

# NUCLEAR LIABILITY DEFERRAL ACCOUNT

## 1.0 OVERVIEW

This evidence presents the impacts on OPG's nuclear asset retirement obligation ("ARO"), nuclear segregated funds, and asset retirement costs ("ARC") resulting from the current approved Ontario Nuclear Funds Agreement ("ONFA") Reference Plan effective January 1, 2012. The current approved ONFA Reference Plan is projected to result in additions to the Nuclear Liability Deferral Account and the Bruce Lease Net Revenues Variance Account. Section 2.0 describes the ONFA Reference Plan update. Section 3.0 discusses the accounting consequences of the update. Section 4.0 presents the impacts of the update for both the prescribed facilities and the Bruce facilities to support the derivation of entries into the Nuclear Liability Deferral Account at Ex. H1-1-1, Table 9, and the Bruce Lease Net Revenues Variance Account at Ex. H1-1-1, Tables 14, 14a and 14b. The entries into the Nuclear Liability Deferral Account for 2011 and 2012 and the projected year-end 2012 account balance are discussed in Section 5.0. The projected additions to the Bruce Lease Net Revenues Variance Account are discussed in Ex. H2-1-2, Section 6.0.

## 2.0 UPDATE AND APPROVAL PROCESS OF ONFA REFERENCE PLAN AND SEGREGATED FUND CONTRIBUTION SCHEDULE

The current approved ONFA Reference Plan covers the period 2012-2016. It was approved by the Province effective January 1, 2012 (see Attachment 1).

The main steps in establishing a new approved ONFA Reference Plan and segregated fund contribution schedule are:

1. Finalizing the main planning assumptions, such as station end-of-life dates, station dismantling assumptions, in-service dates for key facilities such as the deep geologic repositories ("DGR"), used fuel storage and retrieval logistics (including movement of used fuel from wet storage bays to dry storage containers), and assumed waste amounts, which includes used fuel and low and intermediate level waste ("L&ILW").

- 1 2. Developing cost estimates for each of the five nuclear waste management and  
2 decommissioning programs based on the planning assumptions.<sup>1</sup> Cost estimates are  
3 initially developed in constant dollars (baseline cost estimates).
- 4 3. Adopting a set of economic indices that are used to convert the baseline cost estimates  
5 into present value dollars. The baseline cost estimates are escalated into future year  
6 values and then discounted to today's dollars using the approved discount rate  
7 established in the ONFA (5.15 per cent for the current approved ONFA Reference Plan)  
8 in order to calculate the present value of the lifecycle liability.
- 9 4. Developing a segregated fund contribution schedule in accordance with the ONFA based  
10 on the present value calculation of the lifecycle liability and taking into account current  
11 segregated fund values. The general principle used in developing this schedule is that  
12 any difference between the calculated lifecycle liability value and the segregated fund  
13 value must be paid into the funds over the remaining years of the applicable nuclear  
14 facilities.
- 15 5. Submit both the ONFA Reference Plan update and the segregated fund contribution  
16 schedule to the Province for review and approval.

### 18 **3.0 ACCOUNTING CONSEQUENCES OF THE CURRENT APPROVED ONFA** 19 **REFERENCE PLAN**

20 The current approved ONFA Reference Plan is projected to result in higher accounting  
21 nuclear liabilities costs due to:

- 22 • Higher construction costs for both DGR, which reflect more detailed engineering and  
23 advanced design concepts.
- 24 • Higher Used Fuel and L&ILW Storage program costs that reflect current operational  
25 experience and assumptions about station end-of-life dates.
- 26 • Increase in the fixed costs arising from a higher number of used fuel bundles and  
27 amount of L&ILW to be managed. This increase results from the projected accounting  
28 implementation at the end of 2012 of the changes in estimated service lives of Pickering  
29 A and B and Bruce A and B units as contained in the current approved ONFA Reference

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<sup>1</sup> The five programs are: 1) decommissioning; 2) used fuel storage; 3) used fuel disposal; 4) L&ILW storage, and  
5) L&ILW disposal.

1 Plan. The changes in the average service lives, for accounting purposes, of the Bruce A  
2 and B stations are discussed in Ex. H2-1-2. Similar changes for Pickering A and B are  
3 expected based on OPG's high confidence with respect to the extended service lives of  
4 their pressure tubes, as discussed in Ex. H2-2-1.

- 5 • The above increases are partially offset by a reduction in decommissioning costs due to  
6 several factors including longer station operating lives that reduce the present value of  
7 the decommissioning liability, the assumed co-location of decommissioning L&ILW  
8 waste with operational waste in the Kincardine DGR, and a more defined  
9 characterization of waste in the nuclear facilities that reduces the amount of expensive,  
10 higher dose dismantlement work.

11  
12 The accounting consequences of the current approved ONFA Reference Plan are outlined  
13 below. These impacts were determined in accordance with CGAAP in the same manner as  
14 in EB-2010-0008.<sup>2</sup>

15  
16 a. A 2011 year-end net increase to the carrying book value of the ARO and ARC of \$934M  
17 at a discount rate of 3.43 per cent. The top section in Ex H2-1-1, Table 3 provides a  
18 break-down of this adjustment at the program and station levels. The net increase results  
19 in a higher depreciation expense for 2012 for prescribed and Bruce facilities, and a higher  
20 return on ARC in rate base for 2012 for the prescribed facilities. The net increase in the  
21 ARO results in a higher accretion expense for both the prescribed and Bruce facilities.<sup>3</sup>

22  
23 b. A forecast 2012 year-end net increase in the book value of the ARO and ARC of  
24 \$379.0M at a forecasted discount rate of 3.43 per cent based on the projected accounting  
25 implementation of the changes in estimated service lives of Pickering A and B and Bruce  
26 A and B as contained in the current approved ONFA Reference Plan. The bottom section

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<sup>2</sup> OPG has not identified any differences between CGAAP and USGAAP that would impact the determination of its nuclear liabilities.

<sup>3</sup> The accretion expense does not directly enter the derivation of the revenue requirement impact of the nuclear liabilities for the prescribed facilities, as per the OEB-approved methodology outlined in EB-2010-0008, Ex. C2-1-2, Section 3.0.

1 in Ex H2-1-1, Table 3 provides a break-down of the adjustment at the program and  
2 station levels.

3  
4 c. Higher variable cost rates for the management of incremental used fuel and L&ILW,  
5 which result in higher variable expenses for 2012 for both the prescribed and Bruce  
6 facilities as shown in Ex. H2-1-1, Tables 1 and 2, respectively. In addition to the increase  
7 in storage and disposal baseline cost estimates, the higher variable rates also reflect the  
8 current accounting discount rate. The discount rate impacting the variable expenses for  
9 2012 is 3.43 per cent. A discount rate of 4.8 per cent was used to value and accrete the  
10 previous ARO tranche and to determine the variable costs reflected in EB-2010-0008.<sup>4</sup>  
11 The lower discount rate reflects the impact of current financial market conditions on long-  
12 term bond rates. The derivation of the cost rates is described in EB-2010-0008, Ex. C2-1-  
13 2, Section 3.2.

#### 15 **4.0 IMPACT OF THE CURRENT APPROVED ONFA REFERENCE PLAN ON** 16 **DEFERRAL AND VARIANCE ACCOUNTS**

17 The accounting implementation of the current approved ONFA Reference Plan is projected  
18 to increase the carrying balance of the ARO and ARC by \$1,313.3M in 2011-2012 as  
19 detailed in Ex. H2-1-1, Table 3, line 7 (2011 ARO/ARC adjustment of \$934.3M) and line 14  
20 (2012 projected ARO/ARC adjustment of \$379.0M). In addition, the current approved ONFA  
21 Reference Plan increases the variable costs to manage incremental used fuel and L&ILW.

22  
23 The current approved ONFA Reference Plan produces accounting consequences as  
24 discussed in Section 3.0 above, which result in the following financial impacts for 2012:

- 25 • Higher ARC depreciation and variable used fuel and L&ILW storage and disposal  
26 expenses for both prescribed and Bruce facilities.
- 27 • Higher cost of capital on ARC in rate base at the weighted average accretion rate for  
28 prescribed facilities.
- 29 • Higher accretion expense for Bruce facilities.
- 30 • Lower income taxes for Bruce facilities.

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<sup>4</sup> Discussion of the previous discount rates can be found in the EB-2010-0008 Ex. G2-2-1, Page 10.

1 Additionally, the higher contributions into the segregated funds in 2012, based on the  
2 proposed segregated fund contribution schedule, result in a higher income tax deduction for  
3 the prescribed facilities.

4  
5 The methodologies used to derive the above impacts are unchanged from those presented in  
6 EB-2010-0008. These impacts are reflected in the year-end 2012 projected balances in the  
7 Nuclear Liability Deferral Account and the Bruce Lease Net Revenues Variance Account.  
8 Based on the above impacts, the current approved ONFA Reference Plan is projected to  
9 result in additions to the Nuclear Liability Deferral Account to be recovered by OPG of \$180M  
10 in 2012, as discussed in Section 5.0 below, and projected additions to the Bruce Lease Net  
11 Revenues Variance Account to be recovered by OPG of about \$70M, as discussed in Ex.  
12 H2-1-2, Section 6.0.

## 13 14 **5.0 NUCLEAR LIABILITY DEFERRAL ACCOUNT ENTRIES AND BALANCES**

15 The Nuclear Liability Deferral Account has been authorized by the OEB pursuant to section  
16 5.2(1) of O. Reg. 53/05 in order to capture the revenue requirement impact of any change in  
17 OPG's nuclear decommissioning liability arising from an approved reference plan under the  
18 ONFA.<sup>5,6</sup> Ontario Regulation 53/05 section 6.(2)8 requires the OEB to ensure that OPG  
19 recovers the revenue requirement impact of its nuclear decommissioning liability arising from  
20 the current approved reference plan.

21 The forecast amounts approved in EB-2010-0008 were based on the previous reference  
22 plan. As a result, the impacts of the changes in the nuclear liability from the current approved  
23 ONFA Reference Plan are captured in the Nuclear Liability Deferral Account as 2012 entries  
24 given that the current plan became effective on January 1, 2012. The only entries in 2011

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<sup>5</sup> As originally determined by the OEB in its EB-2007-0905 Decision with Reasons (p. 112) and as stated in the EB-2010-0008 Payment Amounts Order (Appendix F, p. 5 and 7), the cost impacts of changes in OPG's nuclear decommissioning and nuclear waste management liabilities for the Bruce facilities are recorded in the Bruce Lease Net Revenues Variance Account rather than the Nuclear Liability Deferral Account.

<sup>6</sup> The "nuclear decommissioning liability" is defined in O. Reg. 53/05 and the EB-2010-0008 Payment Amounts Order (Appendix F, p. 5) as "the liability of Ontario Power Generation Inc. for decommissioning its nuclear generation facilities and the management of its nuclear waste and used fuel."

1 were for amortization of and interest on the account balance approved for recovery in EB-  
2 2010-0008.

3

4 The projected revenue requirement impact on the prescribed assets is \$180M in 2012, as  
5 shown in Ex H1-1-1, Table 9.

6

7 The projected amount of \$180M consists of the following items:<sup>7</sup>

- 8 1) *Depreciation Expense of \$98.2M:* The amount is derived from the \$439.2M increase in  
9 ARC at December 31, 2011 attributable to Pickering A, Pickering B and Darlington  
10 (shown in Ex H2-1-1, Table 3, line 7) divided by the corresponding remaining useful  
11 lives of each of these three stations at December 31, 2011, as detailed in Ex H1-1-1,  
12 Table 9, note 1.
- 13 2) *Return on Rate Base of \$21.8M:* The incremental return on rate base resulting from the  
14 increase in the average ARC for 2012 of \$390.1M (shown in Ex H1-1-1, Table 9, line 2)  
15 is calculated at the approved weighted average accretion rate of 5.58 per cent as per  
16 the EB-2010-0008 Payment Amounts Order, Appendix F, Page 5.
- 17 3) *Variable Expenses of \$26.4M:* The higher variable cost rates for used fuel storage and  
18 disposal and L&ILW management discussed above are applied to the forecast used  
19 fuel and waste volumes underpinning the EB-2010-0008 forecast variable expenses for  
20 2012 in order to calculate the impact of the current approved ONFA Reference Plan on  
21 the variable expenses.
- 22 4) *Income Taxes of \$33.7M:* The income tax impact arises from the difference between  
23 the increase in taxes associated with the recovery of the three impacts noted above  
24 and the decrease in taxes associated with higher segregated fund contributions. The  
25 three impacts above increase regulatory taxable income because they are added to  
26 regulatory earnings before tax. These items are not deductible for income tax purposes.  
27 The increase in 2012 segregated fund contributions reduces taxable income because  
28 these contributions are deductible from earnings before tax. The calculation of the

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<sup>7</sup> These items follow Section 6(2)7 of O. Reg. 53/05, which states that the revenue requirement impact to be recorded in the deferral account is to be based on: return on rate base, depreciation expense, income and capital taxes, and fuel expense. No capital taxes are included because capital taxes were eliminated effective July 1, 2010.

1 income tax impact is based on the resulting net amount of incremental additions to  
2 earnings before tax and is provided at Ex. H1-1-1, Table 9, lines 8 to 13.  
3 The entries into the Nuclear Liability Deferral Account for 2011 and 2012 (amortization and  
4 interest in both 2011 and 2012, and additions in 2012 reflecting the current approved ONFA  
5 Reference Plan discussed above) are shown in Ex. H1-1-1, Tables 1a through 1c. The  
6 resulting account balance at December 31, 2012 to be recovered by OPG is projected to be  
7 \$181.7M.

**LIST OF ATTACHMENTS**

1

2

3 Attachment 1: Letter regarding Ontario Nuclear Funds Agreement Reference Plan



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Ex. H2-1-1 Attachment 1

Corporate & Electricity Finance Division  
Assistant Deputy Minister's Office

June 14, 2012

**MEMORANDUM TO:** Donn W. Hanbidge  
Chief Financial Officer  
Ontario Power Generation Inc.

**FROM:** Sandy Roberts  
Acting Assistant Deputy Minister

**RE:** Ontario Nuclear Funds Agreement Reference Plan

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On November 24 and 29, 2011, Ontario Power Generation Inc. (OPG) submitted its proposed 2012 Ontario Nuclear Funds Agreement (ONFA) reference plan update to the Province.

Based on our review and in accordance with section 5.4.1 of ONFA, the Province approves, effective January 1, 2012, the reference plan submitted by OPG on November 24 and 29, 2011.

Provincial approval of a new reference plan constitutes a "Triggering Event" under ONFA, and - as you are aware - ONFA prescribes a number of tasks which must be carried out by OPG following such a Triggering Event.

We are prepared to work with you and provide feedback on OPG's proposed implementation of the calculations mandated by ONFA sections 3.6, 3.7, 3.8 and 4.6.

I look forward to continuing to work with you in the implementation and administration of ONFA.

Sincerely,

A handwritten signature in black ink, appearing to read "S Roberts".

Sandy Roberts

cc: OPG General Counsel      Steve Orsini  
Albert Sweetnam              Gadi Mayman  
Blair Stransky                Ronald Kwan