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File 22332

**VIA RESS FILING and EMAIL: [boardsec@oeb.gov.on.ca](mailto:boardsec@oeb.gov.on.ca)**

Ms. Kirsten Walli, Board Secretary  
Ontario Energy Board  
P.O. Box 2319  
2300 Yonge Street, 27<sup>th</sup> Floor  
Toronto, ON M4P 1E4

Dear Ms. Walli:

**Re: OPG Application re Payment Amounts for Prescribed Generating Facilities; Board File No.: EB-2013-0321**

Attached please find the Power Workers' Union's Interrogatories with respect to the above-noted application.

Yours very truly,

**PALIARE ROLAND ROSENBERG ROTHSTEIN LLP**

  
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RPS:ps

Encl.

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**IN THE MATTER OF** the *Ontario Energy Board Act, 1998*,  
S. O. 1998, c. 15, Schedule B;

**AND IN THE MATTER OF** an application by Ontario  
Power Generation Inc. pursuant to section 78.1 of the  
*Ontario Energy Board Act, 1998* for an order or orders  
determining payment amounts for the output of certain of  
its generating facilities.

**POWER WORKERS' UNION INTERROGATORIES**

**GENERAL**

**Issue 1.4**

**Is the overall increase in 2014 and 2015 revenue requirement reasonable given the overall bill impact on customers?**

**1.4-PWU-1**

Ref (a): Exh, N1-1-1, Page 2, Lines 12-16 and Page 3, Chart 1

Ref (a) states:

**The main remaining changes from the 2014 - 2016 Business Plan, which net to an approximate \$33.0M increase in revenue requirement over 2014 - 2015, are identified below [Chart 1, page 3]. However, OPG is not seeking to recover these amounts in the revised payment amounts and riders. In order to minimize the impact on the proceeding schedule and to keep the Impact Statement to a manageable size, OPG is limiting the update to just the largest changes.**

- a) Please confirm if OPG is seeking to recover these amounts at any other time or in any other way.
- b) Please provide the breakdown of the \$26M in OM&A cost increase identified in Chart 1.

## **CAPITAL PROJECTS**

### **Regulated Hydroelectric**

#### **Issue 4.2**

**Are the proposed regulated hydroelectric capital expenditures and/or financial commitments reasonable?**

#### **4.2-PWU-2**

Ref (a): EB-2010-0008, Undertaking 2.1, pages 2-4, Table 1. Major Component Work Program for Regulated Hydroelectric Stations (link for the undertaking)

Ref (b): Exh F1-1-1, Attachment 1, Page 4. Hydro Thermal Operations 2013-15 Business Plan, May 16, 2013.

##### **Planning Assumptions (2013-2015)**

- ...
- **Hydro major unit refurbishment and outage program aligned with Darlington refurbishment timing. Non-system impactive outages deferred to post 2016 period**
- **PGS Reservoir rehabilitation and full station outage deferred from 2014 to 2016/17 to mitigate Surplus Baseload Generation (SBG) spill losses**

- a) Please update Table 1 (Major Component Work Program for Regulated Hydroelectric Stations) with the most recent information on completed work program and future investments plans by major component.
- b) Please identify existing major components (i.e. generators, turbine, electrical equipment, auxiliary systems, dams and other civil structures) at regulated hydroelectric stations where the current age of the component exceeds the typical lifetime that the component is expected to provide reliable service.
- c) What are the existing major components (i.e. generators, turbine, electrical equipment, auxiliary systems, dams and other civil structures), if any, at the regulated hydroelectric stations where OPG has identified the need of overhaul or replacement of the component by way of either the most recent facility or component condition assessment or life cycle plan of the facility?
- d) Has OPG deferred capital and OM&A projects that include the overhaul or replacement of components identified in questions b) and c) above, beyond the 2014-2015 test year? If yes, please indicate which projects together with the related costs.
- e) OPG's Hydro Thermal Operations 2013-15 Business Plan indicates that PGS Reservoir rehabilitation and full station outage was deferred from 2014 to 2016/17 to mitigate SBG spill losses. Given the size of the project, discuss whether the deferral of this project can be considered a rate mitigation measure?

- f) Please provide a table similar to Table 1 with the most recent information on major completed work programs and future investments plans by major component and plant group for newly regulated hydroelectric facilities.

## **Nuclear**

### **Issue 4.7**

**Are the proposed nuclear capital expenditures and/or financial commitments reasonable?**

#### **4.7-PWU-3**

Ref (a): Exh D2-1-3. Capital Projects –Nuclear Operation.

Ref (b): Exh F2-3-3. Details of OM&A Projects – Nuclear

Ref (c): Exh F2-1-1, Attachment 2. 2013-2015 Nuclear Business Plan, May 16, 2013. Page 10, Pickering - Major Focus Areas and Page 11, Pickering 2013-2015 Equipment Reliability Plan.

Ref (d): Exh F2-1-1, Attachment 1, Page 47. 2012 Nuclear Benchmarking Report.

#### **Factors Contributing to Performance**

- Top performing plants achieve low forced loss rates through effective implementation and integration of equipment reliability and human performance programs aligned with industry best practices.
- OPG Nuclear has established a structured cross-functional equipment reliability program based on top industry standards and supported by virtually every department in the organization. The implementation of the program involves focusing the workforce and processes on critical equipment across the fleet.
- OPG is currently working on reducing maintenance backlogs, optimizing the preventive maintenance program and obtaining spare parts for critical equipment.
- Darlington has established a fuel handling reliability project and developed new fuel bundles to prevent unit derating.
- Pickering has established short mid-cycle outages to complete critical maintenance activities to improve the reliability of the plant.

- a) Please list the projects identified in Reference (a) and (b) that are part of the Pickering 2013-2015 Equipment Reliability Plan.
- b) Please provide a description of the specific works for each project listed in question a) focusing on their contribution in achieving the following targets for Pickering station:
- 5.5 Forced Loss Rate target in 2015.
  - Completion of up to 250 Works order per outage.

- c) Discuss the impact of the projects listed in question a) on the reliability improvement for each Pickering unit.
- d) At page 10 of Ref (c), resolving recurring equipment failures, including fuel handling systems and turbine governor, is identified as a focus area relating to reliability. What's OPG plan to address meet this objective? Please identify and provide details of key projects listed in question (a) aimed at resolving recurring equipment failures, including fuel handling systems and turbine governor.
- e) The Pickering 2013-2015 Equipment Reliability Plan includes investments and costs of \$5 million for Equipment Reliability Initiatives over the period 2013-2015. What are the actions and works covered under the Equipment Reliability initiatives under the \$5 million budget?
- f) The Pickering 2013-2015 Equipment Reliability Plan includes investments and cost of \$11M for Targeted Backlog reduction over the period 2013-2015. What initiatives and actions are covered by the \$11M budget for Target Backlog reduction?
- g) Please provide an outline of OPG's plan to reduce work order backlogs (On-line corrective and Deficient Maintenance) at the Pickering station?
- h) With respect to Ref (d), how is OPG implementing and integrating equipment reliability and human performance programs aligned with industry best practices?
- i) Please describe initiative and actions aiming at improving human performance to drive order backlog down at the Pickering station.

#### **Issue 4.7**

**Are the proposed nuclear capital expenditures and/or financial commitments reasonable?**

#### **4.7-PWU-4**

Ref (a): Exh A2-1-1, Attachment 1, OPG 2012 Annual Report, page 55.

##### **Nuclear Generating Station**

**Operating an aging nuclear fleet exposes OPG to unique risks such as unplanned outages, an increase in cost of operations and risks associated with nuclear waste management operations.**

**The uncertainty associated with the electricity volume generated by OPG's CANDU nuclear generating units is primarily driven by the condition of the station components and systems, which are all subject to the effects of aging. Fuel channels are expected to be the most life-limiting component affecting station end of life. Other significant factors identified to-date include degradation of primary heat transport pump motors, fuel handling performance issues, feeder pipe wall thinning, and fuel channel aging. To respond to these challenges, OPG continues to implement extensive inspection and maintenance programs to monitor performance and identify corrective actions required to operate reliably and within design parameters.**

Ref (b): Exh A2-1-1, Attachment 1, OPG 2012 Annual Report, page 63: Nuclear Regulatory Requirements:

**An aging nuclear fleet or changes in technical codes or laws may increase the risk of additional nuclear regulatory requirements.**

**The uncertainty associated with nuclear regulatory requirements is primarily driven by plant aging, technology risks, and changes to technical codes. Addressing these requirements could add to the cost of operations, and in some instances, may result in a reduction or elimination of the productive capacity of a station, or in an earlier than planned replacement of a station component. Unlike most other industries, the operations of nuclear stations are often directly impacted by circumstances or events that occur at other nuclear stations across the globe. These circumstances or events may lead to CNSC regulatory changes with a significant impact on the cost and future operation of OPG's nuclear fleet.**

Ref (c): Canadian Nuclear Safety Commission, Regulatory Document RD-334, Aging Management for Nuclear Power Plants. June 2011.<sup>1</sup>

Ref (d): Canadian Nuclear Safety Commission, Regulatory Document REGDOC 2.6.3 (Currently under development). Fitness for Service, Aging Management, June 2013.<sup>2</sup>

- a) Please identify and describe the major structures, systems and components at Pickering and Darlington generating stations that have been affected by physical aging and obsolescence?
- b) Describe the impact of physical aging and obsolescence of structures, systems and components at Pickering and Darlington generating stations on the safe operation of the plants?
- c) Please outline major consequences (e.g. increased probability of failure and increased forced/planned outages) of physical aging and obsolescence of structures, systems and components that OPG has been experiencing at Pickering and Darlington generating stations?
- d) Describe the aging management approach used by OPG to address degradation due to physical aging and obsolescence of its nuclear plants, indicating whether OPG has been applying a systematic and integrated approach to establish, implement, and improve programs for managing aging and obsolescence for Pickering and Darlington nuclear plants in compliance with CNSC requirements, RD-334.
- e) Describe aging management activities that OPG is proactively implementing or will implement over the test year period for the various phases of the lifecycle (design, construction, commission, operation and decommissioning) of Pickering and Darlington nuclear plants.
- f) Do revenue requirement amounts proposed by OPG for the 2014/2015 test year period include OM&A and/or capital expenditures budgets for the recovery of the costs for aging management activities identified in question e)? Are there any aging management activities identified in Question (e) that will not be recovered through OPG's revenue requirements over the 2014/2015 test year? If yes, which ones?

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<sup>1</sup> <http://nuclearsafety.gc.ca/eng/acts-and-regulations/regulatorydocuments/published/html/rd334/index.cfm>

<sup>2</sup> <http://nuclearsafety.gc.ca/eng/acts-and-regulations/regulatorydocuments/history/regdoc2-6-3.cfm>

- g) Has OPG incorporated the Pickering Equipment Reliability Plan as part of its aging management approach?
- h) In June 2013, the CNSC issued a draft report REGDOC-2.6.3 proposing additional guidance in support of the existing requirements in RD-334. Does OPG expect that the additional guidance proposed by the CNSC will impact OPG's aging management approach? Does OPG expect higher costs in order to comply with additional aging management requirements as per the CNSC's proposed guidance? If so, is OPG seeking recovery of the higher costs over the 2014/2015 test year period?

#### **Issue 4.9**

**Are the proposed test period in-service additions for the Darlington Refurbishment Project appropriate?**

#### **4.9-PWU-5**

Ref (a): Exh N1-1-1: Page 18, Lines 10-13 and Lines 15-16:

**Forecast OM&A expenses have increased for 2014 from \$19.6M to \$23.1M and for 2015 from \$18.2M to \$20.4M. The total increase in OM&A over the two years is \$5.6M and is mainly due to the timing of the Operations Trainee Program, deferrals from 2013 and better defined cost estimates, partly offset by lower demolition and removal activities.**

...

**The in-service additions to rate base have increased for 2014 from \$18.7M to \$26.1M and for 2015 from \$209.4M to \$310.0M. The total increase for the two year period is \$108.0M.**

Page 19, Lines 1-3 states:

**While OPG is seeking a finding of reasonability with respect to the updated test period capital expenditures, OPG is not seeking approvals of the higher levels of OM&A expense or in-service additions.**

Ref (b): Exh N1-1-1, Page 19 of 23, Lines 5-11

**Separately, as a result of improved scope definition, the Fuel Handling Refurbishment and Balance of Plant contract strategies are currently under review; this review will be completed by December 15, 2013 and the contract strategy will be updated.**

**As part of the DRP's annual review of its Program Management Plans, the plans are currently being updated and will be issued by December 15, 2013. These plans will reflect the latest information on how the DRP will be managed.**

Ref (c): Exh D2-2-. Darlington Refurbishment, Section 7.2 – Capital In-Service Additions, Page 22, Line 13- Page 28, Line 29

Ref (d): Canadian Nuclear Safety Commission. Record of Proceedings, including Reasons for Decision in the Matter of Ontario Power Generation Inc. Environmental Assessment Screening Regarding the Proposal to Refurbish and Continue to Operate the Darlington Nuclear Generating Station in the Municipality of Clarington, Ontario. Page 30, paragraph 145<sup>3</sup>.

**The Commission asked whether the EA took into consideration the ISR and the Fukushima Lessons Learned. CNSC staff responded that the analysis conducted for the EA took into consideration the installation of safety enhancements identified in the ISR and Fukushima Lessons Learned, as this accurately reflects the post refurbishment operations of Darlington. A representative from OPG noted that four new Safety Improvement Opportunities (SIOs) features, to be completed before refurbishment, are the following:**

- **A containment filtered venting system;**
- **A third emergency power generator (a seismically qualified generator);**
- **Improvements to the power house steam venting system; and**
- **An emergency heat sink (an alternate and independent supply of water as an emergency heat sink).**

- a) Why is OPG not seeking approvals for the higher levels of OM&A expense or in-service additions in Ref (a)? What is OPG's plan to recover these costs?
- b) In Ref (b), has OPG filed the updated contract strategy and Program Management Plans? If yes, where in the evidence?
- c) For each of the six facility and infrastructure projects in Ref (c), please provide specific descriptions of services to be delivered indicating how each project supports the operation of the existing units even before the start of refurbishment outage.
- d) For each of the three safety improvement projects in Ref (c), please provide specific descriptions of services to be delivered indicating how each project supports the operation of the existing units even before the start of refurbishment outage.
- e) As per Ref (c), page 23 of 33, the three safety improvement projects include the Containment Filter Venting System Project. Where in the evidence is this project described? What is the in-service date and cost of this project? Is OPG seeking to recover the cost in the test years?
- f) Canadian Nuclear Safety Commission's ("CNSC") Reasons for Decision in respect of the Environmental Assessment Screening on the Proposal to Refurbish and Continue to Operate the Darlington GS also identified four new safety opportunities to be completed before refurbishment, including the provision of an alternate, independent supply of water as an Emergency Heat Sink. When will this project be completed and placed in-service? Has OPG included in-service capital additions in relation to the Emergency Heat Sink project for 2014 and 2015 test years? If so, please provide a description of the project?

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<sup>3</sup> <http://nuclearsafety.gc.ca/eng/the-commission/pdf/2012-12-03-Decision-DarlingtonEA-e-Edocs4105509-final.pdf>



**Issue 4.11**

**Are the commercial and contracting strategies used in the Darlington Refurbishment Project reasonable?**

**4.11-PWU-6**

Ref (a): Exh. D2-2-1, page 15, lines 23-24:

**The Commercial Strategy selected by OPG is a multi-prime contractor model in which there is more than one prime contractor working on the project.**

- a) In selecting the “multi-prime contractor” model for the Darlington Refurbishment, did OPG undertake any “lessons learned” exercise with respect to the restart of two units at Pickering A and the refurbishment projects at Bruce Power A and Point Lepreau? If so, what lessons were learned from each of those refurbishments, and how did those lessons affect the decision to adopt the “multi-prime contractor” model?

**Issue 4.12**

**Does OPG’s nuclear refurbishment process align appropriately with the principles stated in the Government of Ontario’s Long Term Energy Plan issued on December 2, 2013?**

**4.12-PWU-7**

Ref (a): Government of Ontario: Achieving Balance. Ontario’s Long-Term Energy Plan (2013 LTEP), Page 29:

The reference lists seven principles which the nuclear refurbishment process will adhere to, including the following three principles:

- 1. Minimize commercial risk on the part of ratepayers and government;**
  - 4. Hold private sector operator accountable to the nuclear refurbishment schedule and price;**
  - 5. Require OPG to hold its contractors accountable to the nuclear refurbishment schedule and price;**
- a) What implications, if any, does OPG expect the implementation of the three principles in the 2013 LTEP can have on the overall cost, schedule and feasibility of the Darlington refurbishment project?
- b) Please identify the major changes made to OPG’s initial refurbishment plan as a result of the 2013 LTEP?

## **PRODUCTION FORECASTS**

### **Regulated Hydroelectric**

#### **Issue 5.1**

**Is the proposed regulated hydroelectric production forecast appropriate?**

#### **5.1-PWU-8**

Ref (a): Exh N1-1-1, Page 1, Lines 24-25

**The change in the previously regulated production forecast reflects an increase in water availability resulting in an overall increase of 1.8 TWh over the test period.**

- a) What is the basis for the significant increase in water availability? Where is the evidence located?

**Issue 5.4: Is the proposed new incentive mechanism appropriate?**

#### **5.4-PWU-9**

Ref (a): Exh E1-2-1, Page 5

**In EB-2010-0008 Payment Amounts Order, the OEB established the HIM Variance Account to record 50 per cent of HIM net revenues above \$10M for the period March through December, 2011 and \$14M for calendar year 2012 as a credit to ratepayers. In EB-2012-23 0002 Payment Amounts Order, the OEB set the threshold for 2013 at \$13M. Between March 1, 2011 and December 31, 2011 actual HIM net revenue was \$12.9M. For 2012 actual HIM net revenue was \$15.8M. Projected HIM net revenue for 2013 is \$8.7M.**

Ref (b): Exh E1-2-1, Attachment 1, Page 8, Lines 3-14

In the reference, OPG states:

**OPG's proposal that its incentive payment be based on a 50/50 sharing of the calculated customer benefit is easily misinterpreted. It does not mean that OPG and customers benefit equally from the time shifting, for two reasons. First, there are substantial costs incurred by OPG in conducting the time-shifting that are not part of the 50/50 sharing calculation—those costs are offset by the incentive payment, leaving OPG with a substantially lower net benefit. Second, the calculation gives zero credit for ratepayer benefits that are likely to accrue from GRC payments to the province. Including consideration of both of those issues allows for a more direct comparison of the benefit-sharing in the proposal. In 2014, customers would achieve \$34 million in benefits (\$18 million in net cost reductions plus the \$16 million in GRC payments) while OPG would benefit by \$11 million (\$18 million eHIM payment less the incremental costs of \$7 million), and as a result customers receive 3 out of every 4 dollars in benefits from the time-shifting of generation.**

- a) What is the reason for the projected decline in Hydroelectric Incentive Mechanism ("HIM") net revenue in 2013? Does OPG have the actual HIM net revenue for 2013?
- b) Does the existing HIM formula take into account the cost of time shifting at PGS?
- c) Why did the OPG decide not to include in the new calculation referred to as the enhanced Hydroelectric Incentive Mechanism (eHIM) the cost of time shifting incurred by the OPG in determining the 50/50 sharing of net revenue?

## **Nuclear**

### **Issue 5.5**

**Is the proposed nuclear production forecast appropriate?**

#### **5.5-PWU-10**

Ref (a): Exh N1-1-1, Pages 14, line 29-page 15, line 8:

**The Darlington production forecast for 2014 and 2015 in the 2014 - 2016 Business Plan has a 1.6 TWh reduction in generation compared to the 2013 - 2015 Business Plan.**

**This is due to:**

- **A reduction of 0.28 TWh to reflect the expectation of higher lake water temperatures than assumed in the 2013 - 2015 Business Plan. Higher lake water temperatures lower generation output due to reduced condenser efficiency.**
  - **A 61.9 day increase in planned outage days...**
- a) Please confirm if the 61.9 day increase in planned outage days is responsible for a 1.32 TWh reduction in production forecast - the balance of the 1.6 TWh reduction after taking into account the 0.28 TWh reduction attributable to the expectation of higher water temperature?
  - b) If question a) is confirmed, please also confirm if, of the 1.32TWh reduction due to the 61.9 day increase in planned outage days, 0.83TWh is attributable to the Vacuum Building Outage ("VBO") and 0.49TWh is attributable to increased allowances for Darlington planned outages by 22 days?

### **Issue 5.5**

**Is the proposed nuclear production forecast appropriate?**

#### **5.5-PWU-11**

Ref (a): Exh E2-1-1, Page 5, Lines 18-25

**Planned outages consist of a combination of "routine" inspection and maintenance activities and "non-routine" activities specific to a particular outage. Examples of routine activities would be preventive maintenance, feeder inspections and water lancing of steam generators. Non-routine activities include**

**corrective and deficient maintenance, and replacements or modifications to the equipment or plant configuration that can only be done when the unit is shut down. The majority of work in an outage typically is routine preventative maintenance and inspection activities while the remaining work is non-routine breakdown maintenance and modifications.**

Ref (b): Exh F2-4-1, Page 1, Lines 12-17

**Actual and forecast outage OM&A costs over the period 2010 - 2015 primarily reflect:**

- ...
- ...
- **The addition of mid-cycle outages for Pickering Units 1 and 4 over the period 2012 - 2014 to accelerate reliability work execution**

Ref (c): Exh N1-1-1, Page 14, Lines 8-14

- **The 2013 Unit 4 outage was deferred to January 2014. This resulted in the timing of all future Unit 1 and 4 planned outages being similarly deferred (e.g., the 2014 Unit 1 outage is deferred to 2015; and, the 2015 Unit 4 outage is deferred until 2016). The deferral of the 2013 Unit 4 fall outage into 2014 results in an additional seven planned outage days over the test period due to additional scope.**
- **An additional 28 day 2015 mid-cycle outage has been added to the 2014 – 2016 Business Plan in support of OPG's 2016 targeted reduction in FLR to 5.0 per cent...**

Ref (d): Exh F2-1-1, Attachment 2: 2013-2015 Nuclear Business Plan, May 16, 2013, page 11, Pickering 2013-2015 Equipment Reliability Plan.

- **Pickering Nuclear FLR performance does not meet expectations, in particular Units 1, 4, and 8.**
- a) Please describe routine and non-routine works to be performed during mid-cycle planned outages at Pickering Units 1 and 4 over the period 2014-2015 to accelerate reliability work execution.
- b) Ref (c) set out that an additional 28 day mid-cycle outage schedule for 2015 has been added to the 2014 - 2016 Business Plan in support of OPG's 2016 targeted reduction in FLR to 5.0 per cent. In what unit this outage will be performed? Please describe non-routine works, if any, that OPG will perform during this outage?
- c) As per Ref (d), Pickering Nuclear FLR performance does not meet expectations, in particular Units 1, 4, 8. Please explain why OPG has not implemented mid-cycle planned outages for Pickering Unit 8?

## **Issue 5.5**

**Is the proposed nuclear production forecast appropriate?**

### **5.5-PWU-12**

Ref (a): Exh. E2-1-2, page 3, lines 20-23:

**The higher actual production for 2012 relative to 2011 actual production is primarily due to:**

- **A 1.0 per cent decline (i.e. improvement) in the combined nuclear FLR in the 2012 (4.6 per cent improvement for Pickering, partially offset by a 1.7 per cent increase for Darlington).**

a) Please provide the reasons for the 1.7 per cent FLR increase for Darlington in 2012?

## **OPERATING COSTS**

### **Regulated Hydroelectric**

## **Issue 6.1**

**Is the test period Operations, Maintenance and Administration budget for the regulated hydroelectric facilities appropriate?**

### **6.1-PWU-13**

Ref (a): Exh F1-2-1. Base OM&A – Regulated Hydroelectric

Ref (b): Exh F1-2-1. Tables: Table 2, Base OM&A by Major Components - Previously Regulated Hydroelectric (\$M) and Table 3, Base OM&A by Major Components - Newly Regulated Hydroelectric (\$M)

Ref (c): Exh F1-3-1. Tables: Table1. Project OM&A - Previously Regulated Hydroelectric and Newly Regulated Hydroelectric (\$M),

Ref (d): Exh N1-1-1, Page 2, Line 12-15 and Page 3, Chart 1:

**The main remaining changes from the 2014 - 2016 Business Plan, which net to an approximate \$33.0M [including \$26M in OM&A indicated in Chart 1 on page 3] increase in revenue requirement over 2014 - 2015, are identified below. However, OPG is not seeking to recover these amounts in the revised payment amounts and riders...**

a) Tables 2 and 3 in Ref (b) provide Base OM&A cost for previously and newly regulated hydroelectric facilities by major components including External Purchased

Services. Please describe major services included in the Base OM&A cost for the External Purchased Services component.

- b) Please provide a break out for the total costs for External Purchased Services provided in Table 2 and Table 3 of Ref (b) by major services identified in a) for the test year period. Please provide a separate break out for previously regulated facilities and newly regulated facilities.
- c) What is the share of the labour component for External Purchased Services expense for previously regulated and newly regulated hydroelectric facilities, provided in Table 2 and 3 of Ref (b), for the test year period?
- d) Please provide the share of labour purchased service of the total Project OM&A expense previously and newly regulated hydroelectric facilities provided in Table 1 of Ref (c) for the test year period.
- e) What are the 2014-2016 Business Plan changes, if any, impacting Base OM&A expense for previously and newly regulated hydroelectric facilities included in Table 2 and Table 3 of Ref (b) and Project OM&A expense included in Table 1 of Ref (c)? If there are any, are those changes reflected in the \$26 million OM&A cost change identified in Ref (d) of which OPG is not seeking to recover in the revised payment amounts and riders?

#### **Issue 6.1**

**Is the test period Operations, Maintenance and Administration budget for the regulated hydroelectric facilities appropriate?**

#### **6.1-PWU-14**

Ref (a): Exht F1-5-1, OM&A Purchased Services – Regulated Hydroelectric, page 3.

- a) The reference indicates that total expenses for OM&A Purchased Services for Regulated hydroelectric facilities are \$31.9M, \$20.9M and \$21.6M for 2010, 2011, 2012, respectively. Please provide a breakout of the 2010, 2011 and 2012 OM&A Purchased Service expenses for regulated hydroelectric facilities by major service category (e.g. construction, engineering, materials, tools, equipment, technical support, etc).

#### **Nuclear**

#### **Issue 6.3**

**Is the test period Operations, Maintenance and Administration budget for the nuclear facilities appropriate?**

#### **6.3-PWU-15**

Ref (a): Exh A4-1-1, page 1, lines 12-14 (Business Transformation):

**To sustain these staff reductions, OPG has moved to a centre-led model to use resources more efficiently and avoid duplication of work. Each business unit has launched a number of initiatives to improve efficiencies and reduce work through process streamlining.**

Ref (b): Exh A4-1-1, pages 1, lines 14-16 (Business Transformation): OPG states that

**These initiatives will drive sustainable change in the business, while ensuring that changes do not impact the safety, reliability and environmental sustainability of OPG's operations.**

Ref (c): Exh A4-1-1, Page 2, Lines 8-10:

**Business Transformation is intended to transform OPG so that it can compete, grow and respond to changing market conditions without compromising continued safe and reliable operations.**

Ref (d): Exh F2-1-1, Page 13, Lines 5-6:

**... The nuclear staffing plan is a measured approach and will not compromise safety or the ongoing initiatives to improve reliability and implement industry best practices.**

- a) What is "process streamlining" indicated in Ref (a)? Provide an example of an activity that has changed as a result of process streamlining, and describe how it has changed, together with the savings that have resulted from the change.
- b) What criteria does OPG use to define or determine when the continued safe and reliable operations and environmental sustainability have been compromised?

### **Issue 6.3**

**Is the test period Operations, Maintenance and Administration budget for the nuclear facilities appropriate?**

### **6.3-PWU-16**

Ref (a) Exh: A4-1-1, Page 6, Lines 4-8:

**OPG recognizes that sustainable change requires a culture shift. Based on this recognition, OPG has worked to define the culture required to meet the objectives of business transformation. Under the direction of the CEO and Executive Leadership Team, five new behaviours were defined as the culture shifts that OPG must accomplish in order to sustain change. ...**

- a) Please describe the five new behaviours defined as the culture shifts that OPG must accomplish in order to sustain change.

### Issue 6.3

**Is the test period Operations, Maintenance and Administration budget for the nuclear facilities appropriate?**

#### 6.3-PWU-17

Ref (a) Exh:A4-1-1, Page 1, Lines 8-9:

**In summary, under BT, OPG will use attrition to reduce its year-end 2015 staff level by 2,000 employees with the potential for further reductions in later years.**

Ref (b) Exh:A4-1-1, Page 7, Lines 7-9:

**As part of the business planning cycle each year, the business units review their plans for streamlining work and ensure that sufficient work is being reduced or eliminated to support their attrition expectations.**

- a) Assuming that OPG succeeds in reducing complement by 2000 employees by 2015 through attrition, what mechanisms will OPG employ to ensure that it retains or replaces all critical skills sets? To what extent are any of the functions formerly performed by any of these 2000 employees being replaced by purchased services?
- b) Where OPG's current performance with regard to all aspects of safety (e.g. nuclear, public, staff including work protection and hazard material exposure) exceeds regulatory compliance requirements and/or OPG's policy requirements, is there the possibility that some business units' safety performance will move down towards minimum compliance or policy requirements as a result of the need to support their attrition expectations? Please provide explanation in your response.
- c) Please describe all safety-related performance metrics that track OPG's business units' safety performance. Please include work protection and hazard material exposure related metrics.
- d) Please provide the regulatory standards and/or corporate objectives and the most recent performance levels for all the safety-performance metrics tracked, by the smallest organizational unit available.
- e) Where a business unit's current performance with regard to reliability exceeds OPG's policy objectives is there the possibility that performance in some reliability metrics will move down towards minimum reliability requirements as a result of the need to support the attrition expectations? Please provide explanation in your response.
- f) Where OPG's current performance with regard to environmental sustainability exceeds regulatory compliance requirements and/or OPG's policy requirements, is there the possibility that some business units will move towards minimum compliance or policy requirements as a result of the need to support their attrition expectations? Please provide explanation in your response.



### Issue 6.3

**Is the test period Operations, Maintenance and Administration budget for the nuclear facilities appropriate?**

#### 6.3-PWU-18

Ref (a): Exh F2-2-1, Page 4, line 16-19:

**Other Purchased Services: The costs of specialized external services, including construction and maintenance services, personal protective equipment laundry services, and specialized technical services (e.g. nuclear safety analysis, research and development, and specialized testing services.)**

Ref (b): Exh. F2-2-1, Tables: Table 2 – Base OM&A-Nuclear. Table 2 presents Base OM&A expenses for 2010-2015 including for Other Purchased Services.

Ref (c): Exh F2-3-1, Tables, Table 1 – Project OM&A Summary – Nuclear (\$M)

Ref (d): Exh. F2-4-1. Page 3, Line 30- Page 4, line 7.

**The resource types associated with these incremental resources are as follows:**

- ...
- **Other Purchased Services: the cost of contractors performing specialized inspection and maintenance work or conducting major component refurbishments.**

Ref (e): Exh F2-4-1, Tables: Tables 2 and 3. Outage OM&A – Nuclear by Resource Type (Tables 2 and 3 present Outage OM&A expense, including Other Purchased Service, for bridge year and test period and historic years, respectively)

Ref (f): Exh N1-1-1, Page 2, Line 12-15 and Page 3, Chart 1:

**The main remaining changes from the 2014 - 2016 Business Plan, which net to an approximate \$33.0M [including \$26M in OM&A indicated in Chart 1 on page 3) increase in revenue requirement over 2014 - 2015, are identified below. However, OPG is not seeking to recover these amounts in the revised payment amounts and riders...**

Ref (g): Exh N1-1-1, Page 12, Lines 3-6

**The nuclear production forecast for 2014 and 2015 in the 2014 - 2016 Business Plan is 2.6 TWh lower than the 2013 - 2015 Business Plan, primarily due to the addition of 148.5 planned outage days over the two years. As a result, the forecast production levels for 2014 and 2015 are 49.0 TWh and 46.1 TWh, respectively.**

- a) Please provide a breakout of Other Purchased Service amounts for 2013 actual, 2014 plan and 2015 plan provided in Ref (b) by major service identified in Ref (a), e.g., construction and maintenance services, personal protective equipment

laundry services, nuclear safety analysis, research and development, specialized testing services, etc.

- b) What is the share of the labour component for Other Purchased Services total amounts included in the Base OM&A expense in Ref (b) for the test year period?
- c) What is the share of the labour purchased component for total Project OM&A costs included in Ref (c) for the test year period?
- d) What is the share of the labour component for Other Purchased Services total amounts included in Outage OM&A expense in Ref (e) for the test year period?
- e) Table 2 provided in Ref (b) indicates that Other Purchased Services cost related to nuclear Base OM&A is \$95.4M, \$126.7 M, \$145.9 M and \$146.4 M for 2012 Actual, 2013 budget, 2014 Plan and 2015 Plan, respectively. Please explain the reasons for the increase.
- f) Table 2 provided in Ref (e) indicates Augmented Staff cost related to the nuclear Outage OM&A expense is \$27.8M, \$20.2 and \$27.6M for 2013 budget, 2014 plan and 2015 plan, respectively, while Table 3 indicates \$0.2M in 2011 and \$11.6M in 2012. Please explain the reasons for the increase.
- g) What are the 2014-2016 Business Plan changes, if any, impacting nuclear Base OM&A expense included in Table 2 of Ref (b) and nuclear Project OM&A expense included in Table 1 of Ref (c)? If there are any, are those changes reflected in the \$26 million OM&A cost change identified in Ref (f) of which OPG is not seeking to recover in the revised payment amounts and riders?
- h) Does the addition of 148.5 planned outage days over 2014 and 2015 impact the 2014 and 2015 nuclear Outage OM&A expenses included in Table 2 of Ref (e)? If yes, are the resulting Outage OM&A expense changes reflected in the \$26 million OM&A cost change indicated in Ref (f).

### **Issue 6.3**

**Is the test period Operations, Maintenance and Administration budget for the nuclear facilities appropriate?**

#### **6.3-PWU-19**

Ref (a): Exh F2-6-1, Page 1, Lines 23-24. OM&A Purchased Services – Nuclear Operations. As indicated on page 1, total purchases for the vendors are \$119.5M in 2010, \$65.9M in 2011 and \$84.2M in 2012.

- a) Please provide a breakout of the 2010, 2011 and 2012 OM&A Purchased Service expenses for nuclear operations by major service category (e.g. construction, engineering, safety analysis, etc).

#### **Issue 6.4**

**Is the benchmarking methodology reasonable? Are the benchmarking results and targets flowing from those results for the nuclear facilities reasonable?**

#### **6.4-PWU-20**

Ref (a): Exh F5-1-1, Part a. Nuclear Staffing Benchmarking Analysis, Final Report, February 3, 2012, page 18

##### **Contractor Information Was Converted From Hours or Costs into FTEs**

- OPG provided (July-August 2011 YTD) contractor data in either contractor billed YTD costs, or cumulative contractor YTD hours
- Cumulative contractor billed YTD dollar values were first divided by an average hourly cost that include wages plus benefits, and then by a value to pro-rate the YTD data into annual hours
- Cumulative contractor YTD hours were also divided by the same value to prorate the YTD data into annual hours
- The YTD data was assessed to determine an appropriate annual level of baseline contractor utilization, which resulted in the establishment of 382 baseline contractor FTEs

- a) Please provide the total contractor billed YTD cost that was used for the Nuclear Staffing Benchmarking Analysis and also an estimate of the equivalent contractor annual cost

#### **Issue 6.4**

**Is the benchmarking methodology reasonable? Are the benchmarking results and targets flowing from those results for the nuclear facilities reasonable?**

#### **6.4-PWU-21**

Ref (a): Exh F5-1-1, Part a. Nuclear Staffing Benchmarking Analysis. Final Report. February 3, 2012.

Ref (b): Exh F5-1-1, Part b. 2013 Nuclear Staffing Benchmarking Update. An Addendum to the 2011 Nuclear Staffing Benchmarking Analysis. May 10, 2013.

- a) The 2013 Nuclear Staffing Benchmarking Update (i.e. Ref (b)) applies Benchmark Ratios for the calculation of the 2-Unit CANDU Staffing Benchmarks for the following positions: Admin/Clerical, Budget/Finance, Human Resources, Information Management, Management and Safety/Health. Please describe with demonstration how the Benchmark Ratios displayed on page 27 of Ref (b) were calculated
- b) Please describe with demonstration how the Ratio Adjustments provided on page 27 of Ref (b) were calculated
- c) Please confirm that the 2011 Nuclear Staffing Benchmarking Analysis provided in Ref (a) uses the same Benchmarking Ratios for calculating 2-Unit CANDU Staffing

Benchmarks (as displayed on page 28 of Ref(a)) and 4-Unit CANDU Staffing Benchmarks (as displayed on page 30 of Ref (a)).

- d) Please explain the discrepancies between the Benchmark Ratios used for the determination of the 2013 2-Unit CANDU Staffing Benchmarks (as shown on page 27 of Ref (b)) and 2013 4-Unit CANDU Staffing Benchmarks (as shown on page 29 of Ref (b)) for the five functional staffing areas indicated in question (a) above. Should the Benchmark Ratios used for determining the 2013 2-Unit CANDU Staffing Benchmarks and the 2013 4-Unit CANDU Staffing Benchmarks be the same?
- e) What is the rationale for the Benchmark Ratios used for calculating 2013 4-Unit CANDU Staffing Benchmarks (as displayed on page 29 of Ref (b)) being the same as those used in the 2011 Nuclear Staffing Benchmarking Analysis (i.e. page 28 and 30 of Ref (a))?

#### **Issue 6.4**

**Is the benchmarking methodology reasonable? Are the benchmarking results and targets flowing from those results for the nuclear facilities reasonable?**

#### **6.4-PWU-22**

Ref (a): Exh F5-1-1, Part b: Nuclear Staffing Benchmarking Update, Slide 4.

**In 2011 OPG was 17% (866 FTEs) above the PWR benchmark; in 2013 OPG is 8% (430 FTEs) above the PWR benchmark**

- a) What does OPG expect FTEs and OPG's performance relative to PWR benchmark to be at the end of the 2014 and 2015 test years?
- b) Does the staffing benchmarking study factor in OPG's staff safety performance reflected in OPG's Nuclear performance benchmarking report that indicates that OPG is in the best quartile for most of the safety metrics measured (F2-1-1, Attachment 1 Table 2] ? If it does, please describe how it does so.

### **CORPORATE COSTS**

#### **Issue 6.10**

**Are the centrally held costs allocated to the regulated hydroelectric business and nuclear business appropriate?**

#### **6.10-PWU-23**

Ref (a): Exh A1-6-1, Page 9, Lines 19-23 (Civil Liability)

**OPG is subject to the Nuclear Liability Act (Canada), which governs civil liability for nuclear damage in Canada. Proposed changes to this legislation, expected to be tabled late in 2013, will result in an increase to OPG's risk management costs which are centrally-held and, in turn, directly assigned to Nuclear...**

- a) What would be the impact of the passage of the proposed legislation on OPG's centrally held risk management cost amounts and/ or those directly assigned to nuclear in the 2014 and 2015 test years?

## **DEFERRAL AND VARIANCE ACCOUNTS**

### **Issue 9.6**

**Is OPG's proposal to not clear deferral and variance account balances in this proceeding (other than the four accounts directed for clearance in EB-2012-0002) appropriate?**

### **9.6-PWU-24**

Ref (a): Exh H1-1-1, Page 1 of 15, Lines 24-25

**OPG plans to seek clearance of the December 31, 2014 balances in all its deferral and variance account balances through a separate application to be filed in 2014.**

- a) When in 2014 (which Quarter) does OPG anticipate to file this application?