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PROGRAM ENVIRONMENTAL MANAGEMENT PLAN

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Program Environmental Management Plan

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Revision Summary

Revision Number	Date	Comments
R000	2013-01-31	Initial issue.

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1.0 INTRODUCTION

In support of the Director, NR, Operations and Maintenance, the NR Chemistry & Environment Department will provide technical support and management oversight to ensure that the Environmental Management System is maintained throughout the refurbishment project. This will be accomplished by ensuring that: surveillance, sampling and analysis, qualified staff, training and procedures are in place and are being effectively managed.

The Nuclear Refurbishment (NR) Project will result in significant physical changes to the Darlington site. These changes represent a timely opportunity to make environmental enhancements to our operations. These enhancements would allow us to meet future regulatory requirements, community expectations and to operate in the top decile of our industry. The *Environment Vision* for Darlington is to be recognized by our stakeholders as an industry model for NR Project Management.

2.0 PURPOSE

The Nuclear Refurbishment Environmental Management Plan (EMP) describes how Nuclear Refurbishment and Contractors will manage environmental issues for the Nuclear Refurbishment Program.

It establishes a framework for environmental management for Nuclear Refurbishment Projects, Department s and Vendors/Contractors in accordance to defined goals, objectives and expectations for the Nuclear Refurbishment Program.

3.0 PROGRAM ENVIRONMENTAL MANAGEMENT APPROACH

There will be an over-arching Nuclear Refurbishment Environmental Management Plan for the entire refurbishment project (NK38-PLAN-09701-10067 Sheet 12). This plan will provide NR and other business unit support staff with clear understanding of the environmental management requirements for the entire Nuclear Refurbishment Program including:

- Environmental Goals and Objectives
- Environmental Program Management Framework
- Roles and Responsibilities
- Contractor Environmental Management Expectations
- Program Plan and Key Deliverables
- Nuclear Refurbishment Environment Chemistry & Environment Organizational Structure

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4.0 ENVIRONMENTAL PROGRAM GOALS AND OBJECTIVES

The changes that will occur as a result of the Refurbishment Project have the potential to cause Environmental Impacts. The *Environmental Mission* is to effectively manage all Environmental Aspects during the Refurbishment project, in accordance with the Environmental Management System.

Objectives:

- Maintain Environmental Management System Certification during the project
- Event-free operations during the project.
- Minimize impacts on the operating units.
- Minimize delays in return to service.

Goals:

- Operate As Low As Reasonably Achievable for radiation exposure of the Public and the Environment (PE-ALARA)
- Zero Reportable Spills and Environmental Infractions
- Maximize landfill diversion of conventional waste in alignment with regional objectives.
- Maintain top quartile performance for the generation of Low and Intermediate Level Radioactive Waste (LILRW) during Refurbishment and sustain top decile performance following the project.

5.0 ENVIRONMENTAL PROGRAM MANAGEMENT FRAMEWORK

5.1 Environmental Management System (EMS)

The Nuclear Refurbishment Project will meet the requirements of the ISO-14001 Standard for Environmental Management. In addition to the standard, CNSC Regulatory Standard (S-296) will apply.

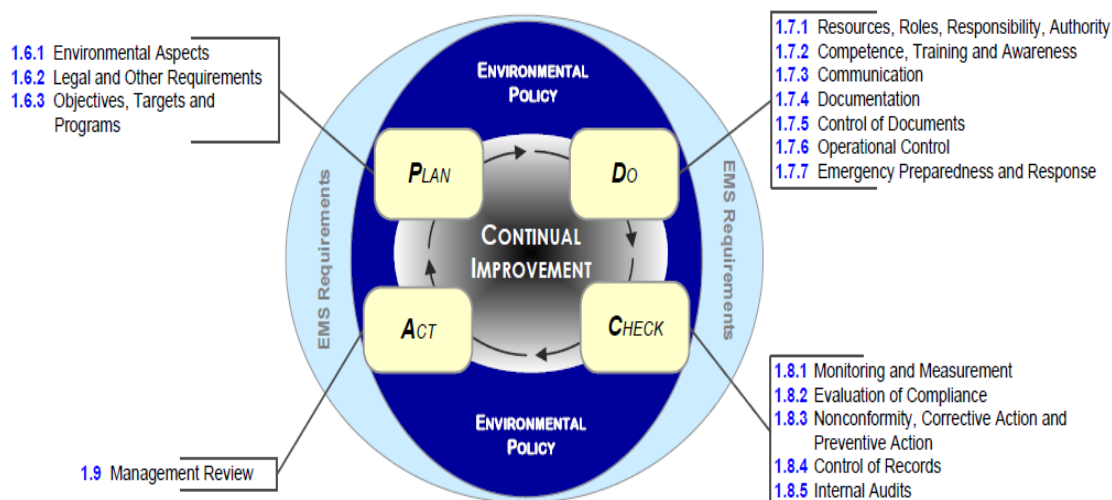
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The refurbishment project will follow a Centre-Led single Environment Management System which will embody the principles shown on the graphic below:



5.2 Contracting Requirements for Environmental Management

With respect to the Project, there are certain elements that must be considered: the standard requires that any person performing work or services on a site, which has the potential to cause a significant environmental impact, should be aware of the requirements and importance of the EMS and are competent to perform the job assigned. Also, for Contractors performing an operation or activity that has the potential where environmental impacts are significant, these controls should take the form of documented procedures. Regardless of who performs the work (i.e. sub-Contractors) the Contractor is accountable for ensuring compliance.

Whether or not OPG is the Constructor of a project or the project is an Owner Only project, OPG can be found liable for environmental regulatory infractions. The Project Manager is responsible for ensuring environmental requirement specifications are prepared, approved and followed. This must be done with full knowledge of the degree of environmental risk inherent to the construction or maintenance activities involved in the project (including environmental impact risks, stakeholder risks and legal risks).

The Project Manager's assessment of the *Environmental Aspects* and potential *Environmental Impacts* will be unique to their project. This assessment will be integrated into the Contractor's Environmental Management Program (CEMP). The assessment provides assurance to the workplace parties that the environmental risks unique to the project have been identified and that adequate controls to eliminate or mitigate the risks are in place before work commences.

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This plan provides the Project Manager with an understanding of the environmental risks of the project and in conjunction with the N-GUID-09701-10013: Nuclear Refurbishment – Environmental Requirements Guideline which provides expectations and specific requirements for the CEMP.

5.3 Environmental Performance Metrics and Targets

A single, consistent set of Environmental Metrics (measures and targets) for Nuclear Refurbishment and Contractors at the Program and Project levels are under review and will be approved for use (NK38-REP-09701-10145: Proposal for Refurbishment Chemistry & Environment Metrics).

NR Senior Line Management, NR Project Teams and Contractors will use the metrics to identify unsatisfactory performance against prescribed targets and identify methods to eliminate causes for unsatisfactory safety performance.

Program and Project Environment metrics will be tracked on a prescribed frequency and reported graphically, or otherwise, through the Refurbishment Program Monthly Status Report and Project Manager Status Reports.

5.4 Environmental Oversight and Monitoring

Environmental oversight and monitoring requirements for Nuclear Projects will be established under direction of N-STD-AS-0030: Project Oversight Standard. Environmental oversight criteria are identified in N-GUID-09701-10013: Nuclear Refurbishment – Environmental Requirements Guideline. Environmental oversight criteria will be included in Project Oversight Plans (POPs).

A Darlington Environmental Review Team (DERT) has been established and will be a key environmental compliance oversight mechanism for the Program.

5.5 Environmental Management Documents for Program

- OPG Environmental Management System (Under development)
- Nuclear Refurbishment – Environmental Requirements Guideline (N-GUID-09701-10013)
- Nuclear Refurbishment - Project Environmental Management Plan (NK38-PLAN-09701-10149)
- Proposal for Refurbishment Chemistry & Environment Metrics (NK38-REP-09701-10145)
- Project Oversight Standard (N-STD-AS-0030)
- Risk Project Management Standard (N-PROC-LE-0028)

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- Information Management (N-PROG-AS-0006)
- Contractor and General Employee Training (NK38-PLAN-09701-10007)

6.0 ROLES AND RESPONSIBILITIES

For the Nuclear Refurbishment Program, safety is a shared responsibility.

All OPG and Contractor employees:

- Have accountability for Safety. This includes making conservative decisions regarding refurbishment operation and construction activities as they relate to the health and safety of our employees and the environment.
- Are accountable for performing work safely and for identifying, communicating and, where appropriate, correcting workplace hazards in order to protect themselves, their co-workers, other Contractors or the environment from harm.

OPG Nuclear Refurbishment is accountable for:

The role and responsibility as the *Owner/Constructor*.

All OPG and Contractor line management are accountable for:

- The safety of their employees at OPG workplaces and for ensuring their activities do not harm any employees or the environment.
- Ensuring the work environment is designed to protect workers and the environment;
- Ensuring that work is planned and performed to protect workers and the environment;
- Providing employees with the information, training, tools, procedures and support required to do their job safely and without harming other workers or the environment.

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7.0 CONTRACTOR ENVIRONMENTAL MANAGEMENT EXPECTATIONS

Contractors are required by OPG to identify hazards, evaluate risks and develop appropriate plans to mitigate risks. OPG expects Contractors to manage their operations to protect the environment the welfare of site staff and the environment. Their process, procedures shall be subject to competent scrutiny through the supply chain. Environmental programs and/or operations that do not meet these expectations, and in particular where there are opportunities that have not been utilized to improve the use of good environmental practice and/or eliminate/reduce significant risks, shall not be deemed acceptable (subject to assessments of reasonable practicability).

Where design is part of the works, the Contractor shall comply with the requirements in this guideline:

- (a) The Principal Contractor shall ensure that: all environmental requirements are fully Incorporated into the Engineering, Procurement and Construction (EPC) process;
- (b) There is clear allocation of responsibility and authority for environmental management matters;
- (c) There is an effective interface with regulators, including obtaining relevant licences, consents and permits;
- (d) This Guideline and other requirements are clearly communicated through their supply chain, and reflected in the Contractor Environmental Management Program (CEMP);
- (e) Ensure that sub-Contractors are competent and resourced to work to the required standards;
- (f) Ensure compliance with site as well as their own requirements by their personnel, sub-Contractors personnel and visitors;
- (g) There is cooperation with the Project Manager and Environment Advisor;
- (h) There is cooperation and participation in environmental programs for Contractors;
- (i) There are mechanisms in place to ensure cooperation and exchange of information on neighbouring/shared risks and logistics;
- (j) Ensure that relevant information on work in the area designated as under their control is provided to OPG to facilitate coordination, so that the activity of any party does not result in undue risk;
- (k) Members of the team have access to appropriate, competent environmental management advice and support; and

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- (I) Monitoring and reporting including: completion of the monthly Environment Scorecard and reporting of incidents and accidents is undertaken.

8.0 PROGRAM PLAN AND KEY DELIVERABLES

Key dates and deliverables to support the completion of the Program Environmental Management Plan are identified in the NR O&M Environment & Chemistry P6 Plan (73018) and include activities that the Program Manager and others will perform to support the plan. The NR O&M Environment & Chemistry P6 Plan is a living plan and is updated on a monthly basis.

9.0 NUCLEAR REFURBISHMENT CHEMISTRY & ENVIRONMENT ORGANIZATION

The NR Chemistry & Environment organizational structure for the Nuclear Refurbishment Project will be a Centre of Excellence organization reporting to the Nuclear Refurbishment Director of Operations and Maintenance.

The organization provides Chemistry & Environment support and services to the NR management team, the NR Refurbishment Execution organization and the NR Functional Departments.

A description of the organizational structure in support of NR Chemistry & Environment is provided in Appendix A.

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Appendix A: Appendix A: Chemistry & Environment Organizational Structure

