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Ex. F2-1-1
Attachment 1

Table 1: Industry Peer Groups

	COG CANDUs (WANO)	All North American PWR and PHWRs (WANO)	INPO AP-928 Workgroup	INPO	CEA	EUCG North American Plants (U.S. and Canada)
Safety						
All Injury Rate					X	
Rolling Average Industrial Safety Accident Rate*		X				
Rolling Average Collective Radiation Exposure*	X					
Airborne Tritium Emissions per Unit	X					
Fuel Reliability Index*	X					
2-Year Reactor Trip Rate*	X					
3-Year Auxiliary Feedwater System Unavailability*	X					
3-Year Emergency AC Power Unavailability*	X					
3-Year High Pressure Safety Injection Unavailability*	X					
Reliability						
WANO NPI	X					
Rolling Average Forced Loss Rate*	X					
Rolling Average Unit Capability Factor*	X					
Rolling Average Chemistry Performance Indicator*	X					
1-Year On-line Deficient Maintenance Backlog			X			
1-Year On-line Corrective Maintenance Backlog			X			
Value for Money						
3-Year Total Generating Cost / MWh						X
3-Year Non-Fuel Operating Cost (OM&A) / MWh						X
3-Year Fuel Cost (OM&A) / MWh						X
3-Year Capital Cost / MW DER						X
Human Performance						
Human Performance Error Rate				X		

* Sub-indicator of WANO NPI

Data provided by the World Association of Nuclear Operators (WANO) is the primary source of benchmarking data for operational performance indicators. Eleven out of twenty benchmarking metrics have been compared to the COG CANDU panel. All WANO performance indicators are measured at the unit level as well as at the plant level except for Industrial Safety Accident Rate and the Emergency AC Power Unavailability.

For a few of the specialized operating metrics, different peer groups were used since WANO data was not available. For comparing maintenance backlogs, the peer group consists of all plants participating in the Institute of Nuclear Power Operations (INPO) AP-928 workgroup. For All Injury Rate comparison, the Canadian Electricity Association (CEA) panel was used.

For financial performance comparisons, data compiled by the Electric Utility Cost Group (EUCG) was used. EUCG is a nuclear industry operating group and the recognized source for cost benchmark information. EUCG cost indicators are available at the plant level only and compared on a net megawatt hour generated basis (to be referred to as MWh subsequently) and a per megawatt (MW) design electrical rating (DER) basis. The only CANDU operators reporting data to EUCG in 2011 were OPG and Bruce Power which is not a sufficiently large panel to provide a basis for comparison. Should more CANDU operators choose to join EUCG in the future, comparisons to a CANDU specific panel will be reconsidered.

For human performance comparisons, data is obtained from INPO.

SEP Interrogatory #008

Ref: Exh F-1-2-2

Issue Number: 6.4
Issue: Is the benchmarking methodology reasonable? Are the benchmarking results and targets flowing from those results for the nuclear facilities reasonable?

Interrogatory

Page 2 of the application at lines 19-25 indicates that CANDU staffing levels have been reduced relative to industry peers. Does OPG examine the capital maintenance spending of its industry peers? If so, please provide a comparison of OPG`s capital maintenance spending relative to the same peers that provide the comparison group for staffing.

Response

OPG does examine and benchmark the capital maintenance spending of its industry peers to establish project portfolio spending targets (see Ex. D2-1-1, page 1). OPG annually reviews cost information collected by the Electric Utilities Cost Group ("EUCG") to develop benchmark values for capital projects as well as OM&A modifications. Darlington and Pickering spent substantially less than their peers between the years 2010 and 2012.

The EUCG is a member-based trade association comprised of professionals from utility companies. The Nuclear Committee operates a database of cost information that has been recognized as the best, most comprehensive source of nuclear plant data in the world.

In order to complete a comprehensive industry staffing benchmark of OPG's nuclear line of business, Goodnight Consulting was awarded a contract through a competitive procurement process. The methodology and data used by Goodnight Consulting is proprietary and independent of EUCG cost information. As a result, OPG cannot definitively ensure that the capital investment benchmarks utilize the same industry peers for comparison purposes as requested.

SEP Interrogatory #007

Ref: Exh F-2-1-1; EB-2010-0008, OPG Application Exh F-5-1-2

Issue Number: 6.4
Issue: Is the benchmarking methodology reasonable? Are the benchmarking results and targets flowing from those results for the nuclear facilities reasonable?

Interrogatory

Is OPG aware of any service that `benchmarks the benchmarkers`? Does OPG conduct any independent research on the validity and accuracy of the benchmarking data used by firms such as Goodnight and ScottMadden?

Response

No, OPG is not aware of any service that 'benchmarks the benchmarkers' and it does not retain such services.

When OPG selects a benchmarking firm, it conducts a rigorous and comprehensive selection process ensuring the contract is awarded based on the following attributes:

- experience in the type or scope of work
- capability of completing fact-based analysis
- strong reputation (good references); and
- cost effectiveness

differences and other factors. Goodnight Consulting's findings confirmed previous findings of OPG Nuclear being over benchmark in staffing. However, Goodnight Consulting's report also provided additional insight on the factors contributing to the previous findings on OPG Nuclear staffing being over benchmark. By normalizing for the technology difference, Goodnight was able to identify that OPG's CANDU requires an additional 400 FTEs compared to PWR to perform similar functions, and in addition have 1,031 FTEs engaged in activities that have no equivalent in a PWR reactor FTEs.

OPG Nuclear was able to use these findings to understand the addressable differences, develop targets and implement improvement plans.

SEP Interrogatory #006

Ref: Exh F-2-1-1; EB-2010-0008, OPG Application Exh F-5-1-2

Issue Number: 6.4
Issue: Is the benchmarking methodology reasonable? Are the benchmarking results and targets flowing from those results for the nuclear facilities reasonable?

Interrogatory

Page 8 of the application indicates that benchmarking of nuclear staffing used the services of Goodnight Consulting Inc. In EB-2010-0008 these services were provided by Scott Madden Inc. Please provide a comparison of the key findings of these two reports.

Response

In 2009, OPG undertook a major new nuclear benchmarking initiative in conjunction with the development of its 2010 - 2014 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.

ScottMadden's Phase 1 results provided a benchmark baseline for OPG by comparing its financial and non-financial performance with industry peers. The objective was to clarify and confirm performance gaps and to identify potential cost and performance improvement areas for inclusion in OPG's business planning process. The ScottMadden Phase 1 analysis did not include staffing benchmarks.

Subsequent to Phase 1, Scott Madden conducted a Phase 2 analysis which supported OPG Nuclear's transition to a gap-based business planning process: a structured approach to identifying improvement opportunities, formulating targets and developing action plans to achieve these improvements. As part of Phase 2, ScottMadden undertook a high-level staff benchmarking analysis using the EUCG database (which with the exception of OPG and Bruce Power consists of US PWR and BWR units). This work confirmed the general assumptions that OPG Nuclear staffing levels were higher than its industry peers and provided general guidance and insight on the development of improvement initiatives that would contribute to the achievement of OPGN's financial cost performance targets. However ScottMadden's staffing analysis did not address some fundamental differences in OPG's operations which require different functional areas or additional resources due to the technology differences between CANDU and PWR plants. In addition, Scott Madden did not adjust for other factors such as workweek hours, reliance by comparators on third-party contractors for services, etc.

In 2011, OPG Nuclear retained Goodnight Consulting to provide a detailed staff benchmarking comparison to an appropriate comparator group with the objective of normalizing for technology