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Ontario Power Generation Program

TITLE
PROJECT MANAGEMENT

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PURPOSE AND SCOPE
<p>This program establishes how the requirements, objectives and commitments for the management of projects across all business areas within Ontario Power Generation (OPG) are fulfilled. This program applies to all projects >\$200k associated with investments in assets, regardless of investment type, expenditure classification or funding arrangement.</p> <p>Project management best practices from internationally recognized institutions have been incorporated throughout this program: [B-1], [B-2], [B-3]</p>

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EXCEPTIONS

The requirements of this program do **not** apply to outage work management, or projects of less than \$200k, however project sponsors may mandate some or all of its application to these projects.

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1.0 DIRECTION

All organizations executing projects within OPG shall follow the principles and requirements set out in this program for the planning, organizing, executing, and controlling of resources to ensure the safe and effective execution and completion of projects.

This 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 across OPG. This governance and supporting documents are written 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.

While the program focuses on the management of individual projects, the concepts and requirements shall also apply to the integrated management of a group or program of related projects, or the total project portfolio at a plant/plant group, business unit or OPG level.

Project management involves the application of a methodical approach for guiding a project from start to finish, and ensuring project objectives including safety, quality, schedule, cost, and intended benefits are realized.

1.1 Project Management Principles

Projects executed in OPG shall be guided by the following set of key principles. These principles are incorporated into the implementing and interfacing documents described in Section 1.3.

1. **Common and Scalable:** A common standardized approach shall be used to define, plan, execute, and control projects throughout a project’s life-cycle. Given that projects will differ in complexity, risk, resource requirements, duration and cost, a risk-based graded approach shall be used to determine the appropriate level of requirements for planning and control of the project work effort.
2. **Integration Management:** Business needs for projects shall be clear and in alignment with OPG’s strategic imperatives. Project performance shall be monitored, and lessons learned, process improvements and experiences shall be captured, shared, and integrated as part of a continuous improvement process. Project management systems and processes shall be in place to support the project management function.
3. **Scope, Quality, Schedule and Cost Management:** Each project shall have a defined scope, schedule and corresponding cost estimate, and follow an appropriate quality program. Project changes shall be managed and controlled. Safety and the required quality shall be the overriding priority and shall not be compromised for schedule or cost.
4. **Human Resource Management:** Resource requirements and constraints shall be identified, planned and managed in a timely manner. This includes the use of qualified, knowledgeable, and integrated multi-disciplinary project teams. Staff shall be competent at the work they are requested to perform and they should clearly understand the project expectations.
5. **Communications and Stakeholder Management:** Information pertinent to prudent decision-making and successful project execution and reporting shall be managed and

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communicated in a timely manner. Each project shall have a sponsor representing the receiving organization of the project deliverables and an executing organization where the project objectives, roles, responsibilities, accountabilities and expectations are defined and communicated. Leaders shall demonstrate an active commitment to project excellence.

- 6. **Risk Management:** Project risks shall be identified and managed throughout the entire project life-cycle. Project contingency shall be determined based on risk and utilized when residual risks cannot be fully mitigated.
- 7. **Procurement Management:** Procurement of resources, contracts and contractors shall be planned and managed throughout the entire project life-cycle. Graded and effective oversight should be applied to projects.

These principles are aligned to the knowledge areas of the Project Management Institute (PMI).

1.2 Performance Indicators and Review

Program metrics shall be established for periodically assessing and reporting on performance at the project, business unit portfolio, and overall OPG portfolio levels, as well as on the health of the overall program. As a minimum, project and portfolio metrics shall include coverage of safety and environment, quality, schedule, and cost. Program health reviews shall include benchmarking, project management staff capability, vendors' performance, and program maturity.

For OPG-Nuclear, this program shall be reviewed and reported in accordance with N-PROC-RA-0023, Fleetview Program Health and Performance Reporting.

1.3 Implementing and Interfacing Documents

The implementing and interfacing documents of this program are described below, and the hierarchy of the documents is shown in Appendix A. These documents provide a comprehensive as well as a scalable approach for managing projects.

Executing organizations should use supporting governance such as manuals, instructions, templates, and forms, and may use non-governance process guides, to facilitate the implementation of the principles of this program and its associated implementing standard.

1.3.1 OPG-STD-0148, Project Management Standard

This standard defines the criteria, expected behaviours and output requirements for the successful execution of a project. These aspects are based on industry standards, and best practices for project management. The standard also describes the project management attributes and methodology required for managing a project throughout its life cycle.

1.3.2 N-CHAR-AS-0002, Nuclear Management System

For OPG-Nuclear applications, compliance to the generic requirements of CSA N286-12, Management System Requirements for Nuclear Facilities, is required in accordance with the programs and standards listed in N-CHAR-AS-0002, Nuclear Management System.

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Compliance to the specific requirements of CSA N286-12 that relate to project management are detailed in Appendix B.

1.3.3 OPG-PROG-0006, Investment Management

This Investment Management program describes the requirements within which an investment in the form of a project is to be managed and assessed.

1.3.4 OPG-STD-0076, Developing and Documenting Business Cases

This standard describes the minimum requirements for developing a Business Case Summary (BCS) to obtain approval for a project, and provides a description of required information to be included in the BCS.

1.3.5 OPG-PROC-0056, Post Implementation Review

This procedure describes the requirements and guidance for performing a post implementation review to determine whether the intended benefits of a project were achieved and to ensure that lessons learned are captured for application to similar future undertakings.

1.3.6 OPG-PROG-0038, Contract Management

This Contract Management program identifies the minimum requirements for managing contracts and contractors for service-based activities being provided on a project.

2.0 ROLES AND ACCOUNTABILITIES

2.1 President, and/ or Senior Vice-President – Business Unit(s)

Ensures requirements established in the Project Management program (this document) are incorporated into the work across all phases of a project, and any additional supporting processes fully align with the program.

2.2 Vice President, Planning & Project Controls, Enterprise PMO

- (a) Monitors and measures the Project Management program’s effectiveness and efficiency.
- (b) Ensures the implementation and maintenance of the Project Management program and its supporting governing document(s).
- (c) Conducts periodic self assessments or audits, reports on performance and identifies areas for improvement.
- (d) Monitors the implementation of this program internally throughout the Business Unit(s).
- (e) Reviews project management best practices.
- (f) Accountable to the Nuclear President and CNO in partnership with the nuclear organization to ensure the integrity of the Nuclear Management System (N-CHAR-AS-0002) is maintained in accordance with the expectations of the President and Chief Nuclear Officer.

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2.3 Peer Team, Project Management

- (a) Manages cross organizational interfaces to ensure alignment of initiatives and activities, performance metrics and indicators.
- (b) Assesses and directs timely interim actions in response to industry or OPG project management related events.
- (c) Drives continuous improvement towards project excellence across OPG.
- (d) Facilitates the identification and common resolution of emerging issues between the organizations, benchmarking to identify gaps to industry best performance, and utilizing results to improve OPG-wide project performance.

2.4 Project Sponsor

- (a) Identifies and initiates the project, and prepares and/or approves the documentation for the identification and initiation phases including the initial project charter.
- (b) Ensures that the delivered project meets business objectives.
- (c) Assists the project manager with the resolution of project related issues including control of project scope.
- (d) As part of project closeout, confirms the project delivery of scope.

2.5 Project Manager

- (a) Ensures the project management requirements as outlined within OPG-STD-0148, Project Management standard, are efficiently and effectively implemented on all projects for which the project manager is accountable.
- (b) Plans and executes the full scope of the project within constraints of working safely, meeting quality requirements, and performing within the approved schedule and budget.

3.0 DEFINITIONS AND ACRONYMS

3.1 Definitions

None.

3.2 Abbreviations and Acronyms

None.

4.0 BASES AND REFERENCES

4.1 Bases

These bases refer to institutions internationally recognized for project management best practices which have been incorporated into this program:

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[B-1] AACE International (formerly the Association for the Advancement of Cost Engineering).

[B-2] Construction Industry Institute (CII).

[B-3] Project Management Institute (PMI).

4.2 References

4.3 Performance References

- N-CHAR-AS-0002, Nuclear Management System
- OPG-PROC-0056, Post Implementation Review
- OPG-PROG-0006, Investment Management
- OPG-PROG-0038, Contract Management
- OPG-STD-0076, Developing and Documenting Business Cases
- OPG-STD-0148, Project Management Standard

4.4 Developmental References

- A Guide to the Project Management Body of Knowledge (PMBOK® Guide) 5th Edition
- FIN-PROC-0030, Property, Plant and Equipment
- LP-PJ-01, Project Management Program
- N-PROG-AS-0007, Project Management
- OPG-POL-0001, Health and Safety Policy
- OPG-POL-0004, Enterprise Risk Management Policy
- OPG-POL-0021, Environmental Policy
- OPG-PROC-0142, IT Project Management
- OPG-PROG-0001, Information Management
- OPG-PROG-0004, Enterprise Risk Management
- OPG-PROG-0009, Items and Services Management
- OPG-PROG-0010, Health and Safety Management System
- OPG-STD-0017, Organizational Authority Register
- OPG-STD-0030, Classification, Protection and Release of Information
- CSA N286-12 Management System Requirements for Nuclear Facilities. Refer to Appendix B for coverage of specific requirements of this program.

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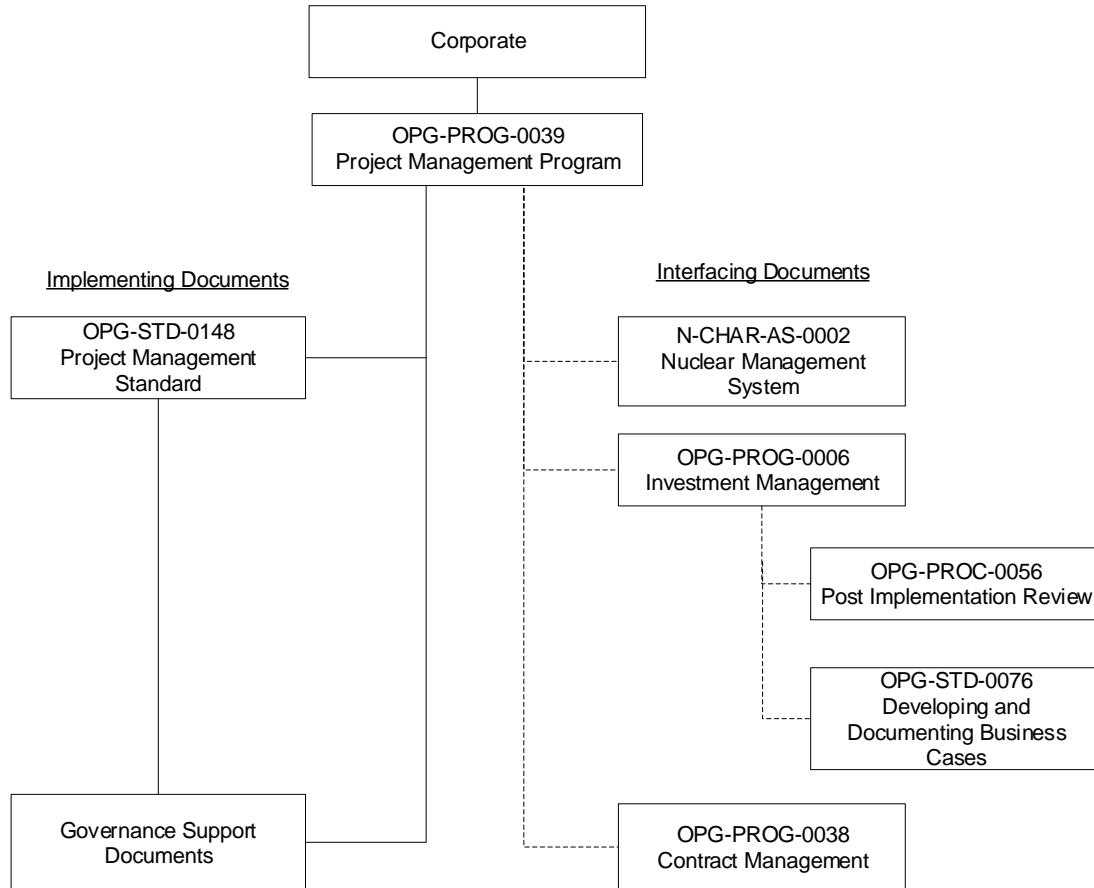
5.0 REVISION SUMMARY

Revision Number	Date	Comments
R002	2019-12-11	<ul style="list-style-type: none"> Incorporated DCR # 140907, 143735, 148938, 151598. Confirmed program interfaces are appropriately cross referenced (DCR # 140907). Removed reference to OPG-STD-0147, Project Life Cycle Management Standard (DCR # 148938). Updated section 2.0 Roles and Accountabilities to align with current organizational titles. Added requirements to Appendix B, Regulatory Requirements Matrix – Nuclear as per DCR #143735. Updated Document Owner, Authorization Authority and Approvals on front cover to reflect the current state. Exceptions box added to cover page (DCR #151598).
R001	2017-06-26	<p>The following minor changes were made for R001 based on Nuclear Stakeholder Relations feedback for superseding N-PROG-AS-0007, Project Management with this corporate program:</p> <ul style="list-style-type: none"> Added Robin Manley to Authorization section of cover page as APPROVAL FOR ISSUE: Clarified Nuclear Managed Systems Section 1.3.3 on how program meets generic and specific CSA N286-12 Modified CSA coverage in Appendix B Clarified VP, Nuclear -PMO, Co-chair Project Excellence role in Section 2.2.
R000	2017-04-10	Initial issue.

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Appendix A: Implementing and Interfacing Documents



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Appendix B: Regulatory Requirements Matrix – Nuclear

The following table lists all of the regulatory requirements for nuclear facilities that relate to project management that are met by this program.

Item #	Reference	Requirement	Governance Demonstrating Compliance
1	CSA N286-12, Sub-clause 7.7.1	General: 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-STD-0148, Project Management Standard
2	CSA N286-12, Sub-clause 7.7.2(a), 7.7.2(b), 7.7.2(c), 7.7.2(d) and 7.7.2(e)	Prerequisites: Conditions to be met prior to Construction.	OPG-STD-0148, Project Management Standard
3	CSA N286-12, Sub-clause 7.7.3(a), 7.7.3(b), 7.7.3(c), 7.7.3(d), 7.7.3(e), 7.7.3(f), 7.7.3(g), 7.7.3(h), 7.7.3(i), 7.7.3(j), 7.7.3(k)	Activities: Construction activities shall be controlled in accordance with drawings, specifications, and work documentation.	OPG-STD-0148, Project Management Standard
4	CSA N286-12, Sub-clause 7.7.4(a), 7.7.4(b), 7.7.4(c), 7.7.4(d), 7.7.4(e), 7.7.4(f)	Documents shall be available prior to and during construction	OPG-STD-0148, Project Management Standard
5	CSA N286-12, Sub-clause 7.8.2(c)	Commissioning: Construction completion assurance has been completed in accordance with Clause 7.11.1 for the structure, system, or component.	OPG-STD-0148, Project Management Standard
6	CSA N286-12, Sub-clause 7.8.4.1	Structures, systems and components shall be commissioned in accordance with written specification and work documentation prepared prior to commissioning.	OPG-STD-0148, Project Management Standard

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Item #	Reference	Requirement	Governance Demonstrating Compliance
7	CSA N286-12, Sub-clause 7.11.2(b)	Boundaries between structures, systems, and components shall be clearly identified in the field and on documents	OPG-STD-0148, Project Management Standard
8	CSA N286-12, Sub-clause 9.6	Construction: 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 by Clause 9.3.5 using approved items.	OPG-STD-0148, Project Management Standard
9	CSA N286-12, Sub-clause 9.7.1	General: The process for commissioning structures, systems, and components shall be established and controlled to confirm that they meet design requirements prior to placing them in service using generally accepted commissioning and project management practices.	OPG-STD-0148, Project Management Standard
10	CSA N286-12, Sub-clause 9.8	Turnover.	OPG-STD-0148, Project Management Standard