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Nuclear Charter

TITLE
NUCLEAR MANAGEMENT SYSTEM

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PURPOSE AND SCOPE
<p>This Charter is applicable to all aspects of the Nuclear business as defined within this document and includes all equipment, systems, and activities. It provides overall direction regarding administration of Nuclear licensing activities and establishes requirements to which employees shall comply. The Nuclear Management System Charter takes its authority from the Corporate Safe Operations Policy (OPG-POL-0032) and the Nuclear Safety Policy (N-POL-0001). Programs from Interfacing Organizations (IO) that take authority from other Corporate policies are identified in Appendix A of this Charter. While these other programs do not take authority from this Charter, they are part of the Nuclear Management System and the Chief Nuclear Officer (CNO) is accountable for their</p>

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effectiveness. Activities affecting the safe operation of Nuclear facilities satisfy applicable requirements of the CSA N286-12 standard.

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EXCEPTIONS

This Charter does not apply to maintenance and engineering of Nuclear facilities outside the inner security fence (protected area), unless those facilities directly impact the Nuclear Station within the protected area or involve Nuclear Sustainability Services (NSS). Interfaces between Nuclear and other lines of the business are described herein.

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1.0 DIRECTION

Chief Nuclear Officer’s Statement of Policy

As required by the OPG Nuclear Safety Policy (N-POL-0001), I am accountable to the President and Chief Executive Officer (CEO) and the Board of Directors of Ontario Power Generation (OPG) to establish and implement an overall Nuclear Management System (NMS) that fosters nuclear safety as the overriding priority in accordance with the CSA N286-12 standard.

The Nuclear Safety Policy applies to every OPG employee, person or entity that supplies a product or service to OPG’s licenced nuclear facilities, from the initial conception of a nuclear project, through procurement and design, construction and installation, commissioning, operations and decommissioning.

This document, in conjunction with the referenced programs, policies and other controlled documents, establishes the overall NMS to assure that systems, equipment and activities are of the required quality throughout the life cycle of our nuclear facilities. Applicable portions of the NMS shall be in place before undertaking any licenced nuclear activities.

Every employee in our organization that executes or supports licenced activities associated with OPG’s nuclear facilities and every person or entity that supplies a product or service to OPG’s nuclear facilities is responsible and shall be held accountable for complying with expectations in this document and programs referenced herein, and shall ensure their actions are deliberate and consistent with protecting the health and safety of the public and the environment. It is through our employees and effective implementation of our NMS that we assure compliance with the Safety Policy by all groups that can have an impact on nuclear safety.

Organizationally, the Chief Engineer, Enterprise Engineering and Chief Nuclear Engineer reports to the Chief Operating Officer. However, this role has matrixed accountability to me for Nuclear related matters. In addition, organizationally, the VP, Generation Strategy and Innovation, reports through to the Chief Operating Officer via the VP, Integrated Fleet Management. However, both VP roles have matrixed accountability to me for Nuclear related matters.

I am accountable for the effectiveness of the overall Nuclear Management System in ensuring our licenced nuclear facilities are operated and maintained using sound nuclear safety and defense-in-depth practices to ensure radiological risks to workers, the public, and environment are as low as reasonably achievable. I ensure that a foundation of leadership exists and hold my direct reports and interfacing organizations accountable for implementation of and adherence with this NMS.

I am accountable for delivering on OPG’s strategic imperatives through the values and behaviours which support our company mission to *Power with Purpose*. These messages are communicated and reinforced by me personally, as well as all levels of management in the organization.

Mission: Power with Purpose – Providing low cost power in a safe, clean, reliable and sustainable manner for the benefit of our customers and shareholders.

Strategic Imperatives: Operational Excellence, Project Excellence, Financial Strength, Social Licence

Values: Safety, Integrity, Excellence, People and Citizenship.

Behaviours: Say It, Do It; Tell It As It Is, Drive Performance, Build Potential, Integrate and Collaborate, Build Relationships, Simplify It, Think Top and Bottom Line; Lead Change, Generate the Future

The Vice President, Generation Strategy & Innovation has been delegated the responsibility for interpreting the requirements of this Charter and its supporting documents, but I maintain overall accountability.

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Chief Nuclear Officer

1.1 Human and Business Performance

The future success of Nuclear lies with our most important asset, our employees. Nuclear must prove itself as a fair and equitable employer of choice. Our organizational pattern, and placement of staff within the pattern, shall meet the needs of the business. Organizational interfaces shall be clearly identified, communicated, and controlled. Employees shall be trained to qualification levels demanded of their role, and shall understand what is expected of them and how they contribute to the success of the business. Effective communication of clearly defined expectations is essential for success. Success is measured by comparing actual results against the defined expectations. Employees shall be given multiple avenues to have their concerns heard in a non-threatening and unbiased fashion and to see them through to resolution; and, when requested, the confidentiality of the employee shall be maintained to the maximum extent possible.

Human and Business Performance establishes overall requirements for sustaining and improving performance. This is accomplished by the following:

- (a) Establishing and implementing a management system consisting of governing documents communicating essential elements of Nuclear business.
- (b) Reinforcing individual accountability for performance and implementing various self-verification and independent oversight techniques.
- (c) Identifying, documenting, evaluating, and correcting in a timely manner, conditions adverse to quality.
- (d) Using internal and industry Operating Experience (OPEX) to improve human, plant and equipment performance and design, procurement, construction, commissioning, and operating requirements and practices.
- (e) Providing information to the people who need it through the management system that establishes how necessary information is identified, targeted to required users, maintained current, and communicated effectively.

The Human and Business Performance programs described below are designed to ensure these business objectives are met.

1.1.1 N-PROG-AS-0001, Nuclear Management System Administration

The Nuclear Management System Administration Program describes the business framework and processes established by OPG Nuclear and Interfacing Organizations to demonstrate effective implementation and compliance with the requirements set out in CSA N286-12, Management System Requirements for Nuclear Facilities. This program ensures that:

- (a) Management system principles of CSA N286-12 are consistently and effectively applied using a risk-based graded approach to all activities defined in N-CHAR-AS-0002, Nuclear Management System.

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- (b) Program Owners and Authorization Authorities understand their role in maintaining an effective management system.
- (c) Nuclear Management System processes and their supporting technologies are standardized to the greatest extent possible.
- (d) Nuclear Management System review is performed by the Fleetview process on programs within the Nuclear Management System, including those owned by Interfacing Organizations, for their overall effectiveness and opportunities for improvement. The Program Owners present their programs to the Nuclear Executive Committee as well as other senior representatives from Interfacing Organizations, in accordance with a schedule that ensures all programs are reviewed at least annually. Each program is systematically reviewed using the key areas of program oversight and leadership, program execution performance indicators, and status of initiatives developed to close any gaps in performance or leadership. This review provides an opportunity for interface and challenge by the senior leadership team to the Program Owner in meeting Nuclear Management System requirements for management review.
- (e) The controls used by the CNO to fulfill the accountability to implement and maintain an effective management system complying with the requirements of CSA N286-12 include:
 - i. A defined organizational structure to own and execute programs in the Nuclear Management System. This includes organizations reporting directly to the CNO as well as Interfacing Organizations. For Interfacing Organizations, Authorization Authority is the line of business Vice President or higher and is accountable to the CNO to ensure integrity of N-CHAR-AS-0002 is maintained.
 - ii. Where an Interfacing Organization (IO) develops their own management system, OPG-PROC-0001 (Processing Administrative Governance Documents) requires a review by the program owner of N-PROG-AS-0001 for any new program document that supports activities in N-CHAR-AS-0002. Any changes to program bases within existing IO programs impacting the Nuclear Management System requirements will also be assessed by the program owner for N-PROG-AS-0001 against the CSA N286-12 criteria on behalf of the Nuclear Executive Committee and CNO. This ensures compliance with the management system requirements of CSA N286-12. Until such time as other business units develop, obtain approval, and implement separate management systems, the Nuclear Management System will continue to apply to all non-Nuclear Program Owners and staff executing work on behalf of Nuclear.
 - iii. The Fleetview process described in 1.1.1(d).
 - iv. Proactive CNO engagement of Nuclear and all other lines of business that support Nuclear, in the Nuclear Business Planning process (see 1.1.3).

This program is owned and implemented by Generation Strategy and Innovation and receives authority from this charter.

1.1.1.1 N-STD-AS-0020, Nuclear Management System Organizations

N-STD-AS-0020, Nuclear Management System Organizations, defines the Nuclear organization and general accountabilities that are applicable to the CSA N286-12 standard. Included are interfacing organizations that do not report to the CNO but support the Nuclear

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line of business. This Standard defines the relationships and interfaces that have been established to ensure effective control of activities that are performed to support the Nuclear line of business. Further details on the organization hierarchy and reporting structure are located in Asset Suite and SAP™.

This standard is owned by Human Resources Business Partners and receives authority from N-PROG-AS-0001, Nuclear Management System Administration.

1.1.2 OPG-PROG-0001, Information Management

This program establishes a set of standards and procedures for the management of OPG’s information throughout its life-cycle, regardless of media, including electronic systems such as e-mail, SharePoint, and the Intranet to ensure consistent and appropriate use. It describes requirements for a management system of activities related to information. The program establishes uniform and efficient processes for management, maintenance, and final disposition of records and documents throughout OPG. It establishes the overall OPG process for governance including electronic filing, approval, distribution, and maintenance of the OPG Governance Framework.

Procedures under this program establish a consistent process across OPG including the establishment of a hierarchy of authority for documents, only one owner for the document, controlled release of the document for revision, controlled review of the document by stakeholders and individuals affected by the change, and the controlled approval and authorization of the document before it is issued as a Governing document.

Governance documents support the implementation of all elements of the CSA N286-12 standard. Creation of all Governance, policies, charters, programs, procedures and processes established through any new Management Systems is controlled through procedures and standards.

This program is owned and implemented by the Chief Administrative Office, and receives authority from OPG-CHAR-0002, CIO Management System.

1.1.3 N-PROG-AS-0005, Nuclear Business Planning

This program establishes the business planning framework across Nuclear Business Units to ensure compliance with Corporate management strategies and business direction, and to create a structure for undertaking business planning activities. Business planning is a tool that directs the organization’s resources to meet strategic goals aligned with the company’s objectives and support safe and efficient business plan execution. The business planning program ensures organizational alignment and defines desired results in sufficient detail to support accountability, and ensures constraints, the availability of resources, and business risks are adequately addressed.

This program is owned and implemented by the Finance organization and receives authority from this charter.

1.1.4 N-PROG-AS-0002, Human Performance

The human performance program establishes a systematic framework for human performance management. The program is specifically designed to achieve higher levels of Nuclear and industrial safety, higher unit reliability, and reduced operating costs through event-free

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operation. The goals of the program are to continually reduce human performance events and errors in pursuit of global recognition as an event-free operator and universal application of event prevention tools.

This program addresses human performance management and improvement by improving human performance through individual behaviours (all employees and contractors), organizational process, and management and leadership behaviours.

A key element of the program is outlined in N-STD-RA-0014, Second Party Verification, which specifies the requirement for verification to confirm a specific task or activity satisfies established requirements in all functional areas of Nuclear (e.g., operations, maintenance, engineering, procurement, construction, commissioning).

This program is owned and implemented by Darlington Station Site Support and receives authority from this charter.

1.1.5 N-PROG-RA-0003, Performance Improvement

This program establishes the processes to ensure deficiencies, non-conformances, weaknesses with a process, document, service, or conditions that adversely impact, or may adversely impact plant operations, personnel, nuclear safety, the environment or equipment and component reliability, are promptly identified and corrected.

For those issues considered significant, or repetitive in nature, these processes ensure appropriate levels of management are notified, causes identified and actions taken to preclude recurrence, and actions taken to address the identified issues are verified to be complete and effective.

This program also provides the processes to ensure in-house and external OPEX is evaluated, distributed to appropriate personnel, and applied to implement actions that improve plant safety and reliability.

An effective self-assessment and benchmarking process is also implemented by this program to promote continuous improvement. Current performance is compared to management expectations, industry standards of excellence, OPEX, and regulatory requirements to identify areas needing improvement. Self-assessment results are promptly identified, communicated to affected groups or individuals, and resolved.

This program is owned and implemented by Darlington Station Site Support and receives authority from this charter.

1.1.6 N-PROG-RA-0010, Independent Assessment

This program provides independent assessment (internal and external) processes to perform a comprehensive and critical evaluation of all activities affecting Nuclear facilities. This program ensures the Nuclear Management System under N-CHAR-AS-0002, is reviewed with sufficient frequency to confirm its continuing effectiveness. The program is comprised of the following processes:

- (a) Internal independent assessments by Nuclear Oversight that provide critical and unbiased oversight function, have organizational freedom and authority to remain independent.

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Results are identified, reported and communicated to a level of management having sufficient breadth of responsibility to resolve the identified deficiencies.

- (b) External independent assessments are provided by a Nuclear Safety Review Board (NSRB) and presented to the Generation Oversight Committee of the Board of Directors. NSRB provides a broad, systematic and independent overview of Nuclear safety in our Nuclear facilities. This is done by reviewing various safety activities, organizations, programs, procedures, requirements and results with respect to effectiveness, risk significance and trends that may affect Nuclear safety and environmental matters. NSRB reports to the CNO and the President and CEO, and reports annually to the Generation Oversight Committee. The Generation Oversight Committee of the Board of Directors is responsible for performing the duties set out in their Charter to enable the Board to fulfill its oversight responsibilities.

This program is owned and implemented by Nuclear Oversight and receives authority from this charter.

1.1.7 N-PROG-TR-0005, Training

This program describes the Training Program for regular staff, contractors, temporary personnel, and other staff assigned work at Nuclear (“Nuclear staff”). The program provides the structure, processes, and tools for defining, developing, implementing, documenting, assessing, and improving the training required to ensure Nuclear staff have the appropriate knowledge, skill, and qualifications for safe and efficient facility operation. Training governing documents:

- (a) Formalize training standards and processes.
- (b) Provide a process for analysis, design, development, delivery, and evaluation of quality training.
- (c) Identify requirements for qualifying staff to meet performance expectations.
- (d) Identify means by which qualifications are tracked and maintained.

This program is owned and implemented by Emergency Services & Training and receives authority from this charter.

1.2 Operate Plant

Safety is an integral part of every operational decision. Activities related to the operation of Systems, Structures, and Components (SSC) are accomplished by qualified personnel in accordance with approved procedures that are maintained consistent with facility design and licensing bases. Operating configuration of each facility is controlled to ensure authorized staff retains an understanding of the status of each generating unit and its supporting services.

The Operations programs described below are designed to ensure these business objectives are met.

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1.2.1 N-PROG-OP-0001, Nuclear Operations

This program implements a series of standards and procedures to ensure safety of the public, environment, plant personnel, and plant equipment. This program establishes safe, uniform, and efficient operating practices and processes within Nuclear facilities that provide Nuclear professionals the ability to ensure Nuclear facilities are operated in such a manner as to ensure compliance with Power Reactor Operating Licence (PROL), Operating Policies and Principles (OP&P), and other applicable regulations and standards.

The Nuclear Operations format is based on operations-related functional areas as defined in the World Association of Nuclear Operators (WANO) Performance Objectives and Criteria. These functional areas are:

Operations Fundamentals

- Monitor Closely
- Control Precisely
- Conservative Bias
- Effective Teamwork
- Understand Sciences, Engineering Principles and Plant Design

Conduct of Operations

- Operations Management and Leadership
- Control Room Activities
- Administrative Controls
- Operations Staffing

Communication standards are established to ensure accurate transfer of information, ensuring communications are clear, concise, and complete to reduce operating and human errors. This includes operation and maintenance of the plant during normal, abnormal, and transient conditions, pre- and post-job briefings, operating logs, and main control room turnover.

This program also addresses procedures and standards for self-checking, reactivity management, operability testing, and infrequently performed tests and evolutions. Controls are put in place to ensure technical procedures are written consistent with plant design and licensing bases.

This program is owned and implemented by Generation Strategy and Innovation and receives authority from this charter.

1.2.2 N-PROG-AS-0008, Heavy Water Management

This program establishes overall requirements for effective and efficient heavy water management within Nuclear, through focus on strategic planning, asset management, and logistics and integration.

The program's governing principles requires it to contribute to meeting Operating Policies and Principles limits, emission limits, and other relevant regulatory limits, and to minimize employee and public dose.

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This program is owned and implemented by Darlington Tritium Removal Facility and receives authority from this charter.

1.3 Maintain Plant

Maintenance programs are structured to ensure Nuclear facility Systems, Structures, and Components (SSC) are maintained within parameters established in the design basis, and equipment malfunctions or deficiencies are corrected in a timely manner and rarely recur. This includes controlling release of systems and equipment for maintenance, subsequent testing and eventual return to service.

The Maintenance programs described below are designed to ensure these business objectives are met.

1.3.1 N-PROG-MA-0004, Conduct of Maintenance

This program implements the processes established to ensure safety of the public, site personnel, protection of the environment, and availability of plant equipment for safe and reliable operation through effective implementation and control of maintenance activities. This program also provides the requirements for managing identification and execution of preventive maintenance and repetitive task work activities using the predefined process in support of operations, maintenance, and testing of Nuclear generating station equipment and facilities.

This program ensures system instrumentation is maintained in a condition to ensure operation within specified limits, and measuring and testing equipment is of proper range, type, condition, and accuracy. To ensure accuracy within limits, adjustment, maintenance, and calibration are performed with equipment having a known relationship to nationally recognized standards. The scope of this program includes the calibration of plant equipment, issue, use, calibration, maintenance, and storage of measuring and testing equipment, and tool identification and issue.

The objectives listed above are primarily achieved by instituting effective maintenance processes, high standards, compliance with procedures, sufficient resources, monitoring and assessing performance, and holding personnel accountable for their performance.

This program is owned and implemented by Generation Strategy and Innovation and receives authority from this charter.

1.3.2 N-PROG-MA-0019, Production Work Management

This program ensures maintenance, modification, and testing activities are identified, prioritized, planned, scheduled, and executed in a manner protecting plant operational integrity, while making the most efficient use possible of available resources. Where possible, corrective maintenance and modification activities are performed during windows when affected equipment has been removed from service to perform predefined (repetitive) maintenance work.

This program is highly integrated with Materials Management, Procurement Engineering, Design Management, and Equipment Reliability programs. By defining a common plant priority scheme and management reporting mechanisms, the program ensures necessary

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resources are focused on problems related to plant condition, thereby minimizing maintenance backlogs.

This program ensures maintenance history is kept in a format allowing for long-term trending as necessary for the Equipment Reliability and Component and Equipment Surveillance programs.

This program also implements requirements of the Conventional Safety and Radiation Protection (RP) programs to ensure a proactive approach to safety is built into task planning.

This program is owned and implemented by Generation Strategy and Innovation and receives authority from this charter.

1.3.3 OPG-PROG-0009, Items and Services Management

This program ensures equipment, components, materials, and services meet appropriate and applicable design and quality requirements through review and approval of suppliers' quality programs, and audits or in-process surveillance of the suppliers' activities.

Equipment, components, materials, and services are purchased to required specifications and codes. Equipment, components, materials, and tools are controlled through proper identification, receipt, inspection, handling, storage, issuance, and shipping to ensure quality of equipment and components is preserved and that only accepted items are used. An annual inventory certification is performed in accordance with Corporate requirements and usage patterns are analyzed to ensure that spare parts will be available to meet normal operating and outage requirements.

This program is integrated with N-PROG-MP-0009, Design Management, to ensure materials meet end-use design requirements and N-PROG-MA-0019, Production Work Management, to ensure materials are available when needed.

Nuclear fuel supply processes ensure Nuclear fuel meets appropriate and applicable design and quality requirements. Processes are also in place to ensure the required quantity of Nuclear fuel is purchased from qualified and secure sources. Nuclear fuel materials are controlled through proper identification, handling, storage, issuance, and delivery to stations to ensure quality is preserved and regulatory control requirements are met.

This program is owned and implemented by Supply Chain Services, and receives authority from the Supply Chain Division.

1.4 Engineering

Engineering contributes to safe, reliable, and competitive operation of Nuclear by:

- (a) Ensuring effective plant system performance monitoring and system condition reporting, equipment performance trending, and effective troubleshooting.
- (b) Providing corrective action when necessary to restore systems or equipment to optimum performance.
- (c) Maintaining plant configuration consistent with design and licensing basis.

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- (d) Supporting operations and maintenance organizations in ensuring facilities are operated consistent with the Safe Operating Envelope (SOE), Nuclear Waste Management Safety and Design Envelope, design basis, and licensing basis.
- (e) Performing Integrated Aging Management activities, including Life Cycle Plans and condition assessments, to understand the condition and maintain the health of critical SSC as the plants age.

Engineering programs described below are designed to ensure the engineering business objectives are met. The business objectives fall into two major categories, Protect the Asset and Control the Design. Engineering programs establish overall requirements for the engineering function.

1.4.1 Protect the Asset

Plant reliability is achieved by putting in place business processes that:

- (a) Determine the condition of SSC.
- (b) Predict expected failure.
- (c) React to the results in a timely manner.

Surveillance programs are defined to implement effective system performance monitoring and system condition reporting, equipment performance trend reporting, and effective troubleshooting.

These processes are applied to equipment important to Nuclear safety, power generation and nuclear facility operation to ensure systems and equipment perform consistent with their design requirements. These programs establish requirements for preventative maintenance, inspection, test, surveillance, and monitoring necessary to ensure systems and equipment perform in accordance with their design basis and at levels optimal to meet needs of the business.

Tracking and trending of system and equipment performance, internal and external shared OPEX, and lessons learned from root cause analysis of critical equipment failures are used to determine any changes to design, maintenance or operating practices necessary to achieve target reliability.

1.4.1.1 N-PROG-MA-0017, Component and Equipment Surveillance

It is essential that component and equipment performance support the safe, reliable, and economic operation of Nuclear facilities. This program fulfils this requirement by identifying defined component programs that evaluate component and equipment health by means of technical evaluations, inspection, maintenance, certification, and testing. Implementation of the program requirements provides a consistent methodology for providing component and equipment surveillance for select components at all Nuclear facilities.

There are component programs in place to ensure assumptions in the Safety Report are met and to ensure reliable component performance as credited in licensing documents. In addition, inspection and test type programs are in place to ensure mandated inspection and test activities driven by licenses and codes and standards are met.

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This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.1.2 N-PROG-MA-0025, Major Components

This program establishes a formal and systematic process in Nuclear for managing information related to four major component areas: Feeders, Steam Generators, Fuel Channels, and Reactor Components and Structures. This program provides a framework for integrating and reporting of the component performance, condition, and compliance with design basis documents. This hierarchy of documents, procedures, and other governance ensures the four major components perform safely and reliably, maintaining the design and licensing basis and the operational safety requirements while optimizing production and cost-effectiveness.

This program is owned and implemented by Advanced Inspection & Maintenance and receives authority from this charter.

1.4.1.3 N-PROG-MA-0026, Equipment Reliability

This program defines the requirements for establishing and maintaining optimum levels of reliability for components important to Nuclear safety, production, and environmental protection. Reliable performance of components means very low numbers of component failures, degraded equipment condition is minimized, and redundancy is maintained on key systems. The program provides a framework for the following activities which ensure high levels of reliable performance of critical components:

- (a) Identification and classification of components according to their criticality to focus activities related to these components according to their assigned criticality.
- (b) Specifying the required maintenance strategies to maintain high levels of reliability and continuously improving the maintenance strategies based on corrective actions and maintenance feedback.
- (c) System monitoring and performance monitoring to ensure systems important to safety and production will perform their intended functions under design basis conditions and at optimum levels.
- (d) Component monitoring for components outside of established component programs.
- (e) Prompt and effective action when critical equipment fails, and to understand the technical and organizational cause to prevent a recurrence.
- (f) Oversight and direction by management on equipment reliability issues and priorities.
- (g) Management of the technical specifications for preventive maintenance requirements.
- (h) Implementation of predictive maintenance activities to detect early degradation of components.
- (i) Transfer of Equipment Reliability requirements to on-line, outage, and long range plans to ensure key actions are planned and executed.

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- (j) Identification and prediction of aging and obsolescence issues on important components and embedding mitigating strategies and actions into the Business Plan.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.1.4 N-PROG-MA-0016, Fuel

This program establishes requirements to integrate and review Nuclear fuel-related data in order to ensure fuel performs safely and reliably over the life of the stations, consistent with design and licensing bases, while optimizing reliability, production, and cost effectiveness. Fuel-related data includes any information which may impact fuel throughout its life cycle including (but not limited to) manufacturing, inspections, research, operating conditions, and fuel channel interactions. Also included is fuel channel data which may impact safety analysis, or the safety report; however, this program does **not** include responsibilities for fuel channel life cycle management and fitness for service which are covered by N-PROG-MA-0025, Major Components.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.1.5 N-PROG-MP-0008, Integrated Aging Management

This program ensures that the condition of critical Nuclear Power Plant equipment is understood and that required activities are in place to ensure the health of these components and systems while the plant ages. This is accomplished by establishing an integrated set of processes and activities which ensure performance requirements of all critical equipment are met on an ongoing basis.

The program also requires preparation of life cycle plans and condition assessments for critical plant equipment. These assessments supplement the ongoing engineering surveillance activities in place to monitor and optimize system performance. From these assessments, actions are established to ensure equipment performance requirements are met during station life.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.1.6 N-PROG-OP-0004, Chemistry

This program specifies processes, overall requirements, and staff accountabilities to ensure effective control of plant chemistry during operational and lay-up conditions, control of laboratory methods, sampling and analyses, process chemicals, chemistry control performance monitoring, and reporting. These activities are performed in order to ensure critical plant equipment performs safely and reliably over the life of the stations.

This program is owned and implemented by Central Engineering and receives authority from this charter.

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1.4.1.7 N-PROG-MA-0013, Welding

This program establishes controlled processes and standardized welding practices to safely and efficiently make sound welds meeting structural integrity, code, and licensing requirements in accordance with qualified procedures and using qualified personnel. This program also covers welding on components not governed by codes and standards.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.1.8 N-PROG-RA-0016, Risk and Reliability Program

This program provides organizational accountabilities, interfaces, and key program elements to ensure risks from Nuclear accidents are identified, monitored, and controlled across Nuclear. Probabilistic Safety Assessment (PSA) is used as a means to assess and manage the magnitude of radiological risks to the public from accidents due to operation of Nuclear reactors, and applied in a consistent manner across Nuclear. Operational reliability monitoring and reporting ensures risks during operation are monitored and managed.

This program consists of safety goals, station-specific PSAs, associated risk models, unavailability models of systems important to safety and software applications, and Nuclear governing documents.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.1.9 N-PROG-MP-0014, Reactor Safety Program

This program defines organizational responsibilities and key program elements for the management of issues related to Nuclear Safety Analysis, in particular generic action items, and the following major components of safe operation:

- Safety Analysis Basis (Safety Report and Analysis of Record)
- SOE
- Beyond Design Basis Accident Management
- Nuclear Waste Management facilities Safety Reports and Safety Analysis

This program and implementing procedures and standards govern management of issues related to Nuclear Safety Analysis and their impact on safe operation.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.2 Control the Design

Design changes shall be controlled to ensure plant configuration is maintained in conformance with design and licensing bases and code requirements, and remains within the SOE, Nuclear Waste Management Safety and Design Envelope and associated analyzed conditions.

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1.4.2.1 N-PROG-MP-0001, Engineering Change Control

This program defines a systematic process and methodology for controlling design modifications to plant SSCs, including software and engineered tools, which meets CSA N286-12 and N285-08 Standards. The program also ensures that Non-identical Component Replacements (NICRs) and Item Equivalency Evaluations (IEE) comply with applicable codes, standards and regulations. The risk-based Engineering Change Control (ECC) process systematically controls design changes from inception to design package completion ensuring they are planned, designed, installed, commissioned, and placed in service within the SOE, Nuclear Waste Management Safety and Design Envelope, design bases, and plant licensing conditions. For all modifications, the ECC process defines requirements such as:

- (a) Regulatory approval and stakeholder reviews.
- (b) Constructability, Operability, Maintainability and Safety walk-down.
- (c) Design completion.
- (d) Management approvals.

ECC process utilizes a graded risk-based approach that allows for permanent and temporary modifications. The ECC process also defines a process to provide engineering control and approval of field changes if they are required, during installation and commissioning. In addition, the ECC process defines a Non-Identical Component Replacement process ensuring ECC is applied for substitution of components when equivalent items are no longer available. The general overall process for all types of changes is similar, differing only in the degree of rigour and formality. All changes are approved by the Design Authority. N-PROG-MP-0009, Design Management, describes the role and how responsibilities of the Design Authority are managed.

Document-only changes that do not affect the *design basis* are managed in accordance with OPG-PROG-0001 and the programs applicable to the engineering document being modified.

This program is owned and implemented by Design & Project Engineering and receives authority from this charter.

1.4.2.2 N-PROG-MP-0009, Design Management

This program provides the framework for establishment of assurance that changes to plant design are controlled in a manner consistent with plant design and licensing basis. This program provides assurance that design bases, design outputs and design process documentation are prepared, reviewed, approved, and implemented in accordance with approved procedures, applicable regulatory requirements, standards, and industry practices. This program also ensures that procurement specifications for materials, systems, components, parts, and services of purchased items will perform their intended end-use design function(s).

A key element of the program specifies the requirement for verification to confirm a specific task or activity satisfies established requirements. Verification applies to all work activities in all functional areas of Nuclear (e.g., operations, maintenance, engineering, procurement, construction, commissioning) which requires verification activities to be identified, planned,

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executed, and documented. The method, extent, and timing of the verification as well as the identity of the verifier shall be recorded and the verifier should be appropriately independent.

This program provides a framework for performing engineering in a consistent manner across Nuclear, including:

- (a) Compliance with all relevant legal, statutory, and regulatory requirements.
- (b) Encouragement of continuous improvement in the conduct of engineering targeted at achieving safe, reliable, and competitive operation of Nuclear facilities.
- (c) Establishment of requirements on how to exercise and delegate engineering authority and design authority.

This program is owned and implemented by Design & Project Engineering and receives authority from this charter.

1.4.2.3 N-PROG-MP-0006, Software

This program provides direction for software classified as Real-Time Process Computing, Scientific, Engineering and Safety Analysis Software or Software Engineering Tools. This program identifies processes and overall requirements for classification of software and identifies governing standards for each software classification to define requirements for software development, maintenance, procurement, qualification, and retirement.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.2.4 N-PROG-MP-0004, Pressure Boundary

This program provides a managed process to control the quality of Pressure Boundary (PB) activities at Nuclear for performing repairs, replacements, and modifications on pressure-retaining systems and components. It reflects those requirements of the PB Quality Assurance program related to performance of PB fieldwork activities. This is to ensure Nuclear retains the PB Certificates of Authorization (C of A) necessary to perform PB activities and, remains compliant with the Nuclear Station PROL, Waste Facility Operating Licenses (WFOL), and applicable CSA Standards.

N-MAN-01913.11-10000, Pressure Boundary Program Manual, as referenced by this program, describes the system used to control the quality of PB activities at Nuclear facilities. It complies with CSA N285.0, General Requirements for Pressure Retaining Systems and Components in CANDU Nuclear Power Plants, and ASME Section III, NCA-4000, Quality Assurance. PB requirements for all stages of work, from design through installation and test, are implemented through supporting Nuclear governing documents.

The Canadian Nuclear Safety Commission (CNSC) has regulatory jurisdiction over PB requirements, including approval of any deviations from those requirements.

OPG maintains a formal agreement with an Authorized Inspection Agency (AIA), acceptable to the CNSC, to provide pressure boundary services of its nuclear facilities in accordance with requirements of CSA N285.0. This includes activities such as certification of Quality

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Assurance and Quality Control programs for acceptability, inspections, registrations and other activities as detailed in the agreement.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.4.2.5 N-PROG-RA-0006, Environmental Qualification

This program provides auditable assurance that essential credited safety-related equipment and components, required to mitigate consequences of a design basis accident, will perform its intended function when exposed to harsh environmental conditions resulting from that accident, and this capability will be maintained over the life of the stations. Implementation of these program requirements shall provide consistent methodology, programmatic controls, and interfaces for establishing and maintaining environmental qualification of equipment and components over the life of the Nuclear plants.

This program is owned and implemented by Central Engineering and receives authority from this charter.

1.5 Manage Risk

Risk Management programs described below are designed to ensure Nuclear minimizes risk to health and safety of the public, environment, and employees, from events associated with station security, fire, industrial hazards, radiation safety, and pandemic. These programs are designed to understand risk, eliminate unnecessary risk, and ensure protective and control measures are put in place against risks that are part of the Nuclear business. These programs are typically not stand-alone programs. They are integrated with other programs to ensure risk elements identified above are managed as part of day-to-day operation of the business.

In the unlikely event of an emergency, an emergency plan has been established to classify, notify, and respond to such emergencies.

1.5.1 Hours of Work

The hours of work for Nuclear employees are controlled, monitored, reported, and assessed for compliance to both legislative requirements and CNSC expectations through N-PROC-OP-0047, Limits of Hours of Work, which describes the controls for managing these requirements. This procedure is owned by the Fleet Operations organization.

1.5.2 Fitness-for-Duty

Fitness for duty expectations are communicated to all staff through "Human Resources Overview" training and adherence to the Corporate Safety Rules (under Common Safety Rule 1.2) and associated training.

1.5.3 N-PROG-RA-0012, Fire Protection

This program establishes provisions to prevent, mitigate, and respond to fires such that fire risk to Nuclear workers, public, environment, Nuclear physical assets, and facility operation, is acceptably low and controlled. The PROLs require Nuclear to comply with the requirements of CSA N293-12, Fire Protection for Nuclear Power Plants. Additionally, the Waste Facility Operating Licenses (WFOLs) as well as the PROLs include codes and standards such as the

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National Fire Code of Canada, the fire protection requirements of the National Building Code of Canada, and applicable National Fire Protection Standards.

This program is owned and implemented by Emergency Services and Training and receives authority from this charter.

1.5.4 N-PROG-RA-0013, Radiation Protection

This program implements a series of standards and procedures for the conduct of activities within Nuclear sites, and with radioactive materials, intended to achieve and maintain high standards of RP including the following objectives:

- (a) Controlling occupational and public exposure by:
 - i. Keeping individual doses below regulatory limits.
 - ii. Avoiding unplanned exposures.
 - iii. Keeping individual risk from lifetime radiation exposure to an acceptable level.
 - iv. Keeping collective doses As Low As Reasonably Achievable (ALARA), and taking social and economic factors into account.
- (b) Preventing the uncontrolled release of contamination or radioactive materials from Nuclear sites through the movement of people and materials.
- (c) Demonstrating the achievement of (a) and (b) through monitoring.

This program is consistent with the Radiation Protection Regulations, the requirements of the license and complies with the CNSC requirement for all licensees to implement an RP program that meets CSA N286-12 requirements for radioactive contamination control and radiation safety.

This program is owned and implemented by Darlington Station Site Support and Innovation and receives authority from this charter.

1.5.5 N-PROG-MA-0015, Work Protection

This program ensures establishment of standards and procedures necessary for worker safety where work on equipment requires isolation or isolation and de-energization. This program specifies continuous monitoring requirements necessary to ensure work practices used are safe, uniform, and effective. Effective implementation and control of work protection activities primarily are achieved by instituting high standards, providing a professional environment and sufficient resources, monitoring and assessing performance, and holding personnel accountable for their performance.

This program is owned and implemented by Generation Strategy and Innovation and receives authority from this charter.

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1.5.6 OPG-PROG-0005, Environment Health and Safety Managed Systems

This program establishes the process requirements implemented and maintained in order to ensure OPG activities are conducted in a manner that prevents or mitigates conventional health and safety risks to workers, and/or adverse impacts on the natural environment. This program encompasses OPG’s Environmental Management System (EMS) and Health and Safety Managed System (HSMS), and outlines the associated roles and responsibilities within the organization. All aspects of the program are structured in accordance with Environment Health and Safety (EHS) compliance obligations, including ISO 14001 and CSA N286-12. The long-term objective of both managed systems is continual improvement of EHS performance.

This program is owned and implemented by the EHS organization and receives authority from OPG-POL-0021, Environmental Policy and from OPG-POL-0001, Employee Health and Safety Policy.

1.5.7 N-PROG-RA-0001, Consolidated Nuclear Emergency Plan

This program implements and maintains Nuclear’s emergency response capability to protect the public, employees, and environment in the event of a nuclear emergency. Appropriate planning measures are established to adequately respond to postulated abnormal situations, including preparation of emergency operating procedures, event classification, notification requirements, event mitigation, personnel protective actions (on-site and off-site), designation of emergency facilities, and public information requirements.

This program is owned and implemented by Emergency Services and Training and receives authority from this charter.

1.5.8 OPG-PROG-0033, Business Continuity Plan

This program establishes a managed system for Business Continuity and provides direction for business/operational continuity and recovery planning to OPG.

The objectives of the OPG Business Continuity (BC) Program are to ensure approved response strategies and recovery priorities are in place for critical functions in the event that an incident results in the following:

- Staffing Unavailability
- Facility Impairment or Loss
- Information Technology (IT), Communication or Computer Systems Unavailable/ Data Loss
- Unavailability of Critical Suppliers or Services.

This includes having Enterprise-Wide Business Continuity Plans in place to address incidents that impact multiple Business Units.

This program is owned by Emergency Services and Training and receives authority from OPG-POL-0032, Safe Operation Policy.

1.5.9 Nuclear Regulatory Affairs

Nuclear is committed to protecting the safety of the public, our workers, and the environment, to maintaining national security, and to meeting the international obligations to which Canada

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has agreed. These commitments are in keeping with the requirements of the Nuclear Safety and Control Act, the Regulations made under that Act, and the licences, permits, and certificates issued by the CNSC pursuant to the Act.

1.5.9.1 N-PROG-RA-0002, Conduct of Regulatory Affairs

This program includes broad guidelines for evaluating impact of licence and permit applications and amendments, providing regulatory and legislative interpretations, and monitoring emerging legislative, regulatory, and industry trends. Successful interface with regulatory agencies is critical in meeting Nuclear’s overall objective. Communication with regulatory agencies must be open, honest and forthright. The program defines a set of processes to ensure these expectations are met in an effective and efficient manner.

This program is owned and implemented by Nuclear Regulatory Affairs and receives authority from this charter.

1.5.10 N-PROG-RA-0015, Nuclear Safeguards

This program puts special controls in place to ensure Nuclear complies with Canada’s commitment to the Nuclear Non-proliferation Treaty consistent with International Atomic Energy Agency (IAEA) requirements for storage and handling of Nuclear fuel throughout its life cycle. The program includes the following:

- (a) Communication protocol between the IAEA, CNSC, and Nuclear.
- (b) Obligations to meet applicable regulatory requirements and requirements of associated safeguards procedures.
- (c) Reporting to meet applicable regulatory requirements and requirements of safeguards agreements.

This program is owned and implemented by Station Engineering and receives authority from this charter.

1.5.11 N-PROG-RA-0011, Nuclear Security

Physical plant security is provided to minimize risk to the public, employees, environment, and the business, from sabotage, theft, or other criminal acts. This program supports the need to protect Nuclear assets by:

- (a) Establishing an enhanced state of security readiness as a result of potential terrorism and commitments to the CNSC.
- (b) Maximizing the response capability to contain, mitigate, and terminate a security event that has either occurred or is in progress.
- (c) Minimizing the adverse impact on legitimate plant staff or operations.

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This program establishes proactive “best-in-business” security processes and conforms to the goals and objectives of the Corporation, and to legislative requirements such as Security Regulations.

This program is owned and implemented by Emergency Services and Training and receives authority from this charter.

1.5.12 OPG-PROG-0042, Cyber Security

This program establishes a framework identifying the processes and overall requirements for an effective Cyber Security program that supports the protection of cyber assets at OPG from cyber attacks. This program also ensures protection of Nuclear cyber essential assets in compliance with CSA N290.7-14, Cyber Security for Nuclear Power Plants and Small Reactor Facilities.

This program is owned and implemented by CIO and receives authority from OPG-CHAR-0002, CIO Management System.

1.6 Provide Services

1.6.1 I-PROG-AS-0001, Conduct of Inspection and Maintenance Services

This program describes the management system applied by Advanced Inspection & Maintenance (AIM) to provide inspection, specialized maintenance, project management, and technical services to Nuclear and non-Nuclear facilities in OPG. The program ensures quality in AIM and enables AIM to provide products and services in a safe, innovative, responsive, and cost effective manner in accordance with regulatory requirements, owner or customer-specified requirements, and industry standards.

The management system consists of this program document and interfacing OPG and Nuclear governance, the AIM organization structure, AIM Executive and management teams, and AIM infrastructures consisting of equipment, facilities, processes, and procedures.

This program is owned and implemented by Advanced Inspection & Maintenance and receives authority from this charter.

1.6.2 OPG-PROG-0039, Project Management

This program sets out the principles and requirements for planning, organizing, and managing resources to ensure the safe, consistent, effective execution and completion of all projects within OPG. Safety and required quality shall be the overriding priority and will not be compromised for cost or schedule.

The program, together with its implementing standards and accompanying process guidance, is structured to ensure that all projects are planned and managed in a consistent manner in accordance with generally accepted best practices for project management, and interfacing corporate governance in areas such as investment management, financial and accounting controls, and contract management. In addition for nuclear projects, this includes compliance to the specific requirements of CSA N286-12 that relate to project management.

This program is owned and implemented by the Project Management Office within the Enterprise Projects organization, and receives its authority from Corporate.

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1.6.3 D-PCH-09701-10000, Darlington Refurbishment Charter

The Darlington Refurbishment Program Charter was developed in accordance with OPG-PROG-0039, Project Management, and is undertaken within the Nuclear Management System. The purpose of the Darlington Refurbishment Program (DRP) Charter is to establish and communicate the expectations of SVP Chief Project Officer, Enterprise Projects regarding the management and operation of the Nuclear Refurbishment Organization while undertaking this Project.

The Nuclear Management System and DRP Charter are applicable to all of the projects within the DRP and to all of the parties supporting and contributing to these projects. The Nuclear Management System defines the governance framework and process support documents framework that have been implemented to manage all activities related to the refurbishment of DNGS.

1.7 Manage Waste

Nuclear Sustainability Services (NSS) is responsible for the life cycle management of radioactive waste for OPG-owned facilities and has direct responsibility for transportation, processing, interim storage, and eventual final disposition of radioactive waste. NSS is also responsible for management oversight of the radioactive waste repositories for both low and intermediate level waste and the adaptive phase management deep geologic repository for high level waste.

Work performed inside NSS licensed facilities is performed in accordance with NSS governing procedures as well as nuclear governance described in this Charter. When NSS performs activities within the bounds of other CNSC licensed facilities, NSS complies with the licensee’s governing procedures.

1.7.1 W-PROG-WM-0001, Nuclear Waste Management

This program establishes the overall program for NSS Waste Facility Operations and incorporates directly or by reference, the controls necessary to meet the requirements of the CSA N286-12 Standard, ISO 14001:2004, and Waste Facility Operating Licenses. The program describes unique aspects of the NSS operations not explicitly addressed in other programs and it identifies governance and interfacing programs.

This program is owned and implemented by the Nuclear Sustainability Services organization and receives authority from this charter.

1.7.2 W-PROG-WM-0002, Radioactive Material Transportation

This program describes controls that ensure safe, compliant, and efficient radioactive material transportation. In addition, it includes verification that the Transportation Emergency Response Plan is appropriately established to provide corporate emergency response for radioactive material transportation incidents.

This program is owned and implemented by the Nuclear Sustainability Services organization and receives authority from this charter.

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1.8 Decommissioning

The Decommissioning Program describes the requirements and processes required to safely and cost effectively decommission OPG's owned nuclear facilities. It provides assurance that decommissioning work will be performed in accordance with the applicable CSA and CNSC requirements.

1.8.1 W-PROG-WM-0003, Decommissioning Program

This program describes controls for the decommissioning of OPG's owned nuclear facilities and provides assurance that work will be planned and controlled in accordance with requirements of CSA N286-12 (Management System Requirements for Nuclear Facilities), N294-19 (Decommissioning of Facilities Containing Nuclear Substances), CNSC Regulatory Guide G-206 (Financial Guarantees for Decommissioning of Licenced Activities), CNSC Regulatory Guide G-219 (Decommissioning Planning for Licenced Activities), and CNSC REGDOC-2.6.3 (Aging Management).

This program is owned by Enterprise Strategy and implemented by the Nuclear Decommissioning Division in the Decommissioning Strategies organization. This program receives authority from this charter

2.0 DEFINITIONS AND ACRONYMS

2.1 Definitions

Condition Assessment is a technical or engineering assessment of the current physical condition of a generating facility and its associated structures. It includes a detailed assessment of all major SSC, and an estimate of the remaining expected service life for the facility and its key components. The condition assessment may also identify future investment requirements for repair, rehabilitation, modification, or replacement to carry the facility and its associated structures to their planned end of life. The rationale for each investment is identified and potential problem areas are highlighted in order that they can be properly monitored.

Human Performance is a series of behaviours executed to accomplish specific task objectives or achieve specific results.

Interfacing Organization is an organization that does not report to the CNO, but owns and/or executes programs within the Nuclear Management System, and works in partnership with the CNO to ensure the integrity of the Nuclear Management System is maintained.

Nuclear Management System is the principles, the required supporting actions, and the supporting documentation to support safe and reliable nuclear facilities, as defined by CSA N286-12. Paragraph 0.2 of N286-12 states "The management system brings together in a planned and integrated manner the process necessary to satisfy the requirements that must be met to achieve business success and sustainability". The Nuclear Management System is represented by a governance framework supported by this Nuclear Charter and further ensures that Nuclear Safety is the overriding priority at OPG Nuclear.

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2.2 Abbreviations and Acronyms

AIA	Authorized Inspection Agency
ALARA	As Low As Reasonably Achievable
ASME	American Society of Mechanical Engineers
CEO	Chief Executive Officer
CNO	Chief Nuclear Officer
CNSC	Canadian Nuclear Safety Commission
C of A	Certificate of Authorization
CSA	Canadian Standards Association
DNNP	Darlington New Nuclear Project
DRP	Darlington Refurbishment Program
NSS	Nuclear Sustainability Services
ECC	Engineering Change Control
IAEA	International Atomic Energy Agency
IEE	Item Equivalency Evaluation
AIM	Advanced Inspection & Maintenance
ISO	International Organization for Standardization
NICR	Non-identical Component Replacement
NSRB	Nuclear Safety Review Board
OPEX	Operating Experience
OPG	Ontario Power Generation
OP&P	Operating Policies and Principles
OPGN	Ontario Power Generation Nuclear
PB	Pressure Boundary
PRA	Probabilistic Risk Assessment
PROL	Power Reactor Operating Licence
RP	Radiation Protection
SOE	Safe Operating Envelope
SSC	Systems, Structures, and Components
SVP	Senior Vice President
WFOL	Waste Facility Operating Licence
WANO	World Association of Nuclear Operators

3.0 REFERENCES

ASME Section III, Boiler and Pressure Vessel Code
ASME Section III, NCA-4000, Quality Assurance
CSA N285.0, General Requirements for Pressure-Retaining Systems and Components in CANDU Nuclear Power Plants
CSA N286-12, Management System Requirements for Nuclear Facilities
CSA N293-07, Fire Protection for CANDU Nuclear Power Plants
CSA N294-19, Decommissioning of Facilities Containing Nuclear Substances
CSA N290.7-14, Cyber Security for Nuclear Power Plants and Small Reactor Facilities
D-PCH-09701-10000, Darlington Refurbishment Charter
I-PROG-AS-0001, Conduct of Inspection and Maintenance Services
ISO 14001:2004, Environmental Management Systems
N-LIST-08130-10025, CSA N286-12 to OPGN Governance Cross-Matrix
N-MAN-01913.11-10000, Pressure Boundary Program Manual

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N-POL-0001, Nuclear Safety Policy
N-PROG-AS-0001, Nuclear Management System Administration
N-STD-AS-0020, Nuclear Management System Organizations
N-PROG-AS-0002, Human Performance
N-PROG-AS-0005, Nuclear Business Planning
N-PROG-AS-0008, Heavy Water Management
N-PROG-MA-0004, Conduct of Maintenance
N-PROG-MA-0013, Welding
N-PROG-MA-0015, Work Protection
N-PROG-MA-0016, Fuel
N-PROG-MA-0017, Component and Equipment Surveillance
N-PROG-MA-0019, Production Work Management
N-PROG-MA-0025, Major Components
N-PROG-MA-0026, Equipment Reliability
N-PROG-MP-0001, Engineering Change Control
N-PROG-MP-0004, Pressure Boundary
N-PROG-MP-0006, Software
N-PROG-MP-0008, Integrated Aging Management
N-PROG-MP-0009, Design Management
N-PROG-MP-0014, Reactor Safety Program
N-PROG-OP-0001, Nuclear Operations
N-PROG-OP-0004, Chemistry
N-PROG-RA-0001, Consolidated Nuclear Emergency Plan
N-PROG-RA-0002, Conduct of Regulatory Affairs
N-PROG-RA-0003, Performance Improvement
N-PROG-RA-0006, Environmental Qualification
N-PROG-RA-0010, Independent Assessment
N-PROG-RA-0011, Nuclear Security
N-PROG-RA-0012, Fire Protection
N-PROG-RA-0013, Radiation Protection
N-PROG-RA-0015, Nuclear Safeguards
N-PROG-RA-0016, Risk and Reliability Program
N-PROG-TR-0005, Training
N-STD-RA-0014, Second Party Verification
National Building Code of Canada 2005
National Fire Code of Canada 2005
NK054-PLAN-01210-00004, DNNP PRSL Renewal Plan
NK054-REP-08310-00001, OPGN Management System Programs Applicable to DNNP
Nuclear Non-Proliferation Treaty
Nuclear Safety and Control Act
OPG-POL-0001, Employee Health and Safety Policy
OPG-POL-0021, Environmental Policy
OPG-POL-0032, Safe Operations Policy
OPG-PROG-0039, Project Management
OPG-PROG-0042, Cyber Security
OPG-PROC-0001, Processing Administrative Governance Documents
OPG-PROG-0001, Information Management
OPG-PROG-0009, Items and Services Management
OPG-PROG-0005, Environment Health and Safety Managed Systems
OPG-PROG-0033, Business Continuity Plan
OPG-PROG-0005, Environmental Management

Nuclear Charter

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W-PROG-WM-0001, Nuclear Waste Management
W-PROG-WM-0002, Radioactive Material Transportation
W-PROG-WM-0003, Decommissioning Program

4.0 REVISION SUMMARY

This is a **non-intent** revision.

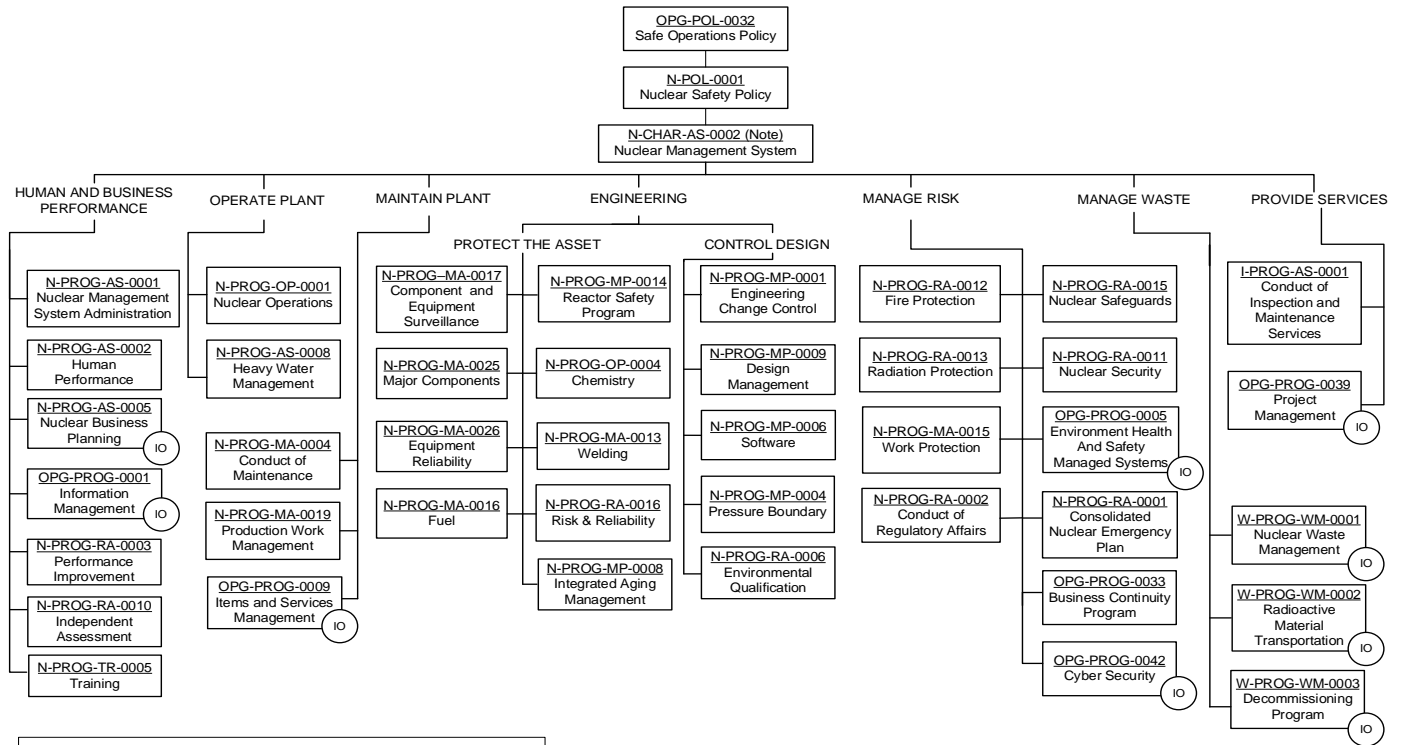
- Per DCR #158263, removed last sentence of Scope: "This charter is also applicable to site preparation activities of the Darlington New Nuclear Project"
- Updated Section 1.0 – Chief Nuclear Officer’s Statement of Policy
- Updated Nuclear Waste Management (NWM) to Nuclear Sustainability Services (NSS) wherever applicable
- Updated Nuclear Training to Emergency Services & Training.

Nuclear Charter

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Title: **NUCLEAR MANAGEMENT SYSTEM**

Appendix A: Governing Document Framework



NOTE - N-CHAR programs implemented under other corporate policies:

- OPG-PROG-0001: OPG-CHAR-0002, CIO Management System
- OPG-PROG-0005: OPG-POL-0001, Employee Health and Safety
OPG-POL-0021, Environment Policy
- OPG-PROG-0042: OPG-CHAR-0002, CIO Management System

Legend:

IO Indicates a Program owned by an Interfacing Organization (IO) that does not report directly to the CNO.