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PROGRAM COST MANAGEMENT PLAN

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Program Cost 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

The purpose of the Program Cost Management Plan is to outline how the Darlington Refurbishment program manages budgets and costs. This Plan applies to all Nuclear Refurbishment (NR) funded work over the life cycle of the program.

2.0 PROGRAM DESCRIPTION

The overall program objectives and description are contained in the Darlington Refurbishment Project Charter, D-PCH-09701-10000 R001, and Program Structure and Summary Management Plan, NK38-PLAN-09701-10067 Sheet 1.

3.0 PROGRAM COST MANAGEMENT APPROACH

3.1 Governing Document

NR's approach to cost management is defined in N-STD-AS-0028, *Project Management Standard*. Cost management and control practices are further detailed in N-MAN-00120-10001-PC, *Project Controls*.

3.2 The Refurbishment Cost Model

Program level budgets will be established via Program Releases. Original Budget funding for the release period will be allocated directly to functional groups (both NR and Centre-led) upon release approval. Project funding will be allocated from the program via the Gated Process and the Gate Review Board in accordance with N-MAN-00120-10001-GRB. Estimated funding requirements for the program life cycle beyond the current release will be documented as unreleased funds at the project and functional levels.

Changes to functional and project funding levels within a release will be managed via a formal change control process as described in Section 4. Funding required in the current release period will be categorized and tracked as follows in Nuclear Refurbishments Project Cost Management system ("Proliance"):

- *Original Budget* is the approved funding established by the release or Gated Process. Original Budgets cannot be altered for the period in which they apply.
- *Control Budget* consists of the Original Budget plus the sum of all approved Directed Changes (i.e. baseline changes).
- *Approved Funding* consists of the Control Budget plus all approved funding requests not impacting the baseline.

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- *Projected Budget* represents the accountable manager's forecast of cost at completion of the current release, and includes all pending (i.e. unapproved) funding change requests plus the impact of undocumented funding impacts based on managerial judgment.

Program releases will also establish program level Contingency and Management Reserve funding. Project level Contingency funding may be allocated within the Definition and Execution phases via the Gated Process. Contingency funding at all levels is based on known risks. Management Reserve funding is set based on "unknown-unknowns" that could impact the viability of the program. NR strategies for managing Contingency and Management Reserve are defined in NK38-PLAN-09701-10067 Sheet 0006, *Darlington Refurbishment Risk Management Plan*. Release of Contingency and Management Reserve funding will be controlled via the change control process as described in Section 4.

3.3 Cost Breakdown Structure

NR will establish a systematic and hierarchical Cost Breakdown Structure (CBS) that identifies all the Control Accounts used by the Program. Within each Control Account will be specific Work Packages. Budgets for all NR work will be established at the Work Package level and associated actual costs will be collected at the Work Package level to support cost performance monitoring including earned value measurement.

3.4 Program and Project Cash Flows

As the costs and schedules for program and projects are developed, resource loaded schedules will be derived to form the basis of the function and project cash flows to support business planning and cost performance monitoring processes. NR schedules will establish Planned Value (PV) at the Work Package level, which will then be translated into budget cash flows in the cost management system.

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4.0 COST CHANGE CONTROL PROCESS

Changes to NR planned costs will be managed via a formal change control process in accordance with N-MAN-00120-10001-PC, *Project Controls*.

Cost and schedule alignment is maintained via the change control process. There are three fundamental change types as illustrated in Table 1:

Table 1: Change Management Types

Change Type	Control Budget Impact	Contingency Impact	Approval Level	Examples
Directed Change	Rebaseline of cost/schedule & change to Control Budget	Balancing impact on Contingency Control Budget	<ul style="list-style-type: none"> NR VP Execution (for approved project risks) NR SVP for all other Directed Changes 	<ul style="list-style-type: none"> Approved project risk is realized Significant change in contract strategy
Funding Variance	No rebaseline, tracked as Approved Funding change	Balancing impact on Contingency Approved Funding	NR P&C Director	<ul style="list-style-type: none"> Cost increase of existing Work Package Vendor contract value varies from original estimate
Forecast Trend	No budget impact, recorded against Projected Budget	Recorded as change in Contingency Projected Budget	Project Manager	<ul style="list-style-type: none"> Project Manager forecasts design product cost increase based on current trends in other projects

A *Directed Change* constitutes re-baselining, and is generally caused by situations beyond the control of the budget/work program owner that renders the existing baseline obsolete. An approved Directed Change will result in changes to the Control Budget of the appropriate function or project as well as equal and opposite changes to the appropriate contingency account Control Budget. Scope transfers and contingency adjustments for approved risks are specific changes that impact Control Budgets.

A *Funding Variance* is an approved change that does not meet the Directed Change criteria but requires a change in funding requirements. An Funding Variance will result in changes to the Approved Funding of the appropriate function or project as well as equal and opposite changes to the appropriate contingency account Approved Funding.

Forecast Trends are Budget Owner forecast estimates of future anticipated changes to Approved Funding levels. Such changes are documented for management forecasting and do not impact budgets. They are reflected in the Projected Budget column of the cost management system.

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All Directed Changes, Funding Variances, and Forecast Trends will be initiated via N-FORM-11252, Nuclear Refurbishment Change Control Form (CCF). Changes to Approved Funding of greater than 10% of divisional budget or \$50,000 within a release period require a CCF.

5.0 MEASURING AND REPORTING PROGRAM COSTS

Costs will be managed at program, project, function, vendor, and Work Package levels using source data from OPG financial systems. Vendor costs will be managed in accordance with contract terms and conditions to meet OPG requirements.

Cost performance will be measured using standard industry metrics, including Earned Value, Schedule Performance Index (SPI), and Cost Performance Index (CPI).

Earned Value (EV) is the value of work performed and will be calculated within the NR cost management system using Work Package budget information from the cost management system work progress information derived from schedules.

SPI is a measure of progress achieved compared to planned progress. SPI will be calculated within the OPG cost management system based on the equation:

$$SPI = EV/PV$$

CPI is a measure of the value of work completed compared to actual cost (AC) and will be calculated within the OPG cost management system based on the equation:

$$CPI = EV/AC$$

Cost variances at a program level will be regularly monitored to ensure that actual and forecasted costs are within Life-to-Date (LTD) approved funding levels, taking into account Contingency and Management Reserve. Program level forecasting will include mitigation and recovery plans as required.

Cost variances at project and function levels will be regularly monitored to ensure that actual and forecasted costs are within Life-to-Date (LTD) approved funding levels. Forecasting will include mitigation and recovery plans as required.

Cost reports will be published on a monthly or more frequent basis in accordance with NK38-PLAN-09701-10067 Sheet 0005, *Refurbishment Program Reporting Management Plan*.

6.0 COST MANAGEMENT PLAN REVIEW

At a minimum, review and, if necessary, revision of this document will be carried out at each major funding release to ensure the cost control processes are still adequate.