SCOTTMADDEN PHASE 2 NUCLEAR BENCHMARKING REPORT

1.0 INTRODUCTION

In 2009, OPG undertook a major new nuclear benchmarking initiative in conjunction with the development of its 2010-2014 nuclear business plan. This initiative was undertaken by OPG Nuclear, with the assistance of ScottMadden Inc. ("ScottMadden"), a general management consulting firm specializing in the provision of benchmarking and business planning consulting services to nuclear utilities.

Given the importance of this initiative, OPG sought to have incorporated into the reports the best comparative data available. As a result, the ScottMadden Phase 1 and Phase 2 reports rely extensively upon data extracted from leading industry association databases.

Data provided by the World Association of Nuclear Operators (WANO) was the primary source of benchmarking data for operational performance indicators. For financial performance comparisons, data was compiled from the database of the Electric Utility Cost Group (EUCG). Data was also obtained from the Canadian Electricity Association (CEA) for the all-injury rate metric and from a workgroup of the Institute for Nuclear Power Operations (INPO) for maintenance backlog comparisons. OPG, as a member of these industry associations, is bound by the confidentiality provisions that these associations have with respect to the use of their data.

The report filed at Ex. F5-T1-S2 has redacted company names from the EUCG comparator charts and the first quartile value for the CEA all-injury performance metric. OPG sought and obtained permission to file EUCG comparisons on the condition that it not identify any company names, other than OPG, associated with the data. The CEA also requires that OPG not disclose the first quartile performance

for the all-injury metric. In addition, OPG has redacted references to individual company performance that appear in the text of the ScottMadden Phase 2 report.

Finally, information on number of security staff at OPG and comparator companies has been redacted for security purposes.

The report is marked “Confidential” because when it was originally produced it included confidential information. The redacted report as filed is no longer confidential.

SCOTTMADDEN
Management Consultants

September 11, 2009

Mr. Randy Leavitt
Vice President, Nuclear Finance

Mr. Pierre Tremblay
Senior Vice President, Nuclear Programs and Training
Ontario Power Generation
889 Brock Road
Pickering, Ontario L1W 3J2

Reference: OPG Nuclear 2009 Benchmarking Project – Phase 2 Final Report

Dear Sirs:

By means of this transmittal letter, we are submitting to Ontario Power Generation (OPG) our final report related to completion of Phase 2 of the OPG Nuclear (OPGN) Benchmarking Project. The purpose of this report as outlined in our proposal of May 19, 2009 is to:

> *"document the activities undertaken during this phase and to assess the degree to which OPG has successfully piloted a gap-based business planning process and used this process to identify and drive meaningful improvement opportunities capable of addressing current performance gaps."*

It is our opinion that OPGN has undertaken the actions necessary to successfully pilot a gap-based business planning process as originally envisioned. These actions include: (a) fairly benchmarking the company's operational and financial performance to external peers, (b) using the benchmarking results to establish performance improvement targets that will achieve, or significantly drive the company closer to, top quartile industry performance, and (c) developing and implementing a gap-based business planning process that identified the improvement initiatives best able to close the identified performance gaps.

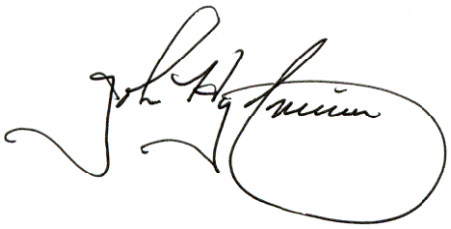
Improvements in the OPGN planning process include the following: (a) establishment of top-down quantitative operational and financial targets for each year and each business unit, (b) identification of site, business unit, and functional improvement initiatives that are tied to specific operational and financial targets, (c) designation of accountability points for the delivery of all improvement initiatives, (d) linkage of improvement initiatives to closure of documented performance gaps, and (e) incorporation of improvement initiatives into the site and support unit business plans and budgets.

It should be noted that the gap-based business planning process outlined above represents a significant change in the manner in which business plans have been traditionally prepared at OPGN. Implementing these changes has not been easy and OPGN management is to be commended on the degree to which they provided executive sponsorship to the internal teams that worked to complete this effort.

ScottMadden believes that OPGN's challenge ahead will be to implement the improvement initiatives identified during the planning process. In our view, several key improvement initiatives cannot be implemented under "business as usual" conditions. They will require changes in the company's governance, performance tracking, and accountability practices that may be as equally challenging as those involved in modifying the business planning process.

Should you have any questions or concerns regarding the attached report, we stand ready to discuss them with you at your earliest convenience.

Yours very truly,



John H. Sequeira, Ph.D.
Partner

SCOTTMADDEN
Management Consultants

✓ Ontario Power Generation Inc.

Nuclear 2009 Benchmarking Project
Phase 2 – Final Report

September 11, 2009

[redacted]

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1.0 Introduction

1.1 About ScottMadden, Inc.

Founded in 1983, ScottMadden, Inc. (ScottMadden) is a general management consulting firm providing independent and objective counsel to more than 300 clients worldwide. We specialize in serving the utility sector and have assisted more than 200 public and private utilities in implementing their strategies, planning their businesses, improving their processes, restructuring their organizations, and improving their operating results. We have successfully completed business advisory projects for 65% of the commercial nuclear generation stations in North America. We have extensive experience assisting executive management in planning and managing the performance of nuclear generation fleets. In 2007-2009, we conducted engagements with five of the top six North American nuclear fleet operators.

We trace the source of our success to our size, culture, and values and our deep understanding of the energy industry gained from more than a quarter century of providing management counsel to our energy clients. Our expertise in energy consulting covers a range of relevant competencies and skills, including:

- Business Management
- Organization Design and Development
- Asset Management
- Benchmarking
- Business Process Improvement
- Operations Management
- Nuclear Operations Turnaround
- Fleet Operating Models
- Nuclear New Build Support

1.2 Project Background

In recent years, OPG has been under increasing scrutiny from the Ontario Energy Board (OEB), as well as third-party interveners, to demonstrate that its operating costs are in line with those of other nuclear stations in Canada and the United States. Benchmarking evidence filed in OPG's last rate application indicated that OPG's operating costs substantially exceeded others in the industry based upon production unit energy costs (PUEC) during the years 2005 through 2007.[1] In its last Decision, the OEB expressed concern as to whether OPG management has adequately engaged in external benchmarking on an ongoing basis and whether such benchmarking has been appropriately used to drive business planning and operational improvement.[2]

In addition, a Memorandum of Agreement between the Province of Ontario and OPG set an expectation that "OPG will seek continuous improvement in its nuclear generation business and internal services. OPG will benchmark its performance in these areas against CANDU nuclear plants worldwide as well as against the top quartile of private and publicly owned nuclear

[1] OEB Decision EB-2007-0905 Re: Productivity and Benchmarking
[2] Ibid.

electricity generators in North America. OPG's top operational priority will be to improve the operation of its existing nuclear fleet."[3]

The OEB directed OPG management in its last Decision to: (1) produce further benchmarking studies, (2) use these studies to determine what level of cost and operational performance improvement is justified, and (3) develop an improvement plan for execution.[4]

1.3 Project Objectives

OPG has been involved in operational and financial benchmarking for many years. Multiple sources of comparative data have been, and continue to be, used. These include EUCG cost and production data, WANO non-cost performance data, and special third-party studies. However, formal external studies by OPGN have not been undertaken since late 2006. To address the OEB's Decision and to update its benchmarking baseline, OPG management retained ScottMadden to undertake further benchmarking studies to compare its nuclear financial and non-financial performance with industry peers. The objective of these studies is to clarify and confirm performance gaps and to identify potential cost and performance improvement areas for inclusion in OPG's 2010-2014 Nuclear Business Plan.

1.4 Project Approach

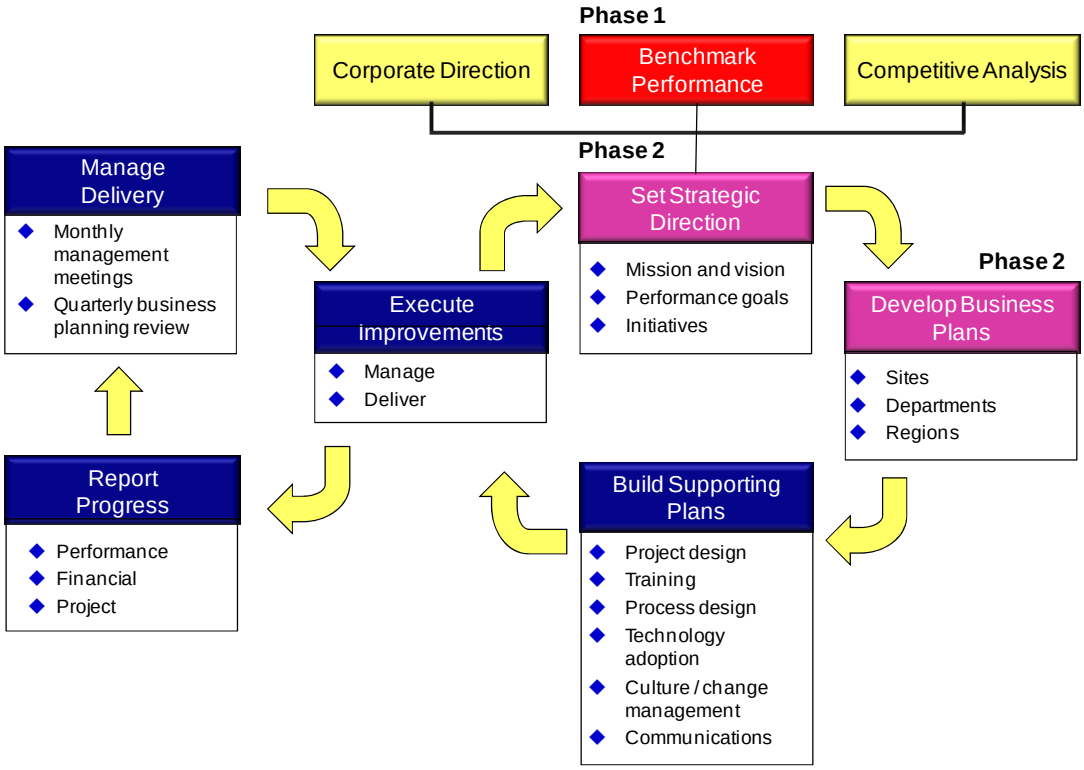
ScottMadden's approach to gap-based business planning is implemented in seven steps as listed below and illustrated in Figure 1.

1. *Benchmark Performance* – Compare the company to industry peers to determine relative standing on key operational and financial performance indicators
2. *Set Strategic Direction* – Use the benchmarks to help set fair and balanced performance targets and identify improvement initiatives that will move the company toward a desired level of performance compared to industry peers
3. *Develop Business Plans* – Prepare site and business unit plans that incorporate the improvement initiatives and ensure that the desired performance targets are achieved
4. *Build Supporting Plans* – Prepare implementation plans for the various improvement initiatives that will help drive the desired changes
5. *Execute Improvements* – Implement the improvement initiatives that will drive improved performance
6. *Report Progress* – Design and implement a reporting process that will effectively track the implementation of improvement initiatives and the delivery of performance improvement
7. *Manage Delivery* – Design and implement a process to ensure that those responsible for implementing the improvement initiatives are held accountable for successful implementation of the initiative and for the delivery of the associated business benefits

[3] 2008 Memorandum of Understanding between the Province of Ontario and Ontario Power Generation
[4] OEB Decision EB-2007-0905 Re: Productivity and Benchmarking

The OPG Nuclear 2009 Benchmarking Project, undertaken in response to the OEB Decision, was designed to address the first three of these steps. Phase 1 addressed *Step 1 – Benchmark Performance*, while Phase 2 addressed *Step 2 – Set Strategic Direction* and *Step 3 – Develop Business Plans*. Phase 1 was performed from March 24 through May 22, 2009, and consisted of a comparative analysis designed to establish current performance gaps at each OPG nuclear station against relevant top-performing peers. The purpose was to enhance understanding of "how much to improve." Phase 2 was performed from May 23 through September 11, 2009 and consisted of using the comparative analysis from Phase 1 to (a) identify where cost and operational improvements are warranted and (b) to formulate targets and action plans for achieving these improvements.

Figure 1 – ScottMadden's Approach to Gap-based Business Planning



2.0 Project Overview

The OPG Nuclear 2009 Benchmarking Project was undertaken in two phases. Each is discussed below.

2.1 Phase 1 Overview

During Phase 1 ScottMadden personnel, assisted by OPG, (a) identified the key performance metrics which would be benchmarked, (b) identified the most appropriate peer groups for comparison, and (c) prepared supporting analyses, charts, and a formal benchmarking report. OPG personnel supplied the OPG data used for comparison and provided insight regarding key factors believed to contribute to specific performance gaps. The results were documented in the *OPG Nuclear 2009 Benchmarking Report* delivered to OPG management on July 2, 2009.

Figure 2 provides a summary of OPG's plant-level performance as of 2008 compared to the benchmark panel for each of the 19 key performance metrics benchmarked during the study.

Figure 2 – Summary Comparison of 2008 OPGN Performance to Industry Benchmarks

Metric	Best Quartile	Median	Pickering A	Pickering B	Darlington
Safety					
All Injury Rate	[redacted]	[redacted]	0.73	0.96	1.04
2-Year Industrial Safety Accident Rate	0.05	0.09	0.14	0.07	0.04
2-Year Collective Radiation Exposure (man-rem per unit)	62.15	81.84	44.2	95.81	72.83
Airborne Tritium (TBq) Emissions per Unit	48.0	101.0	101.0	50.7	40.0
Fuel Reliability (microcuries per gram)	0.000001	0.000165	0.00059	0.00159	0.00025
2-Year Reactor Trip Rate (# per 7,000 hrs)	0.00	0.33	1.22	0.26	0.00
3-Year Auxiliary Feedwater System Unavailability	0.0014	0.0020	0.0119	0.0040	0.0017
3-Year Emergency AC Power Unavailability	0.0024	0.0076	0.0081	0.0091	0.0020
3-Year High Pressure Safety Injection Unavailability	0.0001	0.0037	0.0012	0.0001	0.0001
Reliability					
WANO NPI (Index)	96.19	62.46	60.84	60.93	95.67
2-Year Forced Loss Rate (%)	0.68	3.79	37.90	18.19	0.93
2-Year Unit Capability Factor (%)	90.97	84.31	56.6	73.17	91.99
2-Year Chemistry Performance Indicator (Index)	1.00	1.01	1.13	1.25	1.00
1-Year Online Elective Maintenance (work orders/unit)	218	278	425	695	311
1-Year Online Corrective Maintenance (work orders/unit)	4	7	14	28	11
Value for Money					
3-Year Total Generating Costs per MWh ($/Net MWh)	28.66	32.31	92.27	58.68	30.08
3-Year Non-Fuel Operating Costs per MWh ($/Net MWh)	18.06	21.28	82.62	50.95	25.10
3-Year Fuel Costs per MWh ($/Net MWh)	5.02	5.37	2.64	2.68	2.62
3-Year Capital Costs per MW DER	32.79	46.22	32.07	32.44	18.79

KEY: Green = best quartile performance/max NPI points achieved if applicable
White = 2nd quartile performance
Yellow = 3rd quartile performance
Red = lowest quartile performance

In our opinion, the *OPG Nuclear 2009 Benchmarking Report* presents a fair and balanced view of OPG's operating and financial performance compared to other operators in the nuclear generation industry. The results indicate that OPGN performs well across a broad range of industry operational measures, that the Darlington station is within first or second quartile on a majority of measures, but OPG is clearly challenged with respect to reliability and cost at the two Pickering stations.

Comparatively poor operational and cost performance of the Pickering stations lowers OPG's overall performance compared to other nuclear fleet operators. The impact is shown in the company's relative standing on two key operator level comparisons. The first is the WANO nuclear performance index (NPI) and the second is total generating costs per MWh.

The WANO NPI is designed to provide a comprehensive overview of a nuclear operator's overall operating performance. OPG's results for this indicator are highlighted in Figure 3. The rankings were calculated using the average (mean) results for the units in operation during the given year. The WANO data set is comprised of 20 major operators. A listing of the operators and plants can be found in the appendix of the *OPG Nuclear 2009 Benchmarking Report*. The results are not weighted in any way.

Figure 3 – Average WANO NPI Rankings, 2006–2008[5] per WANO Data

	2006	2007	2008
[redacted]	9	8	1
	4	5	2
	2	1	3
	7	3	4
	19	17	5
	12	13	6
	5	9	7
	3	4	8
	6	10	9
	11	6	10
	8	11	11
	10	7	12
	1	2	13
	13	12	14
	14	14	15
	15	15	16
OPG	17	16	17
[redacted]	20	19	18
	16	20	19
	18	18	20

OPG's WANO NPI ranking is low in comparison to other operators within the group. [redacted] OPG

[5] Nuclear Performance Index (NPI), prepared by the World Association of Nuclear Operators (WANO)

ranked 17 out of a list of 20 fleet operators. Low unit capability factor (UCF) and high forced loss rate (FLR) are the primary contributors to OPG's relative ranking.

A second key operator-level performance indicator is total generating costs per MWh. Total generating costs per MWh is the highest indicator of an operator's overall financial performance. This metric incorporates non-fuel operating costs, fuel costs, and capital costs, and represents the "all in" cost of producing each MWh of power.

The EUCG data set is comprised of 16 major operators. A listing of the operators and plants can be found in the Appendix A. OPG's standing among these 16 North American fleet operators is highlighted in Figure 4 below.

Figure 4 – Three-Year Total Generating Costs per MWh Rankings, 2005–2008 per EUCG Data

	2005	2006	2007	2008
[redacted]	2	1	3	1
	6	3	2	2
	1	9	9	3
	3	5	4	4
	10	14	10	5
	14	7	8	6
	4	6	5	7
	7	4	1	8
	9	11	6	9
	8	2	12	10
	13	8	11	11
	11	10	7	12
	12	12	15	13
	5	13	14	14
	15	15	13	15
OPG	16	16	16	16

It should be noted that OPG's financial and operational performance relative to its peers is impacted by differences in design technology, the number of reactors onsite, the geographic size of the site, reactor age, and operational condition in addition to low capability factors at both the Pickering A and Pickering B sites. It should also be noted that OPG and Bruce Power are the only CANDU operators that reported comparable EUCG data.

At the conclusion of Phase 1, ScottMadden worked with OPG personnel to develop a *Benchmarking Report Procedure* which will be incorporated into OPG's standard business planning procedures. OPG personnel were trained in this procedure and should be capable of independently updating the benchmarking report in support of future business planning cycles.

2.2 Phase 2 Overview

During Phase 2, ScottMadden personnel worked with OPGN Finance to incorporate gap-based business planning practices into the company's existing business planning process. Phase 2 was divided into the following four tasks:

- Task 1 – Develop Gap-Based Business Plans (Site and Support Units). This task consisted of two primary sub tasks: (1) working with OPGN project core team and Nuclear executives to convert the industry benchmarks from Phase 1 into specific performance targets to be used during the gap-based planning cycle, and (2) working with the three nuclear sites and the six nuclear support units to identify specific improvement initiatives capable of achieving the established targets for their sites or units.

- Task 2 – Identify Functional Area Improvement Strategies. In addition to working with the nuclear sites and support units, ScottMadden also worked with 16 functional/peer teams to identify a broad range of fleet-wide improvement initiatives that will also help contribute to achieving the targets set by OPGN management. These were designed to supplement the business unit specific initiatives discussed under Task 1.

- Task 3 – Develop Staffing and Organization Plan. This task was also divided into two subtasks. The first involved comparing OPGN staffing levels to industry peers in North America. These comparisons were provided to the site, support unit, and functional teams to highlight staffing discrepancies and to encourage investigation of best practices associated with reduced staffing levels. The second subtask involved preparing a detailed staffing work program analysis for the Radiation Protection function. This was performed as a pilot to demonstrate the approach used by ScottMadden with other nuclear fleet operators to determine appropriate staffing levels for specific nuclear functions.

- Task 4 – Prepare Final Assessment Report. The final task during Phase 2 involved preparing the present report. This report includes: (a) documentation of the activities undertaken during Phase 2, and (b) an assessment of the degree to which OPG has successfully piloted a gap-based business planning process and used this process to identify and drive meaningful improvements capable of addressing its current performance gaps.

In Section 3.0 of this report, we examine in more detail the activities and deliverables associated with Tasks 1 through 3 of the Phase 2 workplan. In Section 4.0, we provide our assessment of the degree to which OPG has successfully piloted a gap-based business planning process and used this process to identify and drive meaningful improvements capable of addressing current performance gaps.

3.0 Phase 2 Activities and Key Deliverables

3.1 Develop Gap-based Business Plans (Phase 2, Task 1)

Task 1 consisted of assisting OPGN management establish meaningful performance targets and then develop site and support unit plans to achieve these targets. This task has two subtasks, each of which is discussed below.

3.1.1 Target Setting

ScottMadden worked with OPGN management to identify and establish performance targets for a total of 48 performance metrics. This was accomplished in three steps as described below.

Step 1 – Identify Performance Metrics

The first step in target setting was to identify and agree upon the performance metrics for which targets would be set. To prepare for this, ScottMadden assembled a list of key performance measures used by OPGN at the time the *OPG Nuclear 2009 Benchmarking Report* was prepared (May 2009). These metrics are listed in Appendix B which also shows the OPGN reports in which the metrics were used.
The planning team then reviewed these metrics and agreed upon the key metrics which should be used for target setting and business planning.

Figures 5 and 6 present the final list of selected metrics grouped according to OPGN's four cornerstone values (Safety, Reliability, Human Performance, and Value for Money). Figure 5 presents the final performance metrics used to address station performance, while Figure 6 presents the final performance metrics used to address business support unit performance. The list of metrics shown in Figures 5 and 6 vary slightly from those shown in Appendix B. A few metrics were omitted as being of lower value and PUEC was replaced with Total Generating Cost since this is a better comparator of financial performance. No other additions were made since OPGN performance metrics are in line with those typically used by leading nuclear fleet operators.

Step 2 – Conduct Target-Setting Sessions

The next step in target setting was to prepare for, and conduct, a series of target setting meetings with the OPGN Nuclear Executive Committee (NEC). Two target-setting sessions were held. The first, held on June 8, 2009, focused on setting operational performance targets. The second, held on June 15, 2009, focused on setting financial performance targets. The purpose of both sessions was to assist the executive team in reaching consensus on the performance targets that OPGN would commit to for the next five-year business plan (2010-2014).

For the first target-setting session, the executive team set operational performance targets only for the year 2014. Each NEC member committed to their respective 2014 targets based upon their specific situations and their understanding of the factors contributing to the current performance gaps, as challenged by the CNO and the rest of the executive team. The sites and support units were then instructed to fill in the interim years in their final business plans

following the meeting. This allowed the sites and support units to determine the pace in which the operational targets would be achieved based upon the specifics of their site and support unit action plans. For the second target-setting session, the executive team set financial performance targets for the interim planning years as well as for 2014. The additional direction provided in terms of financial targets was required in order to ensure that each site and support unit met the financial obligations of OPGN as a whole.

Figure 5 – Performance Metrics – Nuclear Stations

Safety 1. All Injury Rate 2. Collective Radiation Exposure 3. Fuel Reliability 4. Environment Index 5. Accident Severity Rate 6. Industrial Safety Accident Rate 7. SS – Auxiliary Feedwater System Unavailability 8. SS – Emergency AC Power Unavailability 9. SS – High Pressure Safety Injection Unavailability 10. Reactor Trip Rate (WANO) 11. Airborne Tritium Emissions	**Human Performance** **1. Event Free Day Resets** 2. Corrective Action Program Quality 3. Corrective Action Program Root Cause Effectiveness 4. Corrective Action Program Timeliness 5. Training Index
Reliability 1. Nuclear Performance Index 2. Unit Capability Factor 3. Forced Loss Rate 4. Net Electrical Production 5. Chemistry Performance Indicator (WANO) 6. Plant Condition Index 7. OCMB – On-line Corrective Maintenance Backlog 8. OEMB – On-line Elective Maintenance Backlog 9. ERI – Equipment Reliability Index 10. Plant Reliability List 11. BP Planned Outage Performance 12. System Health Improvement Effectiveness (%) 13. Criticality 1 Deferral of PMs (Average # of PMs/unit)	**Value for Money** 1. OM&A – Base & Outage 2. Non-Fuel Operating Cost per MWh 3. Total Generating Cost per MWh 4. Projects Available for Service

To assist in setting both operational and financial performance targets, the executive team was provided with a targeting worksheet for each cornerstone area showing the following data for each performance metric:

- 2008 actual values
- 2009 projected values
- Existing targets from the prior business plan (2009-2013)
- North American PWR/PHWR best quartile and median values (for benchmarked metrics)
- CANDU best quartile and median values (for benchmarked metrics)

Other material provided included graphs showing 2003-2008 trend lines for each operational metric as well as projections out to 2013 based upon prior business plan targets. These graphs also showed the change in "best quartile" thresholds over time and highlighted the degree to

which prior plans would (or would not) close the performance gap.[6] It should be noted that, prior to ScottMadden's involvement, the NEC executive team had been made aware of the CNO's expectations for the 2010 Nuclear business plan, including a minimum $40M per year reduction in OM&A costs.

Figure 6 – Performance Metrics – Support Units

Safety 1. No Additional Safety Non-Plant Metrics	**Human Performance** No Additional Human Performance Non-Plant Metrics
Reliability 1. Incinerate Liquid Waste 2. Western Used Fuel Dry Storage Facility Capability Factor 3. Inventory Accuracy 4. Stock Out Materials 5. Transportation Package Maintenance Compliance 6. Meet BP and OPG needs for Accepting Low Level Waste Volumes 7. Raditation Material Transportation Preventable Collision Rate 8. OPG Outage Scope Delivered on Schedule 9. IM&CS Equipment Condition Index	**Value for Money** 1. Nuclear Waste Liabilities – Internal 2. NWMD Capital/MFA 3. Inventory Creep 4. Material Requested Not Issued 5. Total Process Costs

In preparation for the second target-setting session (focused on financial targets), ScottMadden prepared five hypothetical scenarios for each site and support unit. The scenarios showed "Total Non-Fuel Operating Costs" and "Non-Fuel Operating Costs per MWh" under various cost reduction assumptions. The scenarios do not reflect ScottMadden's presumption of what is appropriate or achievable for OPGN. Rather, they are indicative of the financial impact of attaining relative degrees of cost reduction. The purpose was to assist the executive team understand the degree of cost reduction required to achieve median or best quartile performance as well as other hypothetical, but more moderate, cost reduction options.

The five scenarios were as follows:

- Scenario 1 – Base Case (prior 2009-2013 Business Plan with additional $40M reduction in each year beginning in 2010; 2014 trended)
- Scenario 2 – Base Case Less 2% (beginning in 2011)

[6] For operational metrics (Safety, Reliability and Human Performance), the "best quartile" benchmarks for 2008 were assumed to remain constant through the end of 2014. For the financial metrics (Value for Money), the "best quartile" and median benchmarks were adjusted for anticipated cost inflation.

- Scenario 3 – Base Case Less 4% (beginning in 2011)
- Scenario 4 – Cost Reductions Required to Achieve Median Performance (by 2014)
- Scenario 5 – Cost Reductions Required to Achieve Best Quartile Performance (by 2014)

It was not expected that the sites or support units would adopt any particular scenario and, in fact, they did not. In the end the business unit executives used the scenarios as guidance and, consistent with operational performance target setting, committed to their respective 2014 targets based upon their specific situations (e.g. the need for incremental expenditures and increased outage days to implement Pickering B Continued Operations) and their understanding of the drivers to the current performance gaps, as challenged by the CNO and the rest of the executive team. Appendix C presents the cost analysis scenarios prepared for the three generation stations (based upon Total Non-Fuel Operating Costs). Appendix D presents the cost analysis scenarios prepared for the three generation stations and business support units (based upon OM&A Costs).

Using the cost analysis scenarios as guidance, the business unit executives worked with their business unit directors to calculate their respective interim year targets. The resulting financial targets for OPGN as a whole are summarized in Figure 7 below with and without the assumption regarding implementation of the Continued Operations program at Pickering B (COOP). They represent what the business unit executives believe are difficult but achievable targets and were developed with encouragement from the CNO to challenge their teams and exceed previous commitments.

Figure 7 – Projected Cost Savings Resulting From Gap-based Business Planning ($000s)

Total Cost Savings (w/ COOP)	2010	2011	2012	2013	2014	CUM TOTAL
Total 2009-13 Plan OM&A [1]	$1,558,749	$1,482,286	$1,516,763	$1,663,731	$1,676,002	$7,897,531
Total 2010-14 Plan OM&A Targets	$1,519,577	$1,454,490	$1,476,432	$1,605,877	$1,596,216	$7,652,591
Total $ Savings Over Prior Plan	$39,172	$27,796	$40,332	$57,854	$79,786	$244,940
Total OM&A % Change	-2.51%	-1.88%	-2.66%	-3.48%	-4.76%	-3.10%

Total Cost Savings (w/o COOP)	2010	2011	2012	2013	2014	CUM TOTAL
Total 2009-13 Plan OM&A [1]	$1,542,949	$1,482,286	$1,516,763	$1,663,731	$1,676,002	$7,881,731
Total 2010-14 Plan OM&A Targets	$1,503,777	$1,429,390	$1,455,632	$1,576,877	$1,564,616	$7,530,291
Total $ Savings Over Prior Plan	$39,172	$52,896	$61,132	$86,854	$111,386	$351,440
Total OM&A % Change	-2.54%	-3.57%	-4.03%	-5.22%	-6.65%	-4.46%

[1] 2014 amounts were not included in 2009 business plan. Values shown for 2014 amounts were derived by ScottMadden by reference to the 2009-2013 trend.

The tables show that the revised planning process facilitated management's ability to set financial targets which are expected to result in cumulative cost savings ranging between 3.1% and 4.5% over what would have been expected under OPGN's prior five-year business plan (2009-2013). The cumulative cost savings over the period 2010 through 2014 total between $244.9M and $351.4M depending upon whether or not the cost of Pickering B Continued Operations is included. While the cost savings are not adequate to achieve best quartile financial performance, they do represent a significant commitment to future cost reduction and an improvement over both the current situation and that previously planned.

Step 3 – Finalize and Distribute Targets

Once the sites and support units had set their operational and financial targets, they were subsequently distributed by the CNO in a formal planning memorandum to the NEC members dated June 30, 2009. These targets then served as financial guidance to both business units and the functional/peer teams as they considered the actions and improvement plans that would be required to achieve them. The specific targets distributed are presented in Appendix E.

To illustrate the impact that achieving the proposed targets will have on OPGN's performance relative to other nuclear fleet operators, ScottMadden prepared a hypothetical benchmarking comparison showing OPGN's "future performance" (assuming all targets are achieved) to today's industry performance levels. This comparison is presented in Figure 8 below.

Figure 8 – Hypothetical Comparison of OPGN Performance to Industry Benchmarks Assuming Achievement of all Operating and Financial Performance Targets by 2014

Metric	Best Quartile	Median	Pickering A	Pickering B	Darlington
Safety					
All Injury Rate	[redacted]	[redacted]	1.2	1.2	1.2
2-Year Industrial Safety Accident Rate	0.05	0.09	0.15	0.15	0.15
2-Year Collective Radiation Exposure (man-rem per unit)	62.15	81.84	125	82	66
Airborne Tritium (TBq) Emissions per Unit	48.0	101.0	81.1	36.5	27.0
Fuel Reliability (microcuries per gram)	0.000001	0.000165	0.0005	0.0005	0.0005
2-Year Reactor Trip Rate (# per 7,000 hrs)	0.00	0.33	0.50	0.50	0.50
3-Year Auxiliary Feedwater System Unavailability	0.0014	0.0020	0.0200	0.0200	0.0200
3-Year Emergency AC Power Unavailability	0.0024	0.0076	0.0250	0.0250	0.0250
3-Year High Pressure Safety Injection Unavailability	0.0001	0.0037	0.0200	0.0200	0.0200
Reliability					
WANO NPI (Index)	96.19	62.46	70.9	81.3	98.6
2-Year Forced Loss Rate (%)	0.68	3.79	4.00	4.00	1.25
2-Year Unit Capability Factor (%)	90.97	84.31	84.3	81	93.3
2-Year Chemistry Performance Indicator (Index)	1.00	1.01	1.04	1.04	1.01
1-Year Online Elective Maintenance (work orders/unit)	218	278	278	300	218
1-Year Online Corrective Maintenance (work orders/unit)	4	7	9	15	5
Value for Money					
3-Year Total Generating Costs per MWh ($/Net MWh)**	37.97	42.60	70.81	64.80	36.75
3-Year Non-Fuel Operating Costs per MWh ($/Net MWh)*	25.53	29.08	60.07	52.47	28.82
3-Year Fuel Costs per MWh ($/Net MWh)	7.62	8.15	7.45	6.01	5.43
3-Year Capital Costs per MW DER	35.49	50.03	34.73	34.67	20.37

*OPG's 2014 Total Generating Costs per MWh target is inclusive of OPEB. To ensure accurate comparison, best quartile and median values were similarly adjusted upward to account for OPEB

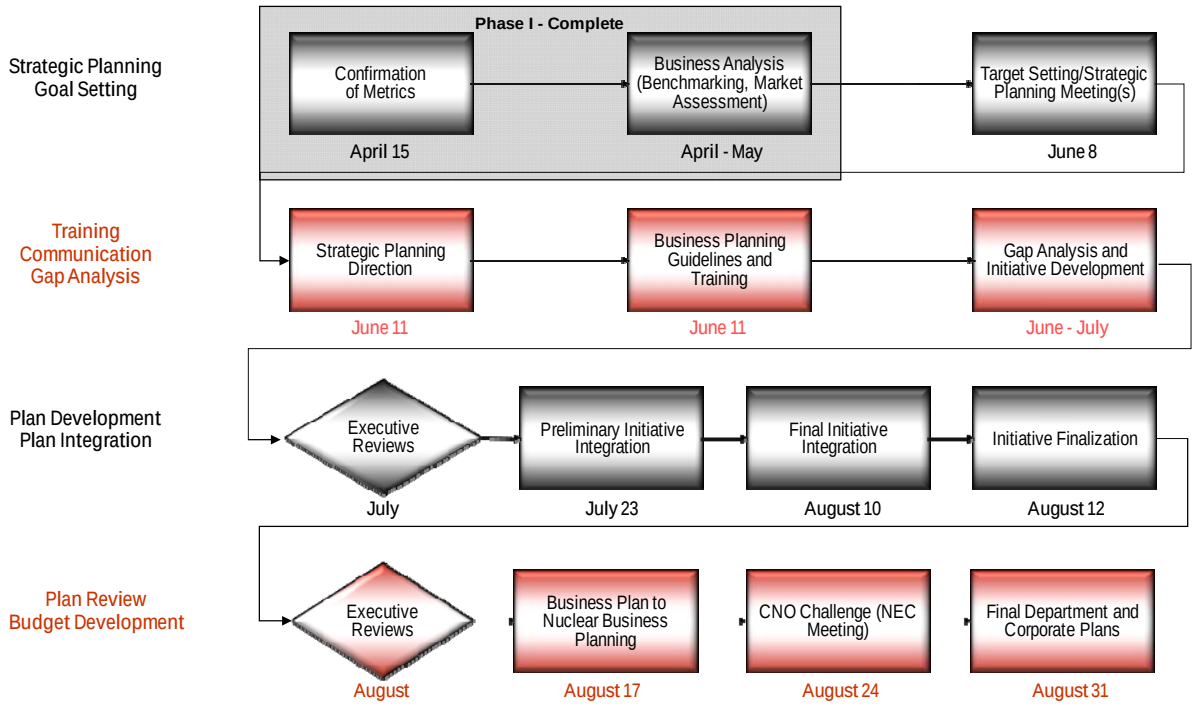
KEY: Green = best quartile performance/max NPI points achieved if applicable
White = 2nd quartile performance
Yellow = 3rd quartile performance
Red = lowest quartile performance

By comparing Figure 2 with Figure 8 the reader can assess the degree of improvement that will result should OPGN achieve its desired targets over the next five years. The reader is advised to remember that industry performance levels may change over this same time period so the comparison is directional only.

3.1.2 Business Plan Development

In parallel with the target setting process, ScottMadden and the project core team began working with the site and support unit business managers to develop the process and templates required to implement gap-based business plans for each site and support unit. These site and support unit plans were then consolidated for subsequent CFO, CEO, and OPG Board of Director review, which was outside the scope of ScottMadden's Phase 2 involvement. The overall process used to develop these plans is illustrated in Figure 9. This process was overlaid upon OPGN's traditional business planning cycle which was already underway (including a memorandum dated March 12, 2009 setting out CNO expectations for 2010 Business Plan) consistent with OPG's corporate business planning process. This resulted in a good deal of additional planning effort for all involved during the summer months of June, July, and August of 2009.

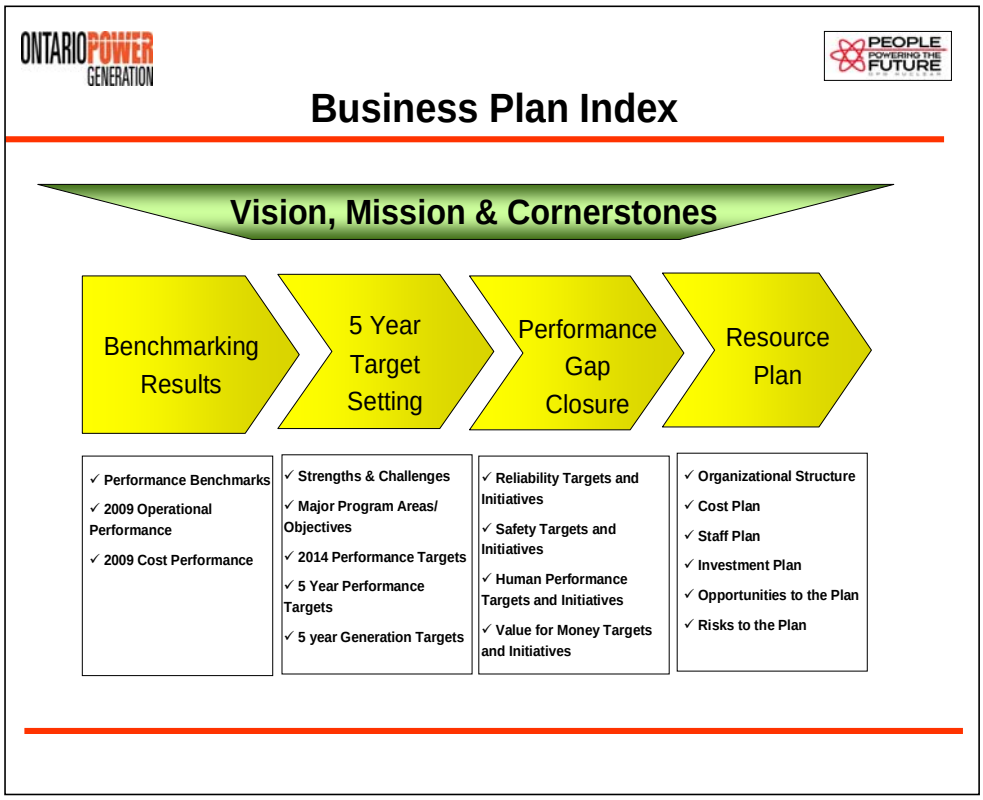
Figure 9 – Overview of 2009 OPG Gap-based Business Planning Process



ScottMadden's role in assisting the development of the site and support unit business plans consisted of conducting initial meetings with the site and business unit business managers, explaining the gap-based business process to be followed, providing initiative improvement templates and providing guidance throughout the process. During this process, ScottMadden and the OPGN Finance team played a coordinating and support role. The sites/support units had primary responsibility for identifying and documenting the changes they desired to implement to help achieve their committed performance targets.

Once the fleet-wide initiatives were developed by the functional/peer teams (see Section 3.2 below), these initiatives were consolidated with the site/support unit initiatives to develop an integrated business plan for each site/business unit. The business plan for each site/support unit followed a standard template, the contents of which are outlined in Figure 10.

Figure 10 – Standard Outline for Site/Support Unit Business Plan

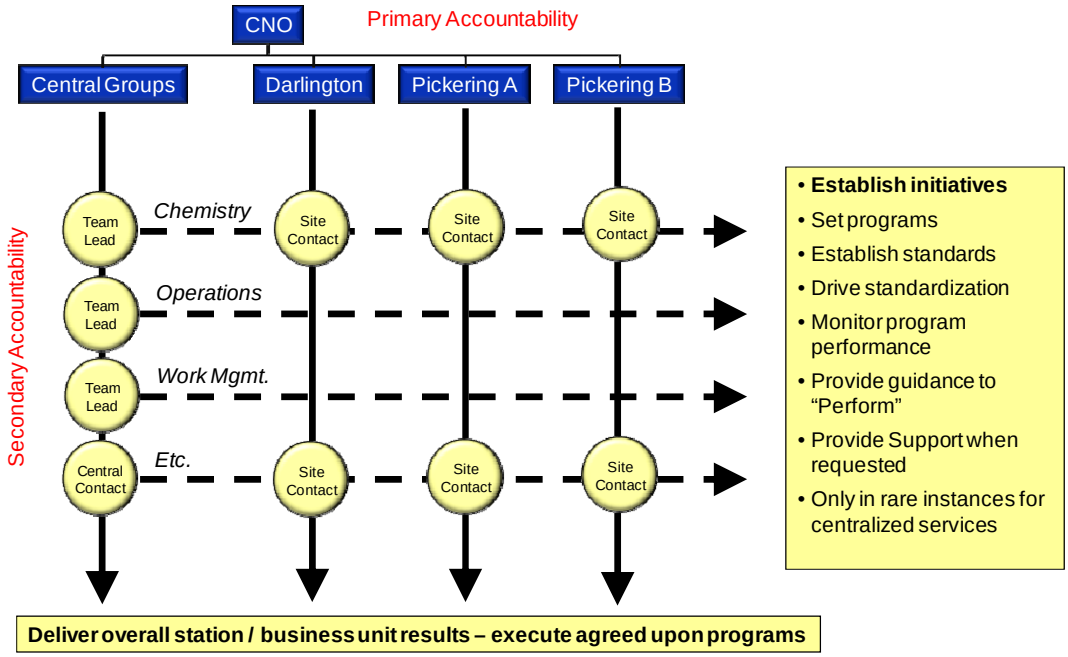


3.2 Identify Functional Area Improvement Initiatives (Phase 2, Task 2)

Under Task 2, ScottMadden assisted OPG in leveraging their internal functional/peer teams for the purpose of identifying fleet-wide improvement initiatives that will contribute toward achieving the company's five-year planning targets. The overlay of fleet-wide improvement initiatives on top of those identified and developed by the sites and support units provides an additional layer of focus and accountability and brings a "fleet-wide" perspective to the business unit plans.

While each generation site is accountable for all activities conducted on that site, the functional/peer teams are responsible for identifying critical fleet-wide initiatives that should be adopted to narrow/ close performance gaps relative to OPGN's peer group. Since each initiative is eventually executed at a particular site or business unit there is, in effect, both site and functional accountability for progress. This approach to primary and secondary accountability is illustrated in Figure 11.

Figure 11 – Primary and Secondary Planning and Execution Accountability



Once the process of agreeing upon the fleet-wide initiatives that would be adopted was completed, these initiatives were consolidated with the site/support unit initiatives to develop an integrated business plan for each site/business unit.

The identification of functional improvement initiatives was accomplished in three steps as described below.

Step 1 – Identify the Functional Teams

The first step was to identify the existing functional teams and their internal leadership. During this step, a total of 16 different functional teams were identified. Four of the teams participating in this effort were formally established "peer teams" while the remainder were functional business units or service teams. A list of the functional/peer teams that were charged with identification of fleet-wide improvement initiatives is presented in Figure 12.

Each functional/peer team was assigned someone from the core team to provide process and administrative support. A representative from Nuclear Finance was also assigned to each team to support the team in developing the business case supporting the initiative. Finally, selected teams (maintenance, outage, engineering, equipment reliability, and materials and services) were provided additional consulting support by representatives from ScottMadden and Model Performance LLC.

Figure 12 – OPG Functional/Peer Teams Participating in the 2009 Planning Cycle

Functional Area	Supporting Organization	Central Contact	Site Contact Darlington	Site Contact Pickering A	Site Contact Pickering B
Operations	NP&T	Dave Walsh [Mgr. Operations Programs]	Peter King	Ken Gilbert	Shane Ryder
Fuel Handling	NP&T	Dave Walsh [Mgr. Operations Programs]	J.R. Pinnegar	John Lennarduzzi/Mike Kramberger	Dana Kimpel
Maintenance	NP&T	Doug Radford [Mgr. Maint. Programs]	Jim Whyte	Chris Johnston	Bill Owens
Work Management	NP&T	Larry Upson	Arthur Despres	Mike Topolnisky	Vince Smyth
Outage	NP&T	Jim Woodcroft [Mgr. Outage Programs]	1 of Ross McCord/Dan Norrad	1 of Dana Letts/Tim Cullen	1 of Walt Arnsby/Ajay Upadhyaya/Chris MacKenzie
Engineering	Engineering	Fred Dermarkar [Dir. Eng. Services]	Steve Woods	Robert Black	Keith Howard
Equipment Reliability / Plant Condition	Engineering	Paul Vonhatten [No sanctioned peer team yet]	Jim Whyte	Jennifer Noronha	Chris Mackenzie
Chemistry	Engineering	Michael Brett [Mgr. Chem., Metal.& Weldg] (Elio Fracalanza effect. 25JUN)	Liette Lemieux	Elio Fracalanza (Mike Brett effect 25JUN)	Elio Fracalanza (Mike Brett effect 25JUN)
Industrial Safety	Corp. HR	Greg Jackson [Mgr. Safety Strategy]	Paul Hurley	Jay Dellandrea (PN)	
Radiation Protection	NP&T	Robin Manley [Mgr. Health Physics]	Peter Burnham	Nick Pistilli	Scott Cameron
Fire Safety	NP&T	Don Trylinski [Mgr. Fire Protection Programs & Training]	Kelly Serson	Richard Hadden	Richard Hadden
Environment	NP&T	Frank Bajurny [Mgr. Environment Programs]	Liette Lemieux	Elio Fracalanza/ Tom Van Horne	Elio Fracalanza/ Tom Van Horne
Training	NP&T	Greg Cornett [Mgr., Training Programs]	Frank Howie	Ron Moore	Jamie Chevers
Financial Performance	Finance	Carla Carmichael [Dir., Nuclear Bus. Planning]	Sabine Parks	Louie Shoukas	John Blazanin
Performance Improvement / HP	PINO	Tom Smart [Mgr., Perf. Improvement]	Jeff Lehman	Ron Maruska	Ian Lake
Materials and Services	NSC	Staff are all from NSC. Planning Contacts: Stephanie Powers, Warren Williams, Ann Sharp, Stuart Harris			

The consulting support provided to these teams included facilitated meetings during which the following material was covered:

- A review of current practices
- An inventory of all existing change initiatives currently underway
- Identification of key "game changing" practices in use at leading nuclear fleet operators and assistance in understanding how these practices are used and their potential impact

Step 2 – Identify and Document Improvement Initiatives

The functional teams were then requested to identify fleet-wide initiatives which could contribute to achieving OPGN's performance targets. They participated in a formal kick-off training session and then were given approximately eight weeks to identify and document improvement opportunities.

All teams were provided a standard "Fleet Initiative Planning Template" to complete for each improvement initiative they identified. The content of each template included the following:

- The name of the initiative
- A short description of the initiative
- The cornerstone metric that the initiative improves
- The name of the owner of the initiatives
- The results expected from the initiative (by location and by year)
- The business or implementation risks associated with the initiative
- The additional resources required to achieve the initiative by category and location (if above base "level of effort")
- An assessment of the technical difficulty associated with implementing the initiative
- An assessment of the "people/culture change" difficulty associated with the initiative
- The start and end date of the initiative
- A Level 1 action plan for implementing the initiative

A sample initiative template can be found in Appendix F to this report.

Step 3 – Review and Consolidate Initiatives

The preliminary initiatives identified by the functional/peer teams were subject to a quality control and testing process that consisted of the following actions:

- Review by a Cross-Functional Review Team (COT Team). An ad-hoc Cross-Functional Review Team was established to identify initiatives that would require two, or more, functional organizations to address. This team consisted of several senior OPGN managers with cross-functional knowledge together with key members of the project core team. Members of the COT team included:

  — Director of Nuclear Programs
  — Director of Nuclear Protection Programs and Training
  — Director of Business Planning – Nuclear
  — Engagement Partner from ScottMadden, Inc.
  — Engagement Director from ScottMadden, Inc.
  — Representative of Model Performance LLC

  The COT team played a key role in identifying and consolidating complex cross-functional improvement initiatives. This team met on three occasions during the planning cycle.

- Review by the Site Directors. The preliminary initiatives were also reviewed by the Site Directors who met on three occasions to review and comment on the preliminary improvement initiatives. The Site Directors included:

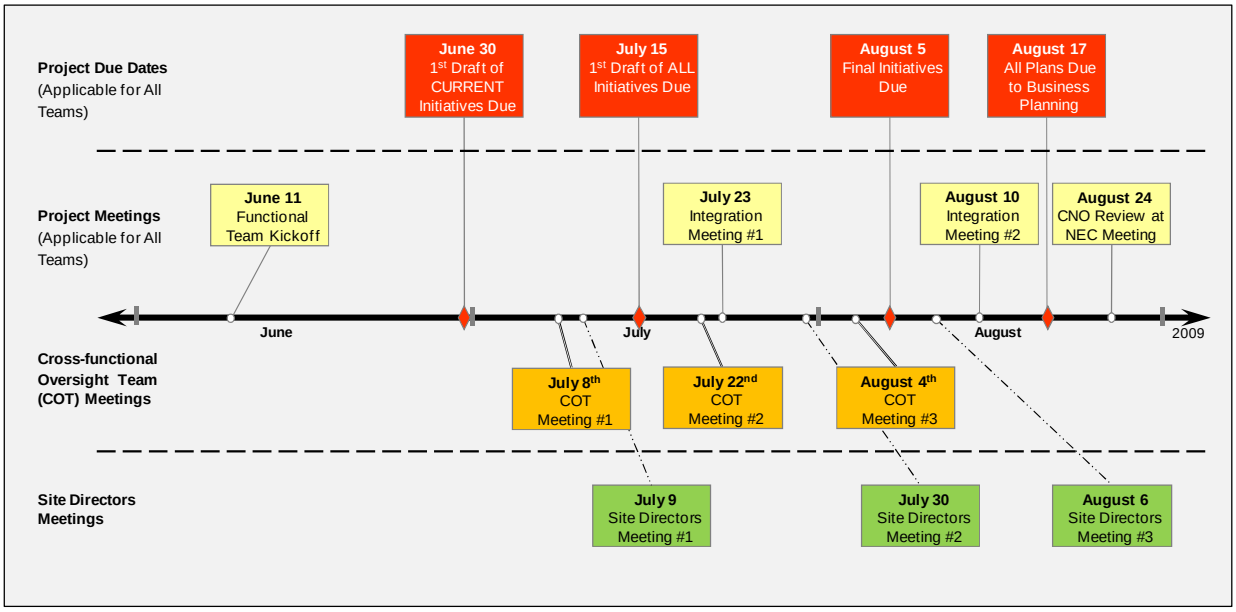
  — Director of Operations & Maintenance (DOM) from all three sites
  — Director Work Management (DWM) from all three sites
  — Director of Engineering (DOE) from all three sites

  The Site Directors played a critical role in ensuring that the most important performance issues were addressed and that the assumptions regarding site resources were adequately dealt with.

- Initiative Integration Meetings. In addition to the COT and Site Director meetings, the gap-based business planning process included two formal "integration and review" meetings designed to allow each functional/peer team to hear what improvement ideas were being proposed by the other functional/peer teams. Given the interconnected nature of work performed at nuclear plants, an improvement initiative proposed by one function may directly or indirectly result in changes in the performance of another function's activities and related performance metrics. It is important that these impacts be adequately identified and explored during the planning process.

The sequencing of these review meetings is highlighted in Figure 13. They concluded with the functional/peer teams presenting to the NEC on August 24, 2009. By this time, the initial 150 fleet improvement initiatives had been consolidated down to 46 key initiatives. Consolidation primarily resulted from the grouping related initiatives, the elimination of lower priority initiatives, and the balancing of workloads.

Figure 13 – Sequencing of Fleet Initiative Development and Review Meetings



During the subsequent week, a second NEC meeting was held to resolve questions that were raised at the August 24th meeting and the COT team met again to review and prioritize the initiatives. Factors considered during prioritization included: (a) the business benefit or impact, (b) the required investment of financial and human resources, (c) the logical sequencing of work, (d) the balance of workload over the planning horizon, and (e) the degree of culture change required. In the end, a total of 33 fleet-wide improvement initiatives were approved for incorporation into the site and support unit business plans. These initiatives are listed in Figure 14.

Figure 14 – Fleet-wide Improvement Initiatives Accepted for the 2010–2014 Business Plan

Top Priority Initiatives – New initiatives that require support outside of the normal course of business and identified as high priority by the functional teams

- EN-01 – Work Order Readiness
- EN-02 – Engineering Value for Money
- ER-01 – Standard Equipment Reliability Program
- OP-05 – Human Performance Improvement Program
- OU-02 – Outage Improvement Strategy
- MA-08 – Day Based Maintenance
- ER-02 – Improve PM Program

"Just do it" – New initiatives that will be completed as part of the normal course of business

- ER-03 – Critical Spares/Obsolescence
- MA-04 – Centralized Measurement and Test Equipment
- MA-06 – Maintenance "Helpers"
- MA-07 – Leverage DN OEMB Process
- MA-09 – Single Source Laundry
- FS-03 – Offer Fire Training
- IS-02 – Safety Behaviors Assessment
- IS-03 – Review Incident Counting Practices
- IS-04 – Constrain Training Qualifications
- FP-02 – Labour Cost Reduction
- PI-01 – CAP Improvement Program
- PI-03 – CAP is Core
- WM-01 – Backlog Reclassification
- RP-05 – Optimize Reactor Face Shielding
- RP-09 – Improve Fuel Machine Filtration
- TR-02 – Computer Based Training Increase
- TR-04 – Initial Authorization Training Program

"Ongoing" – Initiatives that are currently in process and will continue until completed

- MS-02 – Inventory Management
- MS-03 – Strategic Sourcing
- IS-01 – Musculoskeletal Disorder Prevention
- OP-02 – Work Management Performance Improvement Plan
- MA-01 – Improve FIN Effectiveness
- RP-26 – Area Mapping
- EN-03 – Improve Fuel Reliability Index
- RP-10 - Detritiation of Reactor PHT
- PI-02 – Implement Human Performance Rapid Response

The operational improvement and cost savings benefits associated with the functional improvement initiatives were specifically identified and then tied to one or more operational and/or financial performance gap that needed to be closed. When aggregated, these benefits were sufficient to close the gaps between current performance and targeted performance. Should the initiatives be implemented and should they achieve the benefits associated with them, they will significantly improve both OPGN's operational and financial performance.

In the opinion of ScottMadden, many of these improvement ideas would not have been identified using OPG's prior business unit planning process. Accordingly, we believe that the new approach was a significant factor contributing to OPGN's ability to produce a 2010-2014 Business Plan geared to achieve its organization-wide performance targets.

3.3 Develop Staffing and Organization Analyses (Phase 2, Task 3)

As part of the gap-based business planning process, ScottMadden worked with the OPGN core planning team to benchmark staffing levels and review the company's organization model. The purpose was not to develop formal staffing targets but to provide guidance and insight to the functional/peer teams and the business units in their development of improvement initiatives that would contribute to the achievement of OPGN's financial performance targets[7]. This effort consisted to three sub-tasks: (1) assembly and review of high-level industry staffing benchmarks by function, (2) completion of a detailed top-down staffing analysis for a single OPGN function, and (3) a review of OPGN overall organizational structure.

3.3.1 High-Level Staff Benchmarking by Function

To support the 2010-2014 business planning cycle, ScottMadden compared OPGN staff levels to those of other nuclear fleet operators in North America. This information was then provided to the sites/support unit business managers as well as to the functional/peer team leaders. The purpose in distributing this information was to assist these business planners identify areas/functions where staffing levels were inconsistent with those of leading companies (OPGN staffing is generally higher) so as to encourage the functional/peer teams to consider improvement ideas that might help improve the alignment in staffing levels.

Step 1 – EUCG Staffing Data Comparison

The first step was to use EUCG staffing data to prepare function-by-function staffing comparisons.[8] The EUCG data was normalized (for the number of reactor units) and a function-by-function comparison was prepared. EUCG data is subdivided into functions using a series of Work Program Structure (WPS) codes which largely reflect the NEI Standard Nuclear Process Model.[9]

A series of four comparisons were made to different sets (peer panels) of nuclear plants. Each of these comparisons is described below.

Panel 1 – All EUCG Companies. The first peer panel consisted of all EUCG companies. To summarize this panel, the best quartile (lowest staffing) and group median levels were identified. These values are presented in columns [redacted] and [redacted] in each of the four tables presented in Appendix G.

Panel 2 – Large Nuclear Stations. The second peer panel was a group of large nuclear stations. Those selected for comparison were Browns Ferry (TVA), Bruce Power, and Oconee (Duke Energy). Browns Ferry and Oconee were selected since they roughly compare to Darlington and Pickering B in terms of the number of reactor units per station. Bruce Power was selected since

[7] ScottMadden believes that setting staffing targets requires consideration of work tasks and outputs which would have required more time than was available during the current planning cycle. We did, however, conduct a pilot project demonstrating how this work is typically done. The pilot was prepared for the Radiation Protection function and is discussed in Section 3.3.2 of this report.
[8] EUCG, Nuclear Staffing Database, year-end values for 2008
[9] Nuclear Energy Institute, Nuclear Asset Management Process Description and Guideline, NEI AP-940. (NEI, May 2005)

it has both a large number of units and represents the application of CANDU technology. These comparisons are presented in columns [redacted] through [redacted] of Appendix G.

Panel 3 – Smaller Nuclear Stations. The third panel was a group of smaller stations consisting of Prairie Island (Xcel Energy), Nine Mile Point (Constellation), and Surry (Dominion). This group was compared to Pickering A. Although the technology deployed is different (PWR versus CANDU), the number of units at each station is the same (two) and the relative MW size of each unit is similar (500MW to 850 MW). These comparisons are shown in columns [redacted] through [redacted] of Appendix G.

Four separate data views were developed for each of these three panels. These views are listed below. Each view is documented in the separate table in Appendix G.

- Total Staff Summary (onsite employees + offsite employees + baseline contractors)
- Onsite Staff Summary (employees located at the generation site)
- Offsite Staff Summary (employees supporting the generation site, but not located at the site)
- Baseline Contractors Summary[10]

Panel 4 – Operator Level Data for Offsite Staff. The fourth peer panel consisted of comparisons of "offsite staffing" levels summarized at the operator level (e.g., all OPG sites combined) rather than at the station level per Appendix G. All staffing numbers in this comparison are on an absolute basis (not normalized by reactor unit). Only nuclear operating companies with two or more stations were included (11 companies plus OPG). No quartile or median metrics were calculated for this group. The results are shown in Appendix H.

The companies were presented in rank order (from left to right) based upon their total staffing. This comparison highlighted considerable differences between companies with respect to the number of offsite employees supporting nuclear stations. The number of such employees may reflect the total number of nuclear support personnel as well as the approach to where such personnel are located (i.e. onsite versus offsite). [redacted], reported 697 offsite employees supporting 10 stations and 17 units whereas OPGN reported 3,414 offsite employees supporting three stations and 10 units. The study team did not have adequate time to delve into the business drivers behind these variances or to ascertain which approach (i.e., support staff location) is more effective or efficient.

Step 2 – Bruce Power Functional Comparison

In addition to the staffing comparison using EUCG data, ScottMadden was able to prepare a second comparison of OPG staffing to Bruce Power based upon a functional analysis more closely attuned to the way in which Bruce Power organizes its staff to conduct work. This second comparison was prepared in cooperation with Bruce Power allowing both companies to share sensitive and confidential staffing information.

[10] Baseline contractors are non-employees who perform routine, ongoing functions as opposed to project-based contractors

The results of both the EUCG and the Bruce Power functional comparison showed that overall OPGN staff levels per unit exceed both the industry median and Bruce Power levels. OPGN staffing levels are higher than the peer groups for some functional areas and lower for others. For the most part, however, OPGN staff levels are generally higher than the comparison panels. It should be noted that, however, that staffing levels can be influenced by a company's approach to staffing project-based outage functions. Certain North American operators rely extensively on third-party contractors for such services, whereas others, including OPGN, largely rely on in-house resources.

When comparing staff levels one must be careful to consider the underlying work allocation which requires in-depth, top-down staffing analysis. The results of both the EUCG and Bruce Power functional comparison confirmed general assumptions regarding OPGN staffing levels and provided guidance and insight to the sites, functional/peer teams and the business support units in their development of improvement initiatives. The generally lower staffing levels found at other plants encouraged all of these teams to explore ways to deliver current service levels more productively and with fewer employees.

3.3.2 In-Depth, Top-Down Staffing Analysis Pilot

In order to demonstrate how detailed top-down staffing analysis can be used to identify and drive staffing reduction, ScottMadden piloted a top-down staffing analysis using the OPGN Radiation Protection (RP) function as an example. This effort involved: (a) identifying initial top-down benchmark targets based upon EUCG and Bruce Power staff levels for RP, (b) defining current OPGN activities for RP by position, (c) identifying the FTEs associated with each RP activity, (d) benchmarking these activities against peer companies (Bruce Power and Duke Energy), and (e) developing estimates of potential OPGN future staff levels. ScottMadden provided the methodology and templates used and facilitated the process.

The RP Pilot resulted in a number of recommended changes for future consideration by OPG, including: (a) the development of a standard organization structure for the RP function at each site, (b) a revised organization structure for RP services and training, (c) various process improvement recommendations, and (d) a potential reduction of 53 FTEs in the RP function (28%). These reductions would result from:

- Consolidation of resources performing similar job functions at Pickering A and Pickering B
- Elimination of positions dedicated to the new build initiative which has been postponed
- Reduction in the number of instructors required through utilization of computer-based training for courses and evaluations and right-sizing to fit the reduced number of RP staff

Of the potential 48 FTEs reduced, 35 would potentially be reassigned to other functional organization through improved resource alignment while 13 would be eliminated altogether. These changes were still being considered by OPGN at the time this report was prepared. A presentation of the standard site RP organization chart, the revised Health Physics organization chart, and a summary of the staffing analysis results are presented in Appendix I.

3.3.3 OPGN Organization Structure Review

In addition to completing a high-level staff benchmarking analysis, ScottMadden also examined the overall structure of the OPG Nuclear organization. The objective was to evaluate the OPG Nuclear organization structure (nuclear support group and top station level) for consistency with selected "design principles" employed at leading nuclear fleet operators. The following design principles were considered:

- Clear Accountability – Leading fleet operators organize to provide clear accountability for results. In nearly all cases, there is a single point of ownership for performing a particular function. Leading fleet operators do not dilute this focus with multiple/competing responsibilities (e.g., assigning a support responsibility such as training to those with operate responsibility such as plant managers).

- Station-based Accountability – Leading operators have established the nuclear station as the primary point of accountability for results. Site VPs are generally officer-level employees and have full accountability for the delivery of station operating results.

    — Business plans and performance reporting are organized around the station (supporting organizations are shown on station organization chart and costs roll to stations). Headcount is "assigned" to the stations.

- A Strong Plant Manager Focus – Leading fleet operators typically designate a single Plant Manager with responsibility for delivering all core site functions including Operations, Maintenance, Work Control, Chemistry, and Radiation Protection. (This role is separate from the site VP.) In addition, there is typically a single Operations Manager (often aided by the Shift Manager) who is separate from the Plant Manager and to whom the operating shifts report. This avoids having multiple Shift Managers report directly to Plant Manager.

    — The Plant Manager is the next in line to succeed the Site VP

- Adoption of the GOSP (Govern, Oversee, Support, and Perform) Framework – Several governance frameworks are in use by leading nuclear fleet operators to help clarify accountabilities when they are divided across a nuclear fleet. One of these frameworks is the "GOSP framework" which derives its name from the four key accountabilities which are identified under the framework.

  The GOSP framework, as well as other accountability frameworks, is used to ensure role clarity between different organizational units. Using this model calls for clearly distinguishing between the following responsibilities:

— Govern
  - Establish standards and associated accountabilities
  - Define and implement programs
  - Ensure a common definition of "best performance" and plans to achieve this
  - Drive standardization

— Oversee
  - Monitor performance
  - Provide guidance to those with *perform* role
  - Escalate and resolve issues

— Support
  - Provide support to Governance, Oversight, and Perform functions as needed

— Perform
  - Deliver results
  - Execute agreed-upon programs

Key GOSP principles include:

— All employees should understand their respective governance roles, i.e., governance, oversight, support or perform

— *Govern* and *oversee* responsibilities should be separated from *perform* responsibilities as much as possible

— Day-to-day operational (*perform*) responsibilities/functions generally report to the Plant Manager while longer-term strategic (*oversee*) responsibilities/functions report to the Site VP. Similarly, Operations, Maintenance, and Work Control (*perform*) should be under the Plant Manager whereas Training (*support*) is typically a nuclear corporate support unit

- Organization is Structured Around Business Needs not Incumbent Capabilities – The organizational structure should reflect key business functions and their respective requirements rather than the availability of certain personnel or their personal skills sets. The rule is "find people to fit the organization" – not "fit the organization to the person." While a balance must always be reached, the exceptions to this rule should be few.

- Standardized Fleet Organizational Structure and Staffing – Organization structures and staffing levels found at one nuclear station should be equal to, or similar, to those employed at another "sister" or similar station.

  — This facilitates policy and process documentation, fosters quicker sharing of leading practices between sites and increases the effectiveness of personnel when they are transferred between sites

— Improvements in organization structures at one station should be adopted at the remaining stations when management agrees that they represent the fleet's "best" practice. There should be an established process for identifying such practices, gaining agreement as to their benefits and then rolling them out to the other sites

— Spans of control and management layers should be standardized between sites and should be in line with industry standards

By comparing these design principles to OPGN's organization structure, ScottMadden developed the observations and recommendations presented in Figure 15 for the future consideration of OPG.

Figure 15 – Organization Structure Review – Observations and Recommendations

Observations	Recommendations
Clear Accountability for Results ▪ OPGN has established clear accountability for operational and financial results with the CNO which cascades to each of the three Station Site VPs ▪ Accountability for certain nuclear oversight and support functions is less clear at this time	▪ OPG demonstrates alignment with principle of the clear responsibility ▪ Accountability for certain nuclear oversight functions should be clarified and documented using the GOSP framework
Station-Based Accountability ▪ OPG organization has a clear and strong focus on accountability at the nuclear station level ▪ The stations are responsible for business planning, headcount management, and on-site support function delivery	▪ OPG demonstrates alignment with principle of the "station-based accountability"
A Strong Plant Manager Focus ▪ OPGN does not have a designated Plant Manager responsible for core *perform* functions at each station ▪ Instead, the Plant Manager function is performed by two separate Directors: the Director of Operations and Maintenance (DOM), and the Director of Work Management (DWM) ▪ There are also additional Directors of Engineering which is standard industry practice	▪ Consider adopting a single Plant Manager model in lieu of the current dual DOM/DWM roles ▪ In light of the change required by the 33 fleet improvement initiatives, it might be best to postpone implementation of this recommendation until 2012 or beyond
Adoption of the GOSP Model ▪ There is no evidence that the GOSP model has been adopted and consistently applied across the fleet	▪ Adopt the GOSP model and clearly identify all plant functions in their appropriate designation (*govern*, *oversee*, *support*, *perform*)

Observations	Recommendations
	▪ Ensure that managers, supervisors and employees are training in the GOSP concept and appreciate the respective roles and responsibilities
Organization Structured Around Business Needs not Employee Capabilities ▪ ScottMadden did not have adequate time to determine if this principle is being applied or not	▪ n/a
Fleet Standardization ▪ There is no evidence of an attempt to develop or apply a standard station organization and staffing model — Darlington has a Deputy Site VP whereas, the other sites do not — There are different spans of control between sites, especially at the Director level — There are different names for identical or similar functions at different sites ▪ Overall spans of control, on average, reflect those found at leading nuclear operators (4-6 for VPs and Directors and Managers in the 4-6, 6-8 range)	▪ Develop a "best practice" station organization and staffing model and then apply this model consistently across the fleet ▪ Examine and address the overly high spans of control in Engineering ▪ Standardize the organizational nomenclature used at the different sites ▪ Establish a process for identifying "best practices" across OPGN fleet and then rolling these out to all the stations

4.0 Phase 2 Observations and Conclusions

ScottMadden was asked by OPG management to assess the degree to which OPG has successfully piloted a gap-based business planning process and used this process to identify and drive meaningful improvements capable of addressing current performance gaps. This section summarizes our observations and conclusions in response to this request. Our observations and conclusions address each of the key actions required to successfully implement gap-based business planning.

4.1 Benchmarking

The first step in implementing gap-based business planning is accurately benchmarking OPGN's performance to the rest of the industry. This step was completed by OPGN with the support of ScottMadden between March and June 2009.

Benchmarking	
Observations	**Conclusions**
▪ OPG/ScottMadden identified a set of performance metrics covering all four cornerstone values ▪ OPG /ScottMadden identified peer panels and industry comparable data for 19 key benchmarks ▪ OPG/ScottMadden compared OPGN performance to industry best quartile levels across all 19 benchmarked metrics ▪ As Phase 2 progressed, the core team discovered a number of inconsistencies in the reporting of OPG data to EUCG. These did not materially impact the benchmark comparisons and will be corrected in next year's submission ▪ ScottMadden, assisted by OPG, prepared and issued the *OPG Nuclear 2009 Benchmarking Report*	▪ OPG's key performance metrics are in line with those commonly used by leading nuclear fleet operators ▪ OPG successfully compared its current and recent past performance to industry peer groups across a standard set of key performance measures ▪ The comparison, as documented in the *OPG Nuclear 2009 Benchmarking Report*, presents a fair and accurate view of OPG's performance against the North American and Canadian nuclear generation industry

Related Recommendations:

1. Update the OPG Nuclear Benchmarking Report in 2010 using the procedure prepared by the joint ScottMadden/OPG team.

2. Begin this process as early as possible so that the results of the benchmarking analysis are available to the planning team for target setting early in the 2010 business planning cycle

3. Assign a single point of accountability for reporting OPG data to EUCG, WANO and other outside organizations. This will help improve data quality and consistency of presentation.

4.2 Target Setting

The next step in gap-based business planning is to use the results of the benchmarking effort to establish meaningful targets that will help drive future performance. This step was completed by OPG during June and July 2009.

Target Setting	
Observations	**Conclusions**
▪ OPG used the 2009 Benchmarking Report to educate managers and raise performance expectations ▪ OPG conducted two formal target setting workshops and established desired performance levels for the year 2014 across common performance metrics ▪ Specific 2014 targets were set for each site and support unit ▪ The process of setting top-down performance targets based upon where OPG wants to be by 2014 represented a significant departure from past OPGN business planning practices. Adopting this practice represented a major cultural change within the organization at multiple levels ▪ The targets were agreed to by all of the site and support unit executives and were distributed to the site and support unit business managers for adoption in their 2010-2014 five-year business plan	▪ OPG executive leadership demonstrated a firm commitment to top-down business planning throughout the planning process ▪ While the targets set for 2014 will not achieve "best quartile" performance in all performance categories for all sites, they represent a significant improvement over current performance ▪ In our opinion, the targets established by OPG management are fair and reasonable given OPGN's baseline position ▪ Without downplaying the success achieved during the current planning cycle, we believe that opportunities remain for continuous improvement beyond the current business planning horizon

Related Recommendations:

1. When the OPG Nuclear Benchmarking Report is updated in 2010, analyze the new benchmarks and use them to establish operational and financial performance targets for 2015.

2. Through a process of continuous improvement, continue closing the gap to "best quartile" industry performance for all metrics and at all sites as additional years are added to the rolling five-year plan.

4.3 Fleet-Wide Improvement Initiatives

The third step in implementing gap-based business planning was identifying the improvement initiatives needed to achieve the established business targets. These initiatives were both "site specific" (i.e., applicable to a specific site or support unit) or "fleet wide" (i.e.., applicable to all OPGN sites). In the table below, we summarize our observations and conclusions regarding the development of fleet-wide improvement initiatives at OPG.

Fleet-Wide Improvement Initiatives	
Observations	**Conclusions**
▪ Sixteen functional/peer teams were designated to develop fleet-wide initiatives in their individual functional areas ▪ Four of these teams were standing "peer teams," while the rest were corporate functional teams or business units ▪ The teams worked for approximately nine weeks and initially completed 150 improvement initiative templates. These were subsequently consolidated, prioritized and pared down to 33 fleet-wide improvement initiatives scheduled over the years 2010-2014 ▪ The quality of the documentation supporting the improvement initiatives varied significantly between teams and within teams between specific initiatives ▪ In the end, the teams were able to identify a set of fleet-wide initiatives that will significantly contribute to achievement of both the operational and financial planning targets ▪ Throughout the process, there was growing support for the top-down planning process. Several teams stated that they welcomed greater executive direction ▪ Most of the teams struggled with quantifying cost and benefit estimates. There was a new level of healthy discussion regarding the need to identify opportunities for cost reduction coupled with performance improvement	▪ Leveraging functional/peer teams to identify fleet-wide improvement opportunities for inclusion in the planning process was a new endeavor for the OPGN functional teams. As such, the process experienced many of the difficulties associated with "first time" efforts ▪ The performance of the functional/peer teams was challenging due to: (a) the immaturity of the peer team process at OPG, (b) the limited scope of the standing peer teams, (c) the novelty of the process, e.g., the functional teams were asked to deliver improvements and cost reduction at the same time, and (d) differences in the capabilities of the team leaders and their speed in embracing the process ▪ In spite of the start-up issues described above, OPGN successfully leveraged their functional teams to identify a broad range of fleet-wide improvement initiatives designed to achieve the company's performance and financial targets

Related Recommendations:

1. Encourage the functional/peer teams to refine and improve their initiatives throughout the remainder of the planning cycle and into implementation.

2. Re-examine the current functional/peer team structure and governance. Expand the number of formal peer teams to cover additional functions. Revise the program to strengthen the ability of the peer teams to identify and drive meaningful change.

3. As part of continuous improvement to operational and financial excellence, challenge the teams next year to identify further improvements within their respective functional areas.

4.4 Site and Support Business Unit Plans

At the same time the functional/peer teams were developing their fleet-wide improvement initiatives, the sites and business support units were identifying improvement opportunities specific to their individual sites or units. When the fleet-wide initiatives were finalized and agreed to, they were subsequently incorporated into the site and support unit plans for execution. The fleet-wide initiatives supplemented the site and support unit initiatives and became part of their respective business plans. The site and support unit business plans were then submitted to the NEC on September 11th. In the table below, we summarize our observations and conclusions regarding the development of the site and support business unit plans.

Site and Support Unit Plans	
Observations	**Conclusions**
▪ A total of nine business unit plans were prepared – one for each of the three nuclear stations (Pickering A, Pickering B and Darlington), and one for each of the six nuclear support units ▪ The business managers for each of the nine business units were well versed in the development of annual business plans and required minimal support from ScottMadden during this project ▪ Initially, there was some resistance to embracing top-down planning. In time, this was resolved and the business managers prepared solid business plans designed to achieve the targets they committed to ▪ At the time of ScottMadden's departure from the project, some issues remained open with respect to the financial targets in selected business unit plans	▪ There was extensive culture change involved in moving to the new gap-based, top-down business planning process ▪ In the end, the executives, business managers, and functional teams achieved alignment and the process resulted in the creation of business unit plans designed to achieve the desired targets. In ScottMadden's opinion, this is a major step forward in the development of gap-based business planning at OPGN

Related Recommendations:

1. Incorporate gap-based business planning into the business planning processes for all subsequent years.

2. Begin the process early enough so that fleet-wide and site/support unit improvement initiatives are identified prior to the beginning of the summer vacation period.

4.5 Adoption of Gap-Based Business Planning

2009 was the first year in which gap-based business planning was rolled out at OPGN. Future success in adopting this planning model will require the current planning organization to modify its practices and "bake in" the new philosophy, process, schedule and templates. Below we summarize our observations and conclusions with regard to the challenges OPG will face in the future in adopting gap based business planning.

Adoption of Gap-based Business Planning	
Observations	**Conclusions**
▪ OPGN has made a commitment to adopt gap-based business planning in future years ▪ The standard business planning cycle has been modified to incorporate (a) annual updating of the benchmarking report, (b) top-down target setting, (c) development of fleet-wide improvement initiatives, (d) integration of the fleet wide improvement initiatives with the site and support unit improvement initiatives, and (e) the final reconciliation of all initiative results to target achievement ▪ A standard Improvement Initiative Template (Appendix F) has been adopted as the standard template for use in future years	▪ We believe that the current OPGN business planning team under Nuclear Finance has the leadership skills and capability to successfully manage a gap-based business planning process in subsequent years ▪ With adequate oversight, the site and support unit business managers and their teams also have the leadership skills and capability to manage a gap-based business planning process in their respective units in subsequent years ▪ Success in future years will largely depend upon the commitment of the OPG CEO and the OPGN leadership team to the continued pursuit of operational and financial excellence

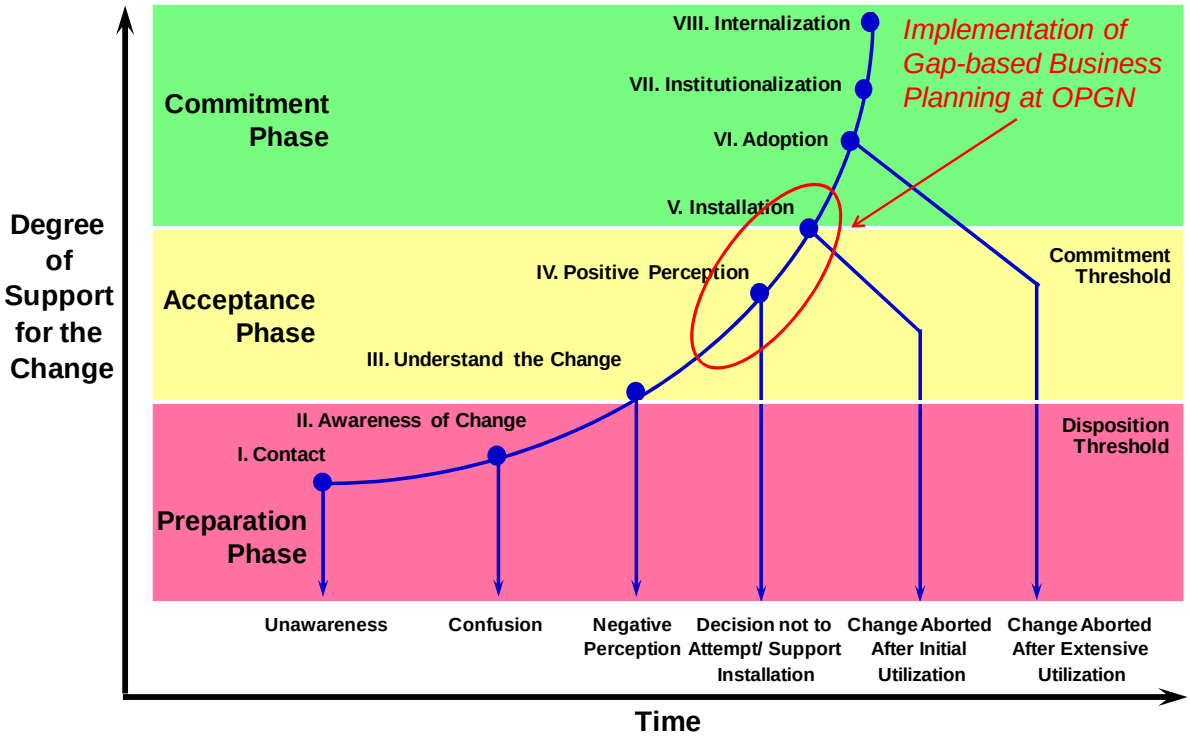
Based upon the above observations and conclusions, we believe that OPGN is well on the way to successfully adopting gap-based business planning. While acceptance varies by business unit and individual, we believe the extent of implementation (as depicted in Figure 16) represents significant progress for the first year of a new program of this nature.

Related Recommendations:

1. As noted earlier, incorporate gap-based business planning into the business planning process for all subsequent years.

2. Ensure ongoing reinforcement of senior management commitment through active communication and participation.

Figure 16 – Implementation of Gap-Based Business Planning at OPGN



4.6 Plan Execution and Monitoring

Establishing the five-year gap-based business plan is only part of adopting a full gap-based accountability model. It is equally important to ensure that adequate monitoring and follow-up practices are in place to ensure that the improvement initiatives are executed on time and that the results are, in fact, achieved. The table below summarizes our observations and conclusions in regard.

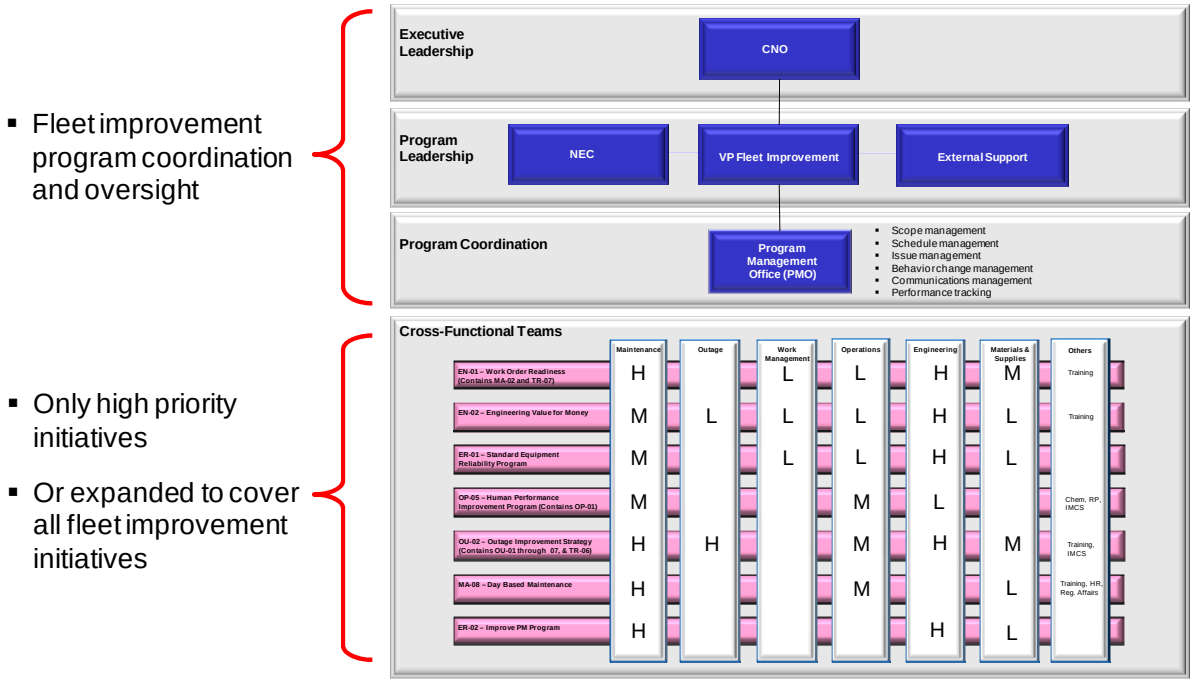
Plan Execution and Monitoring	
Observations	**Conclusions**
▪ OPGN managers noted that complex, cross-functional initiatives generally "die on the vine" when assigned to the line organization for implementation. The reasons cited include: — *The Tyranny of Daily Events:* Team members who have full-time responsibility for daily work are unable to dedicate adequate time and focus on the change initiative — *Diffuse Accountability:* Too many "participants" but no clear leadership and single point of accountability	▪ Without adopting a revised approach to implementing and monitoring change initiatives, OPGN is at risk of not successfully implementing the improvement initiatives that have been agreed upon and incorporated into its business unit plans ▪ Due to time limitations, ScottMadden was unable to perform an analysis as to whether OPGN has the structure, process, and methodologies in place to manage transformational change initiatives of the scope envisioned

Plan Execution and Monitoring	
Observations	**Conclusions**
— *Inadequate Authority:* Inability of accountable owner to get other functions or line organizations to fully cooperate in the resolution of the problem — *Disagreement*: Disagreement across the fleet on what is the best approach to problem resolution. No consistent approach — *Musical Chairs:* Priorities and decisions change as people in key roles change positions in the organization. People tend to "wait out" the problem knowing they will soon be elsewhere ▪ Similarly, <u>when central (non-line) organizations are assigned responsibility</u> for implementing complex changes, these initiatives also experience problems due to: — *Lack of Line Ownership*: The line organization is not adequately involved in creating the solution, and do not understand or appreciate the changes needed. As a result, the changes are not implemented when rolled out — *Absence of Implementation Accountability:* There is too little accountability or consequences if initiatives are not implemented successfully and on time — *Weak Performance Management.* The linkage between implementation success and individual performance and incentive programs is insufficient ▪ At the time this report was prepared OPGN had incorporated the 33 initiatives into the business plans but had not yet established a formal implementation strategy	

Related Recommendations:

1. At the program level, establish a formal organization structure to oversee and coordinate the high impact, most difficult improvement initiatives identified during the planning process. An example of how this might look is presented in Figure 17. This organization would provide additional program oversight and support while the sites and business units maintain "govern" and "perform" responsibilities under the GOSP model. This model has proved effective in driving transformational change in large organizations.

Figure 17 – Recommended Approach to Managing the Planned Fleet Improvement Program



L, M, H (Low, Medium, High) refer to the anticipated level of involvement that each function will have in each "high priority" initiative

2. Assign a full-time senior executive to lead this organization. This executive should have a broad range of experience both at the plant and nuclear corporate level, be highly intelligent, and be "action oriented" and able to drive change in the face of considerable resistance.

3. Establish a Program Management Office (PMO) to support this executive. The PMO should be responsible for supporting the fleet improvement program by providing the following services:
    a. Performance tracking and monitoring
    b. Initiative scope management
    c. Integrated schedule management
    d. Issue management and resolution

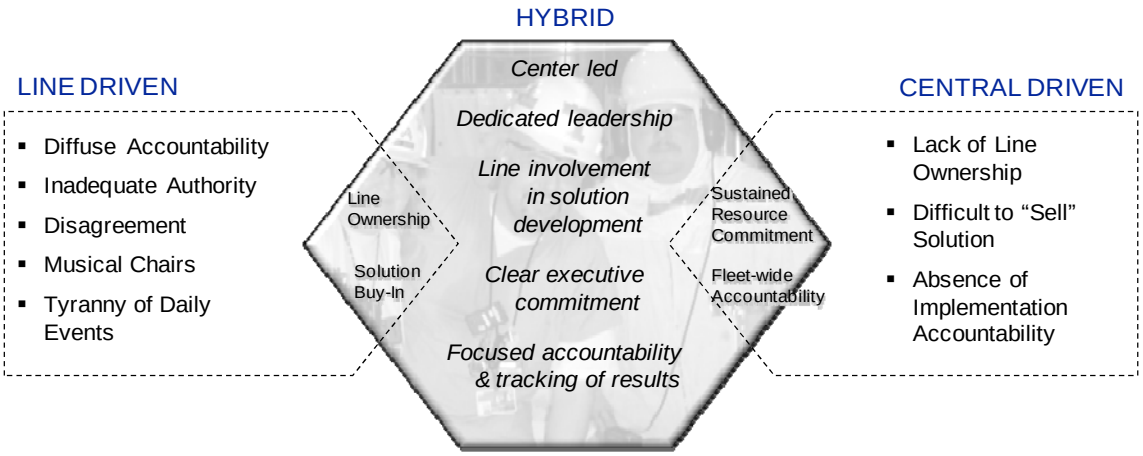
e. Behavior change management

f. Communication management

The PMO may also provide a central pool of individuals skilled in process documentation, process redesign, the application of TQM/Six Sigma/Lean tools and techniques that can be "loaned" out to the various initiative teams as needed.

4. At the initiative level, adopt a "hybrid" project structure capable of leveraging the best elements of central guidance and support combined with significant line participation and decision making. This approach is summarized in Figure 18. Under this structure, the central organization (typically 1 to 2 individuals) would provide project leadership that would work full (or nearly full-time) on the initiative, while the line organization would provide team members (typically 3 to 6 individuals) who would participate part-time through planned meetings. The team member responsibilities would include data collection, information review and the development of recommendations for change. The central leadership maintains the project momentum, analyzes data, and does the "heavy lifting" required to enable progress.

Figure 18 – Hybrid Organization Proposed for Initiative-Level Teams



5. Identify and utilize resources (internal and/or external) experienced in managing large organization transformation initiatives to help launch and provide initial support to the fleet improvement executive, the PMO organization, and the initiative teams.

Appendix A – EUCG 2008 Benchmarking Participants

The table below lists the nuclear operators and the plants which are part of the 2008 EUCG database.

Operator	Plant	Operator	Plant
Bruce	BRUCE	STARS	CALLAWAY
Constellation	CALVERT CLIFFS		COMANCHE PEAK
	NINE MILE		DIABLO CANYON
	R.E. GINNA		PALO VERDE
Dominion Resources	KEWAUNEE		SOUTH TEXAS
	MILLSTONE	TVA	BROWNS FERRY
	NORTH ANNA		SEQUOYAH
	SURRY		WATTS BAR
Duke	CATAWBA	USA	COLUMBIA
	MCGUIRE		COOK
	OCONEE		COOPER
Entergy	ARKANSAS ONE		FERMI
	FITZPATRICK		FORT CALHOUN
	GRAND GULF		SAN ONOFRE
	PALISADES		SUSQUEHANNA
	PILGRIM		WOLF CREEK
	RIVER BEND	Xcel	MONTICELLO
	VERMONT YANK		PRAIRIE ISLAND
	WATERFORD		
Exelon	BRAIDWOOD		
	BYRON		
	CLINTON		
	DRESDEN		
	LASALLE		
	LIMERICK		
	OYSTER CREEK		
	PEACH BOTTOM		
	QUAD CITIES		
	THREE MILE ISLAND		
First Energy	BEAVER VALLEY		
	DAVIS-BESSE		
	PERRY		
OPG	DARLINGTON		
	PICKERING A		
	PICKERING B		
Progress Energy	BRUNSWICK		
	CRYSTAL RIVER		
	HARRIS		
	ROBINSON		
PSEG	HOPE CREEK		
	SALEM		
SC Power and Gas	SUMMER		
Southern	FARLEY		
	HATCH		
	VOGTLE		

Appendix B – OPGN Key Performance Measures

The tables below list all of the performance measures in use by OPG Nuclear at the time the Phase 1 benchmarking report was prepared (May 2009). The tables also show which metrics were subject to benchmarking by ScottMadden and which were used in various OPGN internal reports and plans. A separate table is presented for each OPGN Cornerstone Value. The initial list of metrics presented below was revised slightly and resulted in the final list used during target setting and business planning (See Figures 5 and 6 earlier in this report).

Safety

Cornerstone	Tier	Performance Measure	Benchmarked	Report Card Measure (2009)	Station Report Card Measure (2009)	AIP (2009)	Plant Business Plans	Support Group Business Plans
Safety	1	All Injury Rate	✓	✓	✓	✓	✓	
Safety	1	Collective Radiation Exposure	✓	✓	✓		✓	
Safety	1	Fuel Reliability		✓	✓		✓	
Safety	1	Environment Index		✓	✓	✓	✓	
Safety	1	Accident Severity Rate		✓	✓	✓	✓	✓
Safety	2	Industrial Safety Accident Rate	✓	✓	✓		✓	
Safety	2	SS - Auxiliary Feedwater System Unavailability	✓				✓	
Safety	2	SS - Emergency AC Power Unavailability	✓				✓	
Safety	2	SS - High Pressure Safety Injection Unavailability	✓				✓	
Safety	2	Reactor Trip Rate (WANO)	✓				✓	
Safety	2	Airborne Tritium Emissions	✓	✓	✓		✓	
Safety	2	Contractor Accident Severity Rate		✓				✓
Safety	2	ALARA Dose Savings		✓				✓

Reliability

Cornerstone	Tier	Performance Measure	Benchmarked	Report Card Measure (2009)	Station Report Card Measure (2009)	AIP (2009)	Plant Business Plans	Support Group Business Plans
Reliability	1	Nuclear Performance Index	✓	✓	✓		✓	
Reliability	1	Unit Capability Factor	✓	✓	✓		✓	
Reliability	1	Forced Loss Rate	✓	✓	✓		✓	
Reliability	1	Net Electrical Production		✓	✓	✓	✓	
Reliability	2	Chemistry Performance Indicator (WANO)	✓				✓	
Reliability	2	Plant Condition Index		✓	✓		✓	
Reliability	2	OCMB - On-line Corrective Maintenance Backlog	✓	✓	✓	✓	✓	
Reliability	2	OEMB - On-line Elective Maintenance Backlog	✓	✓	✓	✓	✓	
Reliability	2	ERI - Equipment Reliability Index		✓	✓		✓	
Reliability	2	Plant Reliability List		✓	✓		✓	
Reliability	2	Dry Storage Containers		✓		✓	✓	✓
Reliability	2	Incinerate Liquid Waste		✓		✓		✓
Reliability	2	Western Used Fuel Dry Storage Facility Capability Factor		✓		✓		✓
Reliability	2	Inventory Accuracy		✓		✓		✓
Reliability	2	Stock Out Materials		✓		✓		✓
Reliability	2	Transportation Package Maintenance Compliance		✓		✓		✓
Reliability	2	Customer Satisfaction Index		✓		✓		✓
Reliability	2	Meet BP & OPG needs for Accepting Low Level Waste Volumes		✓		✓		✓
Reliability	2	Rad Material Transportation Preventable Collision Rate		✓		✓		✓
Reliability	2	BP Planned Outage Performance		✓	✓	✓	✓	
Reliability	2	OPG Outage Scope Delivered on Schedule		✓				✓
Reliability	2	IM&CS Equipment Condition Index		✓				✓
Reliability	2	System Health Improvement Effectiveness (%)					✓	
Reliability	2	Criticality 1 Deferral of PMs (Avg # of PMs/unit)					✓	

Human Performance

Cornerstone	Tier	Performance Measure	Benchmarked	Report Card Measure (2009)	Station Report Card Measure (2009)	AIP (2009)	Plant Business Plans	Support Group Business Plans
Human Performance	1	Event Free Day Resets		✓	✓	✓	✓	
Human Performance	2	Corrective Action Program Quality		✓	✓		✓	✓
Human Performance	2	Corrective Action Program Root Cause Effectiveness		✓	✓		✓	✓
Human Performance	2	Corrective Action Program Timeliness		✓	✓		✓	✓
Human Performance	2	Training Index		✓	✓		✓	

Value for Money

Cornerstone	Tier	Performance Measure	Benchmarked	Report Card Measure (2009)	Station Report Card Measure (2009)	AIP (2009)	Plant Business Plans	Support Group Business Plans
Value for Money	1	OM&A - Base & Outage		✓	✓		✓	✓
Value for Money	1	Non-Fuel Operating Cost per MWh	✓				✓	
Value for Money	1	Total Generating Cost per MWh	✓				✓	
Value for Money	2	Nuclear Projects Available for Service (AFS)		✓	✓	✓	✓	✓
Value for Money	2	Annual Projects Started		✓	✓	✓	✓	
Value for Money	2	Blended Unit Cost of Loaded DSC at all UFDS Facilities		✓		✓		✓
Value for Money	2	IMS Utilization Rate		✓				✓
Value for Money	2	Nuclear Waste Liabilities - Internal		✓				✓
Value for Money	2	Nuclear Waste Liabilities - ONFA		✓				✓
Value for Money	2	NWMD Capital / MFA		✓				✓
Value for Money	2	Inventory Creep		✓		✓		✓
Value for Money	2	Material Requested Not Issued		✓				✓
Value for Money	2	Total Process Costs		✓				✓

Appendix C – Cost Analysis Scenarios (Total Non- Fuel Operating Costs) Used for Target Setting – Station Projections

The tables below present the "high-level" cost scenarios used during target setting for the three nuclear stations. Two different scenarios were developed for Pickering B – one under the assumption of continuing operations and one without continuing operations. Each of these summaries was supported by detailed tables showing the cost build up but which are not presented here.

Darlington							
Scenario	Metric	2009 Projection	2010	2011	2012	2013	2014
Scenario 1	Total Non-Fuel Operating Costs	805,952.6	812,771.7	766,811.3	796,329.1	919,434.2	849,776.1
	Generation (TWh)	26.5	27.7	28.9	29.0	26.8	28.4
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 30.39	$ 29.30	$ 26.57	$ 27.48	$ 34.26	$ 29.95
Scenario 2	Total Non-Fuel Operating Costs	805,952.6	812,771.7	751,475.1	764,157.4	863,157.4	779,727.2
	Generation (TWh)	26.5	27.7	28.9	29.0	26.8	28.4
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 30.39	$ 29.30	$ 26.04	$ 26.37	$ 32.16	$ 27.48
Scenario 3	Total Non-Fuel Operating Costs	805,952.6	812,771.7	736,138.8	731,348.7	804,629.9	705,434.3
	Generation (TWh)	26.5	27.7	28.9	29.0	26.8	28.4
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 30.39	$ 29.30	$ 25.51	$ 25.24	$ 29.98	$ 24.87
Scenario 4	Total Non-Fuel Operating Costs	805,952.6	812,771.7	761,282.0	784,803.5	899,401.0	824,999.6
	Generation (TWh)	26.5	27.7	28.9	29.0	26.8	28.4
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 30.39	$ 29.30	$ 26.38	$ 27.08	$ 33.51	$ 29.08
Scenario 5	Total Non-Fuel Operating Costs	805,952.6	812,771.7	739,946.8	739,554.4	819,374.5	724,286.1
	Generation (TWh)	26.5	27.7	28.9	29.0	26.8	28.4
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 30.39	$ 29.30	$ 25.64	$ 25.52	$ 30.53	$ 25.53
Best Quartile Costs/MWh		$ 20.56	$ 21.42	$ 22.12	$ 23.28	$ 24.45	$ 25.53
Median Costs/MWh		$ 23.84	$ 24.76	$ 25.51	$ 26.72	$ 27.95	$ 29.08

Pickering A							
Scenario	Metric	2009 Projection	2010	2011	2012	2013	2014
Scenario 1	Total Non-Fuel Operating Costs	463,994.8	481,914.3	470,147.1	470,382.6	485,238.1	494,193.2
	Generation (TWh)	6.4	6.4	7.4	7.7	7.6	7.6
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 72.68	$ 74.83	$ 63.36	$ 61.25	$ 63.68	$ 65.28
Scenario 2	Total Non-Fuel Operating Costs	463,994.8	481,914.3	460,744.2	451,379.1	455,537.6	453,455.8
	Generation (TWh)	6.4	6.4	7.4	7.7	7.6	7.6
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 72.68	$ 74.83	$ 62.09	$ 58.77	$ 59.78	$ 59.90
Scenario 3	Total Non-Fuel Operating Costs	463,994.8	481,914.3	451,341.3	431,999.3	424,649.3	410,250.3
	Generation (TWh)	6.4	6.4	7.4	7.7	7.6	7.6
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 72.68	$ 74.83	$ 60.83	$ 56.25	$ 55.73	$ 54.19
Scenario 4	Total Non-Fuel Operating Costs	463,994.8	481,914.3	415,323.2	354,283.6	294,922.9	220,135.6
	Generation (TWh)	6.4	6.4	7.4	7.7	7.6	7.6
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 72.68	$ 74.83	$ 55.97	$ 46.13	$ 38.70	$ 29.08
Scenario 5	Total Non-Fuel Operating Costs	463,994.8	481,914.3	410,791.4	344,114.2	277,276.1	193,262.1
	Generation (TWh)	6.4	6.4	7.4	7.7	7.6	7.6
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 72.68	$ 74.83	$ 55.36	$ 44.81	$ 36.39	$ 25.53
Best Quartile Costs/MWh		$ 20.56	$ 21.42	$ 22.12	$ 23.28	$ 24.45	$ 25.53
Median Costs/MWh		$ 23.84	$ 24.76	$ 25.51	$ 26.72	$ 27.95	$ 29.08

Pickering B - No Continuous Operations							
Scenario	Metric	2009 Projection	2010	2011	2012	2013	2014
Scenario 1	Total Non-Fuel Operating Costs	711,471.6	724,082.7	710,885.3	723,583.1	747,423.2	747,423.2
	Generation (TWh)	15.8	14.2	15.8	16.0	15.9	15.9
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.03	$ 50.99	$ 44.99	$ 45.20	$ 47.07	$ 47.01
Scenario 2	Total Non-Fuel Operating Costs	711,471.6	724,082.7	696,667.6	694,350.4	701,674.9	685,811.5
	Generation (TWh)	15.8	14.2	15.8	16.0	15.9	15.9
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.03	$ 50.99	$ 44.09	$ 43.37	$ 44.19	$ 43.13
Scenario 3	Total Non-Fuel Operating Costs	711,471.6	724,082.7	682,449.9	664,538.7	654,096.9	620,467.0
	Generation (TWh)	15.8	14.2	15.8	16.0	15.9	15.9
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.03	$ 50.99	$ 43.19	$ 41.51	$ 41.19	$ 39.02
Scenario 4	Total Non-Fuel Operating Costs	711,471.6	724,082.7	651,084.2	596,724.1	542,486.5	462,372.0
	Generation (TWh)	15.8	14.2	15.8	16.0	15.9	15.9
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.03	$ 50.99	$ 41.21	$ 37.27	$ 34.16	$ 29.08
Scenario 5	Total Non-Fuel Operating Costs	711,471.6	724,082.7	640,760.2	573,786.7	503,698.5	405,927.0
	Generation (TWh)	15.8	14.2	15.8	16.0	15.9	15.9
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.03	$ 50.99	$ 40.55	$ 35.84	$ 31.72	$ 25.53
Best Quartile Costs/MWh		$ 20.56	$ 21.42	$ 22.12	$ 23.28	$ 24.45	$ 25.53
Median Costs/MWh		$ 23.84	$ 24.76	$ 25.51	$ 26.72	$ 27.95	$ 29.08

Pickering B - With Continued Operations							
Scenario	Metric	Projection	2010	2011	2012	2013	2014
Scenario 1	Total Non-Fuel Operating Costs	721,271.6	746,382.7	757,885.3	765,683.1	783,623.2	838,118.2
	Generation (TWh)	15.8	13.9	14.3	15.2	14.9	14.7
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.65	$ 53.70	$ 53.00	$ 50.24	$ 52.56	$ 57.09
Scenario 2	Total Non-Fuel Operating Costs	721,271.6	746,382.7	742,727.6	734,749.5	735,659.2	769,030.3
	Generation (TWh)	15.8	13.9	14.3	15.2	14.9	14.7
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.65	$ 53.70	$ 51.94	$ 48.21	$ 49.34	$ 52.39
Scenario 3	Total Non-Fuel Operating Costs	721,271.6	746,382.7	727,569.9	703,203.4	685,776.9	695,756.6
	Generation (TWh)	15.8	13.9	14.3	15.2	14.9	14.7
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.65	$ 53.70	$ 50.88	$ 46.14	$ 45.99	$ 47.39
Scenario 4	Total Non-Fuel Operating Costs	721,271.6	746,382.7	678,342.6	596,526.6	510,089.8	426,894.4
	Generation (TWh)	15.8	13.9	14.3	15.2	14.9	14.7
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.65	$ 53.70	$ 47.44	$ 39.14	$ 34.21	$ 29.08
Scenario 5	Total Non-Fuel Operating Costs	721,271.6	746,382.7	669,743.0	577,228.3	477,186.3	374,780.4
	Generation (TWh)	15.8	13.9	14.3	15.2	14.9	14.7
	Total Non-Fuel Operating Cost per MWh ($/MWh)	$ 45.65	$ 53.70	$ 46.84	$ 37.88	$ 32.00	$ 25.53
Best Quartile Costs/MWh		$ 20.56	$ 21.42	$ 22.12	$ 23.28	$ 24.45	$ 25.53
Median Costs/MWh		$ 23.84	$ 24.76	$ 25.51	$ 26.72	$ 27.95	$ 29.08

Appendix D – Cost Analysis Scenarios (OM&A) Used for Target Setting – Support Unit Projections

The tables below present the "high-level" cost summaries used during target setting for the seven support units. They also present the base and outage OM&A costs for the stations for reference purposes.

Scenario 1 – Base Case

Scenario 1 - Base Case

Metric	Site / Business Unit		2009	Existing Targets 2010	2011	2012	2013	2014
OM&A	Pickering A	Base	204,000.0	198,000.0	189,800.0	192,500.0	197,200.0	197,200.0
		Outage	46,900.0	73,400.0	58,800.0	52,400.0	63,500.0	72,455.1
		Total	250,900.0	271,400.0	248,600.0	244,900.0	260,700.0	269,655.1
	Pickering B (No Continuous Ops)	Base	267,800.0	257,500.0	261,500.0	273,000.0	277,642.0	277,642.0
		Outage	77,000.0	103,600.0	87,000.0	79,600.0	87,300.0	87,300.0
		Total	344,800.0	361,100.0	348,500.0	352,600.0	364,942.0	364,942.0
	Pickering B (With Continuous Ops)	Base	277,600.0	271,900.0	279,100.0	290,300.0	298,942.0	286,042.0
		Outage	77,000.0	107,700.0	94,500.0	83,100.0	95,000.0	159,695.0
		Total	354,600.0	379,600.0	373,600.0	373,400.0	393,942.0	445,737.0
	Darlington	Base	300,700.0	289,100.0	301,300.0	320,300.0	333,200.0	333,200.0
		Outage	102,400.0	117,700.0	75,500.0	71,300.0	168,700.0	99,041.9
		Total	403,100.0	406,800.0	376,800.0	391,600.0	501,900.0	432,241.9
	NP&T	Base	238,642.5	253,741.0	257,609.0	268,148.3	269,631.2	269,631.2
		Outage	1,820.6	841.9	595.9	628.2	838.7	838.7
		Total	240,463.1	254,582.9	258,204.8	268,776.5	270,469.9	270,469.9
	E&M	Base	72,170.0	69,667.0	70,566.0	73,008.0	73,398.0	73,398.0
		Outage	7,323.0	7,912.0	5,809.0	5,093.0	8,304.0	8,304.0
		Total	79,493.0	77,579.0	76,375.0	78,101.0	81,702.0	81,702.0
OM&A	PINO	Base	9,613.0	9,540.0	9,618.0	9,948.0	10,149.0	10,149.0
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	9,613.0	9,540.0	9,618.0	9,948.0	10,149.0	10,149.0
	NSC	Base	69,915.0	69,744.0	69,837.0	71,024.0	72,081.0	72,081.0
		Outage	6,971.0	1,636.0	1,412.0	1,447.0	1,963.0	1,963.0
		Total	76,886.0	71,380.0	71,249.0	72,471.0	74,044.0	74,044.0
	IM&CS	Base	40,772.0	38,027.0	39,769.0	41,945.0	43,575.0	43,575.0
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	40,772.0	38,027.0	39,769.0	41,945.0	43,575.0	43,575.0
	CNO	Base	8,345.8	3,754.8	4,187.9	7,170.4	5,637.5	5,637.5
		Labour Price Varience	4,386.0	4,474.0	4,400.0	4,576.0	4,700.0	4,700.0
		Total	12,731.8	8,228.8	8,587.9	11,746.4	10,337.5	10,337.5
	NWM	Base	4,651.0	4,452.0	4,592.0	4,918.0	5,875.0	5,875.0
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	4,651.0	4,452.0	4,592.0	4,918.0	5,875.0	5,875.0

Scenario 2 – Base Case and 2% Reduction

Scenario 2 - Base Case and 2% Reduction								
Metric	**Site / Business Unit**		**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
OM&A	Pickering A	Base	204,000.0	198,000.0	186,004.0	184,723.0	185,129.8	180,944.4
		Outage	46,900.0	73,400.0	57,624.0	50,283.0	59,613.3	66,482.5
		Total	250,900.0	271,400.0	243,628.0	235,006.0	244,743.1	247,426.9
	Pickering B (No Continuous Ops)	Base	267,800.0	257,500.0	256,270.0	261,970.8	260,648.1	254,755.4
		Outage	77,000.0	103,600.0	85,260.0	76,384.2	81,956.5	80,103.7
		Total	344,800.0	361,100.0	341,530.0	338,355.0	342,604.6	334,859.0
	Pickering B (With Continuous Ops)	Base	277,600.0	271,900.0	273,518.0	278,571.9	280,644.4	262,462.9
		Outage	77,000.0	107,700.0	92,610.0	79,742.8	89,185.2	146,531.0
		Total	354,600.0	379,600.0	366,128.0	358,314.6	369,829.6	408,993.9
	Darlington	Base	300,700.0	289,100.0	295,274.0	307,359.9	312,805.5	305,733.6
		Outage	102,400.0	117,700.0	73,990.0	68,419.5	158,374.2	90,877.7
		Total	403,100.0	406,800.0	369,264.0	375,779.4	471,179.7	396,611.3
	NP&T	Base	238,642.5	253,741.0	252,456.8	257,315.1	253,127.6	247,404.9
		Outage	1,820.6	841.9	583.9	602.8	787.4	769.6
		Total	240,463.1	254,582.9	253,040.8	257,917.9	253,915.0	248,174.5
	E&M	Base	72,170.0	69,667.0	69,154.7	70,058.5	68,905.5	67,350.0
		Outage	7,323.0	7,912.0	5,692.8	4,887.2	7,795.7	7,619.8
		Total	79,493.0	79,579.0	74,847.5	74,945.7	76,701.2	74,969.8
OM&A	PINO	Base	9,613.0	9,540.0	9,425.6	9,546.1	9,527.8	9,312.4
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	9,613.0	9,540.0	9,425.6	9,546.1	9,527.8	9,312.4
	NSC	Base	69,915.0	69,744.0	68,440.3	68,154.6	67,669.1	66,141.5
		Outage	6,971.0	1,636.0	1,383.8	1,388.5	1,842.8	1,801.2
		Total	76,886.0	71,880.0	69,824.0	69,543.2	69,511.9	67,942.8
	IM&CS	Base	40,772.0	38,027.0	38,973.6	40,250.4	40,907.9	39,984.4
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	40,772.0	40,127.0	38,973.6	40,250.4	40,907.9	39,984.4
	CNO	Base	8,345.8	3,754.8	4,104.1	6,880.7	5,292.4	5,172.8
		Labour Price Varience	4,386.0	4,474.0	4,312.0	4,391.1	4,412.3	4,312.6
		Total	12,731.8	8,228.8	8,416.1	11,271.8	9,704.8	9,485.4
	NWM	Base	4,651.0	4,392.0	4,500.2	4,719.3	5,515.4	5,390.7
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	4,651.0	4,392.0	4,500.2	4,719.3	5,515.4	5,390.7

Scenario 3 – Base Case and 4% Reduction

Scenario 3 - Base Case and 4% Reduction								
Metric	Site / Business Unit		2009	2010	2011	2012	2013	2014
OM&A	Pickering A	Base	204,000.0	198,000.0	182,208.0	176,792.0	172,576.8	163,703.9
		Outage	46,900.0	73,400.0	56,448.0	48,124.2	55,571.1	60,148.0
		Total	250,900.0	271,400.0	238,656.0	224,916.2	228,148.0	223,851.9
	Pickering B (No Continuous Ops)	Base	267,800.0	257,500.0	251,040.0	250,723.2	242,974.5	230,482.1
		Outage	77,000.0	103,600.0	83,520.0	73,104.6	76,399.4	72,471.3
		Total	344,800.0	361,100.0	334,560.0	323,827.8	319,373.9	302,953.5
	Pickering B (With Continuous Ops)	Base	277,600.0	271,900.0	267,936.0	266,611.5	261,614.9	237,455.3
		Outage	77,000.0	107,700.0	90,720.0	76,319.0	83,137.9	132,569.4
		Total	354,600.0	379,600.0	358,656.0	342,930.6	344,752.8	370,024.8
	Darlington	Base	300,700.0	289,100.0	289,248.0	294,163.5	291,595.3	276,603.1
		Outage	102,400.0	117,700.0	72,480.0	65,481.9	147,635.4	82,218.8
		Total	403,100.0	406,800.0	361,728.0	359,645.4	439,230.8	358,821.9
	NP&T	Base	238,642.5	253,741.0	247,304.6	246,267.4	235,964.0	223,832.0
		Outage	1,820.6	841.9	572.0	576.9	734.0	696.3
		Total	240,463.1	254,582.9	247,876.7	246,844.3	236,698.0	224,528.3
	E&M	Base	72,170.0	69,667.0	67,743.4	67,050.5	64,233.2	60,927.7
		Outage	7,323.0	7,912.0	5,576.6	4,677.4	7,267.1	6,893.2
		Total	79,493.0	79,579.0	73,320.0	71,728.0	71,500.4	67,820.8
OM&A	PINO	Base	9,613.0	9,540.0	9,233.3	9,136.2	8,881.8	8,425.1
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	9,613.0	9,540.0	9,233.3	9,136.2	8,881.8	8,425.1
	NSC	Base	69,915.0	69,744.0	67,043.5	65,228.4	63,080.7	59,834.4
		Outage	6,971.0	1,636.0	1,355.5	1,328.9	1,717.9	1,629.5
		Total	76,886.0	71,880.0	68,399.0	66,557.4	64,798.6	61,463.9
	IM&CS	Base	40,772.0	38,027.0	38,178.2	38,522.3	38,134.1	36,171.6
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	40,772.0	40,127.0	38,178.2	38,522.3	38,134.1	36,171.6
	CNO	Base	8,345.8	3,754.8	4,020.4	6,585.3	4,933.6	4,679.9
		Labour Price Varience	4,386.0	4,474.0	4,224.0	4,202.6	4,113.1	3,901.7
		Total	12,731.8	8,228.8	8,244.4	10,787.9	9,046.7	8,581.6
	NWM	Base	4,651.0	4,392.0	4,408.3	4,516.7	5,141.4	4,876.8
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	4,651.0	4,392.0	4,408.3	4,516.7	5,141.4	4,876.8

Scenario 4 – Performance Required to Achieve Benchmark Median

Scenario 4 - Performance Required to Achieve Benchmark Median								
Metric	Site / Business Unit		2009	2010	2011	2012	2013	2014
OM&A	Pickering A	Base	204,000.0	198,000.0	167,667.4	144,987.5	119,856.2	87,841.6
		Outage	46,900.0	73,400.0	51,943.3	39,466.7	38,594.7	32,274.7
		Total	250,900.0	271,400.0	219,610.7	184,454.2	158,450.9	120,116.4
	Pickering B (No Continuous Ops)	Base	267,800.0	257,500.0	239,502.1	225,137.5	201,515.1	171,755.3
		Outage	77,000.0	103,600.0	79,681.4	65,644.5	63,363.1	54,005.7
		Total	344,800.0	361,100.0	319,183.5	290,781.9	264,878.2	225,760.9
	Pickering B (With Continuous Ops)	Base	277,600.0	271,900.0	249,807.5	226,166.3	194,592.6	145,695.1
		Outage	77,000.0	107,700.0	84,581.9	64,741.4	61,839.1	81,340.4
		Total	354,600.0	379,600.0	334,389.4	290,907.6	256,431.6	227,035.6
	Darlington	Base	300,700.0	289,100.0	299,127.4	315,664.1	325,940.0	323,485.1
		Outage	102,400.0	117,700.0	74,955.6	70,268.0	165,024.3	96,154.2
		Total	403,100.0	406,800.0	374,083.0	385,932.2	490,964.3	419,639.3
	NP&T	Base	238,642.5	253,741.0	242,410.1	234,897.9	217,053.1	198,178.9
		Outage	1,820.6	841.9	560.7	550.3	675.2	616.5
		Total	240,463.1	254,582.9	242,970.8	235,448.2	217,728.3	198,795.4
	E&M	Base	72,170.0	69,667.0	66,402.6	63,955.0	59,085.4	53,947.5
		Outage	7,323.0	7,912.0	5,466.3	4,461.5	6,684.7	6,103.4
		Total	79,493.0	77,579.0	71,868.9	68,416.5	65,770.1	60,051.0
OM&A	PINO	Base	9,613.0	9,540.0	9,050.5	8,714.4	8,169.9	7,459.5
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	9,613.0	9,540.0	9,050.5	8,714.4	8,169.9	7,459.5
	NSC	Base	69,915.0	69,744.0	65,716.6	62,217.0	58,025.2	52,979.5
		Outage	6,971.0	1,636.0	1,328.7	1,267.6	1,580.2	1,442.8
		Total	76,886.0	71,380.0	67,045.3	63,484.6	59,605.4	54,422.3
	IM&CS	Base	40,772.0	38,027.0	37,422.6	36,743.8	35,077.9	32,027.6
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	40,772.0	38,027.0	37,422.6	36,743.8	35,077.9	32,027.6
	CNO	Base - CNO Office	8,345.8	3,754.8	3,940.8	6,281.2	4,538.2	4,143.6
		Base - Labour Price Variance	4,386.0	4,474.0	4,140.4	4,008.6	3,783.5	3,454.5
		Total	12,731.8	8,228.8	8,081.2	10,289.8	8,321.7	7,598.1
	NWM	Base	4,651.0	4,452.0	4,321.1	4,308.2	4,729.4	4,318.1
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	4,651.0	4,452.0	4,321.1	4,308.2	4,729.4	4,318.1

Scenario 5 – Performance Required to Achieve Benchmark Best Quartile

Scenario 5 - Performance Necessary to Achieve Benchmark Best Quartile								
Metric	Site / Business Unit		2009	2010	2011	2012	2013	2014
OM&A	Pickering A	Base	204,000.0	198,000.0	165,837.9	140,825.7	112,684.6	77,118.2
		Outage	46,900.0	73,400.0	51,376.5	38,333.9	36,285.4	28,334.7
		Total	250,900.0	271,400.0	217,214.4	179,159.6	148,969.9	105,452.9
	Pickering B (No Continuous Ops)	Base	267,800.0	257,500.0	235,704.4	216,483.5	187,106.7	150,787.9
		Outage	77,000.0	103,600.0	78,417.9	63,121.2	58,832.6	47,412.8
		Total	344,800.0	361,100.0	314,122.3	279,604.6	245,939.3	198,200.7
	Pickering B (With Continuous Ops)	Base	277,600.0	271,900.0	246,640.6	218,849.5	182,040.3	127,909.1
		Outage	77,000.0	107,700.0	83,509.6	62,646.9	57,850.1	71,410.6
		Total	354,600.0	379,600.0	330,150.2	281,496.4	239,890.4	199,319.7
	Darlington	Base	300,700.0	289,100.0	290,744.2	297,464.0	296,938.7	283,995.0
		Outage	102,400.0	117,700.0	72,854.9	66,216.6	150,340.8	84,416.0
		Total	403,100.0	406,800.0	363,599.2	363,680.7	447,279.5	368,410.9
	NP&T	Base	238,642.5	253,741.0	237,515.5	224,172.0	200,336.0	174,451.4
		Outage	1,820.6	841.9	549.4	525.2	623.2	542.7
		Total	240,463.1	254,582.9	238,064.9	224,697.1	200,959.2	174,994.1
	E&M	Base	72,170.0	69,667.0	65,061.9	61,034.7	54,534.7	47,488.5
		Outage	7,323.0	7,912.0	5,355.9	4,257.7	6,169.9	5,372.7
		Total	79,493.0	77,579.0	70,417.8	65,292.4	60,704.6	52,861.2
OM&A	PINO	Total	9,613.0	9,540.0	8,867.8	8,316.5	7,540.7	6,566.4
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	9,613.0	9,540.0	8,867.8	8,316.5	7,540.7	6,566.4
	NSC	Base	69,915.0	69,744.0	64,389.7	59,376.1	53,556.2	46,636.4
		Outage	6,971.0	1,636.0	1,301.9	1,209.7	1,458.5	1,270.1
		Total	76,886.0	71,380.0	65,691.6	60,585.8	55,014.7	47,906.5
	IM&CS	Base	40,772.0	38,027.0	36,667.0	35,066.0	32,376.2	28,193.0
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	40,772.0	38,027.0	36,667.0	35,066.0	32,376.2	28,193.0
	CNO	Base - CNO Office	8,345.8	3,754.8	3,861.2	5,994.4	4,188.7	3,647.5
		Base - Labour Price Variance	4,386.0	4,474.0	4,056.8	3,825.5	3,492.1	3,040.9
		Total	12,731.8	8,228.8	7,918.0	9,820.0	7,680.8	6,688.4
	NWM	Base	4,651.0	4,452.0	4,233.8	4,111.4	4,365.1	3,801.1
		Outage	0.0	0.0	0.0	0.0	0.0	0.0
		Total	4,651.0	4,452.0	4,233.8	4,111.4	4,365.1	3,801.1

Appendix E – Final Business Planning Targets Established for 2014

The tables below present the final operational and financial planning targets agreed to by the OPG Nuclear Executive Committee (NEC) for inclusion in the 2010-2014 Business Plan. **Bold** type is used to indicate the maximum NPI point threshold established by WANO. These thresholds represent guidance as to what is considered superior industry performance.

Safety Cornerstone Targets

Metric	Site / Business Unit	2009 Projection	2014	NA PWR/PHWR		CANDU	
				Best Quartile	Median	Best Quartile	Median
Tier 1							
All Injury Rate	Darlington	1.3	1.2	n/a	n/a	[redacted]	[redacted]
	Pickering A	1.3	1.2	n/a	n/a	[redacted]	[redacted]
	Pickering B	1.3	1.2	n/a	n/a	[redacted]	[redacted]
	IM&CS	2.36	1.2				
Collective Radiation Exposure* (man-rem)	Darlington	84.66	***66***	50.70	66.00	62.15	81.84
	Pickering A	129.53	125	50.70	66.00	62.15	81.84
	Pickering B	86.04	82	50.70	66.00	62.15	81.84
Fuel Reliability* (microcuries per gram)	Darlington	***0.00050***	***0.00050***	0.000001	0.000012	0.000001	0.000165
	Pickering A	0.00280	***0.00050***	0.000001	0.000012	0.000001	0.000165
	Pickering B	0.00120	***0.00050***	0.000001	0.000012	0.000001	0.000165
Environmental Index (%)	Darlington	85	80	n/a	n/a	n/a	n/a
	Pickering A	80	80	n/a	n/a	n/a	n/a
	Pickering B	80	80	n/a	n/a	n/a	n/a
Accident Severity Rate	Darlington	2.81	3.30	n/a	n/a	n/a	n/a
	Pickering A	4.18	3.30	n/a	n/a	n/a	n/a
	Pickering B	2.41	3.30	n/a	n/a	n/a	n/a
	NP&T	3.34	3.30	n/a	n/a	n/a	n/a
	E&M	2.30	3.30	n/a	n/a	n/a	n/a
	PINO	2.84	3.30	n/a	n/a	n/a	n/a
	NSC	2.42	3.30	n/a	n/a	n/a	n/a
	IM&CS	2.36	3.30	n/a	n/a	n/a	n/a
	NWM	7.34	3.30	n/a	n/a	n/a	n/a

Safety Cornerstone Targets (Cont'd)

Metric	Site / Business Unit	2009 Projection	2014	NA PWR/PHWR		CANDU	
				Best Quartile	Median	Best Quartile	Median
Tier 2							
Industrial Safety Accident Rate* (# per 200,000 man-hours worked)	Darlington	***0.15***	***0.15***	0.05	0.09	n/a	n/a
	Pickering A	***0.15***	***0.15***	0.05	0.09	n/a	n/a
	Pickering B	***0.15***	***0.15***	0.05	0.09	n/a	n/a
SS - Auxiliary Feedwater System Unavailability* (unavailability/ required availability)	Darlington	***0.0200***	***0.0200***	0.0025	0.0042	0.0014	0.0020
	Pickering A	***0.0200***	***0.0200***	0.0025	0.0042	0.0014	0.0020
	Pickering B	***0.0200***	***0.0200***	0.0025	0.0042	0.0014	0.0020
SS - Emergency AC Power Unavailability* (unavailability/ required availability)	Darlington	***0.0250***	***0.0250***	0.0087	0.0130	0.0024	0.0076
	Pickering A	***0.0250***	***0.0250***	0.0087	0.0130	0.0024	0.0076
	Pickering B	***0.0250***	***0.0250***	0.0087	0.0130	0.0024	0.0076
SS - High Pressure Safety Injection Unavailability* (unavailability/ required availability)	Darlington	***0.0200***	***0.0200***	0.0021	0.0041	0.0001	0.0037
	Pickering A	***0.0200***	***0.0200***	0.0021	0.0041	0.0001	0.0037
	Pickering B	***0.0200***	***0.0200***	0.0021	0.0041	0.0001	0.0037
Reactor Trip Rate* (# per 7,000 hours critical)	Darlington	***0.50***	***0.50***	0.00	0.25	0.00	0.33
	Pickering A	***0.40***	***0.50***	0.00	0.25	0.00	0.33
	Pickering B	***0.50***	***0.50***	0.00	0.25	0.00	0.33
Airborne Tritium Emissions (Curies)	Darlington	4000	4000	n/a	n/a	n/a	n/a
	Pickering A	12000	6000	n/a	n/a	n/a	n/a
	Pickering B	7000	5400	n/a	n/a	n/a	n/a

Reliability Cornerstone Targets

Metric	Site / Business Unit	2009 Projection**	2014	NA PWR/PHWR		CANDU	
				Best Quartile	Median	Best Quartile	Median
Tier 1							
WANO NPI (INPO)	Darlington	94.9	*98.6*	96.45	91.87	96.19	62.50
	Pickering A	57.4	*70.9*	96.45	91.87	96.19	62.50
	Pickering B	68.1	*81.3*	96.45	91.87	96.19	62.50
Unit Capability Factor* (%)	Darlington	86.5	***93.3***	92.78	90.44	90.97	84.31
	Pickering A	79.5	84.3	92.78	90.44	90.97	84.31
	Pickering B	87.3	81	92.78	90.44	90.97	84.31
Forced Loss Rate* (%)	Darlington	2.00	1.25	0.95	1.81	0.68	3.79
	Pickering A	11.50	4	0.95	1.81	0.68	3.79
	Pickering B	6.20	4	0.95	1.81	0.68	3.79
Net Electrical Production (TWh)***	Darlington	26.52	28.67	n/a	n/a	n/a	n/a
	Pickering A	6.37	7.57	n/a	n/a	n/a	n/a
	Pickering B	15.54	14.66	n/a	n/a	n/a	n/a
Tier 2							
Chemistry Performance Indicator*	Darlington	***1.01***	1.01	1.00	1.01	1.00	1.01
	Pickering A	1.08	1.04	1.00	1.01	1.00	1.01
	Pickering B	1.10	1.04	1.00	1.01	1.00	1.01
Online Elective Maintenance Backlog (# of workorders)	Darlington	300	215	218	278	n/a	n/a
	Pickering A	375	278	218	278	n/a	n/a
	Pickering B	575	300	218	278	n/a	n/a
Online Corrective Maintenance Backlog (# of workorders	Darlington	10	5	4	7	n/a	n/a
	Pickering A	15	9	4	7	n/a	n/a
	Pickering B	25	15	4	7	n/a	n/a

Reliability Cornerstone Targets (Cont'd)

Metric	Site / Business Unit	2009 Projection	2014	NA PWR/PHWR		CANDU	
				Best Quartile	Median	Best Quartile	Median
Plant Condition Index	Darlington	73.70	Internally generated, needs review with site plan	n/a	n/a	n/a	n/a
	Pickering A	56.00		n/a	n/a	n/a	n/a
	Pickering B	65.30		n/a	n/a	n/a	n/a
Equipment Reliability Index	Darlington	67.0	89	n/a	n/a	n/a	n/a
	Pickering A	45.0	82	n/a	n/a	n/a	n/a
	Pickering B	52.0	72	n/a	n/a	n/a	n/a
Planned Outage Performance (days)	Darlington	171.7	80.8	n/a	n/a	n/a	n/a
	Pickering A	106.5	89	n/a	n/a	n/a	n/a
	Pickering B	135.3	225	n/a	n/a	n/a	n/a
Plant Reliability List (# workorders completed)	Darlington	200	200	n/a	n/a	n/a	n/a
	Pickering A	600	200	n/a	n/a	n/a	n/a
	Pickering B	291	TBD	n/a	n/a	n/a	n/a
System Health (%)	Darlington	85.00	95.0%	n/a	n/a	n/a	n/a
	Pickering A	85.00	98.0%	n/a	n/a	n/a	n/a
	Pickering B	85.00	85.0%	n/a	n/a	n/a	n/a
PM Deferrals (#)	Darlington	7	2	n/a	n/a	n/a	n/a
	Pickering A	20	9	n/a	n/a	n/a	n/a
	Pickering B	15	4	n/a	n/a	n/a	n/a

Human Performance Cornerstone Targets

Metric	Site / Business Unit	2009 Projection	2014	No Benchmark Available	
				Best Quartile	Median
Tier 1					
Event Free Day Resets (#)	Darlington	8	4	n/a	n/a
	Pickering A	4	2	n/a	n/a
	Pickering B	8	4	n/a	n/a
Metric	**Site / Business Unit**	**2009 Projection**	**2014**	**NA PWR/PHWR**	
				Best Quartile	**Median**
Tier 2					
Corrective Action Program (CAP) - Quality of Level 1&2 Eval. (%) (Replaces Corrective Action Program Quality %)	Darlington	80.0	90	n/a	n/a
	Pickering A	80.0	90	n/a	n/a
	Pickering B	80.0	90	n/a	n/a
	NP&T	80.0	90	n/a	n/a
	E&M	80.0	90	n/a	n/a
	NSC	80.0	90	n/a	n/a
	IM&CS	80.0	90	n/a	n/a
Corrective Action Program (CAP) - Effect. of Level 1&2 SCRs (%) (Replaces Corrective Action Program Root Cause Effectivenss %)	Darlington	80.0	90	n/a	n/a
	Pickering A	80.0	90	n/a	n/a
	Pickering B	80.0	90	n/a	n/a
	NP&T	80.0	90	n/a	n/a
	E&M	80.0	90	n/a	n/a
	NSC	80.0	90	n/a	n/a
	IM&CS	80.0	90	n/a	n/a
Corrective Action Program (CAP)- Timeliness of Level 1&2 SCRs (%) (Replaces Corrective Action Program Timeliness %)	Darlington	80.0	95	n/a	n/a
	Pickering A	80.0	95	n/a	n/a
	Pickering B	80.0	95	n/a	n/a
	NP&T	80.0	95	n/a	n/a
	E&M	80.0	95	n/a	n/a
	NSC	80.0	95	n/a	n/a
	IM&CS	80.0	95	n/a	n/a
Training Index	Darlington	70	90	n/a	n/a
	Pickering A	70	90	n/a	n/a
	Pickering B	75	90	n/a	n/a

Value for Money Cornerstone Targets

Metric	Site / Business Unit	2009 Projection	2014	Projected 2014 Values	
				Best Quartile	Median
Tier 1					
OM&A Base & Outage ($MM)	Darlington	403.20	444.80	n/a	n/a
	Pickering A	260.30	272.86	n/a	n/a
	Pickering B	352.70	399.90	n/a	n/a
	NP&T	240.50	257.33	n/a	n/a
	E&M	81.00	77.76	n/a	n/a
	PINO	9.60	10.56	n/a	n/a
	NSC	71.90	73.91	n/a	n/a
	IM&CS	41.50	43.10	n/a	n/a
	NWM	4.60	4.39	n/a	n/a
Non-Fuel Operating Cost per MWh ($/MWh)	Darlington	30.13	28.82	25.53	29.08
	Pickering A	74.88	60.07	25.53	29.08
	Pickering B	46.01	52.47	25.53	29.08
Total Generating Cost per MWh** ($/MWh)	Darlington	36.48	36.75	33.98	37.90
	Pickering A	84.47	70.81	33.98	37.90
	Pickering B	54.17	64.80	33.98	37.90
Metric	Site / Business Unit	2009 Projection	2014	NA PWR/PHWR	
				Best Quartile	Median
Tier 2					
Nuclear Projects Available for Service (#)	Darlington	32	100%	n/a	n/a
	Pickering A	8	100%	n/a	n/a
	Pickering B	18	100%	n/a	n/a
	NP&T	7	100%	n/a	n/a

NOTE: OM&A Base and Outage ($MM) excludes approximately $11.6M in OM&A cost associated with the Office of the CNO.

Appendix F – Sample Fleet Improvement Initiative

Provided below is one of the fleet improvement initiatives recommended by the Radiological Protection Team. It is provided as an example of how the standard template was used during the process.

Initiative Action Plan

Initiative Number: RP-05

ONTARIO POWER GENERATION

NOTE: Hover mouse over section titles for additional details

Initiative Title:

Reduce collective radiation exposures (CRE) during reactorface work through optimization of reactor face shielding using combination of alternatives appropriate to the tasks being performed and units pltatform geometries and layout.

Initiative Number:

RP-05 { This a consoildated project for **DN (DA04 & DA07)**, **Pick-A(PA-SA1-)** & **Pick-B** }

Description:

In recent years, increased work activities at the reactor face associated with feeder and fuel channel work in all units have contributed to a steadily increasing dose trend and challenged the station's ability to meet industry standard. This consolidated project encompasses shielding options to the reactor face and overhead radiation fields through combination of Tungsten shielding blocks, overhead shielding structures and shielding cabinets. The implementation of this shielding strategy will provide much needed protection to workers and reduce the risks of unplanned exposures. Impact is expected to save up to 40% of Feeder Thinning inspection dose exposures per outage (i.e. 12 R / outage). This will in turn result in fewer contract workers being required since they are limited by dose (saving real money).

Cornerstone/ Metric(s) Targeted:

Cornerstone safety metrics: Collective Radiation Exposure (CRE), WANO NPI

Initiative Owner:

DA: (Tom Wong) ; IM&CS(Perry Bowles)

Expected Results: (Repeat table below for additional metrics)

Quantitative for Metric Impact:

Metric Name	Year	Darlington	Pickering A	Pickering B
CRE	2010	-3.8 rem/unit	0	0
CRE	2011	-5.6 rem/unit	-7.5 rem/unit	-2.0 rem/unit
CRE	2012	-5.2 rem/unit	-16.5 rem/unit	-4.7 rem/unit
CRE	2013	-10.8 rem/unit	-10.5 rem/unit	-3.8 rem/unit
CRE	2014	-7.2 rem/unit	-21 rem/unit	-7 rem/unit

Financial and Qualitative:

List any other benefits of metric by station/by year - include financial or other. Describe benefit

Metric Name	Year	Darlington	Pickering A	Pickering B
WANO NPI	2010	0.6	0	0
WANO NPI	2011	0.9	1.3	0.4
WANO NPI	2012	0.9	2.7	0.8
WANO NPI	2013	1.8	1.8	0.6
WANO NPI	2014	1.2	3.5	1.2

Additional comments for qualitative benefits

WANO NPI is a calculation of 10 sub-indicators, CRE contributes 10% to this index.

Metric Name	Year	Darlington	Pickering A	Pickering B
value for money	2010	0	0	0
value for money	2011	325,000	120,000	245,000
value for money	2012	325,000	120,000	120,000
value for money	2013	650,000	120,000	370,000
value for money	2014	325,000	0	185,000

ONTARIO POWER GENERATION

Initiative Action Plan

Initiative Number: RP-05

For operational costs saved, by reducing the outage dose exposure by 40%, we would require 40% fewer inspectors. Based on a reduction of 12R per outage, this equates to 20 fewer inspectors for up to 6 weeks per outage. Again assuming a maximum of 60 hours per week per person, the savings per Pickering A or Darlington outage would be around $600K per outage or $1.2M for 2 outages per year. Pickering B outages are less dose-intensive in this area thus the savings in people costs are smaller. The numbers quoted above are for the IMCS feeder inspection and SCRAPE campaign savings. Detailed Feeder replacement savings, believed to represent about 50% of the potential savings, are not available as of this Aug 26 revision.

Risks

Describe below any safety, technical or business risks associated with this initiative

> Field limitations (platform weight carrying capacity, overhead clearance etc) may affect equipment installation in the field. Project cost is highly dependent on the design which is not yet defined. Insufficient station resources and long lead items may affect the project schedule and delay the project deliverables.
> @ DN Shielding blocks may slow down feeder inspections as these blocks need to be removed one by one as the inspection progresses (Not expected to have a major impact). Impact on critical path is expected to be small (2 additional hours)

Resources:

List financial and personnel resources required – indicate any associated capital/O&M project ID numbers and if the project is currently budgeted for – include any budget implications by year and by specific type of budget impacted

NOTE: Although no additional resources are currently budgeted, it is important to note cost and work effort required for the initiative for prioritization purposes

Site/ Department	Year	O&M*	Capital*	Comments (include any numbers of FTEs corresponding to $ or other assumptions)
Darlington	2010		1035k$	302k$ will be needed in 2009 to cover the cost of engineering design, 733 will cover the cost of construction and commissioning in 2010. AISC development release has been approved, to develop AISC Part B
		500k$		Procurement of 480 shield blocks
Darlington	2011	500k$		Procurement of 480 shield blocks
Darlington	2012	LOE		
Darlington	2013	LOE		
Darlington	2014	LOE		
Pickering A	2010		1035k$	302k$ will be needed in 2009 to cover the cost of engineering design, 733k$ will cover the cost of construction and commissioning in 2010.
Pickering A	2011			
Pickering A	2012			
Pickering A	2013			
Pickering A	2014			
Pickering B	2010		1035k$	302k$ will be needed in 2009 to cover the cost of engineering design, 733k$ will cover the cost of construction and commissioning in 2010.
Pickering B	2011			
Pickering B	2012			
Pickering B	2013			
Pickering B	2014			
Corp. (specify dept.)	2010			
Corp. (specify dept.)	2011			
Corp. (specify dept.)	2012			
Corp. (specify dept.)	2013			
Corp. (specify dept.)	2014			

* Note: Initiatives seeking Capital or IT investments must obtain approval through the Asset Investment Screening Committee (AISC). All initiatives requiring budget will require approval and must show clear benefit.

ONTARIO POWER GENERATION

Initiative Action Plan

Initiative Number: RP-05

Technical Difficulty:	Rate technical difficulty to implement (Easy, Medium, or Hard)	Hard

Explain rating

The shielding cabinet/ overhead shielding structure must be able to be adaptable for a variety of work activities at the reactor face (feeder inspection, SFCR, damp scrape, etc.) and within the load bearing capacity of the reactor bridge platform and compactible with station system.

People Change Difficulty:	Rate difficulty in terms of people changes (Easy, Medium, or Hard)	Easy

Explain rating

People working in the shielding cabinet or under the shielding structure are passive users and should not be significantly impacted by it.

List any other measures or metrics used to track the success of initiatives – any success that can be measured near-term

Effectiveness Measures:

An average WANO RP NPI increase of up to 4.5 DN (shielding blocks & overhead shielding), 2.7 at PA and PB (shielding cabinets)is estimated.

Initiative Start/End Dates:	Start Date:	6/11/2009	End Date:	8/5/2011

Initiative Revision Date: 8/26/2009

Action Plan: Shielding cabinets and overhead shielding structures

Action	Description	Owner	Start Date	Completion Date	Comments
1	Submit Partial Release BCS/AISC Part B	IMCS	6/11/2009	7/7/2009	The partial release BCS approval that we proposed was not accepted. Utilizing a person-Rem savings cost justification was also scrutinized. The AISC Committee wanted to see a direct link to FTE savings. They also wanted incorporation of dose savings related to feeder weld overlay replacing feeder replacement at Darlington. The BCS has been re-worked as a developmental release and is headed back through the AISC.
1.1	Partial Release BCS Dispositioned	IMCS	6/11/2009	7/7/2009	
2	Conceptual Design Complete	IMCS	8/17/2009	9/4/2009	
2.1	Interface Agreement Complete	IMCS	8/17/2009	8/21/2009	
2.2	Conceptual Design Plan Approved and Issued	IMCS	8/21/2009	8/28/2009	
2.3	Issue Project Execution Plan (PEP)	IMCS	8/28/2009	9/4/2009	
3	Issue Full Release BCS	IMCS	9/4/2009	10/13/2009	
3.1	Full Release BSC Dispostitioned	IMCS	10/6/2009	10/13/2009	
4	Vendor Delivery	IMCS	10/20/2009	5/21/2010	
4.1	Issue Vendor PO	IMCS	10/20/2009	5/21/2010	
5	Overhead Shielding Structure AFS	IMCS	6/17/2009	8/27/2010	
5.1	Equipment Commissioning & Testing	IMCS	5/21/2010	6/17/2010	
5.2	Issue Operating Instructions	IMCS	6/17/2010	7/13/2010	

Appendix G – Staffing Benchmark Analysis – EUCG Data (Plant Level)

This appendix presents plant-level staffing comparisons prepared using EUCG data.

Table 1: Total Staff Summary

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Account		DARLINGTON	PICKERING B	[redacted]	[redacted]	[redacted]	PICKERING A	[redacted]	[redacted]	[redacted]	Mean of Lowest Quartile	Mean of Median
CM0A	Design/Mods/Technical Engineering	44.4	50.9	22.2	18.7	29.3	60.1	16.0	0.0	33.9	18.2	31.3
CM0B	Plant Computer Engineering	8.0	8.0	3.5	0.0	3.7	8.0	5.0	0.0	0.0	1.4	1.2
CMADM	CM Administrative Support	0.0	0.0	0.3	0.2	0.7	0.0	0.5	0.0	2.0	0.9	1.1
CMMGMT	CM Management	2.7	3.0	0.3	1.3	1.7	4.2	0.5	21.5	6.6	3.2	2.9
CMTOT	***Total - Configuration Management***	***55.1***	***61.8***	***26.3***	***20.2***	***35.3***	***72.3***	***22.0***	***21.5***	***42.5***	***23.7***	***36.6***
ER0A	Plant Engineering	45.6	40.9	21.5	27.0	29.0	74.1	37.3	0.0	37.0	22.9	33.6
ER0B	Non-destructive Exams - NDE	24.3	24.3	0.0	2.2	0.7	24.3	0.0	0.0	4.0	0.6	2.6
ERADM	ER Administrative Support	1.2	1.2	1.2	0.5	0.7	0.9	0.0	0.0	1.5	0.8	1.0
ERMGMT	ER Management	3.1	2.9	1.5	3.0	1.7	2.6	2.0	37.9	5.0	5.4	3.3
ERTOT	***Total - Equipment Reliability***	***74.2***	***69.2***	***24.2***	***32.7***	***32.0***	***101.9***	***39.3***	***37.9***	***47.5***	***29.7***	***40.5***
LP02	QA	4.3	4.3	5.3	3.3	7.7	4.3	5.3	8.5	0.0	5.3	6.9
LP03	Quality Control	0.5	0.5	1.0	0.0	3.7	0.5	1.5	1.5	7.3	1.1	3.0
LP04	Corrective Action Program and OE	3.6	3.9	1.0	2.2	4.7	7.1	3.0	2.0	2.5	2.1	4.9
LP05	Safety/Health	3.7	3.0	2.8	11.0	1.3	5.7	2.5	2.0	4.5	1.5	3.4
LP06	Licensing	2.0	3.3	3.5	1.3	4.3	0.5	11.8	4.3	2.8	5.1	3.6
LP07	Emergency Preparedness	1.8	1.8	3.0	3.5	1.7	1.8	3.5	2.5	2.3	2.6	2.9
LP08	Dedicated Fire Responders	14.1	14.4	9.7	18.2	0.0	0.6	0.5	0.0	0.0	2.4	1.6
LPADM	LP Administrative Support	0.4	0.4	0.5	1.3	2.0	0.4	0.0	0.5	3.9	1.2	2.2
LPMGMT	LP Management	3.1	3.1	0.7	2.8	8.0	3.3	1.3	0.5	10.9	2.3	3.8
LPTOT	***Total - Loss Prevention***	***33.5***	***34.5***	***27.5***	***43.7***	***33.3***	***24.2***	***29.3***	***21.8***	***34.0***	***23.5***	***32.1***
MS01	Materials Mgmt/Warehousing	14.3	14.3	9.3	10.0	4.7	14.3	5.5	8.0	12.5	7.1	11.4
MS02	Contracts/Purchasing	17.7	18.2	2.3	5.3	4.7	18.4	2.3	11.5	0.0	4.2	4.6
MS03	Procurement Engineering	5.9	5.9	1.3	5.7	7.7	5.9	3.8	5.5	0.0	2.7	4.2
MSADM	MS Administrative Support	0.4	0.4	0.0	0.5	0.3	0.4	0.0	2.5	0.0	0.5	0.7
MSMGMT	MS Management	1.9	2.4	0.4	1.0	1.3	1.9	0.3	0.5	0.0	1.1	0.8
MSTOT	***Total - Materials & Services***	***40.2***	***41.2***	***13.4***	***22.5***	***18.7***	***40.9***	***11.8***	***28.0***	***12.5***	***15.6***	***21.7***
NF00	Nuclear Fuels/Reactor Engrg	9.3	11.3	5.5	13.3	14.0	11.0	2.8	7.0	15.4	4.2	7.5
NFADM	NF Administrative Support	0.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.3	0.1	0.2
NFMGMT	NF Management	0.5	0.8	0.5	0.8	3.3	1.5	0.5	0.0	2.1	0.5	0.9
NFTOT	***Total - Nuclear Fuel***	***10.0***	***12.0***	***6.0***	***14.2***	***18.0***	***12.5***	***3.3***	***7.0***	***17.9***	***4.9***	***8.5***
OP01A	Operations	115.8	92.3	47.3	96.5	61.7	186.3	53.0	70.5	65.0	55.4	63.7
OP01B	Operations Support	21.1	16.8	42.3	20.2	18.3	19.8	12.0	24.5	10.6	18.5	19.1
OP02	Environmental	3.1	3.8	2.0	0.0	1.3	1.8	0.5	1.0	0.5	1.4	1.5
OP03	Chemistry	14.2	19.5	9.5	8.5	16.0	0.2	10.0	16.0	9.5	12.8	13.3
OP04	Radiation Protection	20.8	20.8	25.3	12.3	23.0	20.8	12.0	26.0	25.5	20.8	23.2
OP05	Radwaste	23.1	23.4	5.0	2.2	3.7	23.1	1.5	0.5	0.5	2.2	2.1
OPADM	OP Administrative Support	2.1	1.3	1.0	0.5	3.7	2.8	0.0	3.5	4.1	2.0	2.7
OPMGMT	OP Management	5.8	4.6	1.2	4.8	9.3	7.8	1.8	2.5	15.8	5.4	7.7
OPTOT	***Total - Operate Plant***	***205.9***	***182.4***	***133.7***	***145.0***	***137.0***	***262.6***	***90.8***	***144.5***	***131.5***	***118.6***	***133.4***
SS01	Information Technology	1.5	1.0	2.7	11.0	10.3	1.7	10.0	15.5	0.0	6.0	9.5
SS02	Business Services	12.4	11.4	4.3	9.0	7.0	16.6	6.0	7.7	3.3	3.7	8.2
SS03	Records Management and Procedures	41.2	40.5	4.8	23.3	3.3	41.2	12.0	4.0	8.4	5.8	8.4
SS04	Human Resources	3.8	4.1	1.8	4.8	2.3	5.3	2.5	6.1	2.3	2.2	2.7
SS05	Housekeeping and Facilities Management	47.6	47.1	15.7	21.2	19.3	55.8	10.5	10.5	21.0	10.5	14.2
SS06	Communications and Community Relations	2.1	1.9	0.3	2.3	1.0	2.6	1.0	0.5	0.4	0.6	1.0
SS07	Management Assistance and Industry Assoc	0.3	0.3	0.7	11.8	0.0	0.3	0.8	2.5	2.4	1.1	1.9
SS08	Nuclear Officers and Executives	1.2	1.2	3.5	5.5	4.0	1.2	7.3	3.4	2.0	3.5	4.1
SSADM	SS Administrative Support	2.9	2.7	0.7	4.2	0.3	1.9	14.3	1.0	1.0	1.9	2.8
SSMGMT	SS Management	4.7	4.2	1.0	4.3	0.7	4.7	0.8	0.5	5.9	2.4	3.7
SSTOT	***Total - Management & Support Services***	***117.6***	***114.1***	***35.5***	***97.5***	***48.3***	***131.3***	***65.0***	***51.6***	***46.5***	***37.7***	***56.5***
TR00	Training - Develop and Conduct	24.9	24.6	24.3	21.8	19.3	24.6	21.5	25.5	28.6	18.9	26.2
TRADM	Training Administrative Support	0.4	0.4	0.5	1.2	2.0	0.4	0.0	2.5	1.8	1.2	3.5
TRMGMT	Training Management	0.9	0.9	0.7	1.3	2.0	0.9	1.8	0.5	2.9	2.1	2.0
TRTOT	***Total - Training***	***26.2***	***25.9***	***25.5***	***24.3***	***23.3***	***25.9***	***23.3***	***28.5***	***33.3***	***22.2***	***31.7***
WM01A	Planning	7.1	3.1	18.7	36.0	9.3	10.6	14.0	11.0	13.5	14.4	13.7
WM01B	Maintenance/Construction Support	29.3	23.8	10.3	4.3	69.3	35.3	7.0	0.0	0.0	7.4	11.3
WM01C	Scheduling	12.8	16.0	4.3	9.5	4.7	21.0	8.0	6.5	0.0	7.5	5.0
WM01D	Outage Management	9.0	10.5	6.7	0.0	2.7	25.7	3.5	3.0	5.4	3.2	3.8
WM01E	Project Management	0.0	0.0	2.2	0.8	14.0	0.0	0.0	3.0	0.0	4.0	1.8
WM02J	Electrical Maintenance	40.7	37.7	28.7	42.5	4.3	54.8	13.5	17.0	17.0	20.4	19.1
WM02K	I&C Maintenance	40.7	37.7	33.7	0.0	23.0	54.8	11.5	32.0	19.0	24.7	25.2
WM02L	Mechanical Maintenance	62.4	62.7	35.0	39.0	48.7	82.9	33.0	31.0	27.5	37.1	49.0
WM02M	Other Craft/Toolroom/Calibration	0.1	1.6	2.0	18.3	6.0	0.1	0.0	3.5	16.0	0.9	7.6
WMADM	WM Administrative Support	0.9	0.6	1.0	0.8	3.7	0.6	0.0	2.0	3.5	2.9	2.7
WMMGMT	WM Management	3.1	4.4	2.5	8.2	8.7	4.6	2.3	10.0	19.1	5.1	8.1
WMTOT	***Total - Work Management***	***205.9***	***197.9***	***145.0***	***159.5***	***194.3***	***290.4***	***92.8***	***119.0***	***121.0***	***127.6***	***147.2***
	Sub-Total Total Staff	768.3	738.8	437.1	559.5	540.3	962.0	377.3	459.8	486.6	403.5	508.3
CAPTOT	Total - Capital Staffing	0.0	0.0	1.3	44.3	9.3	0.0	30.3	17.5	0.0	6.6	15.7
LP01	Security (Note 1)	0.0	0.0	[redacted]	[redacted]	[redacted]	0.0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ALLSTAFFTOT	Total Staffing with Capital and Security	768.3	738.8	[redacted]	[redacted]	[redacted]	962.0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Note 1: OPG Security Data excluded for confidentiality reasons.

Table 2: Onsite Staff Summary

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Account	Account Description	DARLINGTON (Median)	PICKERING B (Median)	[redacted]	[redacted]	[redacted]	PICKERING A	[redacted]	[redacted]	[redacted]	Mean of Lowest Quartile	Mean of Median
CM0A	Design/Mods/Technical Engineering	8.8	15.3	16.0	14.0	20.7	24.5	10.5	0.0	18.0	15.3	20.5
CM0B	Plant Computer Engineering	0.0	0.0	0.0	0.0	3.7	0.0	5.0	0.0	0.0	0.3	0.5
CMADM	CM Administrative Support	0.0	0.0	0.3	0.2	0.7	0.0	0.5	0.0	1.5	0.8	0.6
CMMGMT	CM Management	0.5	0.8	0.3	1.3	1.7	2.0	0.5	20.0	3.5	1.2	3.4
CMTOT	***Total - Configuration Management***	***9.3***	***16.0***	***16.7***	***15.5***	26.7	***26.5***	***16.5***	***20.0***	***23.0***	***17.6***	***25.0***
ER0A	Plant Engineering	31.5	26.8	19.0	25.2	24.7	60.0	31.5	0.0	37.0	23.9	31.5
ER0B	Non-destructive Exams - NDE	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	4.0	0.5	1.8
ERADM	ER Administrative Support	0.3	0.3	1.0	0.5	0.7	0.0	0.0	0.0	1.5	0.8	0.7
ERMGMT	ER Management	1.0	0.8	1.0	3.0	1.7	0.5	1.0	29.5	5.0	2.0	4.5
ERTOT	***Total - Equipment Reliability***	***32.8***	***27.8***	***21.0***	***30.8***	27.0	***60.5***	***32.5***	***29.5***	***47.5***	***27.2***	***38.4***
LP02	QA	0.0	0.0	2.7	3.0	0.0	0.0	3.5	7.0	0.0	3.9	4.9
LP03	Quality Control	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	5.5	0.8	2.0
LP04	Corrective Action Program and OE	2.5	2.8	1.0	2.0	2.7	6.0	2.5	2.0	2.5	2.3	3.9
LP05	Safety/Health	0.0	0.0	0.7	10.8	1.3	0.0	2.5	2.0	4.5	0.9	1.7
LP06	Licensing	1.5	2.8	2.3	1.3	3.0	0.0	6.0	4.0	2.0	3.2	2.7
LP07	Emergency Preparedness	0.0	0.0	0.7	3.5	1.7	0.0	3.5	2.5	1.5	1.5	2.4
LP08	Dedicated Fire Responders	13.5	13.8	9.7	18.2	0.0	0.0	0.5	0.0	0.0	1.4	3.3
LPADM	LP Administrative Support	0.0	0.0	0.0	1.3	2.0	0.0	0.0	0.5	3.0	0.9	1.2
LPMGMT	LP Management	1.0	1.0	0.0	2.8	5.3	1.5	0.0	0.5	9.5	1.5	3.0
LPTOT	***Total - Loss Prevention (w/o Security)***	***18.5***	***20.3***	***17.0***	***43.0***	16.0	***7.5***	***20.0***	***18.5***	***28.5***	***16.5***	***25.0***
MS01	Materials Mgmt/Warehousing	0.0	0.0	9.3	10.0	4.0	0.0	5.5	6.5	12.5	7.7	8.2
MS02	Contracts/Purchasing	0.8	1.3	0.0	5.3	0.0	1.5	1.5	5.5	0.0	2.4	1.8
MS03	Procurement Engineering	0.0	0.0	1.3	5.5	0.0	0.0	3.0	4.5	0.0	2.0	3.0
MSADM	MS Administrative Support	0.0	0.0	0.0	0.5	0.0	0.0	0.0	2.5	0.0	0.5	0.4
MSMGMT	MS Management	0.0	0.5	0.3	1.0	0.0	0.0	0.0	0.5	0.0	0.8	0.4
MSTOT	***Total - Materials & Services***	***0.8***	***1.8***	***11.0***	***22.3***	4.0	***1.5***	***10.0***	***19.5***	***12.5***	***13.4***	***13.8***
NF00	Nuclear Fuels/Reactor Engrg	9.3	11.3	3.0	13.0	6.0	11.0	0.0	1.5	0.0	1.6	3.1
NFADM	NF Administrative Support	0.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.1
NFMGMT	NF Management	0.5	0.8	0.0	0.8	1.7	1.5	0.0	0.0	0.0	0.3	0.2
NFTOT	***Total - Nuclear Fuel***	***10.0***	***12.0***	***3.0***	***13.8***	8.3	***12.5***	***0.0***	***1.5***	***0.0***	***1.8***	***3.4***
OP01A	Operations	114.0	90.5	47.3	96.5	61.7	184.5	53.0	70.5	65.0	52.2	69.5
OP01B	Operations Support	20.3	16.0	36.7	18.5	18.3	19.0	10.5	24.5	9.0	17.4	18.6
OP02	Environmental	1.3	2.0	2.0	0.0	1.3	0.0	0.5	1.0	0.5	1.2	1.2
OP03	Chemistry	14.0	19.3	8.7	8.3	15.0	0.0	10.0	16.0	9.5	12.3	14.1
OP04	Radiation Protection	9.5	9.5	19.7	12.3	15.3	9.5	12.0	26.0	25.5	19.8	20.8
OP05	Radwaste	0.0	0.3	5.0	2.2	3.0	0.0	1.5	0.5	0.5	1.8	2.0
OPADM	OP Administrative Support	0.8	0.3	1.0	0.5	3.7	2.0	0.0	3.5	4.0	2.1	2.1
OPMGMT	OP Management	2.3	1.3	1.0	4.8	7.7	5.5	1.5	2.5	15.5	5.8	6.5
OPTOT	***Total - Operate Plant***	***162.0***	***139.0***	***121.3***	***143.2***	126.0	***220.5***	***89.0***	***144.5***	***129.5***	***112.8***	***134.8***
SS01	Information Technology	0.3	0.0	2.0	10.8	3.3	0.0	3.0	14.5	0.0	3.2	3.0
SS02	Business Services	2.8	2.0	3.0	9.0	4.3	6.5	4.5	4.5	2.5	2.4	4.8
SS03	Records Management and Procedures	0.8	0.0	4.0	23.3	2.3	0.5	10.0	4.0	7.0	4.2	6.6
SS04	Human Resources	0.0	0.0	1.3	4.7	1.3	0.0	1.5	3.0	1.5	1.2	1.5
SS05	Housekeeping and Facilities Management	26.3	25.8	4.7	21.2	11.3	34.5	10.5	10.5	21.0	5.9	11.8
SS06	Communications and Community Relations	0.0	0.0	0.3	2.3	0.7	0.0	1.0	0.5	0.0	0.6	0.4
SS07	Management Assistance and Industry Assoc	0.0	0.0	0.3	11.7	0.0	0.0	0.5	2.5	1.0	0.4	1.2
SS08	Nuclear Officers and Executives	0.5	0.3	2.3	5.3	2.3	0.5	6.0	1.5	1.0	2.0	3.8
SSADM	SS Administrative Support	0.5	0.3	0.3	4.2	0.0	0.0	13.0	1.0	1.0	1.8	1.7
SSMGMT	SS Management	1.0	0.5	0.7	4.3	0.0	1.5	0.0	0.5	5.5	1.2	2.4
SSTOT	***Total - Management & Support Services***	***32.0***	***28.8***	***19.0***	***96.8***	25.7	***43.5***	***50.0***	***42.5***	***40.5***	***23.0***	***37.2***
TR00	Training - Develop and Conduct	0.3	0.0	17.7	15.3	18.3	0.0	21.5	24.5	26.5	18.4	22.3
TRADM	Training Administrative Support	0.0	0.0	0.3	1.2	2.0	0.0	0.0	2.5	1.5	1.3	2.9
TRMGMT	Training Management	0.0	0.0	0.7	1.3	2.0	0.0	1.5	0.5	2.5	1.6	1.8
TRTOT	***Total - Training***	***0.3***	***0.0***	***18.7***	***17.8***	22.3	***0.0***	***23.0***	***27.5***	***30.5***	***21.4***	***26.9***
WM01A	Planning	5.5	1.5	18.7	34.0	7.0	9.0	10.5	11.0	13.5	13.9	9.3
WM01B	Maintenance/Construction Support	11.0	5.5	4.0	4.3	11.0	17.0	7.0	0.0	0.0	4.0	6.0
WM01C	Scheduling	5.5	9.0	4.3	9.0	4.7	14.0	6.5	6.5	0.0	6.9	5.0
WM01D	Outage Management	8.8	10.3	6.7	0.0	2.3	25.5	3.5	3.0	5.0	2.3	4.6
WM01E	Project Management	0.0	0.0	1.3	0.8	6.0	0.0	0.0	2.5	0.0	1.8	0.9
WM02J	Electrical Maintenance	36.3	33.3	28.7	42.5	4.3	50.5	13.5	17.0	17.0	20.0	17.2
WM02K	I&C Maintenance	36.3	33.3	33.7	0.0	23.0	50.5	11.5	32.0	19.0	22.7	28.5
WM02L	Mechanical Maintenance	54.5	54.8	35.0	39.0	48.7	75.0	30.0	29.5	27.5	34.5	41.7
WM02M	Other Craft/Toolroom/Calibration	0.0	1.5	2.0	18.3	3.3	0.0	0.0	3.5	13.0	0.5	2.8
WMADM	WM Administrative Support	0.8	0.5	1.0	0.8	3.7	0.5	0.0	2.0	3.0	3.0	1.8
WMMGMT	WM Management	2.5	3.8	2.0	8.2	8.0	4.0	2.0	5.5	19.0	5.4	6.4
WMTOT	***Total - Work Management***	***161.0***	***153.3***	***137.3***	***157.0***	122.0	***246.0***	***84.5***	***112.5***	***117.0***	***115.1***	***124.1***
	Sub-Total On-Site	426.5	398.8	365.0	540.3	378.0	618.5	325.5	416.0	429.0	348.8	428.6
CAPTOT	Total - Capital Staffing	0.0	0.0	1.3	44.3	0.0	0.0	9.5	7.0	0.0	1.8	8.4
LP01	Security (Note 1)	0.0	0.0	[redacted]	[redacted]	[redacted]	0.0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ALLSTAFFTOT	Total Staffing with Capital and Security	426.5	398.8	[redacted]	[redacted]	[redacted]	618.5	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Note 1: OPG Security Data excluded for confidentiality reasons.

Table 3: Offsite Staff Summary

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Account	Account Description	DARLINGTON	PICKERING B	[redacted]	[redacted]	[redacted]	PICKERING A	[redacted]	[redacted]	[redacted]	Mean of Lowest Quartile	Mean of Median
CM0A	Design/Mods/Technical Engineering	35.6	35.6	6.2	0.0	0.0	35.6	0.0	0.0	15.9	0.0	2.9
CM0B	Plant Computer Engineering	8.0	8.0	3.5	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.7
CMADM	CM Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
CMMGMT	CM Management	2.2	2.2	0.0	0.0	0.0	2.2	0.0	1.5	3.1	0.0	0.5
CMTOT	***Total - Configuration Management***	***45.8***	***45.8***	***9.7***	***0.0***	***0.0***	***45.8***	***0.0***	***1.5***	***19.5***	***0.0***	***4.2***
ER0A	Plant Engineering	14.1	14.1	2.5	0.0	3.0	14.1	2.8	0.0	0.0	0.0	1.4
ER0B	Non-destructive Exams - NDE	24.3	24.3	0.0	0.0	0.7	24.3	0.0	0.0	0.0	0.0	0.1
ERADM	ER Administrative Support	0.9	0.9	0.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
ERMGMT	ER Management	2.1	2.1	0.5	0.0	0.0	2.1	1.0	8.4	0.0	0.0	0.9
ERTOT	***Total - Equipment Reliability***	***41.4***	***41.4***	***3.2***	***0.0***	***3.7***	***41.4***	***3.8***	***8.4***	***0.0***	***0.0***	***2.3***
LP02	QA	4.3	4.3	2.7	0.0	7.7	4.3	1.8	1.5	0.0	0.1	0.8
LP03	Quality Control	0.5	0.5	1.0	0.0	3.7	0.5	0.0	1.5	1.8	0.0	0.2
LP04	Corrective Action Program and OE	1.1	1.1	0.0	0.0	2.0	1.1	0.5	0.0	0.0	0.0	0.2
LP05	Safety/Health	3.7	3.0	2.2	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.3
LP06	Licensing	0.5	0.5	1.2	0.0	1.3	0.5	0.8	0.3	0.8	0.0	0.8
LP07	Emergency Preparedness	1.8	1.8	2.3	0.0	0.0	1.8	0.0	0.0	0.8	0.0	0.8
LP08	Dedicated Fire Responders	0.6	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0
LPADM	LP Administrative Support	0.4	0.4	0.5	0.0	0.0	0.4	0.0	0.0	0.9	0.0	0.3
LPMGMT	LP Management	2.1	2.1	0.7	0.0	2.7	1.8	1.3	0.0	1.4	0.0	0.6
LPTOT	***Total - Loss Prevention***	***15.0***	***14.3***	***10.5***	***0.0***	***17.3***	***16.7***	***4.3***	***3.3***	***5.5***	***0.1***	***4.0***
MS01	Materials Mgmt/Warehousing	14.3	14.3	0.0	0.0	0.7	14.3	0.0	1.5	0.0	0.2	0.2
MS02	Contracts/Purchasing	16.9	16.9	2.3	0.0	3.0	16.9	0.8	6.0	0.0	0.3	2.1
MS03	Procurement Engineering	5.9	5.9	0.0	0.0	7.7	5.9	0.3	1.0	0.0	0.1	0.2
MSADM	MS Administrative Support	0.4	0.4	0.0	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.1
MSMGMT	MS Management	1.9	1.9	0.1	0.0	1.3	1.9	0.3	0.0	0.0	0.2	0.1
MSTOT	***Total - Materials & Services***	***39.4***	***39.4***	***2.4***	***0.0***	***13.0***	***39.4***	***1.3***	***8.5***	***0.0***	***0.9***	***2.6***
NF00	Nuclear Fuels/Reactor Engrg	0.0	0.0	2.5	0.0	8.0	0.0	2.8	5.5	15.4	0.2	2.2
NFADM	NF Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1
NFMGMT	NF Management	0.0	0.0	0.5	0.0	1.7	0.0	0.5	0.0	2.1	0.2	0.2
NFTOT	***Total - Nuclear Fuel***	***0.0***	***0.0***	***3.0***	***0.0***	***9.7***	***0.0***	***3.3***	***5.5***	***17.9***	***0.4***	***2.5***
OP01A	Operations	1.8	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0
OP01B	Operations Support	0.8	0.8	0.0	0.0	0.0	0.8	0.0	0.0	1.6	0.0	0.1
OP02	Environmental	1.8	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.2
OP03	Chemistry	0.2	0.2	0.8	0.0	1.0	0.2	0.0	0.0	0.0	0.0	0.2
OP04	Radiation Protection	11.3	11.3	2.0	0.0	2.7	11.3	0.0	0.0	0.0	0.0	0.2
OP05	Radwaste	23.1	23.1	0.0	0.0	0.7	23.1	0.0	0.0	0.0	0.0	0.0
OPADM	OP Administrative Support	1.3	1.1	0.0	0.0	0.0	0.8	0.0	0.0	0.1	0.0	0.1
OPMGMT	OP Management	3.6	3.3	0.2	0.0	1.7	2.3	0.3	0.0	0.3	0.0	0.2
OPTOT	***Total - Operate Plant***	***43.9***	***43.4***	***3.0***	***0.0***	***6.0***	***42.1***	***0.3***	***0.0***	***2.0***	***0.0***	***0.9***
SS01	Information Technology	1.2	1.0	0.7	0.0	7.0	1.7	4.0	0.0	0.0	1.1	3.2
SS02	Business Services	9.6	9.4	1.3	0.0	1.3	10.1	1.5	3.2	0.8	0.1	1.1
SS03	Records Management and Procedures	40.5	40.5	0.8	0.0	0.0	40.7	0.5	0.0	1.4	0.0	0.4
SS04	Human Resources	3.8	4.1	0.5	0.0	1.0	5.3	1.0	2.6	0.8	0.1	1.2
SS05	Housekeeping and Facilities Management	21.3	21.3	0.0	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.4
SS06	Communications and Community Relations	2.1	1.9	0.0	0.0	0.3	2.6	0.0	0.0	0.4	0.0	0.2
SS07	Management Assistance and Industry Assoc	0.3	0.3	0.3	0.0	0.0	0.3	0.3	0.0	1.4	0.0	0.6
SS08	Nuclear Officers and Executives	0.7	1.0	1.2	0.0	1.7	0.7	1.3	1.9	1.0	0.0	1.1
SSADM	SS Administrative Support	2.4	2.4	0.3	0.0	0.3	1.9	1.3	0.0	0.0	0.0	0.2
SSMGMT	SS Management	3.7	3.7	0.3	0.0	0.7	3.2	0.8	0.0	0.4	0.0	0.5
SSTOT	***Total - Management & Support Services***	***85.6***	***85.3***	***5.5***	***0.0***	***12.3***	***87.8***	***10.5***	***7.6***	***6.0***	***1.3***	***8.9***
TR00	Training - Develop and Conduct	24.6	24.6	0.0	0.0	0.3	24.6	0.0	1.0	2.1	0.0	0.3
TRADM	Training Administrative Support	0.4	0.4	0.2	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0
TRMGMT	Training Management	0.9	0.9	0.0	0.0	0.0	0.9	0.3	0.0	0.4	0.0	0.3
TRTOT	***Total - Training***	***25.9***	***25.9***	***0.2***	***0.0***	***0.3***	***25.9***	***0.3***	***1.0***	***2.8***	***0.0***	***0.7***
WM01A	Planning	1.6	1.6	0.0	0.0	0.7	1.6	0.0	0.0	0.0	0.0	0.1
WM01B	Maintenance/Construction Support	18.3	18.3	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	0.2
WM01C	Scheduling	7.3	7.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.1
WM01D	Outage Management	0.2	0.2	0.0	0.0	0.3	0.2	0.0	0.0	0.4	0.0	0.4
WM01E	Project Management	0.0	0.0	0.8	0.0	8.0	0.0	0.0	0.5	0.0	0.0	0.4
WM02J	Electrical Maintenance	4.4	4.4	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.2
WM02K	I&C Maintenance	4.4	4.4	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0
WM02L	Mechanical Maintenance	7.9	7.9	0.0	0.0	0.0	7.9	0.0	1.5	0.0	0.0	0.3
WM02M	Other Craft/Toolroom/Calibration	0.1	0.1	0.0	0.0	2.7	0.1	0.0	0.0	0.0	0.0	0.0
WMADM	WM Administrative Support	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
WMMGMT	WM Management	0.6	0.6	0.5	0.0	0.7	0.6	0.3	2.0	0.1	0.0	0.5
WMTOT	***Total - Work Management***	***44.9***	***44.7***	***1.3***	***0.0***	***12.3***	***44.4***	***0.3***	***4.0***	***0.5***	***0.0***	***2.2***
	Sub-Total Off-Site	341.8	340.1	38.8	0.0	74.7	343.5	23.8	39.8	54.1	2.7	28.3
CAPTOT	Total - Capital Staffing	0.0	0.0	0.0	0.0	9.3	0.0	1.3	0.0	0.0	0.0	0.1
LP01	Security (Note 1)	0.0	0.0	[redacted]	[redacted]	[redacted]	0.0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ALLSTAFFTOT	Total Staffing with Capital and Security	341.8	340.1	[redacted]	[redacted]	[redacted]	343.5	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Note 1: OPG Security Data excluded for confidentiality reasons.

Table 4: Baseline Contractors Summary

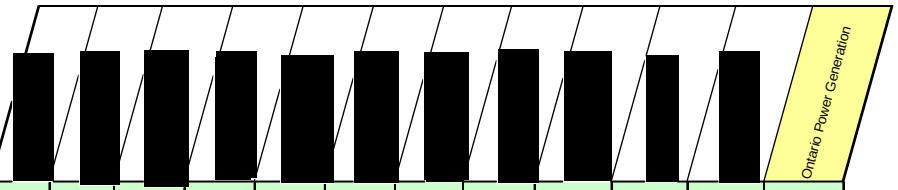
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Account	Account Description	DARLINGTON (Lowest)	PICKERING A (Lowest)	[redacted]	[redacted]	[redacted]	PICKERING A	[redacted]	[redacted]	[redacted]	Mean of Lowest Quartile	Mean of Median
CM0A	Design/Mods/Technical Engineering	0.0	0.0	0.0	4.7	8.7	0.0	5.5	0.0	0.0	0.2	0.4
CM0B	Plant Computer Engineering	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CMADM	CM Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
CMMGMT	CM Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CMTOT	***Total - Configuration Management***	***0.0***	***0.0***	***0.0***	***4.7***	8.7	***0.0***	***5.5***	***0.0***	***0.0***	***0.3***	***0.4***
ER0A	Plant Engineering	0.0	0.0	0.0	1.8	1.3	0.0	3.0	0.0	0.0	0.0	0.2
ER0B	Non-destructive Exams - NDE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
ERADM	ER Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ERMGMT	ER Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ERTOT	***Total - Equipment Reliability***	***0.0***	***0.0***	***0.0***	***1.8***	1.3	***0.0***	***3.0***	***0.0***	***0.0***	***0.1***	***0.2***
LP02	QA	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1
LP03	Quality Control	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LP04	Corrective Action Program and OE	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LP05	Safety/Health	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.6
LP06	Licensing	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0
LP07	Emergency Preparedness	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LP08	Dedicated Fire Responders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LPADM	LP Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LPMGMT	LP Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LPTOT	***Total - Loss Prevention***	***0.0***	***0.0***	***0.0***	***0.7***	0.0	***0.0***	***5.0***	***0.0***	***0.0***	***0.1***	***0.7***
MS01	Materials Mgmt/Warehousing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
MS02	Contracts/Purchasing	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.1
MS03	Procurement Engineering	0.0	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.0	0.0	0.0
MSADM	MS Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MSMGMT	MS Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MSTOT	***Total - Materials & Services***	***0.0***	***0.0***	***0.0***	***0.2***	1.7	***0.0***	***0.5***	***0.0***	***0.0***	***0.0***	***0.4***
NF00	Nuclear Fuels/Reactor Engrg	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NFADM	NF Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NFMGMT	NF Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NFTOT	***Total - Nuclear Fuel***	***0.0***	***0.0***	***0.0***	***0.3***	0.0	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***
OP01A	Operations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
OP01B	Operations Support	0.0	0.0	5.7	1.7	0.0	0.0	1.5	0.0	0.0	0.0	0.3
OP02	Environmental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
OP03	Chemistry	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0
OP04	Radiation Protection	0.0	0.0	3.7	0.0	5.0	0.0	0.0	0.0	0.0	0.2	0.2
OP05	Radwaste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPADM	OP Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
OPMGMT	OP Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPTOT	***Total - Operate Plant***	***0.0***	***0.0***	***9.3***	***1.8***	5.0	***0.0***	***1.5***	***0.0***	***0.0***	***0.4***	***1.1***
SS01	Information Technology	0.0	0.0	0.0	0.2	0.0	0.0	3.0	1.0	0.0	0.3	0.8
SS02	Business Services	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0
SS03	Records Management and Procedures	0.0	0.0	0.0	0.0	1.0	0.0	1.5	0.0	0.0	0.0	0.3
SS04	Human Resources	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5	0.0	0.0	0.0
SS05	Housekeeping and Facilities Management	0.0	0.0	11.0	0.0	8.0	0.0	0.0	0.0	0.0	0.8	3.3
SS06	Communications and Community Relations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SS07	Management Assistance and Industry Assoc	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
SS08	Nuclear Officers and Executives	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSADM	SS Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSMGMT	SS Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSTOT	***Total - Management & Support Services***	***0.0***	***0.0***	***11.0***	***0.7***	10.3	***0.0***	***4.5***	***1.5***	***0.0***	***1.1***	***4.5***
TR00	Training - Develop and Conduct	0.0	0.0	6.7	6.5	0.7	0.0	0.0	0.0	0.0	0.0	1.2
TRADM	Training Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRMGMT	Training Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRTOT	***Total - Training***	***0.0***	***0.0***	***6.7***	***6.5***	0.7	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***1.2***
WM01A	Planning	0.0	0.0	0.0	2.0	1.7	0.0	3.5	0.0	0.0	0.2	0.5
WM01B	Maintenance/Construction Support	0.0	0.0	6.3	0.0	58.3	0.0	0.0	0.0	0.0	0.8	2.2
WM01C	Scheduling	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0
WM01D	Outage Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
WM01E	Project Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.9
WM02J	Electrical Maintenance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
WM02K	I&C Maintenance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1
WM02L	Mechanical Maintenance	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.1	1.9
WM02M	Other Craft/Toolroom/Calibration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	2.1
WMADM	WM Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.2
WMMGMT	WM Management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.2	0.0
WMTOT	***Total - Work Management***	***0.0***	***0.0***	***6.3***	***2.5***	60.0	***0.0***	***8.0***	***2.5***	***3.5***	***2.8***	***8.3***
	Sub-Total Base-Line Contractors	0.0	0.0	33.3	19.2	87.7	0.0	28.0	4.0	3.5	4.9	16.9
CAPTOT	Total - Capital Staffing	0.0	0.0	0.0	0.0	0.0	0.0	19.5	10.5	0.0	0.7	1.9
LP01	Security (Note 1)	0.0	0.0	[redacted]	[redacted]	[redacted]	0.0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ALLSTAFFTOT	Total Staffing with Capital and Security	0.0	0.0	[redacted]	[redacted]	[redacted]	0.0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Note 1: OPG Security Data excluded for confidentiality reasons.

Appendix H – Staffing Benchmark Analysis – EUCG Data (Operator Level)

This appendix presents operator-level staffing comparisons prepared using EUCG data.

Offsite Operator Level Staffing Summary

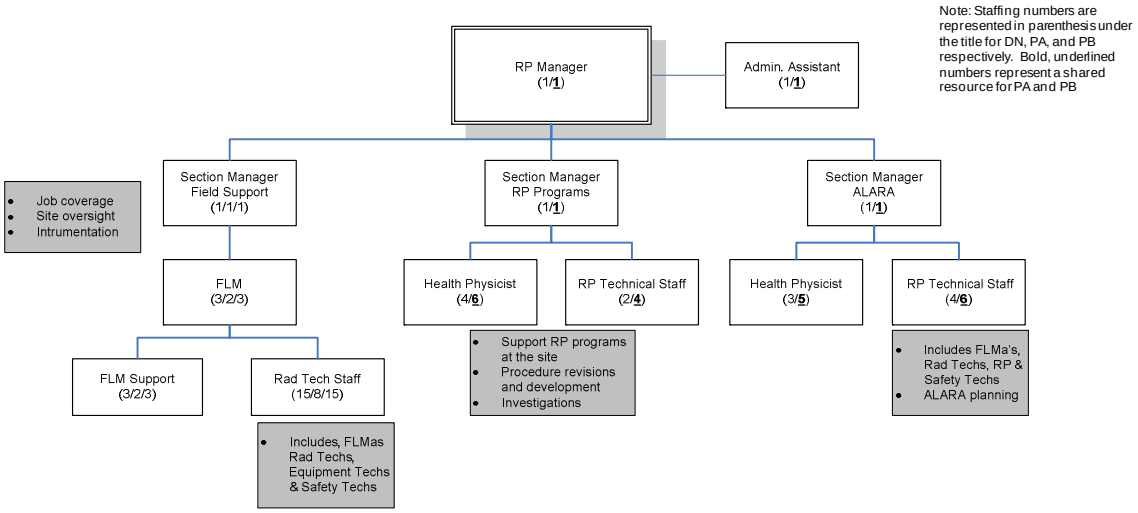


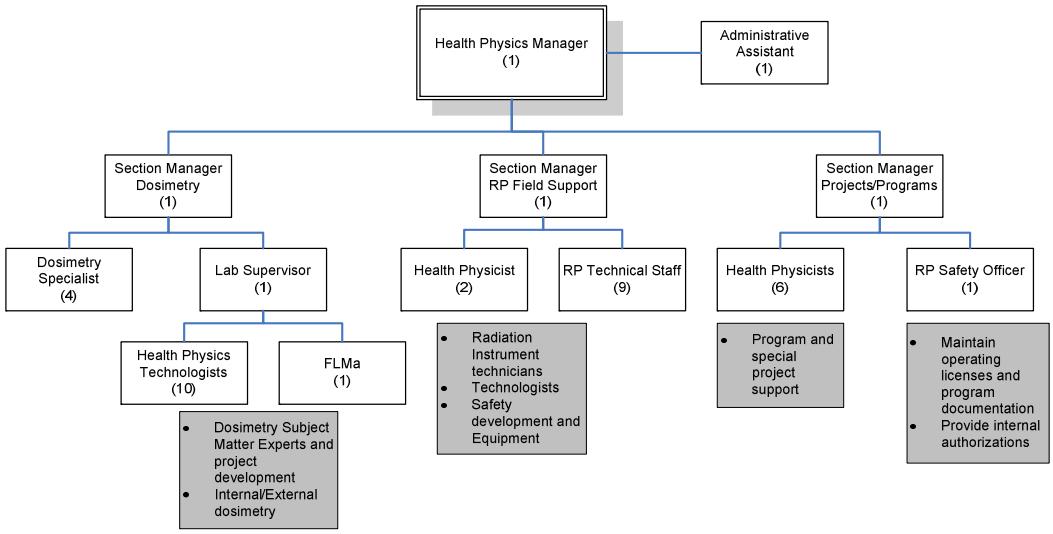
Account	Account Description											
	Units	7.0	3.0	3.0	5.0	5.0	4.0	6.0	7.0	6.0	7.0	17.0	10.0
	Stations	5.0	2.0	2.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	10.0	3.0
CM0A	Design/Mods/Technical Engineering	0.0	0.0	0.0	3.0	31.0	9.0	37.0	126.5	112.9	0.0	77.0	356.0
CM0B	Plant Computer Engineering	0.0	0.0	0.0	0.0	0.0	0.0	21.0	0.0	0.0	0.0	26.0	80.0
CMADM	CM Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	5.0	0.0	1.0	0.0
CMMGMT	CM Management	0.0	0.0	0.0	4.0	0.0	0.0	0.0	25.0	6.0	0.0	25.0	22.0
CMTOT	***Total - Configuration Management***	***0.0***	***0.0***	***0.0***	***7.0***	***31.0***	***9.0***	***58.0***	***155.5***	***123.8***	***0.0***	***129.0***	***458.0***
ER0A	Plant Engineering	0.0	11.0	0.0	7.0	4.0	31.0	15.0	0.0	46.0	27.0	24.0	141.0
ER0B	Non-destructive Exams - NDE	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	9.0	6.0	5.2	243.0
ERADM	ER Administrative Support	0.0	0.0	0.0	0.0	0.0	0.2	1.0	0.0	2.0	0.0	0.0	9.0
ERMGMT	ER Management	1.0	4.0	19.0	31.8	5.0	0.2	3.0	0.0	2.0	0.0	4.2	21.0
ERTOT	***Total - Equipment Reliability***	***1.0***	***15.0***	***19.0***	***38.8***	***10.0***	***32.4***	***19.0***	***0.0***	***59.0***	***33.0***	***33.4***	***414.0***
LP02	QA	0.0	7.0	15.0	7.0	4.0	0.0	16.0	0.0	12.0	69.0	17.0	43.0
LP03	Quality Control	0.0	0.0	0.0	7.0	1.0	0.0	6.0	14.0	0.0	33.0	0.0	5.0
LP04	Corrective Action Program and OE	0.0	2.0	0.0	0.0	7.0	5.0	0.0	0.0	7.0	18.0	1.0	11.0
LP05	Safety/Health	0.0	0.0	0.0	0.0	1.0	4.0	14.0	0.0	9.0	0.0	0.9	38.0
LP06	Licensing	0.0	3.0	9.0	1.5	11.0	10.0	6.7	6.0	23.0	12.0	23.0	5.0
LP07	Emergency Preparedness	0.0	0.0	8.0	0.0	0.0	6.0	14.0	6.0	3.0	0.0	24.0	18.0
LP08	Dedicated Fire Responders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
LPADM	LP Administrative Support	0.0	0.0	0.0	0.0	3.0	0.0	3.0	7.0	6.3	0.0	11.0	4.0
LPMGMT	LP Management	1.0	5.0	0.0	0.0	5.0	1.3	4.0	11.0	3.0	24.0	26.0	20.0
LPTOT	***Total - Loss Prevention***	***1.0***	***17.0***	***32.0***	***15.5***	***32.0***	***26.3***	***63.7***	***44.0***	***63.3***	***156.0***	***102.9***	***150.0***
MS01	Materials Mgmt/Warehousing	3.6	0.0	2.0	7.0	0.0	3.0	0.0	0.0	0.0	6.0	0.0	143.0
MS02	Contracts/Purchasing	6.5	3.0	2.0	29.0	4.0	44.0	17.0	0.0	30.0	25.0	6.2	169.0
MS03	Procurement Engineering	1.8	1.0	0.0	5.0	0.0	0.0	0.0	0.0	9.0	68.0	0.0	59.0
MSADM	MS Administrative Support	0.9	0.0	1.0	0.0	0.0	1.0	0.0	0.0	3.0	3.0	1.2	4.0
MSMGMT	MS Management	4.5	1.0	2.0	0.0	1.0	1.0	0.9	0.0	3.0	12.0	2.2	19.0
MSTOT	***Total - Materials & Services***	***17.3***	***5.0***	***7.0***	***41.0***	***5.0***	***49.0***	***17.9***	***0.0***	***45.0***	***114.0***	***9.6***	***394.0***
NF00	Nuclear Fuels/Reactor Engrg	0.0	11.0	16.0	25.0	29.0	15.0	15.0	108.0	23.0	74.0	38.0	0.0
NFADM	NF Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	6.0	0.0
NFMGMT	NF Management	0.0	2.0	0.0	0.0	2.0	1.0	2.3	15.0	3.0	15.0	8.0	0.0
NFTOT	***Total - Nuclear Fuel***	***0.0***	***13.0***	***16.0***	***25.0***	***31.0***	***16.0***	***17.3***	***125.0***	***28.0***	***89.0***	***52.0***	***0.0***
OP01A	Operations	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0
OP01B	Operations Support	0.0	0.0	0.0	0.0	0.0	0.7	0.0	13.0	0.0	0.0	5.0	8.0
OP02	Environmental	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	7.0	18.0
OP03	Chemistry	0.0	0.0	0.0	0.0	0.0	7.0	5.0	0.0	0.0	9.0	3.0	2.0
OP04	Radiation Protection	0.0	0.0	0.0	0.0	0.0	1.4	12.0	0.0	0.0	24.0	2.0	113.0
OP05	Radwaste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	1.0	231.0
OPADM	OP Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	3.0	11.0
OPMGMT	OP Management	0.0	1.0	0.0	0.0	3.0	0.7	1.0	2.0	0.0	15.0	8.0	32.0
OPTOT	***Total - Operate Plant***	***0.0***	***1.0***	***0.0***	***1.0***	***3.0***	***12.0***	***18.0***	***16.0***	***0.0***	***54.0***	***29.0***	***433.0***
SS01	Information Technology	25.5	16.0	0.0	0.0	63.0	0.0	6.0	0.0	22.0	63.0	30.0	12.0
SS02	Business Services	0.0	6.0	0.0	15.0	7.0	1.7	10.0	6.0	68.0	12.0	19.0	96.0
SS03	Records Management and Procedures	0.0	2.0	0.0	0.0	0.0	10.0	5.0	11.0	2.3	0.0	15.0	405.0
SS04	Human Resources	0.6	4.0	0.0	12.0	2.5	8.0	4.0	6.0	11.0	9.0	11.0	42.0
SS05	Housekeeping and Facilities Management	0.0	0.0	52.0	0.5	0.0	2.7	0.0	0.0	0.0	0.0	2.4	213.0
SS06	Communications and Community Relations	0.0	0.0	0.0	0.0	0.0	0.7	0.0	3.0	6.0	3.0	4.0	21.0
SS07	Management Assistance and Industry Assc	0.0	1.0	0.0	0.0	3.0	8.0	2.0	11.0	1.0	0.0	25.0	3.0
SS08	Nuclear Officers and Executives	0.0	5.0	4.0	9.0	6.0	7.3	7.0	8.0	3.0	15.0	36.0	8.0
SSADM	SS Administrative Support	0.0	5.0	0.0	0.0	0.0	5.0	2.0	0.0	19.0	3.0	5.0	23.0
SSMGMT	SS Management	0.0	3.0	29.0	0.0	2.8	0.0	2.0	3.0	21.0	6.0	22.4	36.0
SSTOT	***Total - Management & Support Service***	***26.1***	***42.0***	***85.0***	***36.5***	***84.3***	***43.2***	***38.0***	***48.0***	***153.2***	***111.0***	***169.8***	***859.0***
TR00	Training - Develop and Conduct	0.0	0.0	0.0	4.0	0.3	0.0	0.0	17.0	3.0	3.0	12.0	246.0
TRADM	Training Administrative Support	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	0.0	0.0	1.0	4.0
TRMGMT	Training Management	0.0	1.0	0.0	1.0	0.8	1.0	0.0	3.0	0.0	0.0	16.0	9.0
TRTOT	***Total - Training***	***0.0***	***1.0***	***0.0***	***5.0***	***1.0***	***1.0***	***1.0***	***22.0***	***3.0***	***3.0***	***29.0***	***259.0***
WM01A	Planning	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	16.0
WM01B	Maintenance/Construction Support	0.0	0.0	0.0	1.0	1.0	2.0	0.0	0.0	0.0	0.0	8.0	183.0
WM01C	Scheduling	0.0	0.0	0.0	1.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	71.0
WM01D	Outage Management	0.0	0.0	16.0	1.0	0.0	1.0	0.0	3.0	0.0	3.0	24.0	2.0
WM01E	Project Management	1.0	0.0	0.0	2.0	0.0	4.0	5.0	0.0	0.0	59.0	12.0	0.0
WM02J	Electrical Maintenance	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	44.0
WM02K	I&C Maintenance	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0
WM02L	Mechanical Maintenance	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	57.2	79.0
WM02M	Other Craft/Toolroom/Calibration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	1.0
WMADM	WM Administrative Support	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	6.0	1.0
WMMGMT	WM Management	0.0	1.0	0.0	4.0	2.0	1.7	3.0	1.0	0.0	6.0	23.2	6.0
WMTOT	***Total - Work Management***	***1.0***	***1.0***	***16.0***	***19.0***	***3.0***	***12.6***	***8.0***	***4.0***	***0.0***	***98.0***	***142.4***	***447.0***
	Sub Total Off-Site	46.4	95.0	175.0	188.8	200.2	201.5	240.9	414.5	475.3	658.0	697.1	3414.0
CAPTOT	Total - Capital Staffing	0	5	0	0		0		0	42	80		
LP01	Security (Note 1)												
ALLSTAFFTOT	Total Staffing with Capital and Security												

Note 1: OPG Security Data excluded for confidentiality reasons.

Appendix I – RP Future State Organization and Staffing

The charts and table below summarize: (a) the future state standard site RP organization and staffing structure and (b) the future state Health Physics organization and staffing structure that resulted from the piloted top-down staffing analysis performed for this function.





Position	Current					Total
	DN	PA	PB	HP	RP S&T	
Managers	4	4	4	4	3	19
Health Physicists	6	6	7	14	0	33
Individual Contributors	29	16	29	28	32	134
Total Staff	**39**	**26**	**40**	**46**	**35**	**186**

Initial Proposal				Total	Delta
DN	PA	PB	HP		
4	1	4	4	**13**	**6**
7	0	11	18	**36**	**-3**
28	12	32	17	**89**	**45**
39	**13**	**47**	**39**	**138**	**48**

Note: Delta includes reduction due to RP S&T realignment. Staff reduction is 13 excluding this adjustment