augmented, or seconded staff working in the DNNP, shall follow this program and all applicable standards and procedures taking authority from it. Further details of training specific requirements for both OPG and contract

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partners for the LTC phase are outlined in the Darlington New Nuclear Project (DNNP) - Construction and Commissioning Training Plan [R-18].

Changes to training governance and associated documentation will be driven by the DNNP Training Plan. As a result of the program analysis described in Section 2.1, it was also identified that revision of the Simulator Quality Assurance procedure [R-19] to include applicable DNNP simulator information will be required during the LTC phase. This revision has been initiated by DCR # 161510 and will be incorporated prior to final simulator acceptance testing.

**2.2.12 Information Management (OPG-PROG-0001)**

The Information Management Program, OPG-PROG-0001, is applicable to the DNNP for LTC phase. During this phase, any OPG employee or agent who produces or receives recorded information on behalf of OPG shall be instructed, through relevant contracts, to create and maintain records and documents in accordance with the Information Management Program. Contract partners must also ensure that the set of standards and procedures they are using within their management systems for DNNP activities follow applicable regulatory requirements for information management.

**2.2.13 Environment Health and Safety Managed Systems (OPG-PROG-0005)**

The Environment Health and Safety (EHS) Managed Systems Program, OPG-PROG-0005, governs the design and execution of OPG’s Environmental Management System (EMS) and Health and Safety Managed System (HSMS) that will be used during the DNNP LTC phase. All phases of the DNNP, including construction, will be executed in a manner that conforms to the requirements of the EMS. As OPG is an owner in the contract model, it is OPG’s responsibility to ensure ongoing oversight through its NMS. The other contract partners will have defined and implemented their own management systems compliant with applicable current standards or have implemented an alternative management system as agreed to by the project partners.

In addition to OPG’s existing environmental protection governance within the EHS program, the DNNP will have project-specific environmental protection measures in place that address potential environmental effects associated with DNNP construction and commissioning activities. Currently, this comprises the Darlington New Nuclear Project (DNNP) - Environmental Management and Protection Plan for Site Preparation [R-20] that is referred to as the EMPP, as well as the Environmental Assessment (EA) Follow-Up Monitoring Program. Prior to start of construction, the DNNP EMPP and the methodology reports for the EA Follow-Up program will be updated to encompass DNNP construction activities, as required. The relevant Environmental Compliance Approvals (ECAs) will also be obtained or updated (as required) to establish compliance limits for non-radiological hazards relevant to DNNP construction. ECA updates will be developed and implemented in accordance with regulatory requirements.

OPG and contract partners will manage the health and safety of all workers associated with the DNNP LTC phase as per this program governance to ensure that contracted work is performed safely. To further support the HSMS for the DNNP as stated in Section 2.2.5, the Darlington New Nuclear Project (DNNP) - Health and Safety Plan [R-12], was created to establish the framework for the management of worker health and safety in accordance with defined health and safety values, goals, objectives, and expectations of OPG.

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To support the LTC phase, reviews are recommended for the Environment Health and Safety Managed Systems Program governance listed below to ensure applicability to DNNP. The review would determine whether the requirements defined in these governance documents apply to the DNNP construction phase activities as currently written. If revisions are required, updates will be addressed through the normal governance change management process, prior to construction activities unless otherwise stated.

The DNNP LTC phase applicability of these documents will be reviewed as initiated via AR# 28253693, AR# 2825369, and AR# 28253696 respectively. Review of the documents listed below will be completed prior to construction, once construction and design details are available:

- Monitoring of Nuclear and Hazardous Substances in Effluents [R-21]
- Management of the Environmental Monitoring Programs [R-22]
- Contaminated Lands and Groundwater Management [R-23]

An update to Groundwater Protection and Monitoring Program [R-24] will be issued by the end of 2022 and which may supersede the groundwater management portions of Contaminated Lands and Groundwater Management [R-23]. This next revision of Groundwater Protection and Monitoring Program [R-24] is tracked under AR 28228985-18.

As part of the next Darlington Environmental Monitoring Program (EMP) Review [R-25] design review, supplementary studies being conducted for the purpose of EA follow-up monitoring during the DNNP LTC phase will be reviewed and incorporated into the EMP, as required. This review has been initiated under DCR# 161562.

### 2.2.14 Items and Services Management (OPG-PROG-0009)

The Items and Services Management Program, OPG-PROG-0009, is applicable to DNNP LTC phase. This program ensures that procurement is planned, and items and services are purchased, stored, and issued to meet applicable technical and quality requirements.

This program will facilitate the procurement of items and services by OPG for the DNNP. Furthermore, this program will support the implementation of the contract model during the LTC phase to engage contract partners whose collective knowledge and expertise will allow the DNNP to successfully complete project activities. As stated in Section 1.1, all contract partners must be approved on OPG's Approved Suppliers List (ASL), in accordance with OPG-PROG-0009 governing documents. This will ensure the contract partners comply with CSA N286-12 [R-2] and have relevant management system and quality programs that meet or exceed those identified in OPG's NMS for the activities they will be performing.

### 2.2.15 OPG Business Planning (OPG-PROG-0037)

The OPG Business Planning Program, OPG-PROG-0037, will be used for the DNNP LTC phase to comply with business planning processes. This includes annual updates to the business plan for DNNP activities, maintenance of the overall Project Execution Plan and ensuring project specific plans are aligned and integrated. The DNNP also identifies and

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mitigates risk as part of the implementation of this process. Risk management supports achievement of business goals as part of business planning.

Facility-specific elements of this program, such as those involving outage planning and nuclear asset management will not be utilized for this phase of the project. These elements will be evaluated for future consideration upon further progression of the BWRX-300 design and leading up to the operational phase of the new facility.

**2.2.16 Project Management (OPG-PROG-0039)**

The DNNP is a strategic project under OPG’s Enterprise Projects portfolio that was initiated with and will continue to be managed by the Project Management Program, OPG-PROG-0039. OPG’s overall accountabilities for project management and oversight of the construction and commissioning work performed by selected contract partners are described within project management governance. The DNNP governance structure is defined by the Darlington New Nuclear Project Charter [R-26] and the Project Management Plan (PMP) [R-27]. The charter defines the primary objectives of the DNNP, and the PMP describes the overall program for the DNNP including scope, resources, project integration, and other project management details. This project governance structure is further defined in Section 2.4.

A governance support document under this program, the Project Construction Management Manual [R-28] will be revised via DCR# 160118 to include DNNP oversight and quality surveillance requirements regarding planning, frequency and execution of activities performed during the LTC phase. No other changes are identified to further enhance the applicability of the program to DNNP LTC phase activities.

**2.2.17 Cyber Security (OPG-PROG-0042)**

The Cyber Security Program, OPG-PROG-0042, establishes a framework identifying the processes and overall requirements that supports the protection of cyber assets at OPG from cyber-attacks. This program also ensures protection of nuclear cyber essential assets. OPG-wide implementing processes will be used to prevent cyber-attacks to all employees and agents who have access to OPG’s facilities and assets. The Designer-GEH will use a separate cyber security program for the design of the new BWRX-300 facility with OPG oversight to compliance to applicable codes and standards.

**2.2.18 Decommissioning (W-PROG-WM-0003)**

The Decommissioning Program, W-PROG-0003, will be used during the LTC phase. The decommissioning related activities for the DNNP will follow this program which set out the requirements, roles and accountabilities, and reference material for all OPG’s nuclear stations/facilities including the DNNP. Decommissioning work performed for the DNNP will meet the requirements of CNSC REGDOC-1.1.2 [R-5] and CSA N294-19, Decommissioning of facilities containing nuclear substances [R-29]. One such requirement states that decommissioning planning shall take place throughout the life cycle of a nuclear facility to ensure that a nuclear facility is sited, designed, constructed, and operated in a manner that will facilitate successful decommissioning. As stated in CSA N294-19 [R-29], Phase 1 – Planning for Decommissioning activities include formulating a decommissioning strategy and completing a Preliminary Decommissioning Plan (PDP) which forms the strategic basis for establishing

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financial guarantees and provides the structural outline of the subsequent plans. PDPs will be prepared for the construction and end of life phases in accordance with W-PROG-WM-0003 and included in Package #6 of the LTC application.

**2.3 LTC Management System Actions Summary**

A summary of the actions identified throughout Section 2.2 is presented in Table 2. All actions will be implemented prior to the start of construction activities unless otherwise specified.

**Table 2: Summary of Actions to Support NMS Programs Applicable for the DNNP LTC Phase**

Action #	Impacted Program #	Impacted Program Title	Action Description	Tracking Method (AR/DCR)	TCD
1	N-PROG-MP-0009	Design Management	Enhance Design Authority (DA) language	DCR # 161998	Prior to construction activities
2	N-PROG-MP-0014	Reactor Safety	Review N-PROG-MP-0014 and selected governance documents to ensure DNNP applicability and associated requirements are documented	DCR # 161753	Prior to applicable LTC activities per governance review cycle
3	N-PROG-RA-0002	Conduct of Regulatory Affairs	Revise N-LIST-00531-10002, OPG Nuclear Licences and Licence Condition Handbooks, to include the addition of applicable OPG documents referenced in the DNNP LTC and LCH	AR to be generated upon issuance of LTC and LCH	After issuance of LTC and LCH
4	N-PROG-RA-0011	Nuclear Security	DNNP phase transition annual review of NK054-PLAN-61400-00001, DNNP Site Security Plan, to ensure compliance and correlation to DNNP license applications	AR # 28245581	Annually
5	N-PROG-RA-0011	Nuclear Security	Review NK054-REP-00531-10000, Site Specific Threat and Risk Assessment - New Nuclear at Darlington, for content change/correction/adaptations to progressing phase changes of DNNP licence applications	AR # 28250778	Annually

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<b>Action #</b>	<b>Impacted Program #</b>	<b>Impacted Program Title</b>	<b>Action Description</b>	<b>Tracking Method (AR/DCR)</b>	<b>TCD</b>
6	N-PROG-TR-0005	Training	Revise N-PROC-TR-0023, Simulator Quality Assurance, to include applicable DNNP simulator information	DCR # 161510	Prior to final simulator acceptance testing
7	N-PROG-RA-0015	Safeguards and Nuclear Material Accountancy	Revise N-PROC-RA-0136, OPG Safeguards and Nuclear Material Accountancy Requirements, to incorporate DNNP safeguard requirements, roles and responsibilities, and guidance references	DCR # 161641	Prior to construction activities
8	OPG-PROG-0005	Environment Health and Safety Managed Systems	Review N-STD-OP-0031, Monitoring of Nuclear and Hazardous Substances in Effluents, for applicability to DNNP construction	AR # 28253693	Prior to construction activities
9	OPG-PROG-0005	Environment Health and Safety Managed Systems	Review N-PROC-OP-0025, Management of the Environmental Monitoring Programs, for applicability to DNNP construction	AR # 28253695	Prior to construction activities
10	OPG-PROG-0005	Environment Health and Safety Managed Systems	Review N-PROC-OP-0044, Contaminated Lands and Groundwater Management Programs, for applicability to DNNP construction	AR # 28253696	Prior to construction activities
11	OPG-PROG-0005	Environment Health and Safety Managed Systems	Update N-STD-OP-0046, Groundwater Protection and Monitoring Program to include the Darlington site (including DNNP)	AR# 28228985-18	Q1 2023
12	OPG-PROG-0005	Environment Health and Safety Managed Systems	Review NK38-REP-03443-10003, Darlington Environmental Monitoring Program (EMP) Review, for incorporation of supplementary studies of EA follow-up monitoring during DNNP construction	DCR # 161562	Prior to construction activities
13	OPG-PROG-0039	Project Management	Revise OPG-MAN-00120-0021, Project Construction Management, to include DNNP quality surveillance information	DCR # 160118	Q4 2022

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### 2.4 DNNP Program Management

The DNNP has developed a project governance structure as described in the Darlington New Nuclear Project – Program Management Plan [R-27]. The top tier document in the DNNP governance is a project charter [R-26] with the second tier consisting of Program Management Plans (PgMPs) and Project Management Plans (PMPs). The third tier includes documents such as manuals, guides, instructions, plans, Contractor/Owner Interface Requirements (COIRs), and forms, which are considered process support controlled documents.

The PgMPs describe how the DNNP is managed to meet the intent of the NMS while establishing program-specific requirements. These plans are designed to provide assurance that all aspects of the DNNP program (such as engineering, procurement, construction) will be conducted in accordance with CSA N286-12 [R-2] and the OPG NMS. These plans will be revised routinely as the project progresses to support business planning or significant project milestones.

### 3.0 FUTURE MANAGEMENT SYSTEM CONSIDERATIONS

As details of the BWRX-300 technology develop, they will be assessed against the full set of regulatory requirements for incorporation into programs to support the operational phase of the DNNP. These programs will be implemented on a priority basis so that they will be fully in effect for the LTO phase. One such program, an Out of Core Criticality program, will be required as per CNSC REGDOC-2.4.3, Nuclear Criticality Safety [R-30], for the operational phase. This program will be implemented prior to the arrival of nuclear fuel to site. Further details on the strategies for implementation of the operational programs will be provided in the LTO application.

### 4.0 CONCLUSION

This report communicates the methodology and results to identify NMS programs applicable to the DNNP's LTC phase, and associated changes required to ensure DNNP requirements are adequately addressed in governing documents. Although similar to the programs defined for the site preparation phase of the DNNP, this phase includes the addition of a contract model with integration of contract partners into the project. This report also communicates the DNNP project governance structure and how it supports compliance with the NMS. This report was written to demonstrate CSA N286-12 [R-2] compliance and communicate intended implementation of NMS programs for the LTC phase. Programmatic considerations for the future BWRX-300 facility for the operating phase will be analyzed to support the LTO application process.



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**Appendix A: Safety and Control Area (SCA) Mapping to NMS Programs Applicable to LTC Phase**

<b>Safety and Control Areas</b>	<b>OPG NMS Program Documents Applicable to the LTC Phase</b>	
	<b>Document #</b>	<b>Document Title</b>
Management system	N-PROG-AS-0001	Nuclear Management System Administration
	N-PROG-RA-0003	Performance Improvement
	N-PROG-RA-0010	Independent Assessment
	OPG-PROG-0001	Information Management
	OPG-PROG-0005	Environment Health and Safety Managed Systems
	OPG-PROG-0009	Items and Services Management
	OPG-PROG-0037	OPG Business Planning
Human performance management	OPG-PROG-0039	Project Management
	N-PROG-AS-0002	Human Performance
	N-PROG-TR-0005	Training
Operating performance	OPG-PROG-0039	Project Management
Safety analysis	N-PROG-MP-0014	Reactor Safety Program
Physical design	N-PROG-MP-0009	Design Management
Fitness for service	*This SCA will be covered under a future licence	
Radiation protection	*This SCA will be covered under a future licence	
Conventional health and safety	OPG-PROG-0005	Environment Health and Safety Managed Systems
Environmental protection	OPG-PROG-0005	Environment Health and Safety Managed Systems
Emergency management and fire protection	N-PROG-RA-0001	Consolidated Nuclear Emergency Plan
Waste management	W-PROG-WM-0003	Decommissioning Program
	OPG-PROG-0005	Environment Health and Safety Managed Systems
Security	N-PROG-RA-0011	Nuclear Security
	OPG-PROG-0042	Cyber Security
Safeguards and non-proliferation	N-PROG-RA-0015	Safeguards and Nuclear Material Accountancy
Packaging and transport	*This SCA will be covered under a future licence	

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Appendix B: CSA N286-12 Clause to OPG NMS Governance Mapping for the LTC Phase

CSA N286-12 Clause	Description	Key Applicable OPG Governance
<b>4</b>	<b>Generic requirements for the management system</b>	
<b>4.1</b>	<b>Application</b>	
4.1.1	<b>General:</b> Applicable portions of the management system shall be defined and implemented before undertaking any work covered by this Standard.	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>  N-CHAR-AS-0002 <i>Nuclear Management System</i>
4.1.2	Management system principles.	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
4.1.3	<b>Graded approach:</b> This standard may be applied in a manner commensurate with risk. With a graded approach, all requirements shall apply but to varying degrees depending upon the safety significance and complexity of the work being performed. If such an approach is used, the criteria and process used for grading shall be defined.	N-PROG-RA-0003 <i>Performance Improvement</i>  N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
<b>4.2</b>	<b>Safety culture:</b> Management shall use the management system to understand and promote a safety culture by:	
4.2(a)	Issuing a statement committing workers to adhere to the management system,	N-CHAR-AS-0002 <i>Nuclear Management System</i>
4.2(b)	Defining and implementing practices that contribute to excellence in worker performance,	N-PROG-AS-0002 <i>Human Performance</i>
4.2(c)	Providing the means by which the business supports workers in carrying out their tasks safety and successfully, by taking into account the interactions between individuals, technology, and the organization, and	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>  N-PROG-AS-0002 <i>Human Performance</i>  OPG-PROG-0005, <i>Environment Health and Safety Managed Systems</i>  OPG-PROG-0042, <i>Cyber Security</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
4.2(d)	Monitoring to understand and improve culture.	N-PROG-AS-0002 <i>Human Performance</i>  N-PROG-RA-0003 <i>Performance Improvement</i>
<b>4.3</b>	<b>Business planning:</b> Top management shall define, plan, and control the business so there is alignment and integration. A process shall be defined that:	N-CHAR-AS-0002 <i>Nuclear Management System</i>
4.3(a)	Creates purpose, such as vision and values,	N-CHAR-AS-0002 <i>Nuclear Management System</i>
4.3(b)	Identifies relevant requirements to be met,	N-CHAR-AS-0002 <i>Nuclear Management System</i>
4.3(c)	Establishes objectives that achieve the requirements,	OPG-PROG-0037 <i>Nuclear Business Planning</i>
4.3(d)	Identifies and controls risks to the objectives, and	OPG-PROG-0037 <i>Nuclear Business Planning</i>
4.3(e)	Establishes and monitors to ensure the planned results are achieved.	OPG-PROG-0037 <i>Nuclear Business Planning</i>
<b>4.4</b>	<b>Organization:</b> Management shall clearly define to workers the following:	
4.4(a)	Organizational structure,	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
4.4(b)	Authorities, accountabilities, and responsibilities of positions,	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>  N-CHAR-AS-0002 <i>Nuclear Management System</i>
4.4(c)	Internal and external interfaces, and	OPG-PROG-0001 <i>Information Management</i>  N-PROG-RA-0002 <i>Conduct of Regulatory Affairs</i>  N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
4.4(d)	How and by whom decisions are made.	OPG-PROG-0001 <i>Information Management</i>
<b>4.5</b>	<b>Resources</b>	
4.5.1	<b>General:</b> The resources necessary to carry out the business plan shall be determined and provided.	OPG-PROG-0037 <i>Nuclear Business Planning</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
4.5.2	<b>Human resources:</b> Workers shall be competent to do the work assigned to them, based on the following:	N-PROG-TR-0005 <i>Training</i>
4.5.2(a)	Competence criteria shall be determined for positions based on the work to be performed and included education, experience, knowledge, ability, and performance requirements,	N-PROG-TR-0005 <i>Training</i>
4.5.2(b)	Workers shall be selected to positions on the basis of defined criteria and their capability to be competent in the position,	N-PROG-TR-0005 <i>Training</i>
4.5.2(c)	Training shall be systematically developed and implemented so that the required qualification is achieved and maintained,	N-PROG-TR-0005 <i>Training</i>
4.5.2(d)	Expectations for trainee performance shall be established and the trainee tested against them,	N-PROG-TR-0005 <i>Training</i>
4.5.2(e)	Expected results and behaviour of workers shall be defined, and	N-PROG-AS-0002 <i>Human Performance</i>  N-PROG-TR-0005 <i>Training</i>
4.5.2(f)	Workers shall be provided feedback on their performance.	N-PROG-AS-0002 <i>Human Performance</i>  N-PROG-TR-0005 <i>Training</i>
4.5.3	<b>Financial resources:</b> Top management shall ensure that the financial resources required to implement the business plan are provided, managed, and controlled.	OPG-PROG-0037 <i>Nuclear Business Planning</i>
<b>4.6</b>	<b>Communication:</b> Process shall be in place to ensure effective communication. Workers shall be made aware of the relevance and importance of their work related to the objectives.	N-PROG-AS-0002 <i>Human Performance</i>
<b>4.7</b>	<b>Information management</b>	
4.7.1	<b>Documentation of the management system:</b> Management shall define, document, control, and maintain the processes that comprise the management system as well as maintain objective evidence to demonstrate effective implementation of the management system.	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
4.7.2	<b>Information:</b> Information shall be provided in a timely manner to those who need it, including the following:	OPG-PROG-0001 <i>Information Management</i>
4.7.2(a)	The necessary information is identified (e.g., identification and labelling of systems and components, radiation dose identification, and worker identification),	OPG-PROG-0001 <i>Information Management</i>
4.7.2(b)	Those who need the information are identified,	OPG-PROG-0001 <i>Information Management</i>
4.7.2(c)	The information is current, correct, and timely, and	OPG-PROG-0001 <i>Information Management</i>
4.7.2(d)	Information systems provide adequate security and ease of use	OPG-PROG-0001 <i>Information Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
4.7.3	<b>Documents:</b> Documents shall be controlled consistent with intended use. Control shall include:	OPG-PROG-0001 <i>Information Management</i>
4.7.3(a)	Unique identification,	OPG-PROG-0001 <i>Information Management</i>
4.7.3(b)	Defined format and presentation,	OPG-PROG-0001 <i>Information Management</i>
4.7.3(c)	Identification of status,	OPG-PROG-0001 <i>Information Management</i>
4.7.3(d)	Review for adequacy and approval,	OPG-PROG-0001 <i>Information Management</i>
4.7.3(e)	Availability for use at the location where the work is to be performed or where the document is required for reference, and	OPG-PROG-0001 <i>Information Management</i>
4.7.3(f)	Prompt removal of obsoleted documents from use.	OPG-PROG-0001 <i>Information Management</i>
4.7.4	<b>Records:</b> Records shall be:	OPG-PROG-0001 <i>Information Management</i>
4.7.4(a)	Readable,	OPG-PROG-0001 <i>Information Management</i>
4.7.4(b)	Complete,	OPG-PROG-0001 <i>Information Management</i>
4.7.4(c)	Identifiable,	OPG-PROG-0001 <i>Information Management</i>
4.7.4(d)	Traceable,	OPG-PROG-0001 <i>Information Management</i>
4.7.4(e)	Retrievable,	OPG-PROG-0001 <i>Information Management</i>
4.7.4(f)	Preserved, and	OPG-PROG-0001 <i>Information Management</i>
4.7.4(g)	Retained as specified.	OPG-PROG-0001 <i>Information Management</i>
<b>4.8</b>	<b>Work management</b>	
4.8.1	<b>Work planning:</b> Work shall be identified and planned with the following:	OPG-PROG-0039 <i>Project Management</i>
4.8.1(a)	A clear description of the work, including requirements and verification,	OPG-PROG-0039 <i>Project Management</i>
4.8.1(b)	Worker requirements, including verification worker,	OPG-PROG-0039 <i>Project Management</i>
4.8.1(c)	Supply chain requirements, including lead times,	OPG-PROG-0009 <i>Items and Services Management</i>
4.8.1(d)	Resource assignment, including the worker to perform the verification,	OPG-PROG-0039 <i>Project Management</i>
4.8.1(e)	Critical characteristics of the work to be verified, verification methods, extent, and acceptance criteria established,	OPG-PROG-0039 <i>Project Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
4.8.1(f)	The sequencing and scheduling of the work, including verification (e.g., inspection and testing requirements), and	OPG-PROG-0039 <i>Project Management</i>
4.8.1(g)	The acceptance criteria for the finished product.	OPG-PROG-0039 <i>Project Management</i>
4.8.2	<b>Work control:</b> Conduct of work shall be authorized and carried out using controlled:	OPG-PROG-0039 <i>Project Management</i>
4.8.2(a)	Documents,	OPG-PROG-0039 <i>Project Management</i>  OPG-PROG-0001 <i>Information Management</i>
4.8.2(b)	Software, including engineering tools and analytical software,	OPG-PROG-0039 <i>Project Management</i>  OPG-PROG-0009 <i>Items and Services Management</i>
4.8.2(c)	Items,	OPG-PROG-0039 <i>Project Management</i>  OPG-PROG-0009 <i>Items and Services Management</i>
4.8.2(d)	Tools, gauges, instruments, and other measuring and testing devices,	OPG-PROG-0039 <i>Project Management</i>  OPG-PROG-0009 <i>Items and Services Management</i>
4.8.2(e)	Processes, and	OPG-PROG-0039 <i>Project Management</i>  N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
4.8.2(f)	Practices.	OPG-PROG-0039 <i>Project Management</i>  N-PROG-AS-0001 <i>Nuclear Management System Administration</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
4.8.3	<b>Independent verification of work:</b> Work activities throughout the life of the nuclear facility shall be independently verified by workers who did not perform the work to confirm that it meets requirements. The extent and timing of the verification shall be based on the potential impact of the work.	N-PROG-AS-0002 <i>Human Performance</i>  N-PROG-MP-0009 <i>Design Management</i>  OPG-PROG-0039 <i>Project Management</i>
<b>4.9</b>	<b>Problem identification:</b> When problems arise, they shall be:	
4.9(a)	Immediately controlled, if required,	N-PROG-RA-0003 <i>Performance Improvement</i>  OPG-PROG-0009 <i>Items and Services Management</i>
4.9(b)	Documented,	N-PROG-RA-0003 <i>Performance Improvement</i>  OPG-PROG-0009 <i>Items and Services Management</i>
4.9(c)	Evaluated for significance and for underlying cause if deemed by management to be systemic or having impact on meeting business objectives, and	N-PROG-RA-0003 <i>Performance Improvement</i>  OPG-PROG-0009 <i>Items and Services Management</i>
4.9(d)	Accepted.	N-PROG-RA-0003 <i>Performance Improvement</i>  OPG-PROG-0009 <i>Items and Services Management</i>
4.9	Actions employed to resolve problems shall be reviewed for effectiveness	N-PROG-RA-0003 <i>Performance Improvement</i>  OPG-PROG-0009 <i>Items and Services Management</i>
<b>4.10</b>	<b>Change:</b> Required changes shall be:	
4.10(a)	Identified, including reason for change,	OPG-PROG-0001 <i>Information Management</i>  OPG-PROG-0039 <i>Project Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
4.10(b)	Justified,	OPG-PROG-0001 <i>Information Management</i>  OPG-PROG-0039 <i>Project Management</i>
4.10(c)	Subject to review by relevant stakeholders,	OPG-PROG-0001 <i>Information Management</i>  OPG-PROG-0039 <i>Project Management</i>
4.10(d)	Reviewed by persons with knowledge of original intent and requirements,	OPG-PROG-0001 <i>Information Management</i>  OPG-PROG-0039 <i>Project Management</i>
4.10(e)	Approved for implementation,	OPG-PROG-0001 <i>Information Management</i>  OPG-PROG-0039 <i>Project Management</i>
4.10(f)	Implemented in accordance with the plan, an	OPG-PROG-0001 <i>Information Management</i>  OPG-PROG-0039 <i>Project Management</i>
4.10(g)	Reviewed for effectiveness.	OPG-PROG-0001 <i>Information Management</i>  OPG-PROG-0039 <i>Project Management</i>
<b>4.11</b>	<b>Assessment</b>	
4.11.1	<b>Self-assessment:</b> Management shall conduct self-assessments to identify opportunities for continual improvement and to confirm that work meets the requirements of the management system.	N-PROG-RA-0003 <i>Performance Improvement</i>
4.11.2	<b>Independent assessment:</b> Shall be conducted on behalf of top management to confirm that the documented management system meets requirements and the implementation of the management system is effective. Independent assessors shall:	N-PROG-RA-0010 <i>Independent Assessment</i>
4.11.2(a)	Have access to the work site, workers, the work, documents, and records, and	N-PROG-RA-0010 <i>Independent Assessment</i>
4.11.2(b)	Neither have performed, verified, nor supervised the work being assessed.	N-PROG-RA-0010 <i>Independent Assessment</i>



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CSA N286-12 Clause	Description	Key Applicable OPG Governance
4.11.2	The results of the independent assessments shall be reported to the level of management having sufficient authority to resolve any identified problems.	N-PROG-RA-0010 <i>Independent Assessment</i>
<b>4.12</b>	<b>Use of experience:</b> Experience gained within the business and other businesses shall be:	
4.12(a)	Identified and collected,	N-PROG-RA-0003 <i>Performance Improvement</i>
4.12(b)	Reviewed for relevance and significance,	N-PROG-RA-0003 <i>Performance Improvement</i>
4.12(c)	Implemented through actions to prevent the recurrence of significant industry problems, and	N-PROG-RA-0003 <i>Performance Improvement</i>
4.12(d)	Used to initiate improvement.	N-PROG-RA-0003 <i>Performance Improvement</i>
4.12	Experience within the business shall be made available to others based on its sensitivity.	N-PROG-RA-0003 <i>Performance Improvement</i>
<b>4.13</b>	<b>Continual improvement:</b> Management shall continually improve the management system. The following shall be carried out:	
4.13(a)	Trend analysis of causes and problems,	N-PROG-RA-0003 <i>Performance Improvement</i>
4.13(b)	Periodically critically assessing the effectiveness of the management system to achieve the planned results,	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
4.13(c)	Benchmarking the performance and experience of others where practicable,	N-PROG-RA-0003 <i>Performance Improvement</i>
4.13(d)	Maintaining the awareness of changes in its business environment, and	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>
4.13(e)	Seeking opportunities to improve processes.	N-PROG-AS-0001 <i>Nuclear Management System Administration</i>  N-PROG-RA-0003 <i>Performance Improvement</i>
<b>7.0</b>	<b>SPECIFIC REQUIREMENTS FOR HIGH ENERGY REACTOR FACILITIES</b>	
<b>7.1</b>	<b>Application</b>	
<b>7.2</b>	<b>Site selection:</b> The site selection process shall be established and controlled through:	
7.2(a)	The decision to evaluate building the nuclear facility,	OPG-PROG-0039 <i>Project Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.2(b)	Defining general requirements,	N-PROG-MP-0009 <i>Design Management</i>  N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.2(c)	Establishing the technology,	N-PROG-MP-0009 <i>Design Management</i>  N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.2(d)	Performing the feasibility studies for the environmental impact statement,	OPG-PROG-0005 <i>Environment Health and Safety Managed Systems</i>
7.2(e)	Defining requirements based on technology selected, and	N-PROG-MP-0009 <i>Design Management</i>  N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.2(f)	Obtaining site preparation approvals.	N-PROG-RA-0002 <i>Conduct of Regulatory Affairs</i>  OPG-PROG-0039 <i>Project Management</i>
<b>7.3</b>	<b>Design</b>	
7.3.1	<b>General:</b> The design process shall be established and controlled.	N-PROG-MP-0009 <i>Design Management</i>
7.3.2	<b>Inputs:</b> Design inputs shall be established. The factors to be considered in determining the design inputs should include:	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(a)	Functional requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(b)	Location and interfacing requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(c)	Performance requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(d)	Operational requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(e)	Environmental considerations,	N-PROG-MP-0009 <i>Design Management</i>  OPG-PROG-0005 <i>Environmental Management System</i>
7.3.2(f)	Safety considerations,	N-PROG-MP-0009 <i>Design Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.3.2(g)	Codes and standards, and jurisdictional requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(h)	Contractual and customer considerations,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(i)	Supply and logistics considerations,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(j)	Stakeholder impact considerations,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(k)	Human factor considerations,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(l)	Experience from previous designs,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(m)	Design requirements for each specific engineering discipline,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(n)	Fabrication requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(o)	Installation requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(p)	Commissioning requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(q)	In-service requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(r)	Research, technical studies, data, and reports,	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(s)	Decommissioning requirements, and	N-PROG-MP-0009 <i>Design Management</i>
7.3.2(t)	Economic considerations.	N-PROG-MP-0009 <i>Design Management</i>
7.3.3	<b>Requirements:</b> Design requirements shall be defined in sufficient detail to provide reference for making decisions, verifying designs, and evaluating.	N-PROG-MP-0009 <i>Design Management</i>
7.3.4	<b>Tools:</b> Design tools shall be appropriate for the application and controlled. Scientific and analytical computer program shall be controlled in accordance with CSA N286.7	N-PROG-MP-0009 <i>Design Management</i>
7.3.5	<b>Design:</b> The design shall be carried out based on the design requirements. Calculations, analyses, and studies shall be controlled in such a manner that they are available to subsequent users of the design.	N-PROG-MP-0009 <i>Design Management</i>
7.3.6	<b>Documents:</b> Design documents shall be created so the design can be related to the design requirement and used by organizations responsible for construction, commissioning, operation, and decommissioning. The following shall be included in the design documents:	N-PROG-MP-0009 <i>Design Management</i>
7.3.6(a)	Design requirements,	N-PROG-MP-0009 <i>Design Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.3.6(b)	Inputs, assumptions, methods, modelling, test and development work, and results,	N-PROG-MP-0009 <i>Design Management</i>
7.3.6(c)	Jurisdictional requirements, applicable codes and standards, and other classification criteria,	N-PROG-MP-0009 <i>Design Management</i>
7.3.6(d)	Purchasing, installation, and construction requirements,	N-PROG-MP-0009 <i>Design Management</i>
7.3.6(e)	Design drawings,	N-PROG-MP-0009 <i>Design Management</i>
7.3.6(f)	Characteristics of the design that need to be confirmed, and	N-PROG-MP-0009 <i>Design Management</i>
7.3.6(g)	System and equipment operating and maintenance requirements.	N-PROG-MP-0009 <i>Design Management</i>
<b>7.4</b>	<b>Safety analysis</b>	
7.4.1	<b>General:</b> The safety analysis process shall be established and controlled. Safety analysis shall be performed and documented for the design basis accident scenarios. Safety analysis shall be performed for the design and carried through the life of the facility. The safety analysis shall be periodically reviewed to ensure it is current.	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2	<b>Control:</b> Safety analysis activities shall be controlled and include:	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(a)	Identification of the following:	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(a)(i)	Safety analysis inputs,	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(a)(ii)	The degree of conservatism,	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(a)(iv)	The acceptance criteria applicable to the safety analysis results, and	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(a)(v)	The tools, analytical software, and test apparatus used in the safety analysis. The selected tools shall be validated to confirm that they are suitable for performing the safety analysis,	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(b)	Evaluation of the results against established acceptance criteria to determine whether the design being analyzed is safe,	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(c)	Severe accident management considerations, and	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(d)	Repetition of the analysis [i.e., items (a) to (c)], where the design is found to be inadequate, using one or both of the following:	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.2(d)(i)	Analysis tools with greater degree of accuracy (justifying a reduced level of conservatism); or	N-PROG-MP-0014 <i>Reactor Safety Program</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.4.2(d)(ii)	Revised design parameters.	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.4.3	<b>Safety analysis tools:</b> Analysis tools shall be appropriate for the application and controlled. Scientific, and analytical computer programs shall be controlled in accordance with CSA N286.7	N-PROG-MP-0014 <i>Reactor Safety Program</i>
7.5	<b>Configuration management:</b> The design and safety analysis shall be incorporated into purchasing, construction, commissioning, operating, and maintenance documentation so that the as-built configuration of the power reactor facility is aligned with the design and safety analysis. This includes the establishment of processes for the identification and labelling of structures, systems, and components and identification and marking of items to control their use and establish traceability where required.	N-PROG-MP-0009 <i>Design Management</i>  OPG-PROG-0009 <i>Items and Services Management</i>
7.6	<b>Supply chain</b>	
7.6.1	<b>General:</b> The supply chain process shall be established.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2	<b>Purchasing requirements:</b> Requirements shall be identified to potential suppliers, and the following shall be defined:	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(a)	Scope of work,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(b)	Technical performance requirements,	OPG-PROG-0009 <i>Items and Services Management</i>  N-PROG-MP-0009 <i>Design Management</i>
7.6.2(c)	Applicable codes, standards, and specifications,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(d)	Jurisdictional requirements,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(e)	Management system standard and applicable requirements.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(f)	Inspection, test, and acceptance requirements, including any special instructions,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(g)	Delivery requirements,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(h)	Documentation requirements and the timing of submissions,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(i)	Requirements for reporting and approving the disposition of problems,	OPG-PROG-0009 <i>Items and Services Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.6.2(j)	The need for right of access to work facilities and records,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(k)	Provisions for extending applicable requirements to sub-suppliers, and	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.2(l)	Provision for controlled distribution, retention, maintenance, and disposition of records.	OPG-PROG-0009 <i>Items and Services Management</i>
<b>7.6.3</b>	<b>Supplier acceptability</b>	
7.6.3.1	Potential suppliers shall be assessed on the following:	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.3.1(a)	Ability to meet the purchasing requirements,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.3.1(b)	Supply history, and	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.3.1(c)	Oversight of supplier's supply chain.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.3.2	Audits shall be planned and performed with sufficient frequency to confirm the initial and ongoing acceptability of the supplier's management system. Audits of suppliers of items and services shall focus on the full product cycle including the design, construction, manufacturing, storage, and distribution.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.3.3	When supplier audits are delegated to another party, the business shall ensure that the results of the supplier's audits are acceptable.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.3.4	Acceptable suppliers shall be included on an approved supplier list and access to the list shall be controlled.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.5	<b>Supplier selection and award:</b> The suppliers' proposals shall be reviewed against the purchasing requirements and any exceptions resolved. The contract shall be awarded to the selected supplier. The selected supplier's technical documents that are required to be submitted shall be reviewed and accepted.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.6	<b>Supplier-customer relationship:</b> The performance of the supplier-customer relationship shall be monitored to ensure purchasing requirements will be met. This should include:	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.6(a)	Alignment of demand signals and supply signals between the customer and supplier to optimize material availability and inventory,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.6(b)	Supplier/customer performance assessment (e.g., score carding),	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.6(c)	Involvement of the supplier in customer demand planning,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.6(d)	Reporting requirements for delays or defects, and	OPG-PROG-0009 <i>Items and Services Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.6.6(e)	Supplier involvement in obsolescence identification and remediation.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.6	The results shall be used as an input in determining the extent and frequency of inspection, verification, and audit activities.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.7	<b>Verification of services:</b> Purchased services shall be verified in accordance with the planned verification.	OPG-PROG-0009 <i>Items and Services Management</i>
<b>7.6.8</b>	<b>Receipt and inspection of items</b>	
7.6.8.1	Examination of received items shall be performed to establish that:	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.1(a)	The item received is in keeping with the purchasing documents and is free from physical damage,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.1(b)	The specified packaging and shipping requirements have been maintained during shipping,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.1(c)	Identification and markings are in accordance with applicable codes, specifications, purchase orders, and drawings, and	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.1(d)	Protective covers and seals, coating and preservatives, inert gas blankets, desiccants, etc., are performing as intended.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.2	In addition to the examination, there shall be evidence that	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.2(a)	The item received was fabricated, tested, and inspected prior to shipment, in accordance with the applicable code, specification, purchase order, or drawings,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.2(b)	The documentation requirements of the purchase order for the item have been met,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.2(c)	The documentation has been reviewed by an organization other than the issuer of the documentation to ensure that the technical requirements of the item have been met, and	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.8.2(d)	If the item requiring inspection was not inspected at source, the item is inspected at the point of receiving to verify conformance with purchase order requirements.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.9	<b>Segregation and disposition of problem items:</b> Items that do not conform to specified requirements shall be identified as problems and segregated to prevent inadvertent installation or use.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.10	<b>Storage and handling:</b> Storage and handling of items shall be controlled, and shall include:	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.10(a)	Prevention of damage, deterioration, or loss,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.10(b)	In storage maintenance and inspections of items and storage areas,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.10(c)	Special handling of tooling and equipment, when required,	OPG-PROG-0009 <i>Items and Services Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.6.10(d)	Controls to ensure that repaired or returned items are fit for use, and	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.10(e)	Identification and control of surplus items.	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11	<b>Planning for replacement parts:</b> There shall be alignment and integration between the maintenance program and the availability of acceptable replacement parts, including:	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11(a)	Integration of the supply plan with the facility life-cycle plan,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11(b)	Integration of the supply plan with the maintenance strategies for structures, system, and components,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11(c)	Definition and sourcing strategy for critical spares,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11(d)	Proactive obsolescence strategies,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11(e)	Demand planning based on past demand and predicted usage,	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11(f)	Stratification of inventory based on usage history, and	OPG-PROG-0009 <i>Items and Services Management</i>
7.6.11(g)	Inventory strategy and management.	OPG-PROG-0009 <i>Items and Services Management</i>
<b>7.7</b>	<b>Construction</b>	
7.7.1	<b>General:</b> The process for constructing structures, systems, and components shall be established and controlled using generally accepted construction and project management practices, in accordance with the design documents referenced in Clause 7.3.6 using approved items.	OPG-PROG-0039 <i>Project Management</i>
7.7.2	<b>Prerequisite:</b> Prior to construction, the following conditions shall be met:	OPG-PROG-0039 <i>Project Management</i>
7.7.2(a)	Necessary construction approvals have been obtained,	OPG-PROG-0039 <i>Project Management</i>
7.7.2(b)	Design is assured to be complete,	OPG-PROG-0039 <i>Project Management</i>
7.7.2(c)	Materials and equipment have been selected,	OPG-PROG-0039 <i>Project Management</i>
7.7.2(d)	An overall construction plan has been established, and	OPG-PROG-0039 <i>Project Management</i>
7.7.2(e)	Requirements have been incorporated into procedures and instructions.	OPG-PROG-0039 <i>Project Management</i>
7.7.3	<b>Activities:</b> Construction activities shall be controlled in accordance with drawings, specifications, and work documentation that include:	OPG-PROG-0039 <i>Project Management</i>
7.7.3(a)	Prerequisites,	OPG-PROG-0039 <i>Project Management</i>



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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.7.3(b)	Precautions to be observed,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(c)	Installation requirements,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(d)	Sequential actions to be followed, including coordinating construction and verification activities,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(e)	Inspection and test plans,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(f)	Special equipment required for installation,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(g)	Specific document references,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(h)	Data report forms and records,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(i)	Reviews and approvals,	OPG-PROG-0039 <i>Project Management</i>
7.7.3(j)	Housekeeping requirements, and	OPG-PROG-0039 <i>Project Management</i>
7.7.3(k)	Foreign material exclusion requirements.	OPG-PROG-0039 <i>Project Management</i>
7.7.4	<b>Documents:</b> The following shall be available prior to and during construction:	OPG-PROG-0039 <i>Project Management</i>
7.7.4(a)	Applicable approved drawings,	OPG-PROG-0039 <i>Project Management</i>
7.7.4(b)	Construction specifications,	OPG-PROG-0039 <i>Project Management</i>
7.7.4(c)	Manufacturer or designer information on installation procedures and work instructions, as applicable,	OPG-PROG-0039 <i>Project Management</i>
7.7.4(d)	Documentary evidence of compliance by the manufacturer with the purchase requirements,	OPG-PROG-0039 <i>Project Management</i>
7.7.4(e)	Documentary evidence that problems have been satisfactorily resolved or controlled, and	OPG-PROG-0039 <i>Project Management</i>
7.7.4(f)	Documented release of items for installation.	OPG-PROG-0039 <i>Project Management</i>
<b>7.8</b>	<b>Commissioning</b>	
7.8.1	<b>General:</b> The process for commissioning structures, systems, and components shall be established and controlled to confirm that they meet design and safety analysis requirements prior to placing them in service.	OPG-PROG-0039 <i>Project Management</i>
7.8.2	<b>Prerequisites:</b> Prior to beginning commissioning activities, the following conditions shall be met:	
7.8.2(a)	Necessary commissioning approvals have been obtained,	OPG-PROG-0039 <i>Project Management</i>

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<b>CSA N286-12 Clause</b>	<b>Description</b>	<b>Key Applicable OPG Governance</b>
7.8.2(b)	An overall commissioning plan has been established,	OPG-PROG-0039 <i>Project Management</i>
7.8.2(c)	Construction completion assurance has been completed in accordance with Clause 7.11.1 for the structure, system, or component,	OPG-PROG-0039 <i>Project Management</i>
7.8.2(d)	Turnover from construction to commissioning has been completed in accordance with Clause 7.11.2 for the structure, system, or component, and	OPG-PROG-0039 <i>Project Management</i>
7.8.2(e)	Requirements have been incorporated into work documentation.	OPG-PROG-0039 <i>Project Management</i>
7.8.3	<b>Control of commissioning activities</b>	
7.8.3.1	During commissioning of structures, systems, and components, they shall be operated and maintained in accordance with Clause 7.9.	OPG-PROG-0039 <i>Project Management</i>
7.8.3.2	A system of permits, tags, or other equivalent control shall be in place to support safe operation, including clear marking of the boundary of commissioning, construction, and operational activities.	OPG-PROG-0039 <i>Project Management</i>
7.8.4	<b>Documents</b>	
7.8.4.1	Structures, systems, and components shall be commissioned in accordance with written specification and work documentation prepared prior to commissioning.	OPG-PROG-0039 <i>Project Management</i>
7.8.4.2	The commissioning specifications shall be defined and clearly identify	OPG-PROG-0039 <i>Project Management</i>
7.8.4.2(a)	Test objectives,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.2(b)	Required performance data,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.2(c)	The acceptance criteria,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.2(d)	Prerequisites for structures, system, and component commissioning,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.3	Work documentation (e.g., procedures) shall be produced that describe the commissioning activities and shall contain:	OPG-PROG-0039 <i>Project Management</i>
7.8.4.3(a)	Specific precautions relative to the activities to be performed,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.3(b)	Detailed back-out provisions to place the nuclear power plant in a safe condition for all anticipated risks to the plant and workers,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.3(c)	The identification of characteristics to be inspected or tested and the conditions to be controlled,	OPG-PROG-0039 <i>Project Management</i>

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CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.8.4.3(d)	Sequential actions to be followed, including coordinating construction, commissioning, operations, verification activities, and hold points,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.3(e)	Acceptance criteria,	OPG-PROG-0039 <i>Project Management</i>
7.8.4.3(f)	The special equipment required for commissioning, and	OPG-PROG-0039 <i>Project Management</i>
7.8.4.3(g)	The data to be collected.	OPG-PROG-0039 <i>Project Management</i>
7.8.4.4	The commissioning documentation outlined in Clauses 7.8.4.2 and 7.8.4.3 shall be verified for conformity to the design.	OPG-PROG-0039 <i>Project Management</i>
7.8.5	<b>Commissioning results:</b> the commissioning results shall be reviewed and confirmed to be acceptable and documented. Commissioning results shall be incorporated into operating documentation where appropriate.	OPG-PROG-0039 <i>Project Management</i>
<b>7.9</b>	<b>Operating</b>	<b>*Clauses under 7.9 - Operating are not applicable for this licensing phase</b>
<b>7.10</b>	<b>Decommissioning:</b> The process for decommissioning structures, systems, and components shall be established and controlled. Note: Planning for decommissioning commences with the decision to build a nuclear facility and continues through the life cycle until completion assurance activities ensure the pre-determined final end state has been met. The physical decommissioning of the nuclear facility is carried out in accordance with the decommissioning plan.	W-PROG-WM-0003 <i>Decommissioning Program</i>
<b>7.11</b>	<b>Common requirements</b>	
7.11.1	<b>Completion assurance:</b> Site selection, design (including safety analysis), supply chain, construction, commissioning, or decommissioning shall be deemed sufficiently complete and the results deemed safe for the intended use and include:	OPG-PROG-0039 <i>Project Management</i>  N-PROG-MP-0009 <i>Design Management</i>
7.11.1(a)	The identification of the critical characteristics applicable to the work being assessed,	OPG-PROG-0039 <i>Project Management</i>  N-PROG-MP-0009 <i>Design Management</i>
7.11.1(b)	A review of the objective evidence to demonstrate that the critical characteristics have been satisfied,	OPG-PROG-0039 <i>Project Management</i>  N-PROG-MP-0009 <i>Design Management</i>

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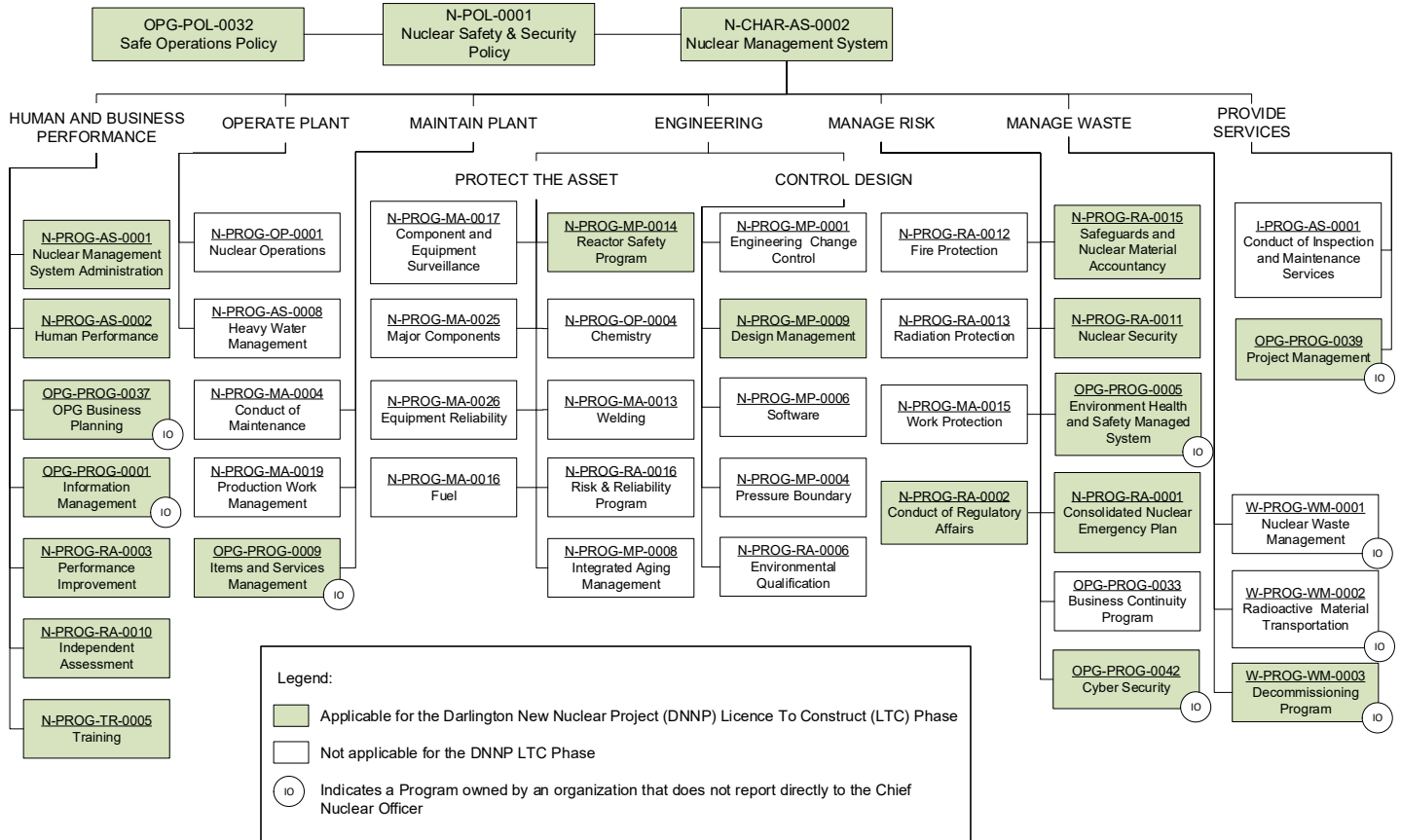
CSA N286-12 Clause	Description	Key Applicable OPG Governance
7.11.1(c)	The identification of any outstanding items and confirmation that these items do not compromise the intended use, and	OPG-PROG-0039 <i>Project Management</i> N-PROG-MP-0009 <i>Design Management</i>
7.11.1(d)	The schedule for completion of outstanding items.	OPG-PROG-0039 <i>Project Management</i>
7.11.1	<b>Note:</b> This work is normally accomplished by a multi-disciplinary review team.	OPG-PROG-0039 <i>Project Management</i>
7.11.2	<b>Turnover:</b> The turnover of structures, systems, and components from one organization to another shall be controlled and the following requirements shall apply:	OPG-PROG-0039 <i>Project Management</i>
7.11.2(a)	One of the organizations shall be designated as the lead organization and shall ensure that all responsibilities and limits of authority are clearly established, documented, and communicated to all organizations,	OPG-PROG-0039 <i>Project Management</i>
7.11.2(b)	Boundaries between structures, systems, and components shall be clearly identified in the field and on documents,	OPG-PROG-0039 <i>Project Management</i>
7.11.2(c)	System status shall be defined,	OPG-PROG-0039 <i>Project Management</i>
7.11.2(d)	Prior to acceptance, workers shall perform walk-down to the extent necessary on the systems, structures, or components that are being turned over to ensure that they are in the state defined in the turnover documentation, and	OPG-PROG-0039 <i>Project Management</i>
7.11.2(e)	Incomplete items, exceptions, and completion schedule shall be identified.	OPG-PROG-0039 <i>Project Management</i>
7.11.3	<b>Research and development:</b> Research and development activities in support of the facility shall be established and controlled.	OPG-PROG-0039 <i>Project Management</i>

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**Appendix C: OPG NMS Programs Applicable for the DNNP LTC Phase**



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- [R-5] CNSC, CMD 22-M23, Written submission from CNSC Staff on REGDOC 1.1.2 Licence Application Guide: Guide to Construct a Reactor Facility, June 21, 2022
- [R-6] NK054-PLAN-08130-1003625, Management System Plan to Support DNNP Licence to Construct (LTC) Phase, Revision 000, April 28, 2022
- [R-7] N-LIST-08130-10025, CSA N286-12 to OPGN Governance Cross-Matrix, Revision 003, March 3, 2021
- [R-8] NK054-CORR-00531-10516, DNNP – Transition of DNNP Site Preparation Management System to OPG Nuclear Management System, Revision 000, January 20, 2020
- [R-9] CNSC, REGDOC-2.5.2, Design of Reactor Facilities: Nuclear Power Plants, Version 1.0, May 2014
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- [R-11] CNSC, REGDOC-2.3.1, Conduct of Licensed Activities: Construction and Commissioning Programs, Version 1.0, January 2016
- [R-12] NK054-PLAN-01210-00034, Darlington New Nuclear Project (DNNP) - Health and Safety Plan, Revision 001, April 20, 2022
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**Enclosure 3**

**Darlington New Nuclear Project (DNNP) - Construction and Commissioning Training Plan**  
**NK054-PLAN-01210-00029 - Sheet 2 R000**  
**Sept. 15, 2022**



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**Darlington New Nuclear Project (DNNP) -  
Construction and Commissioning  
Training Plan**

**NK054-PLAN-01210-00029- Sheet 2 R000**

2022-09-15

Order Number: N/A  
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**Revision Summary**

<b>Revision Number</b>	<b>Date</b>	<b>Comments</b>
R000	2022-09-15	Initial issue.

**Plan**

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## 1.0 PURPOSE

Personnel engaged in all phases of the Darlington New Nuclear Project activities shall have appropriate training, qualifications and competence to perform their assigned tasks effectively and safely.

Training programs emphasize that everyone working on the project is responsible for environment, health and safety in all activities and the importance of adhering to established programs, processes and procedures.

This plan addresses the development and delivery of training for workers involved with the Darlington New Nuclear Project during the Construction and Fuel-Out Commissioning Phases of the project.

## 2.0 SCOPE AND RESPONSIBILITIES

### 2.1 Target Audience

This plan is specific to the Construction and Fuel-Out Commissioning Phases of the project and applies to workers involved with these phases including:

- EPC (Engineering, Procurement, and Construction) Companies or equivalent for the procurement/development and delivery of training and qualification for their staff, supervisors, contractors and sub-contractors.
- OPG Control Room staff, field staff, Control Maintenance, Mechanical Maintenance and associated OPG Instructors for the development and delivery of DNNP specific initial training and qualification programs.

Note: Control Room staff may comprise of previously certified, currently certified at OPG or another Nuclear Power Plant or currently enrolled in Initial Certification Training.

Revisions (i.e., as a result of new technology, equipment, processes and procedures) are expected to be required during these phases for existing Nuclear Training Program governing documents including curriculum adjustments for training such as Nuclear General Employee Training (NGET), Radiation Protection, Conventional Health and Safety, Work Protection Code, Engineering, Applied Nuclear Physics and Chemistry.

### 2.2 Out of Scope

- a) Training and qualification of personnel outside of the target audience or in other phases of the project are excluded from this plan.

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b) Work during Construction is anticipated to be mostly conducted outside the boundary of the protected area of Darlington Nuclear Generating Station. For any work that requires access to Darlington NGS protected area and/or tie-ins to existing Darlington NGS station systems/equipment, qualifications under the Nuclear Training Program (listed in N-LIST-08920-10001 Nuclear Training Programs) may apply. OPG will identify these situations based on scope of work and review of the Vendor Training Plan. Training and qualifications under these circumstances may include (but not limited to) the following:

Engineering Support	refer to N-TQD-403-00001 Nuclear Engineering Support Personnel Training and Qualification Description
Pressure Boundary Program	refer to N-TQD-424-00001 Pressure Boundary Fieldwork/Administration Training and Qualification Description
Radiation Protection (e.g., Orange Badge, Yellow Badge)	refer to N-TQD-443-00001 Radiation Protection Training and Qualifications
Nuclear General Employee Training	refer to N-TQD-501-00001 Nuclear General Employee Training and Qualification Description
Health and Safety Training	refer to N-TQD-505-00001 Conventional Health and Safety Training and Qualification Description
Work Protection Program	refer to N-TQD-507-00001 Nuclear Work Protection Training and Qualification Description
Supplemental BTU and Direct Hire	refer to N-TQD-510-00001 Supplemental BTU and Direct Hire Training and Qualification Description

**2.3 EPC Company Responsibilities**

EPC Companies shall execute the responsibilities following their own quality management system as outlined in their contractual obligations and include the following associated with training:

- a) EPC Companies are responsible for the development or procurement of training required for their staff, supervisors, contractors, and sub-contractors.
- b) EPC Companies should submit training plans for OPG review prior to the initial scheduling and delivery of training for their staff, supervisors, contractors, and sub-contractors. (Training Plans are not required for subsequent training deliveries).
- c) EPC Companies are responsible for the scheduling, facilities and successful delivery of training required for their staff, supervisors, contractors, and sub-contractors prior to assigning work to them.
- d) EPC Companies shall maintain records of their staff, supervisors, contractor, and sub-contractor licenses, certifications, training and qualification associated with DNNP and ensure OPG personnel have access to those records for review if needed.
- e) EPC Companies are responsible for providing sufficient number of trained and qualified personnel.

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f) At the Fuel Load milestone and beyond, EPC Company staff, supervisors, contractors and sub-contractors who are involved in Licensed Activities shall comply with Nuclear Training requirements under N-PROG-TR-0005 or equivalent, Training, and subsequent governing procedures.

**2.4 OPG Responsibilities**

The following lists the responsibilities of OPG:

- a) OPG should interface with project contract staff to coordinate the review of EPC Contract deliverables with respect to training.
- b) The development of material by EPC contract organizations may be complemented by any information specific to the Darlington site and may be provided by OPG to the organizations developing training.
- c) OPG shall review EPC Vendor Training Plans and advise when adjustments are required to meet the needs of the project.
- d) OPG may periodically review training materials, delivery and training records for EPC staff, supervisors, contractors, and sub-contractors involved in the Construction and Fuel-Out Commissioning phases of the Darlington New Nuclear Project.
- e) OPG shall follow the Nuclear Training Program N-PROG-TR-0005 Training or equivalent for the revision, development and delivery of training for personnel who will be executing licensed activities during Fuel-In Commissioning and Commercial Operation of the new plant.

**3.0 MILESTONES AND TIMELINE**

Construction and commissioning activities for the Darlington New Nuclear Project are anticipated to start in Q4-2023 through to Q4-2028.

Various EPC Companies will be involved in Construction at different points in time, therefore training of personnel will also take place at different points in time during this phase of the project.

In many cases, EPC Company staff, supervisors, contractors and sub-contractors will already hold much of the training, certification and qualifications needed for the project. However, in cases where training needs to be developed or procured, EPC Companies should allow sufficient lead time for that training to become available as well as time to deliver the training to personnel who require it prior to work assignment such as the vertical containment shaft boring, steel brick assembly or the reactor power vessel installation.

EPC Companies should submit training plans for OPG review prior to the initial scheduling and delivery of training for their staff, supervisors, contractors, and sub-contractors. (Training Plans are not required for subsequent training deliveries).

The below Figure 1 shows the general timeline for activities that may be required related to the training of EPC and OPG personnel on the project. The term, EPC personnel includes EPC Company staff,

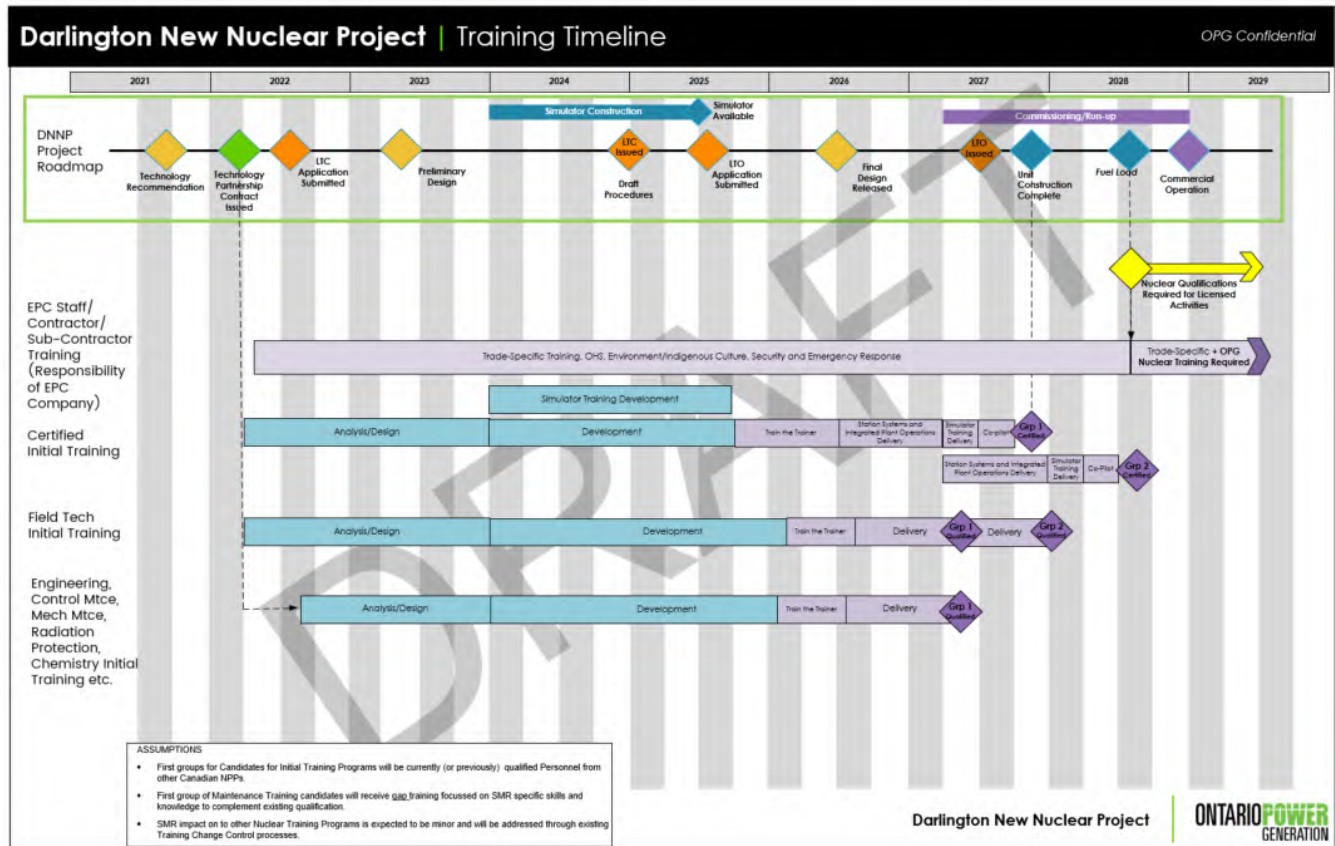


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supervisors, contractors and sub-contractors. The mentioned term was chosen not to exclude any group and is commonly used in other OPG's documentation.

**Figure 1: General timeline for training activities:**



*Note: The above timeline and activities may change as the Project schedule advances.*

#### 4.0 TRAINING CONTENT, SCHEDULING AND DELIVERY

The development and delivery of training and related activities for DNNP impacts the following phases:

- Training during Site Preparation
- Training during Construction
- Training during Commissioning
- Training during Commercial service

During the Construction and Fuel-Out Commissioning phases of the project, consideration for the training program includes:

- Training for EPC Company staff, supervisors, contractors and sub-contractors

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- EPC Company training
- OPG Nuclear Training provided at Fuel Load milestone and beyond
- Training for OPG Staff including:
  - Development and delivery of DNNP specific initial training and qualification programs for certified staff, field personnel and associated OPG Instructors.
  - Revisions as a result of new technology, innovation, equipment, processes and procedures may be required for existing Nuclear Training Programs such as NGET, Radiation Protection, Conventional Health and Safety, Work Protection Code, Engineering, Applied Nuclear Physics and Chemistry.
- Full Scope Simulator facility for training and examining persons seeking or holding certification
- Recruiting and Training Schedule

The revision, development and delivery of Training for staff who will commission, operate and maintain the new station shall follow the Nuclear Training Program under N-PROG-TR-0005 or equivalent and all applicable standards and procedures taking authority from the program.

Development of DNNP specific initial training and qualification for workers who are expected to conduct licensed activities at the new nuclear facility shall follow N-PROC-TR-0008 Systematic Approach to Training (SAT) or an equivalent SAT process, which is the base document of the training system, and describes the identification of performance requirements and definition of worker training through analysis, the design and development of training to support proper job performance and individual development, as well as examination security, development, and approval processes.

Revisions that may be required for existing Nuclear Training Programs as a result of DNNP shall follow N-PROC-TR-0008 or equivalent which provides training change-management process that systematically analyze procedural and equipment changes, changes in job descriptions, operating experience and perceived training needs.

Delivery of Initial Training and Qualification programs for workers who are expected to conduct licensed activities at the new nuclear facility shall follow N-PROC-TR-0008 or equivalent which includes the following:

- Implementation of training to support proper job performance and individual development.
- Training Exemption and Equivalency processes including the requirements, processes, and accountabilities for exempting staff from completing training and process for documenting and approving training equivalencies, hard credits and temporary training extensions.
- Control and use of Vendors for training delivery including requirements, processes, and accountabilities for control of training developed by Vendors and training delivered by Vendors within Nuclear premises and externally.
- Training remediation process that establishes requirements, processes, and accountabilities for providing remedial training for Trainees not meeting established pass- failure criteria.
- Examination security and implementation processes, including documentation of written, oral, simulator-based and e-learning examinations.

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Scheduling of training for DNNP should align with staffing plans for the new station. Training records shall be maintained per N-PROC-TR-0012, Records and Documentation.

#### 4.1 Training Content

Training and Qualification is required for EPC Company staff, supervisors, contractors, and sub-contractors as well as OPG staff including Certified Staff.

##### 4.1.1 EPC Company Staff, Supervisor, Contractors, Subcontractors

EPC staff, contractors and sub-contractors shall hold any required licenses, certifications or professional designations related to the activities they will be performing on the project. Skilled Trades staff shall hold journeyman status and Certificate of Qualification as appropriate. Apprentices shall work under the accountability of a journeyman when performing tasks associated with the skilled trade.

EPC Companies employing staff, contractors and sub-contractors shall verify those licenses and certifications as well as provide any additional training related to work assigned prior to assigning work on the project and maintain copies of them as records. OPG may at any time view those records.

EPC Companies shall also provide staff, supervisors, contractors, and sub-contractors with training as applicable in the following areas:

- Occupational Health and Safety Training
- Environmental and Indigenous Cultural Training
- Emergency Response Procedures Training
- Security Processes Training

EPC Companies are responsible for the scheduling and loading of training for their staff and include those arrangements in their Vendor Training Plan. Scheduling of Training should include a process to identify training demand to ensure individuals are rostered to required training courses. The schedule should identify the facility being used for specific courses, students rostered, and the instructor providing delivery of the training.

EPC Companies shall maintain records associated with any training conducted for their personnel working on the Darlington New Nuclear Project. Records of training include:

- Training Materials Used
- Attendance of Trainees including course information and dates delivered
- Course Results of each individual Trainee
- Evaluation Materials used
- Applicable certifications, licenses, and qualifications for each individual

EPC Companies shall apply their own auditable quality management systems to the training they procure/develop and provide to their staff, supervisors, contractors, and sub-contractors. OPG expects those systems to include a means to assess the training developed and delivered, and a process to ensure corrective actions are identified and executed when deficiencies are discovered.

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OPG shall review Vendor Training Plans and periodically review aspects of the training program such as training materials in use, observations of training delivery, and training records.

Deficiencies and other areas for improvement shall be brought to the attention of the EPC Company for corrective actions. OPG should follow up on the corrective actions to ensure identified deficiencies are addressed satisfactorily.

EPC Company staff, supervisors, contractors, and sub-contractors who are involved in Licensed Activities after the Fuel Load milestone, or who are interfacing with Darlington Generating Station systems/equipment or working in the protected area shall comply with Nuclear Training requirements under N-PROG-TR-0005, Training, or equivalent and subsequent governing procedures.

#### 4.1.2 Training for OPG Staff

The development and delivery of training for OPG staff who will execute licensed activities during fuel-in commissioning shall be governed under N-PROG-TR-0005 Training or equivalent. Fuel-in commissioning activities is outside the scope of this licence. Nuclear Training is a program that corporate and site organizations use to achieve, maintain, and improve worker performance. It is key to improving Nuclear station safety, reliability, and cost effectiveness and ensures that workers are trained and qualified to perform the duties of their position and applies to workers engaged in licensed activities.

The Nuclear Training Program describes the structure and content of Nuclear Training Governance. Nuclear Training governing documents under this program define the following:

- Formal training standards and conduct
- Training systems
- Training administration
- Simulator maintenance and validation

The general requirements of the Nuclear Training Program include:

- Training shall be developed and implemented such that it is performance-oriented and systematically developed.
- Station and organizational standards, work practices and management expectations shall be reinforced in training.
- Qualification requirements for licensed activities shall be established by Line Managers.
- Qualified staff shall be skilled and knowledgeable to perform the tasks assigned to them.
- Only qualified staff shall be assigned to work independently.
- Records shall be developed and managed for all phases of training and on the training and qualification of all workers.

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The following documents constitute the current management system for OPG's Nuclear Training Program:

**Table 1: Management System Document for the Nuclear Training Program**

Document	Title
N-PROG-TR-0005	Training
N-LIST-08920-10001	Nuclear Training Programs
N-STD-TR-0001	Conduct of Training
N-PROC-TR-0007	On-the-Job Training, On-the-Job Evaluation and Practical Evaluations
N-PROC-TR-0008	Systematic Approach to Training
N-PROC-TR-0012	Records and Documentation
N-PROC-TR-0021	Training and Qualification Description Development and Approval Process
N-PROC-TR-0023	Simulator Quality Assurance
N-PROC-TR-0024	Simulator Change Control
N-PROC-TR-0041	TIMS II Administration
N-PROC-TR-0044	Training Demand, Scheduling, and Cancellation Process

Note: These governing documents may be revised, deleted, or new documents created to meet the needs of the new nuclear plant.

### Formal Training Standards and Conduct

The Nuclear Training Program applies to the workgroups and work activities listed in N-LIST-08920-10001, Nuclear Training Programs. This list includes:

- Identification of the Major Nuclear Training Programs
- Listing of Training and Qualification Description (TQD) documents associated with Nuclear Training Programs
- Organization responsible for supporting the associated training
- TQDs document entry-level, initial, and continuing training requirements for workers engaged in licensed activities.

N-LIST-08920-10001 may be revised to incorporate the needs of the new plant.

N-STD-TR-0001, Conduct of Training, describes requirements and accountabilities for implementing Nuclear training and provides conduct expectations for instructors, trainees, and observers related to the execution of training events.

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Systematic Approach to Training

A Systematic Approach to Training shall be used and the extent of application based on the importance of the task to health, safety, environment, security, significance and complexity of the task.

N-PROC-TR-0008 Systematic Approach to Training is the base document of the training system and describes the following processes:

- Training change-management process that systematically analyzes procedural and equipment changes, changes in job descriptions, operating experience and perceived training needs.
- Identification of performance requirements and definition of worker training through analysis
- Design, development, implementation, and evaluation of training to support proper job performance and individual development.
- Training Exemption and Equivalency processes including the requirements, processes, and accountabilities for exempting staff from completing training and process for documenting and approving training equivalencies, hard credits and temporary training extensions.
- Control and use of Vendors for training delivery including requirements, processes, and accountabilities for control of training developed by Vendors and training delivered by Vendors within Nuclear premises and externally.
- Training remediation process establishes requirements, processes, and accountabilities for providing remedial training for Trainees not meeting established pass- failure criteria.
- Examination security, development, approval, and implementation processes, including documentation of written, oral and e-learning examinations.
- Assessment of training effectiveness and quality

**4.1.2.1 OPG Certification Staff**

Training developed and delivered for OPG Certification Staff shall follow N-PROC-TR-0005 Training or equivalent and subsequent governing documents. Certification of personnel is outside the scope of this licence, however, a brief overview of the programs and processes for certifying personnel at existing nuclear generating stations will be discussed. These will be adapted to support certification of personnel for the future operations at DNNP.

Required skills and competencies for certified positions shall be identified through the Systematic Approach to Training (N-PROC-TR-0008) or equivalent described above. N-PROC-TR-0008 applies to the training programs identified in N-LIST-08920-10001, Nuclear Training Programs. This document includes the definition of Major Nuclear Training Programs as those where the consequence of human error poses a risk to the environment, the health and safety of persons, or to the security of the nuclear facilities and of nuclear substances. Positions requiring CNSC certification are listed as Major Trained Performance Areas. These positions are under review as part of training development for Small Modular Reactors (SMRs).

Successful completion of initial certification examinations allows operations personnel to gain certification and requalification tests allow them to maintain certification which are critical elements of their role specific qualifications.

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The testing and certification methodology presently used for CANDU Certification Roles is not planned to be utilized at this time. New methodologies will be developed in collaboration with the regulator in terms of initial certification examinations and requalification testing.

Personnel certification shall meet the requirements of CNSC REGDOC-2.2.3 Volume III. (Note: A revision to REGDOC-2.2.3 Volume III expected to be published in 2023 is anticipated to consider development of SMR in the REGDOC. The impact of this revised REGDOC on DNNP will be assessed once the draft document is available for review. Since this is a CANDU specific document, some changes may need to be required for SMRs and initially for a new build reactor.)

Personnel involved in development and conduct of personnel certification training and the conduct of initial certification examinations and requalification tests shall be qualified in accordance with N-TQD-602-00001 Nuclear Trainer Training and Qualification Description and N-QG-602-00001 Operator Training Instructor Qualification Guide.

DNNP Authorization Training Department begins staffing in 2022 and the current plan is to be fully staffed by 2025.

### 4.2 Full Scope Simulator

The Full Scope Simulator is a replica of the BWRX-300 Main Control Room Hardware panels and instrumentation, telephone and communications systems, radiation and fire emergency tones and public address system and is expected to be in service by Q3-2025. It includes the simulation computers and servers required to provide plant system modeling/simulator operation and Instructor Station functionality.

All Operator related actions normally performed in the BWRX-300 Main Control Room identified by the training analysis will be incorporated into the simulator capability. The simulator will be based on the final iteration of the plant design and the simulator and simulation models will support the training of certified staff.

Full Scope Simulator hardware includes:

- Simulator computers and servers (Production, Development, and Test)
- Simulator display servers
- Plant Computer Function servers
- Instructor Station computers
- Instructor Station console
- Simulator console/panel hardware
- Simulator video and audio recording equipment.

The simulator models the evolutions covered in the plant operating procedures, and the anticipated operational occurrences, infrequent events, special events and accidents including:

- Steady State, Cool Down and Start Up
- Off-Normal Operations such as Loss of Feedwater, Turbine Trip, Line Breaks etc.
- Transients

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#### 4.2.1 Simulator Instructor Station

The Instructor Station is used by the instructor to exercise the simulator and control the evolution of training scenarios with capabilities in the following areas:

- Initial conditions
- Malfunctions
- Simulator control features (such as freeze, run, reset, snapshot, backtrack, replay, slow time, fast time)
- Local operator actions
- Data collection.

The introduction of any instructor station function will not alert the student or examinee to the impending events in any manner other than would occur in the Power Plant. This includes the introduction of a malfunction or instrumentation override.

The Instructor Station includes trending, monitored parameters, verification and validation, scenario event triggers, fast and slow time and other capabilities that provide the instructor with full control and supervision of the simulator status, performance and control.

##### 4.2.1.1 Operator / Instructor Action Monitor and Replay

Two logs record the Operator/Instructor actions:

- The instructor action log collects time-tagged descriptions of the instructor actions (e.g., malfunctions, remote functions, overrides etc.).
- The operator action log collects time-tagged descriptions of the operator actions at the control room panels (controls of switches, potentiometer settings etc.).

The Operator/Instructor action logs display on the instructor's monitor and update dynamically as new actions occur. The logs are saved to permanent files and can be printed if necessary.

#### 4.3 Recruiting and Training Schedule

Scheduling of training for DNNP should align with staffing plans for the new station. Maintenance of training records shall follow N-PROC-TR-0012, Records and Documentation.

The first groups of trainees for the new nuclear plant will be currently or previously trained and qualified staff from OPG or other Nuclear Power Plants. Initial training is planned to begin 2026, with a sufficient number of trained and qualified staff for commissioning activities per the station commissioning/start-up plan.

#### 5.0 TRAINING OVERSIGHT AND QUALITY ASSURANCE

EPC Companies shall apply their own auditable quality management systems to the training they procure/develop and provide to their staff, supervisors, contactors, and sub-contractors. OPG expects



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those systems to include a means to assess the training developed and delivered, and a process to ensure corrective actions are identified and executed when deficiencies are discovered.

In addition, OPG DNNP Training staff shall review Vendor Training Plans and then periodically review aspects of the training program such as training materials in use, observations of training delivery, and training records.

Deficiencies and other areas for improvement should be noted and brought to the attention of the EPC Company for corrective actions. OPG should follow up on the corrective actions to ensure identified deficiencies are addressed satisfactorily.

OPG Training Programs under N-PROG-TR-0005, Training, are subject to training oversight activities described in N-STD-TR-0001, Conduct of Training, Section 1.2, Training Oversight.

**6.0 REFERENCES**

N-PROG-TR-0005, Training

N-STD-AS-0002, Procedural Use and Adherence

NK054-PLAN-01210-00100 Sheet 0007, Darlington New Nuclear Project Training Program Management Plan

**Enclosure 4**

**Darlington New Nuclear Project Indigenous Engagement Report April 2020 to August  
2022**

**NK054-REP-07421.3-00002 R000**

**October 13, 2022**

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**Darlington New Nuclear Project  
Indigenous Engagement Report April  
2020 to August 2022**

**NK054-REP-07421.3-00002-00**

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**Report**

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<b>Revision Number</b>	<b>Date</b>	<b>Comments</b>
R000	2022-10-12	Initial issue.

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**1.0 IDENTIFIED INDIGENOUS NATIONS AND COMMUNITIES**

The lands and waters on which the Darlington New Nuclear Project (DNNP) is situated are within the traditional and treaty territory of the Williams Treaties First Nations, which includes Curve Lake First Nation, Hiawatha First Nation, Alderville First Nation, Chippewas of Beausoleil First Nation, Chippewas of Georgina Island First Nation, Chippewas of Rama First Nation, and the Mississaugas of Scugog Island First Nation.

In 1923, the Chippewa First Nations and the Mississauga First Nations signed the Williams Treaties and together, over 90 years later in June 2018, these Nations joined to ensure that their rights to and the relationship with these lands is respected through a renewed agreement with Canada and the Province of Ontario.

OPG also recognises interest in the project from other Indigenous Nations and communities including the Mohawks of the Bay of Quinte (MBQ) and the Métis Nation of Ontario Region 8.

OPG acknowledges the Aboriginal and treaty rights of Indigenous Nations and communities as recognized in the Constitution Act, 1982. OPG’s Indigenous Relations policy provides a framework for engaging with Indigenous peoples, advancing reconciliation and to regularly reporting on the company’s activities and progress in achieving established goals.

The purpose of this Indigenous engagement report is to document Indigenous engagement activities related to DNNP, to track issues and concerns raised, as well as steps that OPG has taken to minimize impacts or to address issues raised. This report is prepared in accordance with REGDOC-3.2.2, Indigenous Engagement.

OPG’s objective with respect to engagement with interested Indigenous Nations and communities is to share information on DNNP, understand concerns and potential impacts to Aboriginal and Treaty Rights, promote dialogue and create opportunities for participation in the development, implementation and review of mitigation measures. This engagement must be built on a relationship that includes trust and respect in order to be meaningful.

The interested Indigenous Nations and communities identified for the DNNP, as well as the planned frequency of meeting is listed in Table 1.

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**Table 1: Indigenous Nations and communities Included in OPG Indigenous Engagement Program Related to DNNP**

<b>Indigenous Nation or community</b>	<b>Affiliation</b>	<b>Cultural Group</b>	<b>Rationale</b>	<b>Planned Engagement Frequency (Minimum)</b>
Scugog Island FN Williams Treaties First Nations (WTFN)	Anishinabek Nation	Mississauga	Community is approximately 50 km from site.  Rights holder  DNNP is within traditional and treaty territory.	Quarterly
Curve Lake FN Williams Treaties First Nations (WTFN)	Anishinabek Nation	Mississauga	Community is approximately 100 km from site.  Rights holder  DNNP is within traditional and treaty territory.	Quarterly
Hiawatha FN Williams Treaties First Nations (WTFN)	Assoc. of Iroquois and Allied Indians (AIAI)	Mississauga	Community is approximately 80 km from site.  Rights holder  DNNP is within traditional and treaty territory.	Quarterly
Alderville FN Williams Treaties First Nations (WTFN)	Anishinabek Nation	Mississauga	Community is approximately 75 km from site.  Rights holder  DNNP is within traditional and treaty territory.	Quarterly

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<b>Indigenous Nation or community</b>	<b>Affiliation</b>	<b>Cultural Group</b>	<b>Rationale</b>	<b>Planned Engagement Frequency (Minimum)</b>
Georgina Island FN Williams Treaties First Nations (WTFN)	Anishinabek Nation	Chippewa	Community is approximately 95km from site.  Rights holder  DNNP is within traditional and treaty territory.	Quarterly
Rama FN Williams Treaties First Nations (WTFN)	Anishinabek Nation	Chippewa	Community is approximately 120km from site.  Rights holder  DNNP is within traditional and treaty territory.	Quarterly
Beausoleil FN Williams Treaties First Nations (WTFN)	Anishinabek Nation	Chippewa	Community is approximately 210 km from site.  Rights holder  DNNP is within traditional and treaty territory.	Quarterly
Huron Wendat	Assembly of First Nations Quebec- Labrador	Huron	Community is located in Quebec.  Traditional territory spans from southeast Georgian Bay to St. Lawrence seaway.  Delegated by the Government of Ontario – interests are specific to archeological resources.	Twice yearly



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<b>Indigenous Nation or community</b>	<b>Affiliation</b>	<b>Cultural Group</b>	<b>Rationale</b>	<b>Planned Engagement Frequency (Minimum)</b>
Kawartha Nishnawbe	Anishinabek Nation	Mississauga	Not a recognized First Nation by Canada, however they have asserted interests in the area.  Located approximately 100 km from site.  Delegated by the Government of Ontario.	Twice yearly
Mohawks of the Bay of Quinte	Assoc. of Iroquois and Allied Indians (AIAI)	Haudenosaunee	Community is located approximately 140 km from site - Near Belleville.  Expressed interests in the project.	Twice yearly
Métis Nation of Ontario Region 8	Métis Nation of Ontario	Métis	Represented covers Durham, Toronto York, Mississauga, Peel, and Halton.  Expressed interests in the project.	Twice yearly

**2.0 SUMMARY OF ENGAGEMENT ACTIVITIES APRIL 2020 - AUGUST 2022**

In 2020, OPG submitted to the CNSC an Indigenous Engagement Report as part of the Power Reactor Site Licence renewal application that covered the period of November 2018 to March 2020 [R1]. This report is a subsequent report that is submitted to provide an update on the most recent engagement activities and to support the Licence to construct application. The detailed log of engagement activities is provided in Table 2.

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**Table 2: OPG Engagement Log for Identified Indigenous Nation and communities**

<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
May 29, 2020	Williams Treaties First Nations (WTFN)	DNNP update and capacity support discussion	<ul style="list-style-type: none"> <li>Species at risk, bank swallow and butternut trees as they relate to SMRs.</li> <li>Planning for used fuel and low- and intermediate-level waste from SMR</li> <li>Decommissioning plan</li> <li>Project description/EA</li> <li>Effect of blasting at St. Mary's cement adjacent to proposed project site.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigation strategies of impacts to species at risk will be developed based on final layout of SMR, if approved.</li> <li>Irradiated fuel would be stored on site as per current practice at other sites. Plan is for eventual shipment to future NWMO facility.</li> </ul>	<ul style="list-style-type: none"> <li>Additional meeting set up to discuss irradiated fuel storage with NWMO.</li> <li>Follow up meetings led to capacity agreement.</li> </ul>
June 19, 2020	Mohawks of the Bay of Quinte (MBQ)	DNNP Project Update	<ul style="list-style-type: none"> <li>Pickering decommissioning</li> <li>PRSL content and timing of License application</li> </ul>	<ul style="list-style-type: none"> <li>Multi-stage/multi-year process. Renewal of existing License is for site preparation. OPG requires an additional licence to start nuclear construction.</li> <li>OPG took an action to add the topic of PNGS fish diversion to the meeting planned for August.</li> </ul>	OPG sent links to access the PRSL renewal application.
September 30, 2020	Métis Nation of Ontario Region 8 (MNO 8)	DNNP Project update	<ul style="list-style-type: none"> <li>Environmental impacts of the project</li> <li>Status of the EA</li> <li>Impact of the project on water (specifically thermal discharge)</li> <li>Zebra Mussels</li> </ul>		
October 7, 2020	Mohawks of the Bay of Quinte (MBQ)	DNNP update meeting	<ul style="list-style-type: none"> <li>Climate change</li> <li>Environmental Impact Statement (EIS)</li> </ul>		<ul style="list-style-type: none"> <li>Link to EIS and other information on the OPG website provided.</li> <li>Two passes to Nov 18/19 SMR summit provided as professional development.</li> </ul>

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
October 13, 2020	Williams Treaties First Nation (WTFN)	DNNP update and capacity discussion	<ul style="list-style-type: none"> <li>Material from original EA.</li> <li>Potential capacity budget.</li> </ul>	WTFN requested OPG to email Ministry re: artifact status, transfer.	<ul style="list-style-type: none"> <li>OPG emailed Ministry re: artifact status and transfer after the meeting.</li> <li>Passes provided to Nov 18/19 SMR summit for professional development.</li> <li>Capacity support initiated</li> </ul>
November 9, 2020	Williams Treaties First Nations (WTFN)	Meeting re capacity funding and DNNP agreement	<ul style="list-style-type: none"> <li>Capacity agreement schedules reviewed</li> </ul>		
November 13, 2020	WTFN, MBQ, MNO8	Email	<ul style="list-style-type: none"> <li>Site preparation activities and timeline update</li> </ul>		
November 17, 2020	Curve Lake	In-person meeting: VP, New Nuclear Development and Chief Whetung re SMR developments	<ul style="list-style-type: none"> <li>Supply Chain</li> <li>Differences between enriched and non-enriched uranium</li> <li>Planning for used fuel</li> <li>Safety systems of SMRs</li> <li>Potential to use spent fuel in SMRs</li> <li>Economic benefits</li> </ul>	Spent fuel re-use possibly in the future, much work needs to be done.	
December 8, 2020	Mohawks of the Bay of Quinte (MBQ)	Meeting – DNNP update with emphasis on EA subject categories	<ul style="list-style-type: none"> <li>Validity of SMR technologies within the original Environmental Assessment</li> <li>Impacts of nuclear generation on the Great Lakes</li> <li>Storage of nuclear waste.</li> <li>Capacity funding</li> </ul>	Potential funding required for consultant to support MBQ with review work.	
December 11, 2020	Williams Treaties First Nations (WTFN)	Meeting – DNNP Environmental Review	<ul style="list-style-type: none"> <li>Public hearing process and timeline</li> <li>Nuclear waste</li> <li>Bank Swallows</li> <li>Impact of St. Mary's cement site activities</li> </ul>	Discussed additional engagement on environmental work (e.g., fisheries video result, native plant species, fish offsets).	

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
January 6, 2021	Williams Treaties First Nations (WTFN)	Meeting – Virtual	<ul style="list-style-type: none"> <li>Draft capacity framework agreement with WTFN.</li> </ul>		
January 13, 2021	Métis Nation of Ontario Region 8 (MNO 8)	Meeting – virtual	<ul style="list-style-type: none"> <li>Discussion of potential ION candidates within MNO 8 membership</li> </ul>		
January 27, 2021	Williams Treaties First Nations (WTFN)	Email capacity Agreement re: DNNP engagement	<ul style="list-style-type: none"> <li>Signed Agreement sent to WTFN for response.</li> </ul>		Capacity agreement signed in January 2021 by Curve Lake FN and Scugog Island FN.
February 16, 2021	Mohawks of the Bay of Quinte (MBQ)	Email	<ul style="list-style-type: none"> <li>Recommendation for date to provide DNNP update.</li> <li>MBQ indicated staffing issues</li> </ul>		
February 25, 2021	Williams Treaties First Nations (WTFN)	Meeting - Project update	<ul style="list-style-type: none"> <li>Joint meeting with Canadian Nuclear Safety Commission (CNSC) re original environmental decision process.</li> <li>Follow-up from Dec 11/20 environmental topics meetings.</li> <li>Status of the JRP recommendations that pertain to the CNSC</li> <li>CEAA vs IAA re differences</li> </ul>	<ul style="list-style-type: none"> <li>OPG to provide a species list for WTFN for review and assess interest.</li> <li>OPG to provide website resources</li> </ul>	<ul style="list-style-type: none"> <li>OPG to check in with Ministry of Heritage re: artifacts, letter of support.</li> <li>A link of website resources was provided following the meeting.</li> </ul>
March 22, 2021	Métis Nation of Ontario Region 8 (MNO 8) and Mohawks of the Bay of Quinte (MBQ)	Emails -DNNP update and offer to meet.	<ul style="list-style-type: none"> <li>Project update</li> <li>Included Project brochure</li> </ul>	<ul style="list-style-type: none"> <li>Email exchange led to MNO 8 meeting set for May 13th</li> <li>Email exchange led to MBQ meeting set for May 28th</li> </ul>	

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
March 25, 2021	Williams Treaties First Nations	Monthly meeting re DNNP	<ul style="list-style-type: none"> <li>Environmental monitoring commitments identified impacts and potential responses.</li> <li>Availability of jobs in nuclear</li> <li>Education of DNNP staff</li> <li>Economic development opportunities from DNNP</li> </ul>	<ul style="list-style-type: none"> <li>WTFN not interested in Immersive link approach; to suggest alternative.</li> </ul>	
April 15, 2021	Curve Lake First Nation	Meeting with Chief Whetung and staff	<ul style="list-style-type: none"> <li>Memorandum of Understanding (MoU) to start discussions related to equity participation.</li> <li>Employment/training</li> </ul>	<ul style="list-style-type: none"> <li>OPG took an action to provide a draft MoU.</li> <li>Meeting to be held re: ION and supply chain with WTFN reps in May/June.</li> <li>OPG to assign contact re: business development; Curve Lake cautioned against suppliers directly contacting communities.</li> </ul>	
April 28, 2021	Williams Treaties First Nations (WTFN)	Email	<ul style="list-style-type: none"> <li>Shared May 19 info session invitation with WTFN reps for their members.</li> </ul>		
April 29, 2021	Williams Treaties First Nations (WTFN)	Monthly meeting re: DNNP.	<ul style="list-style-type: none"> <li>Project update, overview of three reactor technologies examined</li> <li>DNGS Environmental Risk Assessment (ERA) results.</li> </ul>	<ul style="list-style-type: none"> <li>WTFN members requested information on the size of the buildings in the footprint, the amount of low/intermediate waste on annual basis and the quantity of stored use fuel.</li> <li>Interested in emissions to water and air</li> <li>ERA related VEC rationale requested.</li> </ul>	<ul style="list-style-type: none"> <li>Relevant environmental reports on OPG.com shared via links.</li> <li>Additional Actions taken by OPG:                             <ul style="list-style-type: none"> <li>NWMO presentation to WTFN</li> <li>Opportunities for WTFN participation in environmental monitoring.</li> <li>Presentation by OPG on its climate action plan and energy innovations.</li> </ul> </li> </ul>
May 6, 2021	Rama First Nation	Meeting with Rama Economic Development contacts	<ul style="list-style-type: none"> <li>Business opportunities related to DNNP.</li> </ul>	<ul style="list-style-type: none"> <li>Supply change to following up re office furniture business Rama part owns.</li> </ul>	
May 19, 2021	Williams Treaties First Nations (WTFN)	Virtual Information session on DNNP for WTFN	<ul style="list-style-type: none"> <li>Focus on waste including heavy water</li> <li>Waste amounts produced by SMR technology,</li> <li>Cumulative effects of SMR positioned near DNGS.</li> <li>SMR as new technology.</li> <li>use of copper for DGR/used fuel</li> </ul>	<ul style="list-style-type: none"> <li>Role of NWMO</li> </ul>	

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May 25, 2021	Williams Treaties First Nations (WTFN)	Meeting to discuss Indigenous Opportunities Network (ION) and developing business opportunities with WTFN economic development and employment/training reps.	<ul style="list-style-type: none"> <li>The meeting first in a series. In future feature vendors with opportunities.</li> <li>Feedback that staff and Indigenous businesses will need help from Supply Chain re: setting as a supplier with OPG and vendors.</li> </ul>	<ul style="list-style-type: none"> <li>WTFN members asked to conduct gap analysis. What capacity support do staff and Indigenous businesses need?</li> <li>Assurance that some contracts can be unbundled to facilitate Indigenous business participation.</li> <li>Comments that OPG and vendors should ensure that Indigenous business are genuine and have benefits to Indigenous people and communities.</li> </ul>	<ul style="list-style-type: none"> <li>OPG materials re: presentation emailed to attendees.</li> </ul>
May 27, 2021	Williams Treaties First Nations (WTFN)	Monthly meeting re: DNNP.	<ul style="list-style-type: none"> <li>Emissions from SMR technology</li> <li>Environmental updates. ERA process to start at PNGS with VEC focus.</li> <li>OPG/NWMO waste presentation.</li> <li>Spent fuel and NWMO DGR</li> </ul>		<p>Links on resources related to copper corrosion provided.</p> <p>Journal article: <a href="https://www.sciencedirect.com/science/article/pii/S0079642520301304">https://www.sciencedirect.com/science/article/pii/S0079642520301304</a></p> <p>conference paper: <a href="https://onlinelibrary.wiley.com/doi/full/10.1002/maco.202011763">https://onlinelibrary.wiley.com/doi/full/10.1002/maco.202011763</a></p>
June 10/11, 2021	Williams Treaties First Nations (WTFN) Mohawks of the Bay of Quinte (MBQ)	Participation in the hearing	<ul style="list-style-type: none"> <li>PRSL Licence Renewal Hearing, DNNP</li> </ul>	<ul style="list-style-type: none"> <li>Intervention by Chief Emily Whetung – Curve Lake</li> <li>Intervention by MBQ</li> </ul>	
June 24, 2021	Williams Treaties First Nations (WTFN)	DNNP Monthly Meeting	<ul style="list-style-type: none"> <li>CNSC hearing</li> <li>Project update</li> <li>EA Follow-up Monitoring plan</li> <li>Discussion on how Indigenous Knowledge can be worked into project planning</li> <li>Important that site contractors have Indigenous relations acumen.</li> </ul>	<ul style="list-style-type: none"> <li>Feedback from the hearing was positive.</li> <li>Dates were discussed regarding site visits by WTFN reps.</li> <li>OPG took an action to share EMEAF</li> </ul>	EMEAF shared on June 25 <sup>th</sup> by email

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
July 29, 2021	Williams Treaties First Nations	DNNP Monthly Meeting	<ul style="list-style-type: none"> <li>• Cooling Options</li> <li>• Current shoreline protection at DNGS</li> <li>• Pickering Environmental Risk Assessment (VEC selection)</li> <li>• August 16 Tour Logistics</li> <li>• Feedback on EA Follow up plan and plant species list</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for WTFN participation in Environmental Monitoring was discussed.</li> <li>• OPG took an action to provide more information from archeology assessment, more information on how OPG plans to act if archeological finds are made.</li> <li>• WTFN agreed to provide information for plant/animal species at Frenchman's Bay.</li> </ul>	<ul style="list-style-type: none"> <li>• Logistics set for Aug 16 tour. Follow up tour on Sept 27 for other WTFN reps.</li> <li>• Action related to archeological planning led to discussions with WTFN Archeological expert, hiring an archeological consultant for field monitoring and familiarization training of staff on the project.</li> </ul>
August 10, 2021	Métis Nation of Ontario Region 8 (MNO 8)	Meeting Environmental monitoring follow-up	<ul style="list-style-type: none"> <li>• Removal, replanting of plant species.</li> <li>• Fish testing</li> <li>• Environmental reporting results</li> <li>• Cooling options for SMR technology</li> </ul>	<ul style="list-style-type: none"> <li>• MNO 8 asked if use of plants being removed had been considered. OPG took it away to consider.</li> </ul>	After consideration of use of plants being removed it was determined that there were limited species of interest. OPG does not support harvesting for consumption, but would support use of wood or things like Butternut Tree seed collection (or similar).
August 16, 2021	Williams Treaties First Nations (WTFN)	DNNP site tour	<ul style="list-style-type: none"> <li>• Indigenous knowledge in project planning</li> <li>• Disposition of disturbed plants, soil, etc.</li> <li>• Salmon restocking</li> <li>• Species studies re: health and counts. Discussion of 'Camera Trapping' and other technologies for species counts.</li> <li>• Bank swallow habitat.</li> </ul>	<ul style="list-style-type: none"> <li>• Request for potential harvesting of plants of interest including seeds from butternut tree for use at CLFN.</li> <li>• OPG asked to advocate for Salmon restocking: Indigenous methods should be considered</li> <li>• WTFN indicated a desire to see bank swallow habit from the lake.</li> </ul>	OPG did follow up with Ontario Federation of Anglers and Hunters (OFAH) to incorporate IK in the 'Bring Back the Salmon Program', and offered to Curve Lake to facilitate discussions when they are ready.  OPG and Curve Lake representatives observed Bank Swallows from an OPG vessel on Lake Ontario on June 18, 2022.
August 26, 2021	Williams Treaties First Nations (WTFN)	DNNP Monthly Meeting	<ul style="list-style-type: none"> <li>• Site tour feedback.</li> <li>• High-level review of the 3 technologies being considered</li> <li>• Discussed once through cooling follow-up questions from July 29 meeting</li> <li>• Permits required for Project.</li> </ul>	<ul style="list-style-type: none"> <li>• WTFN requested more information regarding existing DNGS outflow and how it will interact with DNNP outflow.</li> <li>• WTFN expressed concern that SMRs might be used for extractive purposes like mining in other locations and not just for power in communities.</li> </ul>	OPG has an action to provide outflow studies once they are available.

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
September 27, 2021	Williams Treaties First Nations (WTFN)	DNNP Site tour with WTFN delegation	<ul style="list-style-type: none"> <li>• Transmission requirements including EA requirements</li> <li>• Land use for the project</li> <li>• Bank swallow habitat and erosion</li> <li>• Archaeology findings</li> </ul>	<ul style="list-style-type: none"> <li>• Curve Lake recommended a listen session re local Indigenous culture, history, knowledge to augment tour, which focused on the land's biodiversity and mitigation efforts.</li> <li>• European and Indigenous archeological findings was discussed. Talked about status of the artifacts with the Ministry and the plan for eventual repatriation to Curve Lake post-COVID.</li> </ul>	<p>Discussion related to culture started during the December 2021 tours at Darlington.</p> <p>OPG met with MHSTCI on January 11 2022 and they agreed to repatriate artefacts to Curve Lake at the conclusion of COVID restrictions.</p>
October 1, 2021	Williams Treaties First Nations (WTFN)	DNNP Monthly Meeting	<ul style="list-style-type: none"> <li>• Projected waste volume per technology</li> <li>• Other waste streams</li> <li>• Validity of the original EA</li> <li>• Timeline for the NWMO DGR</li> <li>• Historical land and unmapped features like headwater drainage (and potential impacts on these)</li> <li>• Emissions from SMRs compared to CANDU units.</li> <li>• Status of new Environment REGDOCs</li> </ul>	<ul style="list-style-type: none"> <li>• OPG was asked to review emissions at DNGS and DNNP and cumulative effects on the environment.</li> <li>• Follow-up at meeting on October 10<sup>th</sup>.</li> </ul>	Emission estimates are noted as an area of interest and will continue to be discussed as the design matures and more information is available.
October 27, 2021	WTFN, Huron Wendat and Kawartha Nishnawbe	OPG letters re: Min Energy delegation of duty.	<ul style="list-style-type: none"> <li>• Letters to WTFN, Huron Wendat and Kawartha Nishnawbe. Ontario considers all to have rights or asserted rights in Project area.</li> <li>• Offer to HW and KN to meet regarding project update and next steps.</li> </ul>	HW response noted November 10 <sup>th</sup> .	



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October 28, 2021	Williams Treaties First Nations (WTFN)	DNNP Monthly Meeting	<ul style="list-style-type: none"> <li>Follow-up on nuclear technologies (from Oct 1).                             <ul style="list-style-type: none"> <li>Water usage for cooling: variance in water taken.</li> <li>Waste volume differences between technologies.</li> <li>Emission between technologies.</li> <li>Safety case.</li> <li>SMR emissions</li> </ul> </li> <li>Environmental Protection Plan.</li> <li>Minister of Energy Oct 15 letter to WTFN Chiefs.</li> <li>DWMF tours.</li> </ul>	<ul style="list-style-type: none"> <li>There was discussion about the history of the CANDU reactor and how choices made in the 50s and 60s (not to use enriched uranium) drove design considerations. There is no current plan to produce enriched uranium in Canada, but this could be considered in the future.</li> <li>Ministry of Energy sent a letter to WTFN on October 15<sup>th</sup> RE: delegation of DTC. A pending regulatory amendment was also cited in the letter (OPG had forwarded notice of this in an email to WTFN contacts on Sept 15 as well). It was recommended that OPG arrange for a SME presentation regarding the regulatory amendment and the OEB rate process at the Nov 25 meeting.</li> <li>Tour dates in Nov/Dec/Jan were discussed</li> </ul>	Presentation to WTFNs related to OEB rate process took place on November 25 <sup>th</sup> .
November 4, 2021	Williams Treaties First Nations (WTFN)	Virtual Meeting	DNNP technology selection	<ul style="list-style-type: none"> <li>Overall assessment of technology was presented prior to the OPG Board meeting.</li> <li>Community reps in attendance provided their feedback and were appreciative of the transparency.</li> </ul>	
November 5, 2021	Six Nations of the Grand River	Virtual Meeting	Overview of DNNP & Nuclear Waste	<ul style="list-style-type: none"> <li>Discussed the project goals, overview of SMRs, and overview of nuclear waste streams and management of it.</li> </ul>	
November 10, 2021	Huron Wendat	Email received	Huron Wendat re: DNNP	Huron Wendat response to OPG letter of Oct 27 re: offer of engagement on Project. They are opposed to nuclear development and wanted this position known/considered. No specific follow-up action requested.	
November 22, 2021	Huron Wendat	Email sent	Response to Huron Wendat re: DNNP	Response to HW email – acknowledged receipt of email and offered to meet if desired and to send updates.	

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November 25, 2021	Williams Treaties First Nations (WTFN)	DNNP Monthly Meeting	<ul style="list-style-type: none"> <li>OEB rate setting process re: SMR cost recovery.</li> <li>DNNP Update</li> <li>Archaeology protocol</li> <li>DWMF Tours</li> <li>Climate Change effects (led by WTFN)</li> </ul>	<ul style="list-style-type: none"> <li>Roles of OEB, IESO and OPG explained along with cost recovery.</li> <li>Refurbishment cost recovery was used as an example to illustrate process. It was noted that not all requested costs are approved.</li> <li>RFP for early site work was discussed. RFPs include Indigenous content.</li> <li>WTFN would like to interact with vendors to ensure follow-through. Vendors must provide real work opportunities to build community capacity.</li> <li>OPG noted role of Supply Chain dedicated to Indigenous procurement.</li> <li>Archaeology protocol discussed should new Indigenous artifacts be found.</li> <li>WTFN members shared climate change issues re: hunting, harvesting. Cold weather delayed, confusing animals and affecting WTFN practices.</li> </ul>	<ul style="list-style-type: none"> <li>OPG took an action to present its Climate Change Action Plan. This occurred on January 27 2022.</li> <li>Meetings including Site Preparation vendor representatives started April 2022.</li> <li>Initiated concept of an Indigenous Engagement scorecard for DNNP Vendors to measure Indigenous content and benefits.</li> </ul>
December 2, 2021	Williams Treaties First Nations (WTFN) Mohawks of the Bay of Quinte Métis Nation of Ontario Region 8 Kawartha Nishanwbe Huron Wendat	SMR Technology Decision email	BWRX-300 technology decision communicated to: -Williams Treaties First Nations -Mohawks of the Bay of Quinte -Métis Nation of Ontario Region 8 -Kawartha Nishanwbe -Huron Wendat		<ul style="list-style-type: none"> <li>Follow up meeting in January to discuss technology with communities.</li> </ul>
December 10, 2021	Curve Lake First Nation Hiawatha First Nation	DWMF Tour	Site tour of DWMF for one group of five representatives from Curve Lake and Hiawatha – technical staff		
December 17, 2021	Curve Lake First Nation	DWMF Tour	Site tour of DWMF for Chief Whetung and three from her team.	<ul style="list-style-type: none"> <li>Curve Lake reps talked about potential for archeological finds and why it is important to the communities.</li> <li>Listening circles and relationship building was discussed along with Indigenous Knowledge sharing.</li> </ul>	

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Date	Community	Activity	Discussion Topics	Additional Information	Comments/Mitigation
January 25, 2022	MNO8	Update meeting (Virtual)	<ul style="list-style-type: none"> <li>• DNNP update</li> </ul>	<ul style="list-style-type: none"> <li>• Continued interests include the site layout and cooling water.</li> <li>• Interested in a tour</li> </ul>	<ul style="list-style-type: none"> <li>• Tour being arranged before the end of 2022.</li> </ul>
January 27, 2022	Williams Treaties First Nations (WTFN)	Regular Monthly DNNP update meeting	<ul style="list-style-type: none"> <li>• OPG's Climate Action Plan</li> <li>• Project Update and Timeline</li> <li>• Environmental Monitoring Protection Plan</li> <li>• Archaeology Update</li> <li>• Scorecarding of Vendors for Indigenous Engagement</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion regarding nuclear waste and nomenclature: cleaner vs clean.</li> <li>• Off-set credits—how these are determined.</li> <li>• What will be the decision process with respect to deployment of MMRs to replace diesel in communities - Deployment of the GFP project at Chalk River will need to take place first. Community consultation is a priority.</li> <li>• WTFN is interested in participating in environmental monitoring, e.g., bank swallows and roosting sites at Coots Pond. There was discussion about reptile monitoring.</li> <li>• OPG reported on the number of monitoring wells in and around the site as well as monitoring of boreholes.</li> <li>• OPG plans to submit its environmental monitoring report to CNSC in February and encouraged WTFN comment beforehand. Incorporation of IK here an opportunity that should be developed.</li> <li>• OPG is pursuing a contract for archeology with a firm recommended by WTFN.</li> <li>• Scorecarding of vendors for Indigenous engagement will be discussed at a smaller working table due to time constraints at the meeting.</li> </ul>	<ul style="list-style-type: none"> <li>• Explore opportunity to incorporate Indigenous Knowledge into Environmental monitoring.</li> <li>• Scopes of Work for Environmental monitoring provided to Curve Lake to indicate interest in participating and IK.</li> </ul>

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
February 24, 2022	Williams Treaties First Nations (WTFN)	Regular Monthly DNNP update meeting	<ul style="list-style-type: none"> <li>• CCW and Site Preparation Update</li> <li>• Offshore archaeology update</li> <li>• Overview of Indigenous Engagement Plans</li> </ul>	<p>OPG will strive to minimize thermal plume</p> <p>Curve lake archaeologist may need more time to review the archeology reports</p>	<p>Details on cooling water thermal plume modeling and potential for cumulative impacts to be provided when information available.</p> <p>OPG shared deep water study “DNNP Deep Water Fish Community Characterization for Siting of Intake and Diffuser”</p> <p>OPG shared CCW and Site Prep Indigenous Engagement Plans for WTFN review.</p>
March 10 ,2022	Curve Lake	Update meeting re Marine Archaeological Report	Specific “Areas of Interest” will be further investigated this spring and notification/review by Ministry before any work can be done in those locations	<ul style="list-style-type: none"> <li>• The shallow water non-accessible by boat last fall, will be investigated by snorkeling this spring</li> <li>• The deeper waters that were not investigated last fall are to have the boat investigation completed (side sonar, &amp; magnetometer to detect metal objects)</li> </ul>	Curve Lake Archaeologist responded that they have no concerns or further questions regarding the methodology used and are in agreement with the recommendations.
March 11, 2022	Huron Wendat	Meeting – Virtual	<ul style="list-style-type: none"> <li>• Introductions</li> <li>• Huron Wendat history</li> <li>• Huron Wendat position on Nuclear</li> </ul>		
March 24, 2022	Williams Treaties First Nations (WTFN)	Regular Monthly DNNP Update meeting	<ul style="list-style-type: none"> <li>• Site Layout Overview</li> <li>• DNNP Environmental Mapping</li> <li>• Minimizing thermal impact on Lake Ontario and receiving water impact assessment (near-field and far-field)</li> <li>• DNNP Switchyard discussion and transmission corridor</li> <li>• DNNP potential multi-unit layout</li> </ul>	<p>Information was shared with the WTFN members about the environmental mapping. There were no concerns noted.</p> <p>Discussion took place around Condenser Cooling Water intake and outflow and minimizing any impact on the lake.</p>	OPG shared the presentations on the SharePoint site for WTFN
March 28, 2022	Curve Lake	Email from OPG	Opportunity for WTFN presence during offshore archeological inspections.	Due to insurance limitations, cannot have externals on the boat so contractor offered to have CLFN representative(s) observe fieldwork from shore, and the contractor archaeologist can provide a briefing, on the shore, in the morning and/or afternoon.	Curve Lake community contact was agreeable to this alternative.

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Date	Community	Activity	Discussion Topics	Additional Information	Comments/Mitigation
April 28, 2022	Williams Treaties First Nations (WTFN)	Regular Monthly DNNP Update meeting (virtual)	<ul style="list-style-type: none"> <li>• ES Fox introduction</li> <li>• Vendor Indigenous Engagement Scorecard update</li> <li>• Marine archeology update</li> <li>• EIS review methodology</li> </ul>	<p>ES Fox shared their Indigenous Engagement and Site Prep plans.</p> <p>Draft Vendor Indigenous Engagement scorecard was shared by DNNP team for WTFN input/comments for next meeting. Initial feedback on the scorecard was very positive.</p> <p>Marine archeology investigation occurring at Darlington based on findings from last year. Invited representatives to come to site and meet the crews or to ask questions.</p> <p>Site Prep Indigenous Engagement Plan was reviewed, and comments sought. No comments provided at this time. It was noted that it is a living document and can be updated any time.</p> <p>Methodology for the EIS review provided based on the BWRX-300 design.</p>	CCW studies were shared and were made available to the WTFN for comments.
May 5, 2022	Curve Lake MBQ	Email	To request meeting to provide marine archeological update.		
May 6, 2022	Curve Lake	Meeting (virtual)	Archeological update provided.		

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
May 26, 2022	Williams Treaties First Nations (WTFN)	Regular Monthly DNNP Update meeting	<ul style="list-style-type: none"> <li>Offshore Archeological update</li> <li>Site Preparation update</li> <li>Bank Swallow Artificial Structure presentation</li> <li>Site Layout update</li> </ul>	<p>The first unit site layout was presented to WTFN. Spoils disposal area and conceptual infrastructure (road) changes were noted. OPG highlighted the rationale behind the layout and described mitigations of impact to flora and fauna.</p> <p>Voyager Services Ltd.- Opening head office on Scugog Island FN (Kickoff May 31st) Voyager hiring a full-time safety officer. Working with the equipment operator's union to get Indigenous workers 6-12 weeks of training with employment opportunities afterwards</p> <p>Report's scope includes intake and outfall tunnels. There may be other construction where dredging is considered.</p>	<p>OPG uploaded site layout drawing to Share point.</p> <p>OPG shared Fixed Face Earthen Embankment Siting Criteria. Planned to follow up on a boat tour of the shoreline to see the swallow habitat.</p>
June 23, 2022	Anishinabek Nation Delegation and Curve Lake	Site visit and in-person meeting about OPG and DNNP	OPG overview provided.	<p>Toured DNGS – Control Room; Turbine Hall viewing; Irradiated Fuel Bay.</p> <p>Feedback was positive – no specific issues or discussion raised.</p> <p>Some concerns voiced re Hydroelectric dam legacy impacts in the north to sturgeon harvesting and other land impacts.</p>	<p>OPG videos were well-received. Suggestion to have them at community meetings playing at breaks. Also suggestion to translate into Ojibway language.</p> <p>Suggestion to have the Anishinabek Chiefs meet at Darlington in the fall and include tours of Waste facility and potentially Darlington. (Invitation has been extended).</p>
June 24, 2022	Anishinabek Nation Delegation and Curve Lake	Site Tour	Toured Darlington Waste Management Facility.	<p>OPG provided detailed explanation of Irradiated fuel transfer to facility and storage.</p> <p>Question of what the surveillance/ operations would look like in the DGR.</p>	OPG to seek information from NWMO on concept of DGR operations.

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<b>Date</b>	<b>Community</b>	<b>Activity</b>	<b>Discussion Topics</b>	<b>Additional Information</b>	<b>Comments/Mitigation</b>
July 28, 2022	Williams Treaties First Nations (WTFN)	Regular Monthly DNNP Update Meeting	<ul style="list-style-type: none"> <li>• ESA Permit</li> <li>• Early Works update</li> <li>• SF6 Drainage rerouting</li> <li>• EIS Review update</li> </ul>	<p>Early Works presentation provided which covered scope, overview and conceptual service routing. It was noted that an archaeological specialist is being on boarded for the work.</p> <p>WTFN referred to the EIS of 2009 and that in 2018 there was a settlement for WTFN with changes that should be reflected in the EIS. OPG committed to review the EIS in the context of the settlement agreement.</p>	OPG to send draft ESA permit to WTFN when it is available.
August 25, 2022	Williams Treaties First Nations (WTFN)	Regular Monthly DNNP Update Meeting	<ul style="list-style-type: none"> <li>• General project update</li> <li>• Site Preparation update</li> <li>• CCW design update</li> <li>• EIS update and WTFN comments</li> </ul>	<p>A lot of discussion on the CCW design and minimizing impact to fish and thermal discharge in the design.</p> <p>Plan to have more discussion on the draft EIS Review report and comments from the WTFNs.</p> <p>The potential for a ceremony before the project officially breaks ground on the site was tabled.</p>	<p>A ceremony with WTFN Elders was held in October prior to ground-breaking.</p> <p>Follow up discussions related to comments on the EIS took place in September.</p>

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### 3.0 DESCRIPTION OF PLANNED ENGAGEMENT ACTIVITIES

Over the period of engagement documented in this report, some key areas of interest have been raised. As engagement continues and the project progresses, these areas of interest will be further discussed and explored for potential impacts to Treaty Rights and appropriate mitigation. Areas of interest include:

- Archeological planning and findings
- Management of nuclear waste streams
- Impacts to the lake and land and the effect on plant, animal, and aquatic species, with particular interest in bio cultural species
- Emissions to air and water
- Incorporation of Indigenous Knowledge and ceremony
- Opportunities for employment, businesses, and investment

OPG will continue to engage with the identified Indigenous Nations and communities regarding the DNNP. In addition to the identified communities in Table 1, engagement with the Saugeen Ojibway Nation will be requested due to plans, once the unit is operational, to send low and intermediate radioactive waste to the Western Waste facility located in their territory.

A number of communities accept capacity funding for these engagement activities, although some do not. OPG will continue to extend the offer of capacity funding related to engagement activities.

Engagement will include sharing information as it is developed and seeking input as we progress through the project. Specific information that will be shared includes those areas of interest listed above, and other project information including:

- Site preparation activities
- Environmental Assessment (EA) Follow up monitoring program and methodologies
- Permits and licence applications
- Environmental impact Statement (EIS) reviews
- Design of the facility
- Construction planning
- Operations and Decommissioning planning



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### 4.0 PROPOSED SCHEDULE FOR INTERIM REPORT TO CNSC

Currently, CNSC and OPG engage in monthly telephone conference calls to discuss OPG operations and projects and how these interact with Indigenous Nations and communities. The DNNP Project is a regular agenda item on this call. The frequency of these contacts can be increased as needed.

### 5.0 REFERENCES

1. Darlington New Nuclear Project – Indigenous Engagement Report, NK054-REP-07421.3-00001.

**Enclosure 5**

**DNNP Stakeholder Engagement Plan**

**NK054-PLAN-01210-00019 R004**

**October 14, 2022**

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**DNNP STAKEHOLDER ENGAGEMENT PLAN**

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**DNNP STAKEHOLDER ENGAGEMENT  
PLAN****NK054-PLAN-01210-00019-004**

2022-10-12

Order Number: N/A

Other Reference Number: N/A

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### Revision Summary

Revision Number	Date	Comments
R004	2022-10-12	Revised to update current status of tactics and activities
R003	2022-09-19	Revised to correct minor wording changes
R002	2022-06-01	Revised to include LTC phase communication tactics and activities
R001	2022-02-18	Revised to incorporate CNSC feedback
R00	2021-09-10	Initial issue

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**DNNP STAKEHOLDER ENGAGEMENT PLAN**

## 1.0 INTRODUCTION

This document sets out the public and stakeholder engagement plan and activities in support of Ontario Power Generation's (OPG) Darlington New Nuclear Project (DNNP).

The plan documents proposed activities for each phase of the DNNP and is designed to be flexible and responsive. As such, it should be considered a living document subject to review and modification in response to stakeholder input and unanticipated opportunities, events, or issues as they arise. As the project moves into different phases, this plan will be updated to reflect anticipated activities.

Key principles guiding the plan include:

- All communications and outreach activities in support of the project will be integrated into the framework of the existing public information program for the Darlington Nuclear generating station. The information program has been in existence for many years and meets, and in some cases exceeds all regulatory and OPG corporate requirements; specifically:
  - Canadian Nuclear Safety Commission (CNSC) REGDOC 3.2.1 (Public Information and Disclosure)
  - CNSC REGDOC 3.2.2 (Indigenous Engagement)
  - OPG governing document N-STD-AS-0013 (Nuclear Public Information and Disclosure)
- Where necessary, Darlington's existing public information program will be augmented to include activities and/or stakeholders not usually within the scope of the existing program, specific to DNNP.
- Inclusion of interested stakeholders and members of the public will be at a level of involvement as requested to suit their needs and interests.
- All engagement and communication activities with relevant Indigenous communities are outlined in a separate document, NK054-PLAN-01210-00028, DNNP Indigenous Engagement Plan for 2021-2024 and NK054-REP-07421.3-00002 R00, Darlington New Nuclear Project – Indigenous Engagement Report April 2020 to August 2022.

## 2.0 OBJECTIVES AND APPROACH

### 2.1 Objectives

The following objectives drive the activities of the Stakeholder Engagement Plan:

- Communicate plans and activities to stakeholders and share information with them.
- Proactively identify key information and activities during DNNP that may be of interest or impact the community including from an environmental (including effects and mitigation), health and safety perspective.
- Inform and educate stakeholders on the characteristics of the SMR project and technology.

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- Actively listen and seek informed views, perspectives, issues, and concerns from stakeholders.
- Incorporate topics of interest and concerns into future DNNP communication materials and activities.
- Promptly respond to issues raised by the community, stakeholders, and the public.

## 2.2 Approach

The objectives of the plan will be met through the following general communication and engagement process:

- Listen – seek informed views, perspectives, issues and concerns.
- Communicate – inform and share information.
- Engage – provide opportunities for information exchange and issue identification.
- Respond – ensure comments or concerns are dispositioned.
- Document – processes, process outcomes, issues, concerns, and responses.

In parallel to the specific engagement activities identified in this plan, ongoing contact will be maintained with the public and stakeholders throughout the project. The amount of contact will be responsive to the needs of each group. This may be determined by:

- Meetings or events held by a stakeholder organization requesting attendance by OPG or a member of the DNNP Team.
- Frequency of meetings of standing committees, such as the Community Advisory Committees (CAC) (Darlington and Pickering) or Durham Nuclear Health Committee (DNHC), which may request attendance by OPG or a member of the DNNP Team.
- Specific interests of stakeholders from the broader interest community.
- Nature and frequency of contact requested by stakeholders.

### 2.2.1 Public Notification

Public notification will take place at the start of each phase of the project (e.g., site preparation activities, construction, etc.). Public notification will include advertisements in local media; letter(s) to key stakeholders; post(s) to the website; article(s) in Neighbours newsletter, and other methods, as required.

## 3.0 COMMUNICATION PLAN

### 3.1 Primary Focus Area

The primary focus area for the engagement activities includes two municipalities proximate to the Darlington Nuclear site:

- Municipality of Clarington

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- City of Oshawa

These municipalities are both within the ten-kilometre Detailed Planning Zone (DPZ) around the Darlington Nuclear site (as identified in Ontario's Provincial Nuclear Emergency Response Plan) and, as such are mostly likely to be interested in and/or impacted by activities at the site.

### 3.2 Stakeholders and Target Audiences

OPG seeks to actively listen to the public and stakeholders with a potential interest in the DNNP and that they are provided with relevant information and have the opportunity to share their views and perspectives. Information will be communicated in a number of ways based on target audience identification, their interests, and preferred means of communication.

DNNP Stakeholders and target audiences include but are not limited to:

- Indigenous communities with treaty rights in the area or an interest in the project
- Residents living in the vicinity of the Darlington Nuclear station and public in the local community
- Elected officials, MP's, MPP's, mayors, and councillors, in the local community and adjacent areas
- Key community stakeholders and leaders
- Established community committees (including the Darlington Community Advisory Committee and the Durham Nuclear Health Committee)
- Local businesses and business organizations (including local Chambers of Commerce and Boards of Trade and their members)
- Private/public community organizations and special interest groups
- Non-Governmental Organizations who have expressed interest in the project and/or OPG operations
- Nuclear industry associations/organizations and regulatory bodies
- Elementary, secondary, and post-secondary institutions (including local school teachers and students and local Colleges and Universities)
- Federal, provincial, regional, and municipal agencies and officials with a regulatory role or project interest
- Media
- OPG employees and retirees
- Intergovernmental agencies
- Broader community of interest (see Section 3.2.2)

#### 3.2.1 Indigenous Communities

Detailed engagement and communication activities with Indigenous Nations and Communities are outlined in NK054-PLAN-01210-00028, DNNP Indigenous Engagement Plan for 2021-2024 and NK054-REP-07421.3-00002 R00, Darlington New Nuclear Project – Indigenous Engagement Report April 2020 to August 2022.



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### 3.2.2 Broader Community of Interest

OPG recognizes there may be additional interest in DNNP from a broader community of interest, both regionally and nationally with an interest in SMR technology, energy, climate change, and/or environmental issues. These may include individuals and/or groups who participated in the initial licensing and EA process for DNNP or other OPG licensing processes.

OPG will endeavour to include the broader community of interest as part of the communication program. Should additional consultation mechanisms be required, they will be addressed on an as needed basis and added to future revisions of this plan. OPG will continue to add to the target audience list should any groups or individuals proactively contact us and/or as we are made aware of their potential interest in the project.

Additionally, OPG will continue to share information with local and regional land use planners, economic development staff, and social service providers, as applicable.

### 3.3 Stakeholder List

A stakeholder list is maintained and updated regularly to ensure effective and timely information is communicated to interested and appropriate audiences. The database identifies the name, address, phone, email, and affiliation of all identified stakeholders (as available).

### 3.4 Annual Report

The first annual report, detailing all public and stakeholder engagement activities and outreach was created in 2021. This report will be updated annually and will document outreach to target audiences, capture public and stakeholder interest in the project, and document feedback, questions, concerns, and resolutions.

## 4.0 COMMUNICATION VEHICLES

### 4.1 Stakeholder Briefings and Interviews

Briefings will be made by to federal, provincial, regional, and local government representatives and agencies and established stakeholder committees, subject to their interest and for OPG disposition.

Regular project updates will be presented to the Darlington Nuclear Community Advisory Council and the Durham Nuclear Health Committee.

### 4.2 Workshops

Where appropriate, workshops may be developed for key stakeholder groups with a high level of interest in the project.

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### 4.3 Community Information Sessions/Town Halls/Open Houses

Information about the DNNP will be incorporated into community information/open house sessions that OPG hosts in the primary focus area communities. The sessions would provide a forum for two-way communication between participants and OPG and be an opportunity to share information, as well as allow for the public to ask questions and identify or raise any concerns or issues they may have pertaining to the project.

A variety of mechanisms will be used to inform the public about these sessions and encourage attendance, including advertisements online, local newspapers and on social media, information in OPG community newsletters and the distribution of letters of invitation.

### 4.4 Newsletters

Information about the DNNP will be included in OPG’s community newsletter (*Neighbours*). The distribution of this newsletter includes the residents and businesses within the primary focus area (Clarington and Oshawa) in addition to residents and businesses within the ten-kilometre emergency planning zone around the Pickering Nuclear site. It will also be posted online, and shared with contacts, stakeholders, and others as required.

### 4.5 OPG Employee Communication Activities

Information about the DNNP will be shared with employees through OPG-wide and station-specific communication vehicles. When available, information may also be shared through face-to-face (may be virtual) interactions with employees (presentations, lunch-and-learn sessions). Information will also be shared with OPG retirees through existing communication methods and vehicles.

### 4.6 Website

Information about the DNNP will be included on the project web page, [www.opg.com/newnuclear](http://www.opg.com/newnuclear). This will serve as a vehicle to provide information to visitors to the website as well as a mechanism to receive input from interested persons. Information will be updated regularly to reflect the progress of the project.

### 4.7 Social Media

Where appropriate, information about the project will be shared through OPG’s social media channels which include Facebook, Twitter, Instagram, and YouTube as well as targeted social media campaigns, as applicable.

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#### 4.8 Telephone Information Line

The Darlington Nuclear public information program has an active 1-800 information line. This telephone number will be included on public information and correspondence about the project and the public and stakeholders will be encouraged to call with questions and to request further information.

#### 4.9 Media Relations

Ongoing liaison with reporters and news editors (electronic and print media) will be initiated and maintained by OPG Media Relations staff using approved company process.

#### 4.10 Public Communications Tracking

OPG maintains a Public Communications Tracking Program which is a mechanism to receive, document and respond to concerns, complaints, and irregular inquiries received by members of the public and stakeholders. Inquiries may be received through various vehicles, including electronically (email), via telephone, written or in-person discussions. This program will be expanded to ensure any inquiries specific to the DNNP are also managed through the same process. Regulatory Affairs to assist with management of inquiries as needed.

Through the program, the following process will be undertaken when an inquiry is received:

- Identify and record the source of the comment (name of person or groups).
- Indicate the date and event of origin.
- Identify the type of communication and the original document for cross-referencing (letter, meeting report, email, voicemail report, etc.)
- Provide a summary of the comment and response.
- Indicate the response action taken, when and by whom.
- Document how the response was communicated to the comment source, where applicable.

#### 5.0 EVENTS AND ACTIVITIES

Information about DNNP has continued to be shared with the public and stakeholders throughout the project as part of the ongoing Darlington Nuclear public information program. Targeted engagement and communications in support of each phase of the project are outlined the appendices of this plan.

For more information see:

- Appendix A, Site Preparation Licence Renewal Events and Activities
- Appendix B, Site Preparation Events and Activities
- Appendix C, Licence to Construct Events and Activities
- Appendix D, Target Audiences

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## Appendix A: Site Preparation Licence Renewal Events and Activities

The Site Preparation Licence Renewal events and activities were completed in three phases. These planned activities, outlined below, have been completed. Details of the executed activities are documented in the annual stakeholder engagement report.

### Phase I: Q 4 2020 (*approximate dates, or up to date of submission of licence application*)

- During this phase, key information shared included: OPG's desire to renew the licence; the purpose of maintaining an active licence; the role of future new nuclear at DNNP; activities involved/required to renew the licence (i.e., information to be validated/updated); estimated timeline for renewal process activities.

### Phase II: Q1/Q2 2021 (*approximate dates, or up to date of CNSC licence hearings*)

- During this phase, key information shared included content of licence renewal application including results of work completed to validate/update information from the original licence; any additional information or progress specific to the DNNP project that may be relevant including timeline for comments, and the availability of participant funding.

### Phase III: Q3/Q4 2021

- During this phase, key information shared included the CNSC decision on the licence application; next steps for OPG re DNNP.

The following identifies the proposed engagement and communication activities throughout the phases noted above (dates and activities are tentative). Some initiatives listed below had separate internal tactical communication plans developed in support of their development and execution.

TIME FRAME	ACTIVITY	Status
Phase I Q4 2020	<ul style="list-style-type: none"> <li>• Develop stakeholder contact list</li> <li>• Develop communication materials (for example, web page on opg.com; fact sheet, videos) – (update information as appropriate)</li> <li>• Presentation to CAC (Darlington and Pickering)</li> <li>• Article in <i>Neighbours</i> community newsletter (Darlington and Pickering)</li> </ul>	<ul style="list-style-type: none"> <li>• Complete</li> </ul>
Phase II Q1/Q2 2021 (approx.)	<ul style="list-style-type: none"> <li>• Update information on DNNP website</li> <li>• Stakeholder update letter</li> <li>• Updated project brochure</li> <li>• Key stakeholder briefings (Federal, Provincial, Municipal elected officials)</li> <li>• Update to OPG employees and retirees (various communication vehicles – PowerNews,</li> </ul>	<ul style="list-style-type: none"> <li>• Complete</li> </ul>

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	<ul style="list-style-type: none"> <li>PowerNet, Yammer, virtual information sharing opportunities)             <ul style="list-style-type: none"> <li>Article in <i>Neighbours</i> community newsletter (Darlington and Pickering)</li> <li>Host stakeholder workshops                 <ul style="list-style-type: none"> <li>Provincial/Regional/Municipal representatives</li> <li>Non-Governmental Organizations</li> </ul> </li> <li>Hold Public Information Sessions</li> <li>Meetings with Municipal staff as needed about topics of interest (for example, traffic and transportation)</li> <li>Reach out to identified stakeholder regarding participation in the hearing</li> </ul> </li> </ul>	
<p>Phase III Q3/Q4 2021 Post-hearing/ following CNSC licence decision</p>	<ul style="list-style-type: none"> <li>Stakeholder letter</li> <li>Update information on DNNP website</li> <li>Presentation to CAC (Darlington and Pickering) (Q3)</li> <li>Presentation to DNHC (Q3)</li> <li>Key stakeholder briefings (Federal, Provincial, Municipal elected officials) (as required)</li> <li>Briefings to municipal councils (Clarington, Oshawa, Region of Durham) (Q3/Q4)</li> <li>Update to OPG employees and retirees (various communication vehicles – PowerNews, PowerNet, Yammer, face-to-face information sharing opportunities)</li> <li>Article in <i>Neighbours</i> community newsletter (Darlington and Pickering)</li> <li>Update to identified stakeholders and broader communities of interest</li> <li>Meetings with Municipal staff as needed</li> <li>Announcement and education campaign on technology selection (separate tactical communication plan to be developed)</li> <li>Announcement event and associated communications – Board of Directors/Shareholder decision (separate tactical communication plan to be developed)</li> </ul>	<ul style="list-style-type: none"> <li>Complete</li> </ul>
<p>Ongoing</p>	<ul style="list-style-type: none"> <li>Review and update stakeholder contact list</li> <li>Track and respond to stakeholder inquiries through Public Information Tracking Program</li> <li>Update to identified stakeholders and broader communities of interest as required</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing throughout all project phases</li> </ul>

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## Appendix B: Site Preparation Events and Activities

The Site Preparation events and activities will fall into three phases:

### Phase I: Q4 2021-Q1 2022

During this phase, prior to the start of site preparation activities, key information to be shared includes I) update on the licensing process (CNSC licence renewal decision) and next steps II) notification of the early site preparation work to be conducted at the DNNP site and III) technology selection and OPG Board of Director and Shareholder decision announcements.

### Phase II: 2022/2023

During this phase, key information to be shared includes continued communication on the selected technology including launch of an education campaign, continued communication on the status of the project and licensing process (LTC activities). Communications will also begin in parallel on the licence to construct hearing.

### Phase III: 2023 -2025

During this phase, key information to be shared includes communication of wrap-up on site preparation activities, early notification of construction timeframes, and next steps in the licensing process.

TIME FRAME	ACTIVITY	Status
Phase I Q4 2021- Q1 2022	<b>CNSC PRSL Licence Renewal decision:</b> <ul style="list-style-type: none"><li>Stakeholder update letter</li><li>Update to CAC</li><li>Update to DNHC</li><li>Update to Municipal Council(s)</li><li>Updates to website and social media channels</li><li>Employee communications</li><li>Stakeholder &amp; community group presentations as required/requested</li></ul> <b>Notification of site preparation activities prior to commencement via:</b> <ul style="list-style-type: none"><li>Newspaper advertisements</li><li>Social media</li><li>Neighbours newsletter</li><li>Website update</li></ul> <ul style="list-style-type: none"><li>Technology selection announcement/communication/education campaign (separate tactical communications plan to be developed)</li></ul>	<ul style="list-style-type: none"><li>Complete</li></ul>

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	<ul style="list-style-type: none"> <li>• BOD/Shareholder decision announcement/communications (separate tactical communications plan to be developed)</li> <li>• Creation of billboard advertisements, social media advertisements and other promotional materials, as required</li> <li>• Creation of DNNP/SMR display materials (for use at information centres and community events)</li> <li>• Planning of site and bus tours of DNNP land (timing dependent on COVID protocols)</li> </ul>	
<p>Phase II 2022/2023</p>	<p><b>To support technology/BOD/Shareholder decisions (separate tactical communications plan to be developed):</b></p> <ul style="list-style-type: none"> <li>• Updated Project Brochure (email to stakeholders, hard copy, website)</li> <li>• Update website</li> <li>• Stakeholder letter</li> <li>• Key stakeholder briefings (Federal, Provincial, Municipal elected officials)</li> <li>• Update to OPG employees and retirees (various communication vehicles – PowerNews, PowerNet, Yammer, virtual information sharing opportunities)</li> <li>• Article in <i>Neighbours</i> community newsletter (Darlington and Pickering)</li> <li>• Announcement events/press releases</li> <li>• Virtual tours/videos</li> </ul> <p><b>To support Licence to Construct hearing (2023):</b></p> <ul style="list-style-type: none"> <li>• Stakeholder update letter</li> <li>• Update info on DNNP website</li> <li>• Update to OPG employees and retirees (various communication vehicles – PowerNews, PowerNet, Yammer, virtual information sharing opportunities)</li> <li>• Article in <i>Neighbours</i> community newsletter (Darlington and Pickering)</li> <li>• Update to community committees (CAC, DNHC)</li> <li>• Update to Municipal Council(s)</li> <li>• Key stakeholder briefings (Federal, Provincial, Municipal elected officials)</li> <li>• Host stakeholder workshops as required               <ul style="list-style-type: none"> <li>○ Provincial/Regional/Municipal representatives</li> <li>○ Non-Governmental Organizations</li> <li>○ Others as required</li> </ul> </li> <li>• Hold Public Information Sessions</li> </ul>	<ul style="list-style-type: none"> <li>• Complete</li> <li>• Began in fall 2022 (Ongoing)</li> </ul>

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	<ul style="list-style-type: none"><li>• Meetings with Municipal staff as needed about topics of interest (for example, traffic and transportation)</li><li>• Reach out to identified stakeholder regarding participation in the hearing</li></ul>	
Phase III 2023- 2025	<p><b>To support DP-17 commitment (end of site prep)</b></p> <ul style="list-style-type: none"><li>• Conduct public attitude research at the end of the site preparation phase (separate tactical plan to be developed)</li></ul> <p><b>To support licence to construct decision (2024)</b></p> <ul style="list-style-type: none"><li>• Stakeholder update letter</li><li>• Update to CAC</li><li>• Update to DNHC</li><li>• Update to Municipal Council(s)</li><li>• Updates to website and social media channels</li><li>• Employee communications</li><li>• Stakeholder &amp; community group presentations as required/requested</li></ul>	<ul style="list-style-type: none"><li>• To be started in 2023</li></ul>
Ongoing	<ul style="list-style-type: none"><li>• Review and update stakeholder contact list</li><li>• Track and respond to stakeholder inquiries through Public Information Tracking Program</li><li>• Update to identified stakeholders and broader communities of interest as required</li></ul>	<ul style="list-style-type: none"><li>• Ongoing</li></ul>



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### Appendix C: Licence to Construct Events and Activities

The Licence to Construct events and activities falls into four main phases, spanning the timeframe of pre-submission of the Licence to Construct through to the commencement of licensed construction activities, as applicable.

**Phase I: Q2-Q4 2022 (approximate dates, or up to date of submission of licence application)**

- During this phase, key information to be shared includes: OPG’s desire to apply for a Licence to Construct; the purpose of applying for the licence; the role of future new nuclear at DNNP; activities involved/required to apply for the licence (EA study validation, etc.); estimated timeline for Licence to Construct application activities (interventions, hearings, etc.)

**Phase II: Q1 2023/Q3 2024 (approximate dates, or up to date of CNSC licence hearings)**

- During this phase, key information to be shared includes content of the licence application including results of work completed to validate/update EA studies; any additional information or progress specific to the DNNP project that may be relevant including timeline for comments, the availability of participant funding, the timing of and process to intervene in public hearings.

**Phase III: Q3/Q4 2024**

- During this phase, key information to be shared includes the CNSC decision on the licence application; and next steps for OPG on the project, including the timeline for construction activities (as applicable).

**Phase IV: Q4 2025-2028**

- During this phase, key information to be shared includes notice of commencement of construction activities including a timeline of what activities will take place on site, status of construction activities, and communication of any impact to public areas of the site (as applicable).

The following identifies the proposed engagement and communication activities throughout the phases noted above (dates and activities are tentative). Some initiatives listed below may have communication plans developed in support of their development and execution. As additional required activities and opportunities become known, they will be added to future versions of this plan.

TIME FRAME	ACTIVITY	Status
Phase I Q2-Q4 2022	<ul style="list-style-type: none"> <li>• Develop and deliver standard DNNP slide deck</li> <li>• Develop and deliver DNNP virtual tour</li> <li>• Work with GE Hitachi to implement Virtual Reality experience at OPG information centre</li> <li>• Develop DNNP project brand/identify</li> </ul>	<ul style="list-style-type: none"> <li>• In progress</li> </ul>

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	<ul style="list-style-type: none"> <li>• Develop/update communication materials (for example, SMR 101 video, brochures, print materials)</li> <li>• Presentation to CAC (Darlington and Pickering)</li> <li>• Presentation to DNHC</li> <li>• Article in <i>Neighbours</i> community newsletters (Darlington and Pickering) with pull out DNNP Project insert</li> <li>• Attend/Sponsor community events including festivals, rib fests, children’s programs/activities and present/include DNNP messaging</li> <li>• Attend Municipal/Regional events and incorporate DNNP messaging</li> <li>• Conduct tours of DNNP lands and DNGS station/site with interested stakeholders</li> <li>• Assist Indigenous Relations with engagement including tours, meetings, and materials</li> <li>• Develop and disseminate updated Stakeholder letter</li> <li>• Hold OPG Open House with emphasise on SMRs as a key to solving climate change (<i>a separate tactical communication plan will be developed</i>)</li> <li>• Hold Public Information Sessions</li> <li>• Develop and post media release(s)/hold media event(s) as applicable to announce new vendor partners (e.g., engineer, constructor)</li> <li>• Develop, in collaboration with Nuclear Stakeholder Relations and local school boards, a school board strategy to incorporate energy literacy, nuclear energy and SMR/DNNP information</li> </ul>	
<p>Phase II <b>Q1 2023/Q3 2024</b> (approx.)</p>	<p><i>A separate tactical communication plan will be created to support the LTC CNSC hearings.</i></p> <ul style="list-style-type: none"> <li>• Update information on DNNP website</li> <li>• Develop and disseminate Stakeholder update letter</li> <li>• Develop and disseminate updated project brochure</li> <li>• Develop advertisements for newspaper, community spaces, online venues, and virtual viewing</li> <li>• Key stakeholder briefings (Federal, Provincial, Municipal elected officials)</li> <li>• Update to OPG employees and retirees (various communication vehicles)</li> </ul>	<ul style="list-style-type: none"> <li>• To begin in 2023</li> </ul>

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	<ul style="list-style-type: none"> <li>• Article in <i>Neighbours</i> community newsletter (Darlington and Pickering) with pull out DNNP Project insert</li> <li>• Host stakeholder workshops             <ul style="list-style-type: none"> <li>○ Provincial/Regional/Municipal representatives</li> <li>○ Non-Governmental Organizations</li> </ul> </li> <li>• Hold Public Information Sessions</li> <li>• Presentation to CAC (Darlington and Pickering)</li> <li>• Presentation to DNHC</li> <li>• Attend/Sponsor community events including festivals, rib fests, children’s programs/activities and present/include DNNP messaging</li> <li>• Attend Municipal/Regional events and incorporate DNNP messaging</li> <li>• Conduct tours of DNNP lands and DNGS station/site with interested stakeholders</li> <li>• Assist Indigenous Relations with engagement including tours, meetings, and materials</li> <li>• Execute school board strategy to incorporate energy literacy, nuclear energy and SMR/DNNP information into local classrooms both proactively and by request</li> <li>• Reach out to identified stakeholder regarding participation in the hearing</li> </ul>	
<p>Phase III <b>Q3/Q4 2024</b></p>	<ul style="list-style-type: none"> <li>• Develop and disseminate media release, social media posts</li> <li>• Develop and disseminate updated Stakeholder letter</li> <li>• Update information on DNNP website</li> <li>• Develop advertisements for newspaper, community spaces, online venues, and virtual viewing</li> <li>• Presentation to CAC (Darlington and Pickering)</li> <li>• Presentation to DNHC</li> <li>• Key stakeholder briefings (Federal, Provincial, Municipal elected officials)</li> <li>• Update to OPG employees and retirees (various communication vehicles)</li> <li>• Special project edition of in <i>Neighbours</i> community newsletter (Darlington and Pickering)</li> <li>• Presentations/Briefings with Municipal staff as needed</li> <li>• Announcement event and associated communications – Board of Directors/Shareholder decision (separate tactical communication plan to be developed)</li> </ul>	<ul style="list-style-type: none"> <li>• To begin in 2024</li> </ul>

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	<ul style="list-style-type: none"> <li>• Develop advertisements to outline beginning of construction activities</li> <li>• Attend/Sponsor community events including festivals, rib fests, children’s programs/activities and present/include DNNP messaging</li> <li>• Attend Municipal/Regional events and incorporate DNNP messaging</li> <li>• Conduct tours of DNNP lands and DNGS station/site with interested stakeholders</li> <li>• Assist Indigenous Relations with engagement including tours, meetings, and materials</li> <li>• Continue to execute school board strategy to incorporate energy literacy, nuclear energy and SMR/DNNP information into local classrooms both proactively and by request</li> </ul>	
<p><b>Phase IV: Q4 2025-2028</b></p>	<p>During the construction phase of the project, the below tactics will be used often, and as required. More details on this phase of the project will be included in future revisions of this plan.</p> <ul style="list-style-type: none"> <li>• Ongoing updates to project website</li> <li>• Ongoing Stakeholder update letters</li> <li>• Continued dissemination of updated project brochure</li> <li>• Key stakeholder briefings (Federal, Provincial, Municipal elected officials)</li> <li>• Updates to OPG employees and retirees (various communication vehicles)</li> <li>• Ongoing articles in <i>Neighbours</i> community newsletter (Darlington and Pickering) with pull out DNNP Project insert and/or special project editions</li> <li>• Stakeholder workshops             <ul style="list-style-type: none"> <li>○ Provincial/Regional/Municipal representatives</li> <li>○ Non-Governmental Organizations</li> </ul> </li> <li>• Public Information Sessions</li> <li>• Presentation to local community groups including the CAC and DNHC</li> <li>• Continued presence at community events including festivals, rib fests, children’s programs/activities with project messaging</li> <li>• Ongoing attendance at Municipal/Regional events to incorporate DNNP messaging</li> <li>• Continued tours of DNNP lands and DNGS station/site with interested stakeholders (including virtual and VR tour options)</li> </ul>	<ul style="list-style-type: none"> <li>• To begin in 2025</li> </ul>

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	<ul style="list-style-type: none"><li>• Assist Indigenous Relations with engagement including tours, meetings, and materials</li></ul>	
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### Appendix D: Target Audiences

Stakeholder Group
Indigenous communities and organizations with treaty rights and/or interest in the project including the Williams Treaties First Nations, the Mohawks of the Bay of Quinte, The Metis Nation of Ontario (Region 8), the Huron Wendat, and the Kawartha Nishnawbe
Non-Governmental Organizations (including key interveners from recent CNSC hearings, e.g., Ontario Clean Air Alliance, Canadian Association of Physicians for the Environment, Northwatch, Durham Nuclear Awareness, Canadian Environmental Law Association)
MPs in Region of Durham
Minister of Natural Resources and Staff
Other Federal ministries and departments with interest/role in project
Minister of Energy, Northern Development and Mines and staff
MPPs in Region of Durham
Provincial ministries and departments with interest/role in project
Elected officials (Regional Chair, Mayors, councillors) and staff representatives of Clarington and Oshawa (host community) plus immediate surrounding communities
Elected officials and staff representatives of neighbouring communities (Pickering, Ajax, Whitby, Scugog, Uxbridge, Brock, Port Hope)
Municipal departments with interest/role in project
Utility and energy partners
Labour organizations
Nuclear industry associations/organizations
Nuclear industry supply chain vendors
SMR technology developers
Businesses and business organizations including Boards of trade and Chambers of Commerce
Persons living in the vicinity of DNNP
Established community committees including the Darlington Community Advisory Committee and Durham Nuclear Health Committee
Local Durham Region Community Organizations
Educational organizations including local primary and secondary schools and post-secondary institutions
OPG Employees and retirees
Environmental Organizations
Local Media in Darlington community
National/Provincial Media - print, TV, radio, online (including energy reporters)
Industry media
Nuclear Advocates