

CAPITAL PROJECTS – NUCLEAR

1.0 PURPOSE

This evidence provides a project listing and the business case summaries that support the capital expenditures and the in-service amounts for the Nuclear business unit during the test period. These capital expenditures form part of the Nuclear capital budget presented in Ex. D2-T1-S1.

2.0 CAPITAL PROJECTS LISTING

A tiered reporting structure consistent with the OEB filing guidelines has been used to present the evidence for all capital projects which have budgeted expenditures in the test period, or in-service amounts during the bridge year or test period. Specifically:

- Tier 1: Projects with a total cost of \$10M or more. For these projects, summary level information is provided in Ex. D2-T1-S2 Tables 1a/1b, and business case summaries (“BCS”) are provided in Attachment 1. For completeness, Attachment 1 also provides a summary of project description and need for security-related projects for which BCS are not provided.
- Tier 2: Projects with a total cost of \$5M to \$10M, for which summary level information is provided in Ex. D2-T1-S2 Table 2a/2b.
- Tier 3: Projects with a total cost of less than \$5M, for which aggregated information is provided in Ex. D2-T1-S2 Table 3.

For Tier 1 project, Ex. D2-T1-S2 Tables 1a/1b provide information on the 41 projects with a total project cost of \$10M or more. Of these 40 projects:

- 21 are ongoing projects, previously reported in EB-2007-0905.
- Six are new projects, not reported in EB-2007-0905. Further information is provided in section 3.1.
- 11 are projects previously reported in EB-2007-0905 that have been completed. Further information is provided in section 3.2.
- Three are projects previously reported in EB-2007-0905 that have been deferred. Further information is provided in section 3.3.

Table 1 further indicates that of the same 41 projects:

- 16 have final in-service dates in the bridge year, and eight in the test period.
- Eight are projects with superceding releases, four of which have project cost increases of greater than 10 per cent above the initial full release. Further information is provided in section 3.4.

For Tier 2 projects, Ex. D2-T1-S2 Table 2a/2b provides information on the 15 released projects with a total project cost between \$5M and \$10M.

For Tier 3 projects, Ex. D2-T1-S2 Table 3 provides information on the 34 released projects with a total project cost less than \$5M.

There are a total of 53 projects categorized as "Listed Work to be Released". These projects are presented in Ex. D2-T1-S2 Tables 5a and 5b. These projects are currently in the project identification or project initiation phases, with project costs funded by base or project OM&A, as outlined in Ex. D2-T1-S1. OPG expects that by the test period, some of these listed projects (or other projects yet to be identified) would move from the project identification and initiation phases into project definition or execution phase as part of the ongoing portfolio management process. As indicated in the tables, preliminary forecasts are that six of these projects will have total project cost greater than \$10M.

3.0 PROJECT-SPECIFIC INFORMATION - TIER 1 PROJECTS

3.1 New Projects

There are six additional Tier 1 projects that have been undertaken through the BCS approval process since EB-2007-0905. Business case summaries or other supporting documentation for these projects are provided in Attachment 1. All but one of these projects was listed in EB-2007-0905 as "Listed Work to be Released", and undertaking this new work is part of the normal progression through the project management process, as outlined in Ex. D2-T1-S1.

The exception is Project 34012, which was not listed in EB-2007-0905. As outlined in the supporting information provided in Attachment 1, it was determined during preparation for the

Darlington Vacuum Building Outage that several of the planned temporary modifications could be engineered to provide future benefit with minimal additional cost over the originally planned expenditures. On the basis of this future value, and consistent with OPG's capitalization policy, the total project expenditures were deemed as eligible for capitalization, and the project was placed into service in 2009.

3.2 Completed Projects

Twelve Tier 1 projects have been completed as of year-end 2009. Ex. D2-T1-S2 Table 1 further indicates that of these 12 projects: eight were completed on or under budget; one was completed within 10 per cent of the original full release; and, three exceeded 10 per cent of the original full release.

3.3 Deferred/Cancelled Projects

Three Tier 1 projects have been deferred as of year-end 2009. Approval documents and justification are provided in Attachment 1.

3.4 Project Variance Explanations

There are six Tier 1 projects for which total actual or forecast project cost variances exceed 10 per cent, three of which have been completed and are referenced in section 3.2 above. Superseding business case summaries are provided in Attachment 1.

4.0 CAPITAL PROJECT IN-SERVICE INFORMATION

There are several capital projects forecast to come partially or fully into service in the bridge year or test period. These forecast in-service amounts represent a combination of project-specific forecasts contained in approved BCS (as presented in Ex. D2-T1-S2 Tables 1b, 2 and 3), and a forecast of the supplemental in-service amounts. Forecast in-service capital additions are summarized in Ex. D2-T1-S2 Table 4c.

Supplemental in-service forecasts reflect several factors that could increase the actual in-service amounts in a given year over that included in the approved BCS, specifically:

- 1 • the in-service forecasts in the BCS assume that the approved project contingency will not
- 2 be used, such that use of contingency will therefore result in higher in-service amounts;
- 3 • in-service forecasts provided in a developmental or partial release BCS are subject to
- 4 confirmation, and potential increase, upon approval of a full release BCS;
- 5 • completed work packages may be deemed ready for service earlier than forecast in the
- 6 BCS.

7
8 This supplemental in-service forecast is included in Ex. D2-T1-S2 Table 4c based on best
9 estimates of the additional in-service declarations that can be expected in the test years. This
10 table also includes variance analysis for 2008 and 2009, while Ex. D2-T1-S2 Tables 4a and
11 4b provide project-by-project reconciliation against the capital in-service forecasts provided in
12 EB-2007-0905 Undertaking J6.5,

13
14 For completeness, Table 4c includes planned minor fixed asset expenditures (see Ex. D2-
15 T1-S1 Tables 4a – 4c), which are deemed to be placed in-service in the year of acquisition.

LIST OF ATTACHMENTS

1
2
3
4

Attachment 1: Business Case Summaries and Supporting Information

ATTACHMENT 1

Business Case Summaries and Supporting Information

1.0 Business Case Summaries ("BCS")

Attached is a listing of all capital projects with a Total Project Cost (actual or forecast) of \$10M or greater, and their associated BCS (excluding P2/P3 Isolation Project, see Ex. D2-T1-S1, section 4.0). Paper copies of the business case summaries are provided in a separate binder (EB-2010-0008 Volume 4).

Note: Several attachments are marked "Confidential" because the original documents contain confidential information. The redacted versions provided as pre-filed evidence are not confidential.

2.0 Security Project Description and Need

This section provides a brief project description of the security-classified nuclear projects, for which BCS are not provided. This level of information is the same as that submitted in EB-2007-0905.

In all cases, the need is the requirement to meet Canadian Nuclear Safety Commission ("CNSC") security requirements, which are common to all OPG nuclear stations (Pickering A, Pickering B and Darlington).

- Project 25609, Physical Barrier System (was Security Fence Project): Install improved perimeter fencing system at Pickering A, Pickering B and Darlington, including lighting, perimeter monitoring and other required functions.
- Project 25902, Controlled Area Improvements: Reconfigure site access, such that all access to the Pickering or Darlington sites is through a single secure entrance.
- Project 25905, Security Monitoring Room: Replace security monitoring rooms at Pickering site and Darlington to meet current requirements.
- Project 25901, Security Hardening Project
- Project 25908, Security Doors Upgrade

- 1 • Project 62558, Security Optimization: Improve physical security provisions within
- 2 Pickering A, Pickering B and Darlington stations.

Nuclear Business Case Summary Index

Tab	Facility	Ongoing Projects From EB-2007-0905	Project No.
1	DN	DLC Modifications – Simulator Based Training	28453
2	DN	Fuel Handling Power Track Modifications	31438
3	DN	Improve Maintenance Facilities	31717
4	DN	New Change Room Facility	31718
5	DN	Chiller Replacement to Reduce CFC Emissions	33631
6	DN	FH Computer Replacement	33815
7	DN	SDS Computers Aging Management	33955
8	DN	SG Controls Replacement	33973
9	DN	DCC Replacement/Refurbishment/Upgrades	33977
10	PA	Calandria Vault Inspections	46537
11	PA	D ₂ O Storage Tank Project	46576
12	PA	Unit 1 & 4 Calandria Vault Dryer Augmentation	49252
13	PA	Switchyard Relay Building Cable Replacement	49266
14	PB	Emergency Power Generator Control Upgrade	49110
15	PB	Chemistry Standards (CH-002)	79147
		Completed/Deferred From EB-2007-0905	
16	DN	Second Darlington Full Scope Simulator	28452
17	DN	D ₂ O Storage Facility	31555
18	DN	Main Control Room HVAC	33293
19	DN	Used Fuel Dry Storage in Station Modifications	33925
20	DN	Auxiliary Heating System	34000
21	DN	Feeder Replacement ALARA	34008
22	DN	Fire Protection Upgrade Program Phase 3	79148
23	PA	D ₂ O Storage Facility	49251
24	PB	CFC Replacement (Freon Removal)	40543
25	PB	Auxiliary Power System	49104
26	PB	Standby Generator Governor Update	49109
27	PB	Fire Protection Phase 2	79016
28	ENG	Additional Feeder Cut and Weld Tooling	62567
		Projects Not In EB-2007-0905	
29	DN	Vacuum Building Outage Recurring Alterations	34012
30	PA	Replacement of Standby Boiler	49267
31	PA	Inter Station Transfer Bus Capacity Increase	49270
32	ENG	Feeder Repair by Weld Overlay	62568
33	IMS	Upper Feeder Cabinet Inspection Robot	66266