

AMPCO Interrogatory #146

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

Ref: C2-1-1 Page 5, Footnote

Preamble: The evidence states "The ONFA between OPG and the Province of Ontario sets out OPG's obligations for funding the long-term programs of the nuclear liabilities, through contributions to two segregated funds, the Decommissioning Segregated Fund ("Decommissioning Fund") and the Used Fuel Segregated Fund ("Used Fuel Fund") (collectively, "segregated funds"). In accordance with the ONFA, the Decommissioning Segregated Fund is established to pay for costs associated with the Decommissioning program, the L&ILW Disposal program, certain costs of the Used Fuel Storage program incurred after the stations are shut down, and the costs of the L&ILW storage program incurred after the stations are shut down. The Used Fuel Segregated Fund funds the costs of the Used Fuel Disposal program and certain costs of the Used Fuel Storage program after the stations are shut down."

- a) Please provide any documentation defining how OPG's funding contributions are to be determined. Do the calculations vary depending on the funding position of the segregated funds? If so, define the specific calculations required under each scenario and provide any documents (including without limitation regulations, statutes, MOUs) that proscribe these calculations. Please highlight the specific references that proscribe these calculations.
- b) Provide the calculations at the station level used to determine the funding levels for each year 2016-2021.

Response

- a) OPG's funding contributions are determined pursuant to the Ontario Nuclear Funds Agreement (ONFA), which can be found at Ex. L-8.1-15 SEC-91 Attachment 1. The purpose of the ONFA is to ensure that sufficient funds are available in the segregated fund to pay for costs described in the preamble to the question. As such, if the segregated funds are fully funded on the occurrence of a triggering event as defined in ONFA section 3.6.1 for the Used Fuel Fund and section 4.6.1 for the Decommissioning Fund, no future funding contributions are required. If the segregated funds are under-funded when a triggering event occurs, the future quarterly funding contributions are

1 calculated as prescribed in section 3.6.2 for the Used Fuel Fund and section 4.6.2 for the
2 Decommissioning Fund.

- 3
4 b) The funding contributions are calculated pursuant to requirements in the ONFA outlined
5 in part (a) above. The application of these requirements to the approved 2012-2016
6 ONFA Reference Plan liability resulted in prescribed funding contributions to the Used
7 Fuel Fund for the 2016-2021 period as set out by station in Attachment 1, and no
8 contributions to the Decommissioning Fund. The detailed mathematical computation
9 underlying these approved contribution levels are not relevant and are not provided. The
10 contribution levels are set in accordance with the ONFA reference plan approved by the
11 Province, and OPG's evidence provides the calculations of the revenue requirement
12 impacts flowing from the approved contribution levels. In the EB-2013-0321 Decision
13 with Reasons, the OEB further noted that "[t]he Board has no authority over the
14 segregated funds or the reference plan for nuclear liabilities established by the Ontario
15 Nuclear Funds Agreement." (p. 110)

ATTACHMENT 1

Used Fuel Fund Quarterly Contributions 2016-2021(\$)						
	Pickering A (Units 1-4)	Pickering B (Units 5-8)	Bruce A	Bruce B	Darlington	Total
3/31/2016	1,875,153	1,953,276	(9,886,178)	2,896,564	39,911,344	36,750,159
6/30/2016	1,975,247	2,057,541	(9,832,039)	3,012,296	39,972,754	37,185,799
9/30/2016	2,087,843	2,174,827	(9,773,619)	3,139,001	40,039,012	37,667,064
12/30/2016	2,215,351	2,307,647	(9,710,404)	3,278,192	40,110,703	38,201,489
3/31/2017	328,158	341,830	422,690	476,999	37,229,013	38,798,691
6/30/2017	533,167	555,379	637,775	749,436	37,472,218	39,947,975
9/29/2017	785,608	818,338	868,147	1,063,555	37,732,768	41,268,416
12/29/2017	1,099,892	1,145,716	1,115,892	1,427,044	38,013,023	42,801,567
3/30/2018	1,496,714	1,559,070	1,383,706	1,849,596	38,316,038	44,605,124
6/29/2018	2,006,990	2,090,606	1,675,210	2,343,711	38,645,915	46,762,432
9/28/2018	2,679,294	2,790,920	1,995,508	2,926,020	39,008,429	49,400,171
12/31/2018	3,595,190	3,744,974	2,352,230	3,619,632	39,412,221	52,724,248
3/29/2019	4,904,135	5,108,452	2,757,563	4,458,400	39,871,082	57,099,631
6/28/2019	6,924,008	7,212,478	3,234,371	5,499,369	40,410,890	63,281,117
9/30/2019	10,493,282	10,930,457	3,831,683	6,853,166	41,087,132	73,195,720
12/31/2019	31,149,783	32,447,554	(1,387,853)	(2,607,749)	35,180,631	94,782,366
3/31/2020	-	-	7,774,039	16,590,026	8,799,420	33,163,484
6/30/2020	-	-	7,774,039	16,590,026	8,799,420	33,163,484
9/30/2020	-	-	7,774,039	16,590,026	8,799,420	33,163,484
12/31/2020	-	-	7,774,039	16,590,026	8,799,420	33,163,484
3/31/2021	-	-	7,774,039	16,590,026	8,799,420	33,163,484
6/30/2021	-	-	7,774,039	16,590,026	8,799,420	33,163,484
9/30/2021	-	-	7,774,039	16,590,026	8,799,420	33,163,484
12/31/2021	-	-	7,774,039	16,590,026	8,799,420	33,163,484

AMPCO Interrogatory #147

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

Ref: C2-1-1

Preamble: The evidence discusses amounts recorded in OPG's financial statements as due to or due from the Province in accordance with generally accepted accounting principles.

- a) Please provide the amounts recorded in OPG's financial statements as due to or due from the Province for the years 2013 to 2015 and forecast for 2016 to 2021.
- b) Please confirm the first year that OPG recorded an amount due to province in its financial statements.
- c) Please provide the regulations, rules, guidelines or any other relevant documents with specific references that govern when and how amounts due to or due from the Province are managed.

Response

- a) The total "Due to Province" amounts recorded in OPG's audited consolidated financial statements as at December 31 for 2013-2015 and reflected in pre-filed evidence projections as at December 31 for 2016-2021 are as follows:

\$M	2013 Actual	2014 Actual	2015 Actual	2016 Proj'n	2017 Proj'n	2018 Proj'n	2019 Proj'n	2020 Proj'n	2021 Proj'n
Used Fuel Fund	990	1,429	1,703	1,791	1,883	1,980	2,082	2,189	2,302
Decommissioning Fund	624	1,100	1,285	1,351	1,421	1,494	1,571	1,652	1,737

Refer to Ex. L-8.1-15 SEC-091 part (d) for discussion of how the forecasted funded status of the Decommissioning Fund is derived.

- b) OPG recorded the first "Due to Province" amount in its 2004 financial statements. The first "Due from Province" amount was recorded in the 2003 financial statements.

1 c) Section 3.7.1 of the Ontario Nuclear Funds Agreement (ONFA) governs the
2 determination of the Used Fuel Fund “Due to Province” or “Due from Province” amount
3 related to the guaranteed the rate of return earned for the portion of the Used Fuel Fund
4 attributed to the first 2.23 million used fuel bundles. In conjunction with Section 2.2 and
5 as applicable Section 3.10.3 and Section 4.7.3, Section 8.2 of the ONFA governs OPG’s
6 right to the Decommissioning Fund and the Used Fuel Fund, and therefore provides the
7 basis for the “Due to Province” amounts related to the excess of the value of fund assets
8 over the corresponding ONFA liability.¹ A copy of the ONFA is found at Ex. L-8.1-15
9 SEC-091 Attachment 1.

10
11 The description of the accounting treatment of the “Due to Province” and “Due from
12 Province” amounts can be found in OPG’s audited consolidated financial statements. For
13 example, refer to the 2015 audited consolidated financial statement at Ex. A2-1-1, Att. 3,
14 p. 144.

15
16 From an OPG rate-setting perspective, the OEB explicitly addressed the matter of the
17 “Due to Province” amounts for the ONFA funds in its EB-2013-0321 Decision with
18 Reasons, p. 110:

19
20 *The Board will not direct OPG to use the excess earnings in the*
21 *Decommissioning and Used Fuel funds to decrease the revenue*
22 *requirement by \$28.5M as proposed by AMPCO as the funds are “Due to*
23 *Province” as stipulated in the Ontario Nuclear Funds Agreement reference*
24 *plan. The Board is satisfied that the current over funding position will not*
25 *result in a cash withdrawal from the fund to the Province. In addition, given*
26 *the long-term nature of the fund, it is appropriate for any periodic over*
27 *earning to be retained within the fund to offset future potential under earning.*

¹ Further details with respect to the Decommissioning Fund can be found in EB-2013-0321 Ex. J11.8

AMPCO Interrogatory #148

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

Ref: C2-1-1 Page 6

- a) Please indicate when the used fuel bundles exceeded the 2.23 million used fuel bundle threshold.
- b) Please provide the current number of used fuel bundles.

Response

- a) The number of used fuel bundles exceeded 2.23 million in 2013.
- b) There were approximately 2.5M used fuel bundles as at June 30, 2016.

AMPCO Interrogatory #149

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

Ref: C2-1-1 Page 7

Preamble: The evidence states "As at December 31, 2015, the Decommissioning Fund was overfunded at less than 120 per cent.

a) Please provide the current funding position of the fund.

Response

a) See Ex. L-8.1-15 SEC-91 part (c).

AMPCO Interrogatory #150

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

Ref: C2-1-1 Table 1

Preamble: The total revenue requirement impact of OPG's nuclear liabilities (Prescribed Facilities and Bruce) are \$454.3 million in 2017, \$450.1 million in 2018, \$439.1 million in 2019, \$506 in 2020 and \$444 million in 2021.

- a) Please provide any relevant documents (including without limitation regulations, statutes, MOUs) and highlight the specific references that proscribe the circumstances under which OPG must pay the province any amounts from the segregated funds.
- b) Please provide any relevant documents (including without limitation regulations, statutes, MOUs) and highlight the specific references that proscribe the calculation of the amounts OPG must pay the province from the segregated funds under the circumstances defined in a)
- c) Provide a table showing the amounts to be paid to the province from the segregated funds each year 2016-2021 and show the supporting calculations.
- d) Please provide the revenue requirement impact if the amounts calculated as due to the province are retained by OPG.

Response

OPG understands that the question is in reference to the "Due to Province" amounts related to the segregated funds.

- a) and b) The document that describes the circumstances under which the Province would be entitled to withdraw amounts from the segregated funds and the calculation of such amounts is the Ontario Nuclear Funds Agreement (ONFA). The ONFA can be found at Ex.L-8.1-15 SEC-091 Attachment 1. The sections of the ONFA describing the payout circumstances and related calculations of the "Due To Province" amounts are set out in Ex. L-8.1-2 AMPCO-147 part (c).

1 c) The projected total year-end "Due to Province" amounts for 2016-2021 are provided in
2 Ex. L-8.1-2 AMPCO-147 part (a). These amounts were based on the actual amounts
3 reported in OPG's 2015 audited consolidated financial statements (Ex. A2-1-1
4 Attachment 3, p. 145) and were determined in accordance with the ONFA requirements.
5 OPG is not providing the requested supporting calculations for the reasons set out in part
6 (d) below.

7
8 d) OPG is not providing the hypothetical calculations requested in part (d) or the
9 calculations requested in part (c), as this information is not relevant to the determination
10 of payment amounts for OPG's prescribed assets. The OEB previously found in the EB-
11 2013-0321 Decision with Reasons that "[t]he Board will not direct OPG to use the excess
12 earnings in the Decommissioning and Used Fuel funds to decrease the revenue
13 requirement by \$28.5M as proposed by AMPCO as the funds are "Due to Province" as
14 stipulated in the Ontario Nuclear Funds Agreement reference plan," noting that "[t]he
15 Board has no authority over the segregated funds or the reference plan for nuclear
16 liabilities established by the Ontario Nuclear Funds Agreement." (p. 110)

SEC Interrogatory #91

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

[C2/1/1, p.5]

With respect to the Ontario Nuclear Fund Agreement:

- a. Please provide a copy of the Ontario Nuclear Funds Agreement.
- b. Please provide a copy of the current Ontario Nuclear Funds Agreement Reference Plan.
- c. What percentage funded is the Decommissioning Fund?
- d. What is the forecast percentage funded of the Decommissioning Fund for each year between 2017 and 2021?
- e. Please provide a copy of the latest financial statements of the segregated funds.

Response

- a. The Ontario Nuclear Funds Agreement (ONFA) is provided in Attachment 1.
- b. The current ONFA Reference Plan was the one approved to be effective January 1, 2012 (the 2012 ONFA Reference Plan). The full 2012 ONFA Reference Plan is a voluminous document approximately 4,000 pages long and containing highly detailed technical evaluations and cost estimating information for thousands of work program elements. It is also a confidential document. In order to present this information in a more practical and meaningful way, in Attachment 2, OPG provides non-confidential summary level reports for each of the five nuclear liability programs (see Ex. C2-1-1, section 3.1.1) and for the ONFA liabilities overall. These reports, which form part of the 2012 ONFA Reference Plan, total approximately 175 pages and provide the key outputs and assumptions.
- c. As at June 30, 2016, the date of OPG's most recent issued interim consolidated financial statements, the Decommissioning Fund was approximately 118% funded.
- d. As explained at Ex. C2-1-1 p. 7, lines 1-19, OPG limits the Decommissioning Fund earnings it recognizes in accordance with US GAAP such that the balance of the fund is

1 equal to the current ONFA decommissioning liability (referred to in ONFA as the
2 Decommissioning Balance to Complete Cost Estimate), plus the portion of the excess
3 funding available to OPG to transfer to the Used Fuel Fund under the ONFA. As both the
4 Decommissioning Fund balance and the ONFA decommissioning liability are assumed to
5 grow at the rate of 5.15% per annum based on the approved ONFA Reference Plan, the
6 forecast funded status of the Decommissioning Fund, in percentage terms, is the same
7 as the actual funded status at the time the forecast is developed and, in dollar terms,
8 increases at the rate of 5.15% per annum over the projection period.

9
10 The specific forecasted funded status does not affect the forecasted earnings or balance
11 of the Decommissioning Fund as long as the fund is between 100% and 120% funded at
12 the time the forecast is developed because OPG does not have the right or access to that
13 excess funding.¹

14
15 Since the 2017-2021 forecast in the pre-filed evidence was based on the December 31,
16 2015 actual funded position, it reflects the December 31, 2015 funded status of slightly
17 less than 120%.

- 18
19 e. The audited 2015 Used Fuel Fund financial statements are provided in Attachment 3 and
20 the audited 2015 Decommissioning Fund financial statements are provided in Attachment
21 4.

¹ If the Decommissioning Fund were to be over 120% funded at the time the forecast is developed, the specific forecasted funded status would affect the forecasted earnings and balance of the Decommissioning Fund to the extent that the Used Fuel Fund is underfunded, as OPG has the right to direct up to 50 per cent of the excess over 120 per cent to the Used Fuel Fund, up to the amount that the Used Fuel Fund is underfunded. OPG can direct such a transfer upon approval of a new ONFA Reference Plan only, with the Province entitled to receive an amount from the Decommissioning Fund that is equal to the amount transferred to the Used Fuel Fund.

**HER MAJESTY THE QUEEN
IN RIGHT OF ONTARIO
AS REPRESENTED BY THE MINISTER OF FINANCE**

- and -

ONTARIO POWER GENERATION INC.

- and -

**EACH OF OPG DARLINGTON INC., OPG DARLINGTON WASTE INC., OPG
PICKERING INC., OPG PICKERING WASTE INC., OPG-HURON A INC., OPG-
HURON B INC., OPG WASTE INC. and OPG-HURON COMMON FACILITIES INC.**

**ONTARIO NUCLEAR FUNDS AGREEMENT
AS AMENDED JULY 7, 2003 AND OCTOBER 28, 2004**

OFFICE CONSOLIDATION

As of April 1, 1999

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ONTARIO NUCLEAR FUNDS AGREEMENT

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SCHEDULES

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Schedule 3.6	-	Used Fuel Segregated Fund Amended Payment Schedule
Schedule 3.6.1		Procedures for Determining Payments by OPG and the OPG Nuclear Subsidiaries to the Used Fuel Segregated Fund
Schedule 4.3	-	Summary of 1999 Estimated Decommissioning Eligible Costs
Schedule 4.6	-	Decommissioning Segregated Fund Original or Amended Payment Schedule
Schedule 4.6.1	-	Procedures for Determining Payments by OPG and the OPG Nuclear Subsidiaries to the Decommissioning Segregated Fund
Schedule 6.1	-	Form of Commitment in Lieu
Schedule 11.2	-	Dispute Resolution Procedure

ONTARIO NUCLEAR FUNDS AGREEMENT

THIS AGREEMENT is made as of the 1st day of April, 1999,

A M O N G:

HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO as
represented by the Minister of Finance

(the "**Province**")

- and -

ONTARIO POWER GENERATION INC., a corporation
incorporated under the laws of Ontario

(**"OPG"**)

- and -

Each of **OPG DARLINGTON INC.**, **OPG DARLINGTON WASTE INC.**, **OPG PICKERING INC.**, **OPG PICKERING WASTE INC.**, **OPG-HURON A INC.**, **OPG-HURON B INC.**, **OPG WASTE INC.** and **OPG-HURON COMMON FACILITIES INC.**, each a corporation incorporated under the laws of Ontario

(each of whom is an OPG Nuclear Subsidiary as herein defined)

All capitalized terms shall have the meanings attributed to them in this Agreement.

WHEREAS:

- A. OPG and the OPG Nuclear Subsidiaries, collectively, are the owners and/or the operators of the Stations and Other Facilities.
- B. The operation of the Stations and Other Facilities produces Nuclear Waste which must be safely managed and eventually disposed of in accordance with

the Approved Reference Plans in effect at the time in question and in compliance with Applicable Law.

- C. The Stations and Other Facilities must, in due course, be Permanently Shutdown and Decommissioned in accordance with Applicable Law and the requirements of Applicable Regulators.
- D. The Parties have agreed to enter into this Ontario Nuclear Funds Agreement (a) to ensure that sufficient funds are accumulated or otherwise are readily available to pay for the costs of Managing Nuclear Waste and Decommissioning each of the Stations and Other Facilities; (b) to limit the financial exposure that OPG and the OPG Nuclear Subsidiaries face with respect to increases in the cost of Managing Used Fuel resulting from changes in Approved Reference Plans for Nuclear Waste Management; and (c) to permit OPG and the OPG Nuclear Subsidiaries to meet the requirements for a financial guarantee under the *Nuclear Safety and Control Act* (Canada).
- E. Concurrently with this Agreement becoming effective, the OEFC Payment will have been made to the Decommissioning Segregated Fund and OPG will have made the Payments to each of the Used Fuel Segregated Fund and the Decommissioning Segregated Fund contemplated by this Agreement.
- F. The Province has agreed, subject to the provisions of this Agreement, to provide the one or more Provincial Guarantees as required from time to time.
- G. OPG and the OPG Nuclear Subsidiaries have agreed to make Payments to each of the Segregated Funds, subject to and in accordance with the terms of this Agreement and each of the Used Fuel Segregated Fund Custodial Agreement and the Decommissioning Segregated Fund Custodial Agreement, as applicable, so that when combined, in the case of the Used Fuel Segregated Fund, with a return on the assets of the Used Fuel Segregated Fund equal to the Discount Rate and, in the case of the Decommissioning Segregated Fund, with the return on the assets of the

Decommissioning Segregated Fund, there will be sufficient assets in the applicable Segregated Fund to pay, when due, all Used Fuel Eligible Costs and all Decommissioning Eligible Costs, as the case may be.

- H. Nuclear Legislation currently requires OPG to periodically prepare and submit for approval by the Applicable Regulator under Nuclear Legislation Reference Plans for Nuclear Waste Management and for Decommissioning the Stations and Other Facilities.
- I. The liability of the Province for Provincial Payments to the Used Fuel Segregated Fund under the terms of this Agreement is based on the assumption that the total number of Used Fuel Bundles discharged and projected to be discharged from all Stations will be 2,230,000 (the Used Fuel Bundle Threshold). OPG and the OPG Nuclear Subsidiaries shall be obligated to pay all Incremental Costs, and to make Payments in Cash to the Used Fuel Segregated Fund in an amount equal to the aggregate of such Incremental Costs, at the times and in the manner provided for in this Agreement.

NOW THEREFORE in consideration of the mutual covenants and agreements contained in this Agreement and other good and valuable consideration (the receipt and sufficiency of which are acknowledged by each of the Parties), the Parties agree as follows:

Article 1 - INTERPRETATION

1.1 Definitions

In this Agreement capitalized terms have the meanings set out in Schedule 1.1.

1.2 Schedules

The following are the schedules attached to this Agreement (as amended, supplemented, replaced and restated from time to time as provided for in this Agreement or otherwise agreed to by the Parties hereto) each of which shall be deemed to be an integral part of this Agreement:

- | | | |
|----------------|---|--|
| Schedule 1 | - | OPG Nuclear Subsidiaries |
| Schedule 1.1 | - | Definitions |
| Schedule 3.3 | - | Used Fuel Segregated Fund Original Payment Schedule |
| Schedule 3.3.1 | - | Summary of 1999 Estimated Used Fuel Eligible Costs |
| Schedule 3.6 | - | Used Fuel Segregated Fund Amended Payment Schedule |
| Schedule 3.6.1 | - | Procedures for Determining Payments by OPG and the OPG Nuclear Subsidiaries to the Used Fuel Segregated Fund |
| Schedule 4.3 | - | Summary of 1999 Estimated Decommissioning Eligible Costs |
| Schedule 4.6 | - | Decommissioning Segregated Fund Original or Amended Payment Schedule |
| Schedule 4.6.1 | - | Procedures for Determining Payments by OPG and the OPG Nuclear Subsidiaries to the Decommissioning Segregated Fund |
| Schedule 6.1 | - | Form of Commitment in Lieu |
| Schedule 11.2 | - | Dispute Resolution Procedure |

Article 2 -

OWNERSHIP, SEGREGATION AND MANAGEMENT OF THE SEGREGATED FUNDS

2.1 General

- 2.1.1 Owner of the Segregated Funds. Unless otherwise required by Applicable Law (including the *Nuclear Fuel Waste Act* (Canada), if and when enacted) or otherwise agreed in writing with the Province, OPG shall at all times be the owner of each of the Segregated Funds, subject to the security interests granted by OPG in favour of the Province contemplated by sections 3.11 and 4.8 and to the respective provisions of the applicable Segregated Fund Management Agreements and the Segregated Fund Custodial Agreements.
- 2.1.2 Segregation of Used Fuel Segregated Fund Assets, Etc. The assets constituting the Used Fuel Segregated Fund shall at all times be kept separate and apart from all other property and assets of OPG, including the assets constituting the Decommissioning Segregated Fund. The Used Fuel Segregated Fund shall be subject to the terms of each of the Used Fuel Segregated Fund Management Agreement and the Used Fuel Segregated Fund Custodial Agreement in effect from time to time. The rights and obligations of the Used Fuel Segregated Fund Custodian shall be governed by the Used Fuel Segregated Fund Custodial Agreement. The rights and obligations of each Used Fuel Segregated Fund Manager shall be governed by its respective Used Fuel Segregated Fund Management Agreement.
- 2.1.3 Segregation of Decommissioning Segregated Fund Assets, Etc. The assets constituting the Decommissioning Segregated Fund shall at all times be kept separate and apart from all other property and assets of OPG, including the assets constituting the Used Fuel Segregated Fund. The Decommissioning Segregated Fund shall at all times be subject to the terms of each of the Decommissioning Segregated Fund Management Agreement and the Decommissioning Segregated Fund Custodial Agreement in effect from time

to time. The rights and obligations of the Decommissioning Segregated Fund Custodian shall be governed by the Decommissioning Segregated Fund Custodial Agreement. The rights and obligations of each Decommissioning Segregated Fund Manager shall be governed by its respective Decommissioning Segregated Fund Management Agreement.

2.1.4 No Commingling. Each of the Used Fuel Segregated Fund and the Decommissioning Segregated Fund shall be maintained as a separate and distinct fund. Save for any transfer of assets expressly permitted by this Agreement, the assets of the Segregated Funds shall in no circumstances be commingled. Each of the Used Fuel Segregated Fund Custodian and the Decommissioning Segregated Fund Custodian shall open and maintain accounts with one or more financial institutions in accordance with the applicable Segregated Fund Custodial Agreement into which Cash, negotiable securities and/or short-term investments acceptable to the Province, acting reasonably, in respect of any Payments, Provincial Payments and the OEFC Payment to the Segregated Fund in question shall be deposited forthwith on receipt from time to time.

2.1.5 Segregated Fund Custodians.

- (a) OPG and the Province agree to obtain the co-operation of the Used Fuel Segregated Fund Custodian to the effect that it shall accept for deposit in the Used Fuel Segregated Fund all Payments from OPG (or from any OPG Nuclear Subsidiary), all Provincial Payments and any assets transferred to the Used Fuel Segregated Fund. The Parties agree to obtain the co-operation of the Decommissioning Segregated Fund Custodian to the effect that it shall accept for deposit in the Decommissioning Segregated Fund all Payments from OPG or from any OPG Nuclear Subsidiary, all Provincial Payments, any assets transferred to the Decommissioning Segregated Fund and the OEFC Payment.

- (b) OPG and the Province agree to take such steps as may be required to cause each Segregated Fund Custodian to deal with its Segregated Fund as provided in its respective Segregated Fund Custodial Agreement.

2.1.6 Selection of First Segregated Fund Custodians and Segregated Fund Managers. The Province and OPG shall as soon as practical after the execution and delivery of this Agreement jointly appoint the initial Segregated Fund Custodians and the initial Segregated Fund Managers on terms and conditions satisfactory to both the Province and OPG, acting reasonably. Each of the Province and OPG, in accordance with the terms of the applicable Segregated Fund Custodial Agreement or Segregated Fund Management Agreement, and subject to Applicable Law, shall have the right to remove any Segregated Fund Custodian and any Segregated Fund Manager, as the case may be, from time to time and, jointly with the other shall, acting reasonably, appoint a replacement Manager or replacement Custodian in its stead.

2.1.7 Indemnities under Agreements.

- (a) OPG agrees to reimburse the Province or the Ontario Financing Authority, as the case may be, in immediate funds for any amount paid or payable by the Province or the Ontario Financing Authority, as the case may be, pursuant to the indemnification provisions of (i) any Segregated Fund Custodial Agreement, (ii) any Segregated Fund Management Agreement, or (iii) any other written agreement approved by the Province (or its agent) and OPG with Persons dealing at arm's length with OPG and each of the OPG Nuclear Subsidiaries for services relating to the custody and management of the Segregated Funds the extent that the indemnification obligation arises out of (a) a direction from OPG or any other action or omission by OPG, or (b) a breach of the applicable agreement by OPG.

- (b) The Province agrees to reimburse, or to cause the Ontario Financing Authority to reimburse, OPG in immediate funds for any amount paid or payable by OPG pursuant to the indemnification provisions of (i) any Segregated Fund Custodial Agreement, (ii) any Segregated Fund Management Agreement, or (iii) any other written agreement approved by the Province (or its agent) and OPG with Persons dealing at arm's length with OPG and each of the OPG Nuclear Subsidiaries for services relating to the custody and management of the Segregated Funds to the extent that the indemnification obligation arises out of (a) a direction from the Province or the Ontario Financing Authority or any other action or omission by the Province or the Ontario Financing Authority, or (b) a breach of the applicable agreement by the Province or the Ontario Financing Authority.
- (c) The Province and OPG agree that for the purposes of this Agreement (and in particular, subsection 3.7.1 hereof) any No-Fault Indemnity Payments paid or payable to the Used Fuel Segregated Fund Custodian or to the Used Fuel Segregated Fund Manager constitute fees paid or payable to the Used Fuel Segregated Fund Custodian or to the Used Fuel Segregated Fund Manager, as the case may be, which have been reasonably allocated to the Used Fuel Segregated Fund and that any No-Fault Indemnity Payments paid or payable to the Used Fuel Segregated Fund Custodian or to the Used Fuel Segregated Fund Manager constitute fees paid or payable to the Used Fuel Segregated Fund Manager or to the Used Fuel Segregated Fund Manager, as the case may be, which have been reasonably allocated to the Used Fuel Segregated Fund.

2.2 Restriction on Use of the Segregated Funds

The assets of the Segregated Funds may not be held, used, paid, distributed, Disbursed, managed, encumbered in any way or transferred except as required or expressly permitted by the terms of this Agreement, the applicable Segregated Fund

Custodial Agreement and/or applicable Segregated Fund Management Agreement(s), and except in accordance with Applicable Law.

2.3 Nuclear Waste Management and Decommissioning

OPG and each OPG Nuclear Subsidiary agrees, and agrees to the extent that it is able to do so, to cause the WMO, if and when constituted, to comply with the requirements of Nuclear Legislation and the requirements of any Applicable Regulator under Nuclear Legislation and the terms of the then current Approved Reference Plans in Managing Nuclear Waste and in Decommissioning each of the Stations and Other Facilities.

2.4 Certain Provincial and OEFC Expenses

Each of OPG and the OPG Nuclear Subsidiaries agree to pay the following expenses of each of the Province and OEFC in Cash in a timely manner, without duplication, following written requests therefor from the Province or OEFC, as the case may be. Such written requests shall be accompanied by evidence of the expenditures in respect of which reimbursement is sought, in form and substance satisfactory to OPG, acting reasonably, including, where appropriate, copies of invoices for:

- (a) all reasonable out of pocket and third party supplier, legal, advisor, audit (including those incurred under subsection 9.3.3), agent, personal property security registrations and other costs incurred by the Province from and after the date of the execution and delivery of this Agreement in respect of its rights and obligations under this Agreement, any Segregated Fund Custodial Agreement and any Segregated Fund Management Agreement, excluding costs payable under any Segregated Fund Custodial Agreement, costs payable under any Segregated Fund Management Agreement and any financing costs related to the provision of any Provincial Payment (including any Provincial Commitment in Lieu) and/or any Financial Guarantee, and

- (b) all reasonable out of pocket and third party supplier, legal, advisor, audit, agent and other costs incurred by OEFC from and after the date of the execution and delivery of this Agreement in respect of its rights and obligations under this Agreement, excluding any financing costs related to the provision of the OEFC Payment (including any OEFC Commitment in Lieu).

No later than 60 days prior to each calendar year, the Province and OEFC shall provide OPG and the OPG Nuclear Subsidiaries with a good faith estimate of the amount each anticipates will be required to reimburse it for expenses under this section 2.4 in respect of that calendar year, provided, however, any such estimate so provided shall in no circumstances reduce or limit the obligation of OPG and the OPG Nuclear Subsidiaries to pay all such expenses incurred by the Province or OEFC, as aforesaid. Each of the Province and OEFC may, by notice in writing to OPG and the OPG Nuclear Subsidiaries at any time and from time to time during any calendar year, amend its estimate of such expenses. The foregoing obligations are in addition to and not in substitution for the indemnity obligations of OPG and the OPG Nuclear Subsidiaries under each of subsection 7.4.3 and section 13.4.

Article 3 -

Used Fuel Segregated Fund

3.1 "Used Fuel Eligible Costs" and "Used Fuel Excluded Costs"

For the purposes of this Agreement:

- 3.1.1 Definition of Used Fuel Eligible Costs. **"Used Fuel Eligible Costs"** means those reasonable costs described below reasonably relating to the Management of Used Fuel (excluding, for greater certainty, Used Fuel Excluded Costs) including disposal, deep geological disposal, storage (centralized storage or storage at the Site of a Station, as hereinafter

provided), and any other approach to the Management of Used Fuel proposed and approved as required pursuant to Nuclear Legislation, incurred (or to be incurred) by or on behalf of OPG or any OPG Nuclear Subsidiary or any other Person who assumes responsibility from OPG or from any one or more OPG Nuclear Subsidiary for all or part of such costs (including any such cost incurred, or to be incurred, by the WMO, CNSC or any other Applicable Regulator under Nuclear Legislation), where such costs are in accordance with an Approved Reference Plan or a Reference Plan that OPG reasonably expects will, in substance, be submitted to and approved by the Province and thereafter approved, if required, by the Applicable Regulator under Nuclear Legislation in due course, which costs shall be strictly limited to:

- (a) the following direct costs relating to the Management of Used Fuel, being:
 - (i) all costs reasonably relating to conducting studies on proposed approaches for the Management of Used Fuel and the development of a recommended approach in accordance with Nuclear Legislation;
 - (ii) all planning, research and development costs reasonably relating to all relevant aspects of the storage or the disposal of Used Fuel in a Repository, in each case either above or below ground;
 - (iii) all costs reasonably relating to selecting, acquiring, and maintaining one or more Sites for a Repository, including all reasonable legal, engineering and other costs incurred in selecting, acquiring and maintaining one or more Sites for a Repository, including all necessary planning and design costs and all technical, safety and environmental assessments;

- (iv) all costs reasonably relating to the development of conceptual, feasibility, preliminary and final designs for a Repository, its related Site and/or the Management of Used Fuel;
- (v) all costs reasonably relating to the making of applications for, pursuing, and maintaining all Licences for each such Repository and/or its related Site and for the transportation of Used Fuel to such Repository issued by the Applicable Regulator under Nuclear Legislation, and any reasonable legal, engineering and other costs incurred in meeting the requirements to obtaining such Licences, including all necessary planning and design costs and all technical, safety and environmental assessments;
- (vi) all costs reasonably relating to providing information to the public and taking such other public affairs steps as circumstances require with respect to the selection, acquisition, licensing, construction, operation, maintenance, Decommissioning and abandonment of any Repository and/or its related Site, and the transportation of Used Fuel to such Repository;
- (vii) all costs reasonably relating to the construction of a Repository;
- (viii) all costs reasonably relating to transporting Used Fuel to a Repository;
- (ix) all costs reasonably relating to operating and maintaining any Repository, including insurance and security costs and costs for handling, containment, radiation protection, processing, storage and disposal of Used Fuel;
- (x) all costs reasonably relating to obtaining approval for, purchasing, maintaining, loading, sealing, transporting,

processing and handling containers (including multi-purpose containers) for storage or disposal of Used Fuel in any Repository, which containers have been approved for such purpose, if required, by the Applicable Regulator under Nuclear Legislation;

- (xi) all costs reasonably relating to the final closure and sealing of each Repository, and all costs reasonably relating to the maintenance, insurance, security and monitoring of such closed and sealed Repositories in compliance with Nuclear Legislation; and
- (xii) all costs reasonably relating to the Decommissioning of each Repository including decontamination and restoration of the Site to the standard required by an Applicable Regulator under Nuclear Legislation;

provided that for greater certainty and subject to paragraph 3.1.1(b), for each of the foregoing subparagraphs 3.1.1(a)(iii) to (xii), none of the costs described therein which are (or are to be) incurred with respect to the storage of Used Fuel at or adjacent to a Station Site shall be a Used Fuel Eligible Cost;

- (b) for each Station, the following direct costs which reasonably relate to the storage of Used Fuel at or adjacent to the Station Site after Permanent Shutdown of such Station, from and after the earliest of the following dates:
 - (i) the date on which Safe-Storage for the Station is completed;
 - (ii) the date, in compliance with Good Utility Practices (or as otherwise determined by an Applicable Regulator under Nuclear Legislation), from and after which Used Fuel can no longer be

stored in one or more of the Station's wet bays without material modification thereof; and

- (iii) the date, in compliance with Good Utility Practices (or as otherwise determined by an Applicable Regulator under Nuclear Legislation), from and after which Used Fuel can no longer be stored in dry storage facilities located at or adjacent to the Station Site without material modification thereof;

being:

- (A) all costs reasonably relating to procuring additional dry storage casks, including transportation and handling costs;
- (B) all costs reasonably relating to the extension of the useful life, expansion or reinforcement of any wet bay located at the Station Site;
- (C) all costs reasonably relating to the extension of the useful life, expansion or reinforcement of any dry storage facilities located at or adjacent to the Station Site; and
- (D) all costs reasonably relating to making application for, pursuing, and maintaining all Licences associated with the matters referred to in this paragraph 3.1.1(b) and any reasonable legal, engineering, or other costs that reasonably relate to meeting the requirements to obtaining such Licences, including all necessary planning and design costs and all technical, safety and environmental assessments;

provided, however, once the dismantling or entombing of the Station has been completed, all costs incurred thereafter that reasonably relate to the handling, storage, containment, radiation protection,

environmental monitoring, security, and administration of Used Fuel at or adjacent to the Station Site shall be Used Fuel Eligible Costs;

- (c) if the Governor in Council selects an approach under the *Nuclear Fuel Waste Act* (Canada), if and when enacted, for the Management of Used Fuel other than deep geological disposal, centralized storage, or storage on or adjacent to the Site of one or more Stations, then, in any such event, all costs consistent with those Used Fuel Eligible Costs described in the foregoing provisions of this subsection 3.1.1 reasonably relating to the development and implementation of such approach selected by the Governor in Council shall be, and shall form part of, Used Fuel Eligible Costs;
- (d) any cost, or portion thereof, which would not otherwise qualify as a Used Fuel Eligible Cost, where the Province has determined in its sole discretion that:
 - (i) there are reasonable grounds for concluding that such cost is related to the Management of Used Fuel and is not a Used Fuel Excluded Cost; and
 - (ii) it is in the interests of both the Province and OPG that such cost, or portion thereof, be treated for the purposes of this Agreement as a Used Fuel Eligible Cost.

For greater certainty, the Parties agree that the foregoing right of the Province, being the exercise of an absolute discretion by the Province, cannot be the subject matter of a Dispute or Financial Issue under this Agreement or of any other proceeding at law initiated by OPG or any OPG Nuclear Subsidiary;

- (e) all costs and expenses deemed to be Used Fuel Eligible Costs under any of paragraphs 3.11.6(d) and (g), subsections 5.4.3, 7.3.2,

7.4.1, 9.3.2 and 11.1.3, section 13.4 and item 8 of Part II of Schedule 11.2, to the extent such costs are not in respect of the Decommissioning Segregated Fund;

- (e.1) all No-Fault Indemnity Payments payable by OPG, the Province or the Ontario Financing Authority from time to time provided the payment, where relating to a service shared among the Segregated Funds, is reasonably allocated to the Used Fuel Segregated Fund;
- (f) all reasonable fees, commissions and expenses of (i) the Used Fuel Segregated Fund Custodian under the Used Fuel Segregated Fund Custodial Agreement, (ii) each Used Fuel Segregated Fund Manager under its respective Used Fuel Segregated Fund Management Agreement and (iii) Persons dealing at arm's length with OPG and each of the OPG Nuclear Subsidiaries performing services related to the custody and management of the Used Fuel Segregated Fund provided that the retainer of those Persons has been agreed to in writing by the Province (or its agent) and OPG, acting reasonably; and
- (g) all Incremental Costs.

3.1.2 Definition of Used Fuel Excluded Costs. **"Used Fuel Excluded Costs"** means each of those costs described below incurred (or to be incurred) by or on behalf of OPG or any OPG Nuclear Subsidiary or any other Person who assumes responsibility from OPG or from any OPG Nuclear Subsidiary for all or part of such costs, (including any such cost incurred, or to be incurred by the WMO, CNSC or any other Applicable Regulator under Nuclear Legislation), whether or not relating to the Management of Used Fuel:

- (a) any costs arising as a result of a Nuclear Incident at a Station or Other Facility, including all clean-up costs and other costs arising as a result of the Nuclear Incident, such as disposal of property contaminated as a result of any such Nuclear Incident that would not have become

Radioactive but for the Nuclear Incident, and all damage claims relating to such Nuclear Incident, including those of third parties, and the liabilities of OPG or the OPG Nuclear Subsidiaries under the *Nuclear Liability Act* (Canada), but only in each case to the extent that any of the costs referred to in this paragraph 3.1.2(a) are in addition to costs which would have occurred had there been no Nuclear Incident;

- (b) any costs resulting from criminal or quasi-criminal offences or from civil proceedings or third party liability claims relating to the Management of Used Fuel, except reasonable costs relating to any civil proceedings or third party liability claims that would otherwise have qualified as Used Fuel Eligible Costs;
- (c) any costs relating to Low and Intermediate Level Waste co-located at the Site of a Repository which would not have been incurred but for the co-location of Low and Intermediate Level Waste at such Site; (it being acknowledged, for greater certainty, that any costs relating to Low and Intermediate Level Waste co-located at the Site of a Repository which would have been incurred even if such Low and Intermediate Level Waste were not so co-located are Used Fuel Eligible Costs);
- (d) any costs related to any Used Fuel that has not been produced at a Station; and
- (e) any Decommissioning Eligible Costs.

3.2 Nuclear Legislation Used Fuel Fund Requirements

3.2.1 Other Used Fuel Funds. To the extent that any Nuclear Legislation requires that OPG or one or more of the OPG Nuclear Subsidiaries establish one or more funds (for example, the NFWA Fund) to provide for the funding of costs relating to the Management of Used Fuel, then OPG and such OPG Nuclear Subsidiaries agrees with respect to each such fund:

- (a) If any cost mandated to be paid out of the fund in question is a Used Fuel Eligible Cost, then each such fund (including the NFWA Fund) shall be deemed to be part of the Used Fuel Segregated Fund, provided only that any costs payable out of any such fund (including the NFWA Fund) that do not qualify as Used Fuel Eligible Costs under paragraphs 3.1.1(a) to (f), inclusive, shall be deemed to be Incremental Costs;
- (b) To the extent that any Nuclear Legislation applies in respect of any Used Fuel Eligible Costs or to the Used Fuel Segregated Fund and any provision of the subject Nuclear Legislation directly conflicts with the provisions of this Agreement, the provision of the Nuclear Legislation shall prevail and govern to the extent of any such conflict.
- (c) To the extent that any Nuclear Legislation requires that a fund be established to provide for the funding of costs relating to the Management of Used Fuel that comes within the provisions of paragraph 3.2.1(a), and such Nuclear Legislation prohibits the commingling of the assets of such fund with the assets of another fund, including the Used Fuel Segregated Fund, then OPG and the OPG Nuclear Subsidiaries agree to establish a separate fund substantially similar in all respects to the Used Fuel Segregated Fund to the extent permitted by such Nuclear Legislation (or any Applicable Regulator thereunder) and such separate fund or funds shall be deemed for all purposes of this Agreement to form part of the Used Fuel Segregated Fund. In addition, OPG and the OPG Nuclear Subsidiaries agree to make Payments in respect of such costs in such amounts and as otherwise required by the said Nuclear Legislation, or by the Applicable Regulator thereunder, and to enter into a fund management agreement substantially similar to the Used Fuel Segregated Fund Management Agreement(s) in effect from time to time and a custodial agreement substantially similar to the Used Fuel Segregated Fund Custodial

Agreement in effect from time to time in respect of any such fund or funds. OPG and the Province agree to take such steps as may be required from time to time to ensure that such fund manager(s) and custodian are so engaged.

- (d) Notwithstanding paragraph 3.2.1(c), OPG and the Province agree to take whatever steps are reasonably necessary (including transferring assets from one fund to another) to ensure that to the extent permitted by Applicable Law, the Used Fuel Segregated Fund and any such separate fund or funds established under the previous provisions of this subsection 3.2.1 are treated for all purposes of this Agreement as a single fund, without any duplication by reason of the existence of more than one fund, in respect of each of the matters and procedures contemplated by this Agreement, including Payments to, Provincial Payments to, permitted Disbursements from, the right of the Province to receive reports, the right of the Province to audit and rights in respect of the excess or surplus from the Used Fuel Segregated Fund or any such separate fund or funds.

3.2.2 Limitation – the Province. To the extent that any Nuclear Legislation requires that there be only one fund relating to the Management of Nuclear Waste, such fund shall be the Used Fuel Segregated Fund, provided that the Province shall not (save as otherwise specifically provided in this Agreement) assume any financial risk in respect of, or be obligated to pay or fund the payment of, any Incremental Cost funded by, or Incremental Cost Disbursed from, the Used Fuel Segregated Fund or the return earned on any assets in the Used Fuel Segregated Fund allocated to Incremental Costs. For greater certainty, none of the obligations imposed on the Province under section 3.7 shall apply to the return earned on any assets in the Used Fuel Segregated Fund at any time allocated to Incremental Costs and none of the obligations imposed on the Province under section 3.8 shall apply to Incremental Costs. OPG and the OPG Nuclear Subsidiaries shall make Payments in accordance

with the terms and conditions of this Agreement to the Used Fuel Segregated Fund sufficient to fund all Incremental Costs.

- 3.2.3 Limitation - OEFC. OEFC shall in no circumstances be obligated to assume any financial risk whatsoever in respect of, or be obligated to pay or fund the payment of, any expense incurred by OPG or any OPG Nuclear Subsidiary in respect of the Management of Used Fuel.

3.3 Initial Determination of the Used Fuel Payment Schedule

- 3.3.1 1999 Reference Plan Estimated Used Fuel Eligible Costs. OPG has prepared to the satisfaction of the Province, and the Parties agree that Schedule 3.3.1 sets out the calendar-year-by-calendar-year estimated Used Fuel Eligible Costs (expressed both in constant 1999 Dollars and Present Value as at January 1, 1999 dollars) based on the 1999 Reference Plan, and such further and other relevant information as required by either OPG or the Province, acting reasonably.
- 3.3.2 Original Payment Schedule 3.3. Based on the information referred to in Schedule 3.3.1, and the assumption that the Used Fuel Segregated Fund is not subject to tax of any nature whatsoever, OPG has prepared, and the other Parties agree, that the annexed Original Payment Schedule 3.3 accurately reflects the individual nominal quarterly Payments to be made by OPG and the OPG Nuclear Subsidiaries to the Used Fuel Segregated Fund and the portion of the payments set out in Original Payment Schedule 3.3 allocated to each Station.

3.4 OPG Initial Payment and Bruce Extraordinary Payments

- 3.4.1 OPG Initial Payment. Concurrently with this Agreement becoming effective, OPG agrees to make an initial Payment in Cash and/or negotiable securities and short-term investments acceptable to the Province, acting reasonably, to the Used Fuel Segregated Fund equal to the greater of (a) such Payment that is then required under the provisions of the *Nuclear Fuel Waste Act* (Canada),

if and when enacted, except to the extent that such Payment has already been made, and (b) the amount as of the date this Agreement becomes effective by which (i) the sum of \$597,769,347 plus interest thereon calculated at the Discount Rate for the period from January 1, 2002 to that date plus the aggregate Present Value at that date of each nominal quarterly Payment payable to the Used Fuel Segregated Fund under the Original Payment Schedule 3.3 prior to that date, exceeds (ii) the aggregate Present Value of each Used Fuel Eligible Cost incurred between January 1, 2002 and that date. For greater certainty, any amount paid into the NFWA Fund by OPG prior to the date on which the initial Payment is made under this Agreement shall form part of the initial Payment to the Used Fuel Segregated Fund contemplated by this paragraph 3.4.1(b).

3.4.2 Bruce Extraordinary Payments.

- (a) OPG and the OPG Nuclear Subsidiaries hereby agree to make one or more Payments to the Used Fuel Segregated Fund on or before March 24, 2008 in an amount equal in the aggregate to \$246,745,518 plus interest at a rate equal to the Discount Rate plus 1.25% on the unpaid balance thereof from and after February 14, 2003 until paid in full (collectively, the “**Bruce Extraordinary Payment**”).
- (b) The Payment obligation imposed under paragraph 3.4.2(a) is subject to the qualification that to the extent that the amount of any such Payment exceeds the Present Value, at the time of such Payment, of the balance of all Payments due by OPG and the OPG Nuclear Subsidiaries under Original Payment Schedule 3.3 or the then current Amended Payment Schedule 3.6 if Original Payment Schedule 3.3 has been replaced pursuant to section 3.6, then OPG and/or the subject OPG Nuclear Subsidiary(ies) in question shall be entitled to retain such excess to its/their own account.

3.5 OPG Quarterly Payments

From and after the date of the initial Payment to the Used Fuel Segregated Fund provided for in subsection 3.4.1, OPG and the OPG Nuclear Subsidiaries agree to make nominal quarterly Payments to the Used Fuel Segregated Fund on the last Business Day of every quarter during the term of this Agreement on the basis of Original Payment Schedule 3.3 or the Amended Payment Schedule 3.6 in effect from time to time, if Original Payment Schedule 3.3 has been replaced. To the extent that OPG or any OPG Nuclear Subsidiary fails to make any such nominal quarterly Payment when due, it agrees to pay to the Used Fuel Segregated Fund, in addition to the unpaid amount, an amount equal to the interest which would have been earned on the amount not so paid if that amount had earned interest from the date it was due to the date such Payment is made at a rate of interest equal to the greater of (a) the Used Fuel Segregated Fund Rate of Return during such period, and (b) the Prime Rate of Interest in effect during such period plus two (2%) per cent.

3.6 Review of Used Fuel Segregated Fund Payment Obligations

In addition to any other circumstances specifically provided in this Agreement, Original Payment Schedule 3.3, any subsequent Amended Payment Schedule 3.6, and the quarterly Payment obligations thereunder, shall be amended from time to time during the term of this Agreement and replaced with an Amended Payment Schedule 3.6 in accordance with the following:

- 3.6.1 Requirement to Amend. The amount of the quarterly Payments to the Used Fuel Segregated Fund (as reflected in Original Payment Schedule 3.3 or the then current Amended Payment Schedule 3.6 if Original Payment Schedule 3.3 has been replaced) shall be revised in accordance with the following provisions of this section 3.6 and the procedures in Schedule 3.6.1 each time that (a) a new or amended Reference Plan becomes an Approved Reference Plan, (b) a Decommissioning Segregated Fund Matching Payment is made by the Province to the Used Fuel Segregated Fund, (c) a transfer of assets from the Decommissioning Segregated Fund is made to the Used Fuel Segregated

Fund under subsection 4.7.3, (d) a Bruce Extraordinary Payment is paid in full to the Used Fuel Segregated Fund, (e) either OPG or the Province, acting reasonably, makes a determination that the Used Fuel Segregated Fund is subject to tax of any nature whatsoever or, having become subject to such tax, is no longer subject to such tax, whether in whole or in part, (f) the Province approves or is deemed to have approved a CNSC Reconciliation Statement under subsection 7.3.4, or (g) any other payment or contribution is made to the Used Fuel Segregated Fund other than a Payment pursuant to section 3.5 subsections 7.3.5, 9.2.5 or 9.3.4 or a Provincial Payment (each of the events in paragraphs (a) through (g) of this subsection 3.6.1 being a **"Triggering Event"**).

3.6.2 Determination of Payments. The nominal quarterly Payments to the Used Fuel Segregated Fund shall be calculated as of the date of a Triggering Event as follows:

- (a) Determine Station Amount. The Station Amount to be paid for each Station for each quarter during that Station's Remaining Operating Period shall be determined. Subject to the other paragraphs of this subsection 3.6.2, the **"Station Amount"** for a Station as of the date of a Triggering Event shall be the equal nominal amount for each quarter during the Station's then Remaining Operating Period determined so that the aggregate Present Value of each of those equal quarterly nominal amounts plus the Fair Market Value of the assets of the Used Fuel Segregated Fund notionally allocated to that Station equals the Used Fuel Balance to Complete Cost Estimate notionally allocated to that Station in each case as of the date of the Triggering Event. For greater certainty, a Station Amount can be either a positive or negative amount.
- (b) Station Amount Where Limitation Applies. Notwithstanding paragraph 3.6.2(a), if the limitation in paragraph 3.6.2(e) applies, then for the purposes only of determining the amount by which the nominal

quarterly Payments shall be less than the nominal quarterly Payments set out in the Original Payment Schedule 3.3, the Station Amount for each Station shall be recalculated: (i) insofar as it relates to the Fair Market Value of assets of the Used Fuel Segregated Fund notionally allocated to Incremental Costs and the portion of the Balance to Complete Cost Estimate notionally allocated to Incremental Costs (in each case in accordance with subsection 9.2.3), in the manner otherwise described in this subsection 3.6.2; and (ii) insofar as it relates to the remaining Fair Market Value of assets of the Used Fuel Segregated Fund and the remaining portion of the Used Fuel Balance to Complete Cost Estimate, as the equal nominal amount for each quarter during the Remaining Operating Period for the Station under the 1999 Reference Plan, determined so that the Present Value of each of those quarterly nominal amounts plus the Fair Market Value of the remaining assets notionally allocated to that Station equals the remaining portion of the Used Fuel Balance to Complete Cost Estimate notionally allocated to that Station. If the application of this paragraph 3.6.2(b) would result in an obligation to make any Payments on any date prior to January 1, 2020 which exceed the nominal quarterly Payments set out in Original Payment Schedule 3.3, then notwithstanding this subsection 3.6.2, the nominal quarterly Payments payable on any such date shall be as set out in Original Payment Schedule 3.3. This paragraph 3.6.2(b) shall not apply in respect of Payments calculated for any period on or after January 1, 2020.

- (c) Aggregate Quarterly Payments and Right to Net. The nominal quarterly Payment to the Used Fuel Segregated Fund shall equal the aggregate of the Station Amounts for each Station. For greater certainty, if the Station Amount for any Station is a negative amount because the Fair Market Value of the assets of the Used Fuel Segregated Fund notionally allocated to that Station exceeds the portion of the Used Fuel Balance to Complete Cost Estimate notionally

allocated to that Station, the Station Amount for that Station shall be calculated as a negative amount which may be deducted or netted against other amounts in determining the aggregate quarterly Payment to the Used Fuel Segregated Fund. The resultant nominal quarterly Payments shall be set out in a new or revised Amended Payment Schedule 3.6 which, subject to paragraph 3.6.2(e), shall replace the then current Original Payment Schedule 3.3 or Amended Payment Schedule 3.6 as the case may be. Notwithstanding the above, the aggregate nominal quarterly Payment cannot be less than nil.

(d) Tax Over-Contribution. Notwithstanding paragraph 3.6.2(e), to the extent that:

- (i) OPG or any OPG Nuclear Subsidiary has at any time made any over-contribution to the Used Fuel Segregated Fund by virtue of Payments being previously determined on the basis that the Used Fuel Segregated Fund is subject to tax of any nature or of any amount; or
- (ii) a Tax Payment is transferred or paid to the Used Fuel Segregated Fund in accordance with paragraph 4.7.3(c),

then the amount of such over-contribution or Tax Payment plus interest on the balance thereof (after giving effect to the following provisions of this paragraph 3.6.2(d)) at a rate equal to the Used Fuel Segregated Fund Rate of Return (for the period of time commencing on the date of each over-contribution or the date on which the Tax Payment is paid or transferred into the Used Fuel Segregated Fund, as applicable, and ending on the date that such over-contribution or Tax Payment to which such interest relates has been applied to reduce the nominal quarterly Payments) shall be applied to reduce the nominal quarterly Payments to the Used Fuel Segregated Fund next falling due

until such time as the amount of such over-contribution or Tax Payment, as applicable, and interest, have been exhausted.

- (e) Limitation. Notwithstanding paragraphs 3.6.2(a) and 3.6.2(c), but subject to paragraph 3.6.2(d), the nominal quarterly Payments to the Used Fuel Segregated Fund may not be less than (but may be equal to) the nominal quarterly amounts set out in Original Payment Schedule 3.3, except in accordance with the following:
- (i) if (and for so long as) the Present Value Threshold Percentage is less than 60%, then the quarterly Payments to the Used Fuel Segregated Fund shall never be less than the nominal quarterly Payments set out in Original Payment Schedule 3.3;
 - (ii) if (and for so long as) the Present Value Threshold Percentage is equal to or greater than 60%, but less than 70% and the nominal quarterly Payments calculated pursuant to paragraphs 3.6.2(a) and 3.6.2(c) would be less than the nominal quarterly Payments set out in Original Payment Schedule 3.3, then the nominal quarterly Payments to the Used Fuel Segregated Fund shall be those nominal quarterly Payments set out in Original Payment Schedule 3.3 less 25% of the amount, if any, by which the nominal quarterly Payments set out in Original Payment Schedule 3.3 exceeds the nominal quarterly Payments calculated pursuant to paragraphs 3.6.2(a) and 3.6.2(c);
 - (iii) if (and for so long as) the Present Value Threshold Percentage is equal to or greater than 70%, but less than 80% and the nominal quarterly Payments calculated pursuant to paragraphs 3.6.2(a) and 3.6.2(c) would be less than the nominal quarterly Payments set out in Original Payment Schedule 3.3, then the nominal quarterly Payments to the Used Fuel

Segregated Fund shall be those nominal quarterly Payments set out in Original Payment Schedule 3.3 less 50% of the amount, if any, by which the nominal quarterly Payments set out in Original Payment Schedule 3.3 exceeds the nominal quarterly Payments calculated pursuant to paragraphs 3.6.2(a) and 3.6.2(c);

- (iv) if (and for so long as) the Present Value Threshold Percentage is equal to or greater than 80%, but less than 90% and the nominal quarterly Payments calculated pursuant to paragraphs 3.6.2(a) and 3.6.2(c) would be less than the nominal quarterly Payments set out in Original Payment Schedule 3.3, then the nominal quarterly Payments to the Used Fuel Segregated Fund shall be those nominal quarterly Payments set out in Original Payment Schedule 3.3 less 75% of the amount, if any, by which those nominal quarterly Payments set out in Original Payment Schedule 3.3 exceeds the nominal quarterly Payments calculated pursuant to paragraphs 3.6.2(a) and 3.6.2(c); and
- (v) if (and for so long as) the Present Value Threshold Percentage is equal to or greater than 90%, then the nominal quarterly Payments shall be those calculated pursuant to paragraphs 3.6.2(a) and 3.6.2(c).
- (f) Assets to be Taken into Account. For purpose of determining a Station Amount, the assets of the Used Fuel Segregated Fund as of the date of a Triggering Event shall first be adjusted to give effect to:
 - (i) any Provincial Payment required to be made under paragraphs 3.8.3(a), (b) or (c) or 3.10.3(b) as of the date of that Triggering Event whether or not such payment has been made; (ii) any reimbursement to the Province of any payment required pursuant to subsection 7.4.1 in respect of an activity required or permitted to be funded from the

Used Fuel Segregated Fund and of any over-contribution required pursuant to paragraph 3.8.3(g) as at that Triggering Event, in each case whether or not such reimbursement has actually been made; (iii) any Payments deemed to be made to the Used Fuel Segregated Fund pursuant to paragraphs 3.7.1(d) or 3.8.3(g) or subsection 7.4.1 as of that Triggering Event notwithstanding that OPG may have paid the amount to the Province; and (iv) any payment to or from the Used Fuel Segregated Fund which will be required pursuant to paragraph 3.7.1(b) as of that Triggering Event even if such payment has not been made.

(g) Allocation of Value of Assets. For purposes of the determination of Payments pursuant to this Agreement only, the Fair Market Value of the assets of the Used Fuel Segregated Fund shall be notionally allocated among the Stations at any time in accordance with the following:

- (i) The initial Payment made by OPG pursuant to subsection 3.4.1 shall be notionally allocated among the Stations as set out in Original Payment Schedule 3.3.
- (ii) Each Payment pursuant to Original Payment Schedule 3.3 or an Amended Payment Schedule 3.6 shall be notionally allocated to each Station *pro rata* to the Station Amounts for each Station included in such Payment. For this purpose and for greater certainty, any payments made by OPG and the OPG Nuclear Subsidiaries to the Province pursuant to paragraphs 3.7.1(d), 3.8.3(g) or subsection 7.4.1 shall be notionally allocated to each Station as if the payments had been made to the Used Fuel Segregated Fund.
- (iii) Provincial Payments, Decommissioning Segregated Fund Matching Payments, assets transferred from the

Decommissioning Segregated Fund, Bruce Extraordinary Payments and any other payment or contribution made to the Used Fuel Segregated Fund other than a Payment pursuant to Original Payment Schedule 3.3 or an Amended Payment Schedule 3.6 shall be notionally allocated among the Stations *pro rata* to the amount, if any, by which the Used Fuel Balance to Complete Cost Estimate notionally allocated to each Station exceeds the Fair Market Value of the assets of the Used Fuel Segregated Fund notionally allocated to such Station, in each case as of the time of the payment or contribution and in accordance with the then current Approved Reference Plan.

- (iv) It shall be assumed that all assets of the Used Fuel Segregated Fund earn a rate of return equal to the Discount Rate regardless of the actual rate of return earned on those assets and that such earning will be allocated to each Station in the same manner as the related assets are allocated pursuant to this section 3.6.
- (h) Allocation of Used Fuel Balance to Complete Cost Estimate and Used Fuel Cost Estimate. For purposes of the determination of Payments pursuant to this Agreement only, the Used Fuel Balance to Complete Cost Estimate and the Used Fuel Cost Estimate shall be notionally allocated among the Stations at any time in accordance with the then current Approved Reference Plan.
- (i) Allocation of Disbursements. For purposes of the determination of Payments pursuant to the Agreement only, Disbursements from the Used Fuel Segregated Fund in any calendar year shall, notwithstanding how the Disbursement may have actually been expended, be notionally allocated among the Stations *pro rata* to that calendar year's portion of the Used Fuel Cost Estimate notionally

allocated to each Station for such calendar year, in accordance with the then current Approved Reference Plan.

3.6.3 Remaining Operating Period.

- (a) If a new or amended Reference Plan becomes an Approved Reference Plan more than five (5) years prior to the Operating Period End Date for a Station as contained in the previous Approved Reference Plan and such Station has Permanently Shutdown or the Operating Period End Date in the new Approved Reference Plan is earlier than the Operating Period End Date contained in the previous Approved Reference Plan, then the Remaining Operating Period for that Station shall be the greater of (i) five (5) years from the date of the new Approved Reference Plan and (ii) Remaining Operating Period for such Station in the new Approved Reference Plan.
- (b) If a new or amended Reference Plan becomes an Approved Reference Plan fewer than five (5) years prior to the Operating Period End Date for a Station as contained in the previous Approved Reference Plan, then the Remaining Operating Period for such Station shall be the Remaining Operating Period for such Station under the immediately preceding Approved Reference Plan.
- (c) If a Triggering Event occurs after a Station has Permanently Shutdown and the Fair Market Value of the assets notionally allocated to that Station is not equal to the portion of the Used Fuel Balance to Complete Cost Estimate then notionally allocated to that Station, the Remaining Operating Period for that Station shall be deemed to be five (5) years from the date of the Triggering Event.
- (d) If (i) the amount, if any, as at the date of a Triggering Event, by which the Used Fuel Balance to Complete Cost Estimate notionally allocated

to Incremental Costs exceeds the Fair Market Value of the assets notionally allocated to Incremental Costs (in each case in accordance with subsection 9.2.3) under the then current Approved Reference Plan, is greater than such excess amount as at the date of a Triggering Event under the immediately preceding Approved Reference Plan or (ii) the Adjusted Cost Estimate under the then current Approved Reference Plan is greater than the Adjusted Cost Estimate under the immediately preceding Approved Reference Plan, then, in either such case, the Remaining Operating Period for each Station shall be the greater of (A) the Remaining Operating Period for that Station under the then current Approved Reference Plan and (B) five (5) years from the date of the Triggering Event.

3.7 Adjustment for Used Fuel Segregated Fund Rate of Return

3.7.1 Provincial Adjustment for Non-Incremental Used Fuel Segregated Fund Rate of Return.

- (a) Concurrent with the preparation of an Amended Payment Schedule 3.6, OPG shall prepare and submit a written report to the Province setting out OPG's estimate of the amount of the Actual Used Fuel Fund Value and the Fixed Used Fuel Fund Value, as of the day immediately before the most recent Triggering Event (the "**Valuation Date**"). The "**Actual Used Fuel Fund Value**" for any Valuation Date means the Fair Market Value of the assets in the Used Fuel Segregated Fund as of that date. The "**Fixed Used Fuel Fund Value**" for any Valuation Date means the aggregate of (i) the value the Used Fuel Segregated Fund would have had had the assets in the Used Fuel Segregated Fund earned a rate of return equal to the Discount Rate during the period commencing on the date on which the conditions precedent set out in subsection 8.1.2 are satisfied or waived and ending on the Valuation Date, plus (ii) the aggregate Present Value of (A) all brokerage fees paid in respect of the Used Fuel

Segregated Fund, (B) fees paid or then payable to the Used Fuel Segregated Fund Managers or Used Fuel Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds, and (C) fees paid or then payable to any other Person which are Used Fuel Eligible Costs pursuant to paragraph 3.1.1(f). For greater certainty, services relating to custodianship of a Segregated Fund include fees for transaction processing, income processing, administration, performance measurement and accounting services for the Segregated Fund but exclude any Disbursement costs (other than the costs of paying the Disbursements as such) charged by any Person other than the Segregated Fund Custodian or its agent or agents. For purposes of determining the Actual Used Fuel Fund Value and the Fixed Used Fuel Fund Value, all assets transferred to the Used Fuel Segregated Fund from the Decommissioning Segregated Fund and any Decommissioning Segregated Fund Matching Payment made by the Province at that time shall for greater certainty be included as assets of the Used Fuel Segregated Fund, but all amounts allocated to Incremental Costs in accordance with subsection 9.2.3 and all assets transferred to the Decommissioning Segregated Fund from the Used Fuel Segregated Fund shall be excluded from the assets of the Used Fuel Segregated Fund. Notwithstanding the foregoing, all Provincial Payments previously made by the Province under subparagraph 3.7.1(b)(ii) shall be included in the assets of the Used Fuel Segregated Fund for the purposes of determining the Actual Used Fuel Fund Value and excluded from the assets of the Used Fuel Segregated Fund for the purposes of determining the Fixed Used Fuel Fund Value. In addition, the determination of the Fixed Used Fuel Fund Value shall take into account each of the timing and amount of the Disbursements out of the Used Fuel Segregated Fund, other than Disbursements to pay Incremental Costs.

(b) After receipt by the Province of the report referred to in paragraph 3.7.1(a) and all supporting documentation in respect thereof reasonably requested by it from OPG, and after the Actual Used Fuel Fund Value and the Fixed Used Fuel Fund Value in question have either been agreed to by OPG and the Province or any Dispute or Financial Issue in respect thereof has been determined under the provisions of Article 11 or Schedule 11.2:

- (i) the Province may direct the Used Fuel Segregated Fund Custodian to make a Disbursement to the Province in any amount up to the amount, if any, by which the Actual Used Fuel Fund Value exceeds the Fixed Used Fuel Fund Value; and
- (ii) the Province shall deliver a notice in writing in respect thereof to the Used Fuel Segregated Fund Custodian and immediately make a Provincial Payment to the Used Fuel Segregated Fund equal to the amount, if any, by which the Fixed Used Fuel Fund Value exceeds the Actual Used Fuel Fund Value,

together with interest thereon at the Discount Rate during the period from the applicable Valuation Date to the date of payment. The Province may set off against any Provincial Payment required pursuant to subparagraph 3.7.1(b)(ii), the amount of any Disbursement required to be made to the Province pursuant to any of paragraph 3.7.1(d), paragraph 3.8.3(g) or subsection 7.4.1, in each case to the extent not yet made, without duplication and net of any payments by OPG and the OPG Nuclear Subsidiaries to the Province under any of paragraph 3.7.1(d), paragraph 3.8.3(g) or subsection 7.4.1 which have been applied to reduce the amount of any such required Disbursement.

(c) Subject to any Applicable Law to the contrary, payments required by the Used Fuel Segregated Fund or the Province pursuant to this

subsection 3.7.1 may be satisfied by increasing or reducing, as applicable, the undrawn balance on a Provincial Commitment in Lieu.

- (d) To the extent that the Disbursements referred to in subparagraph 3.7.1 (b)(i) are prohibited by Applicable Law or the Used Fuel Segregated Fund Custodian otherwise fails for any reason to make such Disbursements to the Province, OPG and the OPG Nuclear Subsidiaries agree to pay the amount of such Disbursement (including for greater certainty applicable interest under paragraph 3.7.1(b) but only up to the amount of Payments next falling due until the amount of such Disbursement is paid to the Province. The Province shall bear the risk that OPG and the OPG Nuclear Subsidiaries are not obligated to make Payments equal to the amount of the Disbursement. The Parties shall require the Used Fuel Segregated Fund Custodian to credit the amount of such payments by OPG to the Province as if such payments had been made as Payments to the Used Fuel Segregated Fund and OPG and the OPG Nuclear Subsidiaries shall be deemed to have discharged their obligations to make such Payments to the extent so paid. However, to the extent Applicable Law does not permit such amounts to be credited against Payments to the Used Fuel Segregated Fund or to the extent compliance with this paragraph 3.7.1(d) does not fully discharge any obligation of OPG and the OPG Nuclear Subsidiaries to make such payments under Applicable Law, OPG and the OPG Nuclear Subsidiaries shall not be obligated to pay such amounts to the Province.
- (e) If the Province has, before the 30th day after delivery of the said report and all supporting documentation in respect thereof reasonably requested (and received) by it from OPG, filed a Dispute under Schedule 11.2 or disputes a Financial Issue under subsection 11.1.3 with respect to the report and supporting documentation in respect thereof reasonably requested by the Province under this

subsection 3.7.1, any Provincial Payment to the Used Fuel Segregated Fund required under this subsection 3.7.1 shall not be made until a final determination of any such Dispute or Financial Issue has been made. If no such Dispute or Financial Issue has arisen within that period, the Province shall be deemed to have accepted the report.

3.8 Allocation of Liability

The Province agrees to make Provincial Payments, and OPG and the OPG Nuclear Subsidiaries agree to make Payments to the Used Fuel Segregated Fund in accordance with the following provisions of this section 3.8.

- 3.8.1 Used Fuel Bundle Threshold Limitation on Provincial Payments. The liability of the Province for Provincial Payments under this section 3.8 is based on the assumption that the total number of Used Fuel Bundles discharged and projected to be discharged from all Stations will be 2,230,000 (the Used Fuel Bundle Threshold). OPG and the OPG Nuclear Subsidiaries shall make Payments in accordance with the terms and conditions of this Agreement sufficient to fund the payment of all Incremental Costs.
- 3.8.2 Calculation of Approved Cost Estimate and Adjusted Cost Estimate. At each time that a new or amended Reference Plan becomes an Approved Reference Plan, OPG shall calculate each of the Approved Cost Estimate and the Adjusted Cost Estimate subject in each case to the approval thereof in writing by the Province, acting reasonably.
- 3.8.3 Payments and Provincial Payments. The Adjusted Cost Estimate shall be compared to the liability thresholds set out below and the Parties shall comply with the following provisions:
- (a) If the Adjusted Cost Estimate exceeds \$4.6 billion but is less than or equal to \$6.6 billion (each Present Value as of January 1, 1999), the Province shall make Provincial Payments to the Used Fuel Segregated Fund equal to 50% of the amount by which the lesser of:

(i) \$6.6 billion; and

(ii) the amount of the Adjusted Cost Estimate;

exceeds \$4.6 billion (all amounts, including for greater certainty, the amount of such Provincial Payments, Present Value as of January 1, 1999).

(b) If the Adjusted Cost Estimate exceeds \$6.6 billion but is less than or equal to \$10.0 billion (each, Present Value as of January 1, 1999), the Province agrees to make Provincial Payments to the Used Fuel Segregated Fund equal to:

(i) the Provincial Payments which would have been required under paragraph 3.8.3(a), being \$1.0 billion, and

(ii) 90% of the amount by which the lesser of:

(A) \$10.0 billion; and

(B) the amount of the Adjusted Cost Estimate;

exceeds \$6.6 billion (all amounts, including for greater certainty, the amount of such Provincial Payments, Present Value as of January 1, 1999).

(c) If the Adjusted Cost Estimate exceeds \$10.0 billion (Present Value as of January 1, 1999), the Province agrees to make Provincial Payments to the Used Fuel Segregated Fund equal to the sum of (i) the Provincial Payments which would have been required under paragraph 3.8.3(b), being \$4.06 billion and (ii) 100% of the difference between the amount of the Adjusted Cost Estimate and \$10.0 billion (all amounts,

including for greater certainty, the amount of such Provincial Payments, Present Value as of January 1, 1999).

- (d) OPG and the OPG Nuclear Subsidiaries agree to make Payments to the Used Fuel Segregated Fund in accordance with the terms and conditions of this Agreement sufficient to fund the payment of all Used Fuel Eligible Costs in the Adjusted Cost Estimate at the times and in the amounts set out in Original Payment Schedule 3.3 or the then current Amended Payment Schedule 3.6 if Original Payment Schedule 3.3 has been replaced, in all cases after taking into account the Provincial Payments required by this subsection 3.8.3.
- (e) The determination from time to time of Amended Payment Schedule 3.6 shall reflect the foregoing provisions of this subsection 3.8.3, without duplication of a Payment already required to be made under Original Payment Schedule 3.3 or an Amended Payment Schedule 3.6.
- (f) The Parties acknowledge that to the extent that the Used Fuel Segregated Fund is used to permit OPG and/or the OPG Nuclear Subsidiaries to honour their obligations under any Nuclear Legislation as contemplated by section 3.2, all Incremental Costs resulting from the application of section 3.2 shall be excluded from the operation of the foregoing provisions of this subsection 3.8.3. OPG and the OPG Nuclear Subsidiaries agree to make Payments sufficient to fund in whole all such Incremental Costs at the times and in the amounts provided for in this Agreement, and they acknowledge that neither the Province nor OEFC shall in any circumstances be obligated to fund any portion of such Incremental Costs or to assume any risk of increases in such costs as a result of any change in the provisions (or the enactment of) any Nuclear Legislation or otherwise, save only any

payment obligation of the Province as may arise under any Provincial Guarantee.

- (g) The Parties acknowledge that circumstances may arise where the Province will have made Provincial Payments to the Used Fuel Segregated Fund in excess of its obligation to do so under the terms of this Agreement. The Province shall have the right as at December 31 in any year during the term of this Agreement to cause OPG to prepare a calculation of any such over-contribution to the Used Fuel Segregated Fund by the Province and to submit such estimate to the Province for its approval. The Province shall review the report and all supporting documentation in respect thereof reasonably requested (and received) by it from OPG and, acting reasonably, approve OPG's calculation, failing which the resulting Financial Issue shall be settled in accordance with subsection 11.1.3. If at any time it is determined that the Province has over-contributed to the Used Fuel Segregated Fund, to the extent that Applicable Law permits such over-contribution (together with interest thereon at the Discount Rate for the period from the date of the over-contribution to the date of repayment to the Province) to be re-paid to the Province out of the Used Fuel Segregated Fund, OPG and the Province agree to cause the Used Fuel Segregated Fund Custodian to make a Disbursement to the Province equal to the amount of the over-contribution (plus interest as aforesaid) within 10 Business Days of the Province making a request therefor in writing, provided that the repayment to the Province may be made in Cash only to the extent of the then Present Value of Cash contributed to the Used Fuel Segregated Fund up to that time by the Province, net of the then Present Value of any repayment to the Province in Cash previously made pursuant to this subsection 3.8.3. Any repayment to the Province not permitted to be made in Cash because of the previous sentence shall be made by reducing the amount of any outstanding Provincial Commitment in Lieu previously

contributed to the Used Fuel Segregated Fund. To the extent that such reimbursement is prohibited by Applicable Law or the Used Fuel Segregated Fund Custodian otherwise fails for any reason to reimburse the Province, OPG and the OPG Nuclear Subsidiaries agree to pay the amount of such over-contribution (plus interest as aforesaid) to the Province in Cash, but only up to the amount of Payments next falling due until the amount of such over-contribution (plus interest as aforesaid) is paid to the Province. The Province shall bear the risk that OPG and the OPG Nuclear Subsidiaries are not obligated to make Payments equal to the amount of the over-contribution (plus interest as aforesaid). The Parties shall require the Used Fuel Segregated Fund Custodian to credit the amount of such payments by OPG to the Province as if such payments had been made as Payments to the Used Fuel Segregated Fund and OPG and the OPG Nuclear Subsidiaries shall be deemed to have discharged their obligations to make such Payments to the extent so paid. However, to the extent Applicable Law does not permit such amounts to be credited against Payments to the Used Fuel Segregated Fund or to the extent compliance with this paragraph 3.8.3(g) does not fully discharge any obligation of OPG and the OPG Nuclear Subsidiaries to make such payments under Applicable Law, OPG and the OPG Nuclear Subsidiaries shall not be obligated to pay such amounts to the Province.

- (h) The Province may set off against any Provincial Payment required pursuant to subsection 3.8.3 the amount of any Disbursement required to be made to the Province pursuant to any of paragraph 3.7.1(d), paragraph 3.8.3(g) or subsection 7.4.1, in each case to the extent not yet made, without duplication and net of any payments by OPG and the OPG Nuclear Subsidiaries to the Province under any of paragraph 3.7.1(d), paragraph 3.8.3(g) or subsection 7.4.1 which have been applied to reduce the amount of any such required Disbursement.

3.9 Provincial Payments - General

3.9.1 Limitation. Except as specifically set out in this Agreement (including as set out in subsections 3.7.1, 3.8.3 and 4.7.3 and paragraph 3.10.3(b)), the Province shall not be obligated to make any payments of any kind to the Used Fuel Segregated Fund. OEFC shall, in no circumstances, be obligated to make any payments of any kind to the Used Fuel Segregated Fund.

3.9.2 Satisfaction of Provincial Payments. Any Provincial Payment to the Used Fuel Segregated Fund shall be made in any of the following ways:

- (a) by payment in Cash;
- (b) by the execution and delivery by the Province of one or more Commitments in Lieu substantially in the form annexed as Schedule 6.1;
- (c) in accordance with the provisions of paragraph 6.1.2(b), by the increase in the undrawn balance under an outstanding Provincial Commitment in Lieu by endorsement on the grid forming part thereof;
or
- (d) by any combination of the foregoing alternatives. To the extent that the Province executes and delivers a Commitment in Lieu under this subsection 3.9.2, the Province agrees to comply with the provisions of section 6.1 in respect thereof.

3.9.3 Conditions Precedent to Each Provincial Payment. Unless otherwise required by Applicable Law and subject to the provisions of subsection 5.2.3 and paragraph 6.1.2(a), the Province shall only be obligated to make payments to the Used Fuel Segregated Fund in Cash as required by this Agreement or pursuant to a Provincial Commitment in Lieu upon delivery by OPG of a duly executed Compliance Certificate addressed to the Province and to the Used

Fuel Segregated Fund Custodian (even if such Compliance Certificate discloses breaches by OPG or any OPG Nuclear Subsidiary of any of the terms and conditions of this Agreement) dated the date on which the Province makes a payment in Cash to the Used Fuel Segregated Fund; provided only that the Province shall not be obligated to make any Provincial Payment if as a result of one or more breaches of the Agreement the Province has at the time the Provincial Payment is otherwise due appointed a Receiver under either paragraphs 3.11.6(a) or 4.8.6(a).

3.10 Disbursements Out of the Used Fuel Segregated Fund

3.10.1 Disbursements Out of the Used Fuel Segregated Fund.

- (a) Save as hereinafter specifically provided, Disbursements from the Used Fuel Segregated Fund shall only be made pursuant to Approved Budgets and, where applicable, in compliance with the requirements of Nuclear Legislation.
- (b) Those Used Fuel Eligible Costs or other payments described in any of paragraphs 3.1.1(e.1), 3.11.6(d) and (g), subsections 5.4.3, 7.4.1 and 13.4, those taxes described in paragraph (b) of section 1.69 of Schedule 1.1 and any other Disbursements specifically authorized to be made from the Used Fuel Segregated Fund by the terms of this Agreement shall be Disbursed against a requisition therefor signed by the Province or its agent alone.
- (c) All Used Fuel Eligible Costs and all other Disbursements (other than fees and expenses of any Used Fuel Segregated Fund Custodian or any Used Fuel Segregated Fund Manager, payment of which is provided for in the subject Used Fuel Segregated Fund Custodial Agreement or Used Fuel Segregated Fund Management Agreement, and the transfer of assets from one Segregated Fund to the other) specifically authorized to be made from the Used Fuel Segregated

Fund by the terms of this Agreement, in each case to the extent not otherwise Disbursed, shall be paid by Disbursement against a requisition therefor signed by the Payee, subject to compliance with the following procedures:

- (i) The Payee shall have given not less than 30 Business Days prior written notice addressed to (A) the Province (or its agent), (B) the Used Fuel Segregated Fund Custodian, and (C) where the Payee is neither OPG nor an OPG Nuclear Subsidiary, to OPG, for the Disbursement in question specifying the amount requested to be Disbursed, accompanied by the Disbursement statement referred to in subparagraph 3.10.1(c)(ii);
- (ii) The Payee shall have provided to (A) the Province (or its agent), (B) the Used Fuel Segregated Fund Custodian, and (C) where the Payee is neither OPG nor an OPG Nuclear Subsidiary, to OPG, a Disbursement statement containing details as to the proposed use of the proceeds of the Disbursement in question;
- (iii) OPG shall have delivered a certificate of a senior officer (given by such senior officer on behalf of OPG without personal liability) addressed to the Province (or its agent) and to the Used Fuel Segregated Fund Custodian certifying in writing:
 - (A) that such senior officer has read and is familiar with the provisions of this Agreement and that such senior officer has all information necessary to be in a position to certify the matters set out in clauses (B), (C) and (D) of this subparagraph 3.10.1(c)(iii);
 - (B) that all costs or expenses included in the Disbursement statement are Used Fuel Eligible Costs

and identifying, by reference to the then current Approved Budget, the specific Used Fuel Eligible Costs and, separately, the specific Incremental Costs proposed to be satisfied out of the Disbursement proceeds or are otherwise Disbursements specifically authorized to be made from the Used Fuel Segregated Fund by the terms of this Agreement;

- (C) whether, and to the extent that a Default or an Event of Default has occurred, or would occur by reason of receipt of the Disbursement in question; and
- (D) that all requirements of any Applicable Regulator and Applicable Law with respect to the matters identified in the subject Disbursement statement have been met;

provided where the Payee is neither OPG nor an OPG Nuclear Subsidiary, the said certificate shall be provided by OPG within two (2) Business Days following delivery of the said Payee's Disbursement statement under subparagraph 3.10.1(c)(ii);

- (iv) To the extent that any such Disbursement is to be paid (directly or indirectly) to OPG, to an OPG Nuclear Subsidiary or to any Person not dealing at arm's length with any of them, and a Default or an Event of Default has occurred and has not been cured, the part of such Disbursement to be paid (directly or indirectly) to OPG, to an OPG Nuclear Subsidiary or to any Person not dealing at arm's length with any of them, shall not be paid until such Default or Event of Default has been cured; (for greater certainty, for the purposes of this section 3.10, the WMO shall be deemed to deal at arm's length with OPG and each of the OPG Nuclear Subsidiaries); and

- (v) If (A) the 30 Business Day period referred to in subparagraph 3.10(c)(i) has passed and the Province shall not have delivered a Disputed Disbursement Notice, (B) the Province has notified OPG and the Used Fuel Segregated Fund Custodian in writing before the end of such period that it will not deliver a Disputed Disbursement Notice within such period, or (C) the Province has delivered a Disputed Disbursement Notice within such period, and the payment of the Disputed Disbursement shall have been agreed to by OPG and the Province or the Dispute or Financial Issue resolved in favour of paying the Disbursement (in whole or in part), then the amount in question shall then be paid.
- (d) Apart from the foregoing and save as provided in subsection 7.3.2, prior to the wind-up of the Used Fuel Segregated Fund, there shall be no Disbursements (other than fees and expenses of any Used Fuel Segregated Fund Custodian or any Used Fuel Segregated Fund Manager, payment of which is provided for in the subject Used Fuel Segregated Fund Custodial Agreement or Used Fuel Segregated Fund Management Agreement, and the transfer of assets from one Segregated Fund to the other) from the Used Fuel Segregated Fund except as provided by this Agreement.
- (e) Any Disbursement in compliance with the foregoing provisions of this subsection 3.10.1 shall be free of the charge against the Used Fuel Segregated Fund conferred on the Province by section 3.11.

3.10.2 Account Deposit. The Used Fuel Segregated Fund Custodian shall make any permitted Disbursement in Cash into a bank account in the name of the Payee. Where the Payee is OPG, an OPG Nuclear Subsidiary or the WMO (to the extent that OPG can so direct the WMO), such bank account shall be a single-purpose bank account. The Payee may be any other fund or trust which OPG has been obligated to establish under Nuclear Legislation. The Payee shall be entitled to pay Used Fuel Eligible Costs provided for in the

subject Disbursement statement directly from the said bank account to the subject suppliers (including OPG and each OPG Nuclear Subsidiary). The Parties agree to use reasonable efforts to cause each Payee to follow the foregoing procedures to facilitate any audit or tracing of the use and application of all Disbursements from the Used Fuel Segregated Fund by the Province, its agent, an Applicable Regulator under Nuclear Legislation or OPG, should the need arise.

3.10.3 Used Fuel Segregated Fund Surplus.

- (a) Subject to any Applicable Law prohibiting it from doing so, and subject to the maintenance of reasonable reserves as hereinafter provided, the Province shall have the right at any time and from time to time by notice in writing to each of OPG, any other Person entitled to notice under Applicable Law and the Used Fuel Segregated Fund Custodian, first to cancel or reduce all or any part of any then outstanding Provincial Commitment in Lieu and, second, after the entire amount of any Provincial Commitment in Lieu has been cancelled or reduced to nil in accordance with the foregoing, to have Disbursed in Cash to the Province from the Used Fuel Segregated Fund all or any part of the assets remaining in the Used Fuel Segregated Fund, apart from such amount, in each case, to remain in the Used Fuel Segregated Fund (whether represented by a Provincial Commitment in Lieu, Cash, investments or other assets) as the Province, acting reasonably, determines may be required to fund ongoing Used Fuel Eligible Costs (which amount shall in no event be less than 110% of the sum of the Used Fuel Balance to Complete Cost Estimate and the aggregate of any incurred and unpaid Used Fuel Eligible Costs).
- (b) If at any time following any cancellation or reduction of a Provincial Commitment in Lieu, or a portion thereof, or any Disbursement in Cash to the Province under paragraph 3.10.3(a), the Used Fuel Segregated Fund is Under-Funded (provided OPG and the OPG Nuclear

Subsidiaries have made all Payments required by the terms of this Agreement to be made by them to the Used Fuel Segregated Fund as at the date in question), the Province agrees, within 30 days of receiving written notice to that effect from OPG, to make Provincial Payments to the Used Fuel Segregated Fund in such amount (or amounts) from time to time as may be required to fund any unpaid Used Fuel Eligible Costs up to an amount equal to the aggregate of all such Disbursements so made (but not previously repaid pursuant to this paragraph 3.10.3(b)), and no amount of any Provincial Commitment in Lieu so cancelled or reduced (and not previously reinstated pursuant to this paragraph 3.10.3(b)) plus, in each case, the return that such amounts would have earned (calculated using the Discount Rate) had the Commitment in Lieu in question not been so cancelled or reduced, or the Disbursement in question to the Province not been made, provided that the Province pursuant to subparagraph 3.10.3(a) (plus interest thereon as aforesaid) and only once the Province has repaid to the Used Fuel Segregated Fund all Disbursements in Cash made to the Province pursuant to paragraph 3.10.3(a) (plus interest thereon as aforesaid) shall the Province be entitled to reinstate the amount of any Provincial Commitment in Lieu cancelled or reduced pursuant to paragraph 3.10.3(a) in order to repay amounts to the Used Fuel Segregated Fund required under this paragraph 3.10.3(b).

3.11 Provincial Security Interest in Used Fuel Segregated Fund

3.11.1 Grant of Charge to Secure Payment of Used Fuel Eligible Costs and Certain Indemnities.

- (a)** Subject to Applicable Law restricting it from doing so, OPG (and each OPG Nuclear Subsidiary to the extent they have an interest in the UFSF Collateral) hereby grants, assigns, mortgages and charges by way of the UFSF Security to and in favour of the Province as a first

charge and security interest in the UFSF Collateral, as general and continuing security for (i) performance by OPG and each OPG Nuclear Subsidiary of their respective obligations to the Province under this Agreement (including their obligations to indemnify the Province set out in subsection 7.4.3 and section 13.4), (ii) the rights and privileges conferred on the Province by the terms of this Agreement and (iii) the payment in accordance with the terms of this Agreement (including the provisions of paragraph 3.11.6(c)) of first, all Used Fuel Eligible Costs other than Incremental Costs and, second, all Incremental Costs.

- (b) The UFSF Security interest shall be perfected by registration of an appropriate financing statement against OPG (and any affected OPG Nuclear Subsidiary) under the *Personal Property Security Act* (Ontario), and by OPG (and each such affected OPG Nuclear Subsidiary) obtaining a discharge (or postponement on terms acceptable to the Province under subsection 3.11.5) of any competing security interests at any time and from time to time attaching to the UFSF Collateral. OPG and each OPG Nuclear Subsidiary acknowledges that, except as set out in this Agreement, the Used Fuel Segregated Fund Custodial Agreement and except as otherwise permitted under Applicable Law, it has no right, power or authority to direct the Used Fuel Segregated Fund Custodian with respect to any Disbursement of any monies from the Used Fuel Segregated Fund.

3.11.2 Confirmation of Charge on Fund Assets. For greater certainty, each OPG Nuclear Subsidiary represents and warrants to the Province that it has no interest in any of the UFSF Collateral. Apart from the UFSF Collateral, other than by operation of the provisions of section 3.2, no other assets or property in which OPG or any OPG Nuclear Subsidiary has an interest shall at any time form part of the UFSF Collateral or be subject to the charge of the UFSF Security.

3.11.3 Certain Representations and Warranties. OPG represents and warrants to the Province that except for the rights conferred on the Province by the UFSF Security and the obligations otherwise imposed by this Agreement, the Used Fuel Segregated Fund Custodial Agreement and by Applicable Law in relation to the Used Fuel Segregated Fund, OPG is, and insofar as any UFSF Collateral acquired after the date hereof will be, the owner of the UFSF Collateral, free from any adverse lien, security, interest, encumbrance or claim of any nature whatsoever apart from Permitted Encumbrances and the UFSF Security, and OPG agrees that it will defend the UFSF Collateral against all claims and demands of all Persons other than the Province and the Used Fuel Segregated Fund Custodian.

3.11.4 Attachment Not Postponed. The attachment of the security interest constituted by the UFSF Security has not been postponed and the UFSF Security shall attach to any particular UFSF Collateral as soon as OPG or any OPG Nuclear Subsidiary has rights in that UFSF Collateral. Any Disbursements from the Used Fuel Segregated Fund in compliance with the provisions of this Agreement shall be free of the charge of the UFSF Security.

3.11.5 Further Assurances. The Parties undertake to execute and deliver such further assurances in respect of the UFSF Security as the Province may from time to time reasonably require. OPG (and each of the OPG Nuclear Subsidiaries to the extent it has an interest in any of the UFSF Collateral) agrees to use commercially reasonable efforts to obtain such postponement(s) of claims in favour of the Province from any Person claiming a competing interest in the UFSF Collateral (or any part thereof) as the Province may reasonably require from time to time to confirm the first charge of the UFSF Security in the UFSF Collateral.

3.11.6 Rights and Remedies. The UFSF Security shall be enforceable on demand by the Province at any time that an Event of Default described in any of item nos. (a), (b), (d) (insofar as compliance with subsection 3.10.1 is concerned) or (g) of the definition of Event of Default has occurred and has not been

cured within the cure periods set out therein or as otherwise agreed to in writing by the Parties. If the Event of Default in question has been cured, without derogation to its other rights under this Agreement, the Province shall not be entitled to enforce, or continue to enforce, the UFSF Security. If at any time the UFSF Security shall become enforceable, then in addition to the rights conferred on the Province under the *Personal Property Security Act* (Ontario), the following provisions shall apply (subject to, and in compliance with, Applicable Law, this Agreement, the Used Fuel Segregated Fund Custodial Agreement, the Used Fuel Segregated Fund Management Agreement(s) and the requirements of any Applicable Regulator):

- (a) the Province may appoint, by notice in writing to OPG and to the Used Fuel Segregated Fund Custodian, a Receiver of all or any part of the UFSF Collateral and remove or replace such Receiver from time to time or may institute proceedings in any court of competent jurisdiction for the appointment of the Receiver or any replacement Receiver;
- (b) where the Province is in this section 3.11 referred to, such term shall, where the context permits, be deemed to include reference to any Receiver appointed by the Province and the officers, employees, servants or agent of such Receiver;
- (c) if appointed, such Receiver shall (i) preserve the UFSF Collateral (ii) continue the management of the Used Fuel Segregated Fund in accordance with the terms of both this Agreement and the Used Fuel Segregated Fund Management Agreement(s), and (iii) use the UFSF Collateral and its proceeds first to fund the payment of all Used Fuel Eligible Costs other than Incremental Costs, and second to fund the payment of all Incremental Costs, each at that time outstanding or incurred during the term of its appointment as Receiver (and the performance of the other obligations and rights secured by the UFSF Security) in accordance with the terms of this Agreement;

- (d) the Province may seize, collect, realize, sell, release to third parties or otherwise deal with the UFSF Collateral or any part thereof in such manner, upon such terms and conditions and at such time or times as may seem to it advisable and without notice to OPG or any of the OPG Nuclear Subsidiaries except as otherwise required by any Applicable Law (provided that the UFSF Collateral and any proceeds thereof shall be applied in accordance with subsection 3.11.8, and may charge on its behalf (and pay to others) all reasonable sums for expenses incurred and for services rendered (expressly including legal advice and services, and receivers and accounting fees) in or in connection with taking, perfecting, seizing, collecting, realizing, selling or obtaining payment of the UFSF Collateral, which charges shall be deemed to be Used Fuel Eligible Costs;
- (e) the Province shall not be liable or accountable for any failure to seize, collect, realize, sell or obtain payment of the UFSF Collateral or any part thereof and shall not be bound to institute proceedings for the purpose of seizing, collecting, realizing or obtaining possession or payment of the same or for the purpose of preserving any rights of the Province, OPG or any of the OPG Nuclear Subsidiaries or any other Person in respect of same;
- (f) the Province may grant extensions of time and other indulgences, take and give up securities, accept compositions, grant releases and discharges, release any part of the UFSF Collateral to third parties and otherwise deal with the debtors of OPG or any OPG Nuclear Subsidiaries, sureties and others and with the UFSF Collateral as the Province may see fit without prejudice to the liability of OPG or any of the OPG Nuclear Subsidiaries or the Province's right to realize against the UFSF Collateral under the terms of this Agreement;

- (g) the Province may, if it deems it necessary for the proper realization of all or any part of the UFSF Collateral in accordance with this subsection 3.11.6, pay any encumbrance, lien, claim or charge that may exist or be threatened against the same and in every such case the amounts so paid together with costs, charges and expenses incurred in connection therewith shall be deemed to be Used Fuel Eligible Costs; and
- (h) if after all the expenses of the Province in connection with the preservation and realization of the UFSF Collateral as above described shall have been satisfied, all obligations of OPG or all of the OPG Nuclear Subsidiaries secured by the UFSF Security shall have been satisfied and all Used Fuel Eligible Costs have been paid in full, any remaining UFSF Collateral shall be dealt with in accordance with the applicable provisions of this Agreement.

3.11.7 Disbursements Following Default or an Event of Default. Notwithstanding a Default or an Event of Default has occurred and has not been cured within the period provided for under the terms of this Agreement, but subject to the rights conferred on the Province under subsection 3.10.1 and paragraphs 3.11.6(d) and (g), the Province agrees to permit Disbursements to be made to any Payee (including, but subject to subparagraph 3.10.1(c)(iv), OPG or any OPG Nuclear Subsidiary) under subsection 3.10.1.

3.11.8 Application of Proceeds. Any UFSF Collateral and any proceeds received by the Used Fuel Segregated Fund Custodian or by the Province in respect of any sale of, collection from, or other realization upon all or any part of the UFSF Collateral shall be applied by the Province first to the payment of any Disbursement required to be made pursuant to section 3.10 or permitted to be made pursuant to either paragraph 3.11.6(d) or (g), second to the payment and discharge of all the obligations of OPG and the OPG Nuclear Subsidiaries under the terms of this Agreement in respect of Used Fuel Eligible Costs other than Incremental Costs, third to the payment and

discharge of all the obligations of OPG and the OPG Nuclear Subsidiaries under the terms of this Agreement in respect of Incremental Costs, and fourth to the payment and discharge of all other obligations of OPG and the OPG Nuclear Subsidiaries under the terms of this Agreement.

Article 4 -

DECOMMISSIONING SEGREGATED FUND

4.1 “Decommissioning Eligible Costs” and “Decommissioning Excluded Costs”

For the purposes of this Agreement:

4.1.1 Definition of Decommissioning Eligible Costs. **“Decommissioning Eligible Costs”** means those reasonable costs described below reasonably relating to the Decommissioning of Stations and Other Facilities (except Repositories), the Management of Nuclear Waste, including Low and Intermediate Level Waste disposal and Nuclear Waste Storage (excluding, for greater certainty, Decommissioning Excluded Costs), incurred (or to be incurred) by or on behalf of OPG or any OPG Nuclear Subsidiary or any other Person who assumes responsibility from OPG or from any one or more OPG Nuclear Subsidiary for all or part of such costs (including any such cost incurred, or to be incurred, by the WMO, CNSC or any other Applicable Regulator under Nuclear Legislation), where such costs are in accordance with an Approved Reference Plan or a Reference Plan that OPG reasonably expects will, in substance, be submitted to and approved by the Province and thereafter, if required, by the Applicable Regulator under Nuclear Legislation in due course, which costs shall be strictly limited to:

- (a) all direct costs reasonably relating to planning, research and development relating to Decommissioning and/or Management of Low and Intermediate Level Waste, including all reasonable legal,

engineering and other costs, including all necessary planning and design costs and all technical, safety and environmental assessments;

- (b) all direct costs reasonably relating to placing a CANDU Reactor at a Station into Safe-Storage after Permanent Shutdown of such CANDU Reactor and all costs reasonably relating to subsequent Safe-Storage of such CANDU Reactor;
- (c) all direct costs reasonably relating to securing and monitoring (i) each CANDU Reactor from and after Permanent Shutdown thereof, (ii) each Station from and after Permanent Shutdown, and (iii) each Other Facility, except a Repository, from and after Permanent Shutdown;
- (d) all direct costs reasonably relating to Safe-Storage of a CANDU Reactor, Station or Other Facility, except a Repository, if applicable, including all costs reasonably relating to securing and monitoring for that CANDU Reactor, Station or Other Facility from and after its Permanent Shutdown;
- (e) all direct costs reasonably relating to Decommissioning each Station and Other Facility, other than a Repository, and of Decommissioning the Site of each such Station and Other Facility, other than a Repository, in compliance with Applicable Law or the Applicable Regulator;
- (f) all direct costs reasonably relating to the Management of Low and Intermediate Level Waste resulting from the Decommissioning of Stations and Other Facilities, other than a Repository and of Decommissioning the Site of each Station or Other Facility (except a Repository);
- (g) all direct costs reasonably relating to restoring the Site of each Station and each Other Facility, other than a Repository, to the standard

required by Applicable Law or any Applicable Regulator after Permanent Shutdown of such Station or Other Facility and all necessary subsequent monitoring and maintenance of the Site;

- (h) all direct costs reasonably relating to providing information to the public and taking such other public affairs steps as circumstances require with respect to (i) Decommissioning and abandonment of a Station or Other Facility (except a Repository), including obtaining Licences required in respect thereof and (ii) the selection, acquisition, obtaining Licences, construction, operation, maintenance and abandonment of any Waste Management Facility, Low and Intermediate Level Waste Facility and/or its respective related Site;
- (i) the following direct costs for transportation, processing and storage of Low and Intermediate Level Waste, being:
 - (i) all costs reasonably relating to transporting Low and Intermediate Level Waste from a Station or Other Facility after Permanent Shutdown of the CANDU Reactor, the operation or Permanent Shutdown of which, generated such Low and Intermediate Level Waste (provided that if it is not possible to determine whether such Low and Intermediate Level Waste was generated from a CANDU Reactor which has been Permanently Shutdown, then this subparagraph 4.1.1(i)(i) only applies to such Low and Intermediate Level Waste after the Station or Other Facility which generated such Low and Intermediate Level Waste has been Permanently Shutdown), to a Waste Management Facility and, handling, containment, radiation protection, processing and storage of the Low and Intermediate Level Waste at such Waste Management Facility, including costs of obtaining Licences and providing information to the public;

- (ii) all costs reasonably relating to processing and storage of Low and Intermediate Level Waste at any Waste Management Facility generated at a Station or Other Facility at any time (including prior to Permanent Shutdown) which is in a state of Permanent Shutdown; and
 - (iii) all costs reasonably relating to Decommissioning each Waste Management Facility and Decommissioning the Site of each Waste Management Facility to the standard required by Applicable Law or any Applicable Regulator, and all required subsequent monitoring and maintenance of each such Site;
- (j) the following direct costs for the Management of Low and Intermediate Level Waste, being:
- (i) all costs reasonably relating to selecting, acquiring and maintaining Sites for one or more Low and Intermediate Level Waste Facilities;
 - (ii) all costs reasonably relating to the development of conceptual, feasibility, preliminary and final designs for a Low and Intermediate Level Waste Facility, its related Site and/or the Management of Low and Intermediate Level Waste;
 - (iii) all costs reasonably relating to making application for, pursuing, and maintaining all required Licences under Applicable Law for any such Low and Intermediate Level Waste Facility and any reasonable legal, engineering and other costs reasonably relating to meeting the requirements to obtaining such Licences, including all costs reasonably relating to necessary technical or environmental assessments and planning and design costs;

- (iv) all costs reasonably relating to providing information to the public and taking such other public affairs steps as circumstances require with respect to the selection, acquisition, licensing, operation, and maintenance of any such Site for any Low and Intermediate Level Waste Facility;
- (v) all costs reasonably relating to the construction of any Low and Intermediate Level Waste Facility in accordance with plans and Licences issued and approved, if required, under Applicable Law;
- (vi) all costs reasonably relating to transporting (including costs of transportation containers) Low and Intermediate Level Waste from a Waste Management Facility, Station or Other Facility to a Low and Intermediate Level Waste Facility or to a Repository;
- (vii) all costs reasonably relating to operating and maintaining any Low and Intermediate Level Waste Facility, including insurance and security costs and costs of handling, containment, radiation protection, processing, disposal or storage of Low and Intermediate Level Waste in a Low and Intermediate Level Waste Facility;
- (viii) all costs reasonably relating to Low and Intermediate Level Waste co-located at the Site of a Repository which would not have been incurred but for the co-location of Low and Intermediate Level Waste at such Site;
- (ix) all costs reasonably relating to obtaining approval for, purchasing, maintaining and loading containers for disposal or storage of Low and Intermediate Level Waste at a Low and

Intermediate Level Waste Facility, which containers have been approved, if required, under Applicable Law for such purpose;

- (x) all costs reasonably relating to the final closure and sealing of, and subsequent maintaining, insurance, monitoring, and security for, each Low and Intermediate Level Waste Facility in compliance with Applicable Law; and
- (xi) all costs reasonably relating to the Decommissioning of each Low and Intermediate Level Waste Facility and Decommissioning of the Site to the standard required by Applicable Law or any Applicable Regulator;

[this paragraph shall for all purposes be subject to the proviso that if a Low and Intermediate Level Waste Facility is located at or adjacent to a Station Site, then only those costs described in paragraph 4.1.1(j) which are incurred solely in relation to such Low and Intermediate Level Waste Facility shall be Decommissioning Eligible Costs by virtue of this paragraph 4.1.1(j).]

- (k) the following direct costs relating to the storage of Used Fuel, being:
 - (i) all costs reasonably relating to storage of Used Fuel at a Station or Waste Management Facility after a CANDU Reactor is Permanently Shutdown, where the Used Fuel was produced by such CANDU Reactor, and thereafter, whether in wet-bays or dry storage, apart from costs of this nature that are Used Fuel Eligible Costs, including costs of obtaining Licences and providing information to the public; and
 - (ii) all costs reasonably relating to Decommissioning facilities for the wet bay and dry storage of Used Fuel (apart from costs of this nature that are Used Fuel Eligible Costs) to the standard

required by Applicable Law or any Applicable Regulator, and all necessary subsequent monitoring and maintenance thereof;

- (l) in the event an Approved Reference Plan has adopted a strategy for the Decommissioning of Stations and Other Facilities and/or the long-term Management of Low and Intermediate Level Waste other than a strategy described in the foregoing provisions of this definition of Decommissioning Eligible Costs, then costs consistent with those listed under paragraphs (a) to (k), as applicable, reasonably relating to the development and implementation of such strategy for the Decommissioning of Stations and Other Facilities and/or the long-term Management of Low and Intermediate Level Waste;
- (m) any cost, or portion thereof, which would not otherwise qualify as a Decommissioning Eligible Cost, where the Province has determined in its sole discretion that:
 - (i) there are reasonable grounds for concluding that such cost is related to the Decommissioning of Stations and/or Other Facilities and/or the long-term Management of Low and Intermediate Level Waste, including waste disposal, long-term storage and Decommissioning of Waste Management Facilities, and is not a Decommissioning Excluded Cost; and
 - (ii) it is in the interests of both the Province and OPG that such cost, or portion thereof, be treated for the purposes of this Agreement as a Decommissioning Eligible Cost.

For greater certainty, the Parties agree that the foregoing right of the Province, being the exercise of an absolute discretion by the Province, cannot be the subject matter of a Dispute or Financial Issue under this

Agreement or of any other proceeding at law initiated by OPG or any OPG Nuclear Subsidiary;

- (n) all costs and expenses deemed to be Decommissioning Eligible Costs under any of paragraphs 4.8.6(d) and (g), subsections 5.4.3, 7.3.2, 7.4.1, 9.3.2, and 11.1.3, section 13.4 and item 8 of Part II of Schedule 11.2, to the extent such costs are not in respect of the Used Fuel Segregated Fund;
- (n.1) all No-Fault Indemnity Payments payable by OPG, the Province or the Ontario Financing Authority from time to time provided the payment, where relating to a service shared among the Segregated Funds, is reasonably allocated to the Decommissioning Segregated Fund;
- (o) all reasonable fees, commissions and expenses of (i) the Decommissioning Segregated Fund Custodian under the Decommissioning Segregated Fund Custodial Agreement, (ii) each Decommissioning Segregated Fund Manager under its respective Decommissioning Segregated Fund Management Agreement and (iii) Persons dealing at arm's length with OPG and each of the OPG Nuclear Subsidiaries performing services related to the custody and management of the Decommissioning Segregated Fund provided that the retainer of those Persons has been agreed to in writing by the Province (or its agent) and OPG, acting reasonably; and
- (p) Other Fund Costs.

4.1.2 Definition of Decommissioning Excluded Costs. **“Decommissioning Excluded Costs”** means each of those costs described below incurred (or to be incurred) by or on behalf of OPG or any OPG Nuclear Subsidiary or any other Person who assumes responsibility from OPG or any one or more OPG Nuclear Subsidiary for all or part of such costs (including any such cost incurred or to be incurred by the WMO, CNSC or any other Applicable

Regulator under Nuclear Legislation), whether or not relating to the Decommissioning of Stations and Other Facilities or the Management of Low and Intermediate Level Waste:

- (a) any costs arising as a result of a Nuclear Incident at a Station or Other Facility, including all clean-up costs and other costs arising as a result of the Nuclear Incident, such as disposal of property contaminated as a result of any such Nuclear Incident that would not have become Radioactive but for the Nuclear Incident, and all damage claims relating to such Nuclear Incident, including those of third parties, and the liabilities of OPG or the OPG Nuclear Subsidiaries under the *Nuclear Liability Act* (Canada), but only in each case to the extent that any of the costs referred to in this paragraph are in addition to costs which would have occurred had there been no Nuclear Incident;
- (b) any costs resulting from criminal or quasi-criminal offences or from civil proceedings or third party liability claims relating to Decommissioning of Stations and Other Facilities or the Management of Nuclear Waste, except reasonable costs relating to any civil proceedings or third party liability claims that would otherwise have qualified as Decommissioning Eligible Costs;
- (c) any costs related to any Low and Intermediate Level Waste not produced at a Station or not produced at an Other Facility directly or indirectly as a result of the Management of Nuclear Waste which was produced at a Station;
- (d) any severance costs for employees involved in the operation and/or maintenance of a Station or Other Facility during its operational life except for those employees who are retained to maintain the Station or Other Facility in a state of Safe-Storage and/or those employees engaged in Nuclear Waste Management or Decommissioning activities

beyond the end of the Station's Remaining Operating Period or the Other Facility's remaining operating life, as the case may be; and

- (e) any Used Fuel Eligible Costs.

4.2 Nuclear Legislation Decommissioning Fund Requirements

4.2.1 Other Decommissioning Funds. To the extent that any Nuclear Legislation requires OPG or one or more of the OPG Nuclear Subsidiaries to establish one or more funds to provide for the funding of costs relating to the Decommissioning of Stations and Other Facilities (other than any Repository) or the Management of Nuclear Waste (other than costs which are Used Fuel Eligible Costs), then OPG and such OPG Nuclear Subsidiaries agrees with respect to each such fund:

- (a) To the extent that any Nuclear Legislation applies in respect of any Decommissioning Eligible Costs or to the Decommissioning Segregated Fund and any provision of the subject Nuclear Legislation directly conflicts with the provisions of this Agreement, the provision of the Nuclear Legislation in question shall prevail and govern to the extent of any such conflict.
- (b) To the extent that any Nuclear Legislation requires that a fund be established to provide for the funding of Decommissioning Eligible Costs and such Nuclear Legislation prohibits the mixing of the assets of such fund with the assets of another fund, including the Decommissioning Segregated Fund, then OPG and the OPG Nuclear Subsidiaries agree to establish a separate fund substantially similar in all respects to the Decommissioning Segregated Fund to the extent permitted by such Nuclear Legislation (or any Applicable Regulator thereunder) and such separate fund or funds shall be deemed for all purposes of this Agreement to form part of the Decommissioning Segregated Fund. In addition, OPG and the OPG Nuclear Subsidiaries

agree to make Payments in respect of such costs in such amounts and as otherwise required by the said Nuclear Legislation or by the Applicable Regulator thereunder, and to enter into a fund management agreement substantially similar to the Decommissioning Segregated Fund Management Agreement(s) in effect from time to time and a custodial agreement substantially similar to the Decommissioning Segregated Fund Custodial Agreement in effect from time to time in respect of any such fund or funds. OPG and the Province agree to take such steps as may be required from time to time to ensure that the such fund manager(s) and custodian are so engaged.

- (c) Notwithstanding paragraph 4.2.1(b), OPG and the Province agree to take whatever steps are reasonably necessary (including transferring assets from one fund to another) to ensure that to the extent permitted by Applicable Law, the Decommissioning Segregated Fund and any such separate fund or funds established under the previous provisions of this subsection 4.2.1 are treated for all purposes of this Agreement as a single fund, without any duplication by reason of the existence of more than one fund, in respect of each of the matters and procedures contemplated by this Agreement, including Payments to, the OEFC Payment to, permitted Disbursements from, the right of the Province to receive reports, the right of the Province to audit and rights in respect of the surplus from the Decommissioning Segregated Fund or any such separate fund or funds.

4.2.2 Other Fund Costs. To the extent that any Nuclear Legislation requires that there be only one fund, the fund shall be the Decommissioning Segregated Fund, provided that neither the Province nor OEFC shall (save as otherwise specifically provided in this Agreement) assume any financial risk in respect of, or be obligated to pay or fund the payment of, any expense incurred by OPG or any OPG Nuclear Subsidiary that is an Other Fund Cost. OPG and the OPG Nuclear Subsidiaries shall make Payments to the Decommissioning

Segregated Fund as provided in section 4.3 or section 4.6 to fund all Other Fund Costs.

4.3 Decommissioning Segregated Fund Schedules

Based on the assumption that the return on investment (if any) in the Decommissioning Segregated Fund is not subject to tax of any nature whatsoever, OPG has prepared Schedule 4.3 and the information set out in Schedule 4.3 shall be treated in all respects as accurate and complete as at the date hereof. Schedule 4.3 sets out on a Station-by-Station, and calendar-year-by-calendar-year basis estimated Decommissioning Eligible Costs (expressed in constant 1999 Dollars and in nominal year-of-expenditure dollars) based on the 1999 Reference Plan and such further and other relevant information as required by either OPG or the Province, acting reasonably.

4.4 OEFC Payment Obligation to the Decommissioning Segregated Fund

4.4.1 OEFC Payment. Concurrently with this Agreement becoming effective, the Province shall cause OEFC to make the OEFC Payment to the Decommissioning Segregated Fund in the amount of \$2,378,113,937 plus interest calculated at a rate equal to the Discount Rate for a Commitment in Lieu from April 1, 1999 to the date on which the OEFC Payment is made.

4.4.2 Satisfaction of OEFC Payment. The OEFC Payment may be made to the Decommissioning Segregated Fund in any of the following ways:

- (a) by payment in Cash, negotiable securities and/or short-term investments acceptable to the Parties, acting reasonably;
- (b) by the execution and delivery by OEFC of a Commitment in Lieu substantially in the form annexed as Schedule 6.1;
- (c) in accordance with the provisions of paragraph 6.1.3(b), by the increase in the undrawn balance under an outstanding OEFC Commitment in Lieu by endorsement on the grid forming part thereof; or

(d) by any combination of the foregoing alternatives.

The Province agrees to cause OEFC to comply with the provisions of section 6.1 in respect of any OEFC Commitment in Lieu executed and delivered by OEFC under this section 4.4.

4.4.3 Conditions Precedent to the OEFC Payment and to Each Payment In Cash by OEFC Under the OEFC Commitment in Lieu. Unless otherwise required by Applicable Law and subject to compliance with subsection 5.2.3 and paragraph 6.1.3(a), OEFC shall only be obligated to make the OEFC Payment and payments in Cash to the Decommissioning Segregated Fund under the OEFC Commitment in Lieu required by this Agreement in each case upon delivery by OPG of a duly executed Compliance Certificate addressed to OEFC and to the Decommissioning Segregated Fund Custodian (notwithstanding such Compliance Certificate discloses breaches by OPG or any OPG Nuclear Subsidiary of any of the terms and conditions of this Agreement) dated the date on which OEFC makes the OEFC Payment or a payment under the OEFC Commitment in Lieu in Cash; provided only that OEFC shall not be obligated to do so if as a result of one or more breaches of the Agreement the Province has, at the time the OEFC Payment or payment in Cash under the OEFC Commitment in Lieu is otherwise due, appointed a Receiver under either paragraphs 3.11.6(a) or 4.8.6(a).

4.4.4 Limitation. Apart from the foregoing and subject to the other provisions of this Agreement, including those relating to any Provincial Guarantee, neither the Province nor OEFC shall in any circumstances be obligated at any time to make any payments of any kind or provide other financial support of any nature whatsoever to the Decommissioning Segregated Fund.

4.5 Payment to the Decommissioning Segregated Fund

Concurrently with this Agreement becoming effective, OPG shall make a Payment in Cash and/or negotiable securities and short-term investments acceptable to the Province, acting reasonably, to the Decommissioning Segregated Fund equal to the

amount as of the date this Agreement becomes effective by which (a) the Decommissioning Balance to Complete Estimate under the 1999 Reference Plan as of that date exceeds (b) the aggregate Present Value of the OEFC Payment as of that date.

4.6 Review Decommissioning Segregated Fund Payment Obligations

In addition to any other circumstances specifically provided in this Agreement, Original Payment Schedule 4.6, if and when established, and any subsequent Amended Payment Schedule 4.6 and the quarterly Payment obligations of OPG and the OPG Nuclear Subsidiaries thereunder, shall be established or amended from time to time during the term of this Agreement in accordance with the following:

- 4.6.1 Requirement to Establish or Amend. The amount of the quarterly Payments to the Decommissioning Segregated Fund (as reflected in Original Payment Schedule 4.6, if and when established, or the then current Amended Payment Schedule 4.6 if Original Payment Schedule 4.6 has been replaced) shall be established or revised in accordance with the following provisions of this section 4.6 and the procedures in Schedule 4.6.1 each time that (a) a new or amended Reference Plan becomes an Approved Reference Plan, (b) either OPG or the Province, acting reasonably, makes a determination that the Decommissioning Segregated Fund is subject to tax of any nature whatsoever or, having become subject to such tax, is no longer subject to such tax, whether in whole or in part, (c) it is determined by OPG, acting reasonably, that during any consecutive 12-month period (with duplication of any such period), the Decommissioning Segregated Fund Rate of Return has been greater than the Discount Rate, (d) the Province approves or is deemed to have approved a CNSC Reconciliation Statement under subsection 7.3.4, or (e) any other payment or contribution is made to the Decommissioning Segregated Fund other than a Payment pursuant to Original Payment Schedule 4.6 or an Amended Payment Schedule 4.6, subsections 7.3.5, 9.2.5 or 9.3.4, a Provincial Payment or the OEFC Payment (each of the events in paragraphs (a) through (e) of this subsection 4.6.1 being a “**Triggering**

Event”). The Original Payment Schedule 4.6 shall be established in accordance with the procedures of this section 4.6 and Schedule 4.6.1 at the time that the first Triggering Event occurs.

4.6.2 Determination of Payments. The nominal quarterly Payments to the Decommissioning Segregated Fund shall be calculated as of the date of a Triggering Event as follows:

- (a) Determine Station Amount. The Station Amount to be paid for each Station for each quarter during that Station’s Remaining Operating Period shall be determined. The “**Station Amount**” for a Station as of the date of a Triggering Event shall be the equal nominal amount for each quarter during the Station’s then Remaining Operating Period determined so that the aggregate Present Value of each of those equal quarterly nominal amounts plus the Fair Market Value of the assets of the Decommissioning Segregated Fund notionally allocated to that Station equals the Decommissioning Balance to Complete Cost Estimate notionally allocated to that Station, in each case, as of the date of the Triggering Event. For greater certainty, a Station Amount can be either a positive or negative amount.
- (b) Aggregate Quarterly Payments and Right to Net. The nominal quarterly Payment to the Decommissioning Segregated Fund shall equal the aggregate of the Station Amounts for each Station. For greater certainty, if the Station Amount for any Station is a negative amount because the Fair Market Value of the assets of the Decommissioning Segregated Fund notionally allocated to that Station exceeds the portion of the Decommissioning Balance to Complete Cost Estimate notionally allocated to that Station, the Station Amount for that Station shall be calculated as a negative amount which may be deducted or netted against other amounts in determining the aggregate quarterly Payment to the Decommissioning Segregated

Fund. The resultant nominal quarterly Payments shall be set out in the Original Payment Schedule 4.6 or a new or revised Amended Payment Schedule 4.6, as applicable, which shall, if such schedule is not the Original Payment Schedule, replace the then current Amended Payment Schedule 4.6 or Original Payment Schedule 4.6, as the case may be. Notwithstanding the above, the aggregate nominal quarterly Payment cannot be less than nil.

- (c) Tax Over-Contribution. To the extent OPG or the Nuclear Subsidiaries has at any time made any over-contribution to the Decommissioning Segregated Fund by virtue of Payments being previously determined on the basis that the Decommissioning Segregated Fund is subject to tax of any nature or of any amount, the amount of such over-contribution plus interest on the balance thereof (after giving effect to the following provisions of this paragraph 4.6.2(c)) at a rate equal to the Decommissioning Segregated Fund Rate of Return (for the period of time commencing on the date of each over-contribution and ending on the date that such over-contribution to which such interest relates has been applied to reduce the nominal quarterly Payments) shall be applied to reduce the nominal quarterly Payments to the Decommissioning Segregated Fund next falling due until such time as the amount of such over-contribution and interest has been exhausted.
- (d) Assets to be Taken into Account. For the purposes of determining a Station Amount, the assets of the Decommissioning Segregated Fund as of the date of a Triggering Event shall first be adjusted to give effect to: (i) any reimbursement of the Province required pursuant to subsection 7.4.1 in respect of an activity required or permitted to be funded from the Decommissioning Segregated Fund as of that Triggering Event whether or not such reimbursement has actually been made; (ii) any Payments deemed to be made to the Decommissioning Segregated Fund pursuant to subsection 7.4.1 as of that Triggering

Event notwithstanding that OPG may have paid the amount to the Province; and (iii) Provincial Payments or OEFC Payments to the Decommissioning Segregated Fund under subsection 4.7.3 required as of that Triggering Event whether or not such payment has actually been made.

(e) Allocation of Value of Assets. For purposes of the determination of Payments pursuant to this Agreement only, the Fair Market Value of the assets of the Decommissioning Segregated Fund shall be notionally allocated among the Stations at any time in accordance with the following:

- (i) Each Payment pursuant to Original Payment Schedule 4.6 or an Amended Payment Schedule 4.6 made from time to time shall be notionally allocated to each Station *pro rata* to the Station Amounts for each Station included in such Payment. For greater certainty, any payments by OPG or the OPG Nuclear Subsidiaries to the Province pursuant to subsection 7.4.1 shall be notionally allocated to each Station as if the payments had been made to the Decommissioning Segregated Fund.
- (ii) The OEFC Payment, any Provincial Payments, the initial Payment made by OPG pursuant to section 4.5 and any other payment or contribution made to the Decommissioning Segregated Fund other than a Payment pursuant to Original Payment Schedule 4.6 or an Amended Payment Schedule 4.6 shall be notionally allocated among the Stations *pro rata* to the amount if any, by which, the Decommissioning Balance to Complete Cost Estimate notionally allocated to each Station exceeds the Fair Market Value of the assets of the Decommissioning Segregated Fund notionally allocated to such Station, in each case as of the time of the payment or

contribution, in accordance with the then current Approved Reference Plan.

- (iii) It shall be assumed that all assets of the Decommissioning Segregated Fund earn a rate of return equal to the Discount Rate regardless of the actual rate of return earned on those assets and that such earnings will be allocated to each Station in the same manner as the related assets are allocated pursuant to this section 4.6.
- (f) Allocation of Decommissioning Balance to Complete Cost Estimate and Decommissioning Cost Estimate. For purposes of the determination of Payments pursuant to this Agreement only, the Decommissioning Balance to Complete Cost Estimate and the Decommissioning Cost Estimate shall be notionally allocated among the Stations at any time in accordance with the then current Approved Reference Plan.
- (g) Allocation of Disbursements. For purposes of the determination of Payments pursuant to this Agreement, Disbursements in any calendar year from the Decommissioning Segregated Fund shall, notwithstanding how the Disbursement may actually have been expended, be notionally allocated among the Stations *pro rata* to that year's portion of the Decommissioning Cost Estimate notionally allocated to the Station for such calendar year, in accordance with the then current Approved Reference Plan.

4.6.3 Remaining Operating Period.

- (a) If a new or amended Reference Plan becomes an Approved Reference Plan more than five (5) years prior to the Operating Period End Date for a Station as contained in the previous Approved Reference Plan and such Station has Permanently Shutdown or the Operating Period

End Date in the new Approved Reference Plan is earlier than the Operating Period End Date contained in the previous Approved Reference Plan, then the Remaining Operating Period for that Station shall be the greater of (i) five (5) years from the date of the new Approved Reference Plan and (ii) the Remaining Operating Period for such Station in the new Approved Reference Plan.

- (b) If a new or amended Reference Plan becomes an Approved Reference Plan fewer than five (5) years prior to the Operating Period End Date for a Station as contained in the previous Approved Reference Plan, then the Remaining Operating Period for such Station shall, notwithstanding the foregoing, be the Remaining Operating Period for such Station under the immediately preceding Approved Reference Plan.
- (c) If a Triggering Event occurs after a Station has Permanently Shutdown, and the Fair Market Value of the assets notionally allocated to that Station is not equal to the portion of the Decommissioning Balance to Complete Cost Estimate then notionally allocated to that Station, the Remaining Operating Period for that Station shall be deemed to be five (5) years from the date of the Triggering Event.
- (d) If the amount, if any, as at the date of the Triggering Event, by which the Decommissioning Balance to Complete Cost Estimate exceeds the Fair Market Value of the assets of the Decommissioning Segregated Fund under the then current Approved Reference Plan is greater than such excess amount as at the date of the Triggering Event under the immediately preceding Approved Reference Plan, then the Remaining Operating Period for each Station shall be the greater of the (i) Remaining Operating Period for that Station under the then current Approved Reference Plan and (ii) five (5) years from the date of the Triggering Event.

4.7 Disbursements Out of the Decommissioning Segregated Fund

4.7.1 Disbursements Out of the Decommissioning Segregated Fund.

- (a) Save as hereinafter specifically provided, Disbursements from the Decommissioning Segregated Fund shall only be made pursuant to Approved Budgets and, where applicable, in compliance with the requirements of Nuclear Legislation.
- (b) Those Decommissioning Eligible Costs or other payments described in any of paragraph 4.1.1(n.1), subsection 4.7.3, paragraphs 4.8.6(d) and (g), subsections 5.4.3 and 7.4.1 and section 13.4, and those taxes described in paragraph (b) of section 1.88 of Schedule 1.1, and any other Disbursements specifically authorized to be made from the Decommissioning Segregated Fund by the terms of this Agreement shall be Disbursed against a requisition therefor signed by the Province or its agent alone.
- (c) All Decommissioning Eligible Costs and all other Disbursements (other than fees and expenses of any Decommissioning Segregated Fund Custodian or any Decommissioning Segregated Fund Manager, payment of which is provided for in the subject Decommissioning Segregated Fund Custodial Agreement or Decommissioning Segregated Fund Management Agreement, and the transfer of assets from one Segregated Fund to the other) specifically authorized to be made from the Decommissioning Segregated Fund by the terms of this Agreement, in each case to the extent not otherwise Disbursed, shall be paid by Disbursement against a requisition therefor signed by the Payee, subject to compliance with the following procedures:
 - (i) The Payee shall have given not less than 30 Business Days prior written notice addressed to: (A) the Province (or its agent), (B) the Decommissioning Segregated Fund Custodian, and

(C) where the Payee is neither OPG nor an OPG Nuclear Subsidiary, to OPG, for the Disbursement in question specifying the amount requested to be paid by Disbursement, accompanied by the Disbursement statement referred to in subparagraph 4.7.1(c)(ii);

(ii) The Payee shall have provided to (A) the Province (or its agent), (B) the Decommissioning Segregated Fund Custodian, and (C) where the Payee is neither OPG nor an OPG Nuclear Subsidiary, to OPG, a Disbursement statement containing details as to the proposed use of the proceeds of the Disbursement in question;

(iii) OPG shall have delivered a certificate of a senior officer (given by such senior officer on behalf of OPG without personal liability) addressed to the Province (or its agent) and to the Decommissioning Segregated Fund Custodian certifying in writing:

(A) that such senior officer has read and is familiar with the provisions of this Agreement and that such senior officer has all information necessary to be in a position to certify the matters set out in clauses (B), (C) and (D) of this subparagraph 4.7.1(c)(iii);

(B) that all costs or expenses included in the Disbursement statement are Decommissioning Eligible Costs and identifying, by reference to the then current Approved Budget, the specific Decommissioning Eligible Costs and separately, the specific Other Fund Costs proposed to be satisfied out of the Disbursement proceeds or are otherwise Disbursements specifically authorized to be

made from the Decommissioning Segregated Fund by the terms of this Agreement;

- (C) whether, and to the extent that a Default or an Event of Default has occurred, or would occur by reason of receipt of the Disbursement in question; and
- (D) that all requirements of any Applicable Regulator and Applicable Law with respect to the matters identified in the subject Disbursement statement have been met;

provided where the Payee is neither OPG nor an OPG Nuclear Subsidiary, the said certificate shall be provided by OPG within two (2) Business Days following delivery of the said Payee's Disbursement statement under subparagraph 4.7.1(c)(ii);

- (iv) To the extent that any such Disbursement is to be paid (directly or indirectly) to OPG, to an OPG Nuclear Subsidiary or to any Person not dealing at arm's length with any of them, and a Default or an Event of Default has occurred and has not been cured, the part of such Disbursement to be paid (directly or indirectly) to OPG, to an OPG Nuclear Subsidiary or to any Person not dealing at arm's length with any of them shall not be paid until such Default or Event of Default has been cured (for greater certainty for the purposes of this section 4.7, the WMO shall be deemed to deal at arm's length with OPG and each of the OPG Nuclear Subsidiaries); and
- (v) If (A) the 30 Business Day period referred to in subparagraph 4.7.1(c)(i) has passed and the Province shall not have delivered a Disputed Disbursement Notice, (B) the Province has notified OPG and the Decommissioning Segregated Fund Custodian in writing before the end of such

period that it will not deliver a Disputed Disbursement Notice within such period, or (C) the Province has delivered a Disputed Disbursement Notice within such period, and the payment of the Disputed Disbursement shall have been agreed to by OPG and the Province or the Dispute or Financial Issue resolved in favour of paying the Disbursement (in whole or in part), then the amount in question shall then be paid.

- (d) Apart from the foregoing and save as provided in subsection 7.3.2, prior to the wind-up of the Decommissioning Segregated Fund, there shall be no Disbursements (other than fees and expenses of any Decommissioning Segregated Fund Custodian or any Decommissioning Segregated Fund Manager, payment of which is provided for in the subject Decommissioning Segregated Fund Custodial Agreement or Decommissioning Segregated Fund Management Agreement, and the transfer of assets from one Segregated Fund to the other) from the Decommissioning Segregated Fund except as provided by this Agreement.
- (e) Any Disbursement shall be free of the charge against the Decommissioning Segregated Fund conferred on the Province and OEFC by section 4.8.

4.7.2 Account Deposit. The Decommissioning Segregated Fund Custodian shall make any permitted Disbursement in Cash into a bank account in the name of the Payee. Where the Payee is OPG, an OPG Nuclear Subsidiary or the WMO (to the extent that OPG can so direct the WMO), such bank account shall be a single-purpose bank account. The Payee may be any other fund or trust which OPG has been obligated to establish under Nuclear Legislation. The Payee shall be entitled to pay Used Fuel Eligible Costs provided for in the subject Disbursement statement directly from the said bank account to the subject suppliers (including OPG and each OPG Nuclear Subsidiary). The Parties agree to use reasonable efforts to cause each Payee to follow the

foregoing procedures to facilitate any audit or tracing of the use and application of all Disbursements from the Used Fuel Segregated Fund by the Province, its agent, an Applicable Regulator under Nuclear Legislation or OPG, should the need arise.

4.7.3 Decommissioning Segregated Fund Surplus.

- (a) OPG may at any time within 60 Business Days following the date on which a Reference Plan becomes an Approved Reference Plan, and OPG shall, on the request of the Province by notice in writing to OPG during that time, determine the Fund Value as at the date on which such Reference Plan becomes an Approved Reference Plan, and report that determination to the Province, together with confirmation by the Decommissioning Segregated Fund Custodian of any information included in the report that was obtained from such Decommissioning Segregated Fund Custodian, including for greater certainty a list of the assets held in the Decommissioning Segregated Fund and the amounts and timing of all Disbursements out of the Decommissioning Segregated Fund to such date. The said confirmation shall be provided to OPG and the Province in writing within 10 Business Days of such request. Absent manifest error, the contents of the confirmation from the said Decommissioning Segregated Fund Custodian shall be final and binding on the Parties.
- (b) Based and relying on the reports referred to in paragraph 4.7.3(a), OPG agrees to calculate each of the Surplus and Tax Surplus, if any. The Province shall review and, acting reasonably, approve OPG's calculation of the Surplus and Tax Surplus. Once the Province and OPG are in agreement as to the amount of each of the Surplus and Tax Surplus, or failing agreement, once the amount of each of the Surplus and Tax Surplus, if any, has been determined under subsection 11.1.3, OPG shall have the right under this paragraph

4.7.3(b), exercisable by notice in writing to both the Province and OEFC, to request that the Province either transfer assets to the Used Fuel Segregated Fund or make a Decommissioning Segregated Fund Matching Payment. Such notice shall specify with respect to the transfer or Decommissioning Segregated Fund Matching Payment, as the case may be, the amounts which are in respect of each of the Surplus and the Tax Surplus.

- (c) Within 10 Business Days of receiving the notice from OPG referred to in paragraph 4.7.3(b), the Province shall in accordance with such notice direct the Decommissioning Segregated Fund Custodian to either (i) transfer assets from the Decommissioning Segregated Fund to the Used Fuel Segregated Fund having a value equal to the aggregate of (A) the lesser of the amount specified in the notice in respect of Surplus and 50% of the Surplus (such lesser amount being the “**Special Payment**”) and (B) the lesser of the amount specified in the notice in respect of the Tax Surplus and the Tax Surplus (such lesser amount being the “**Tax Payment**”) or (ii) make a Disbursement to the Province in an amount equal to the sum of the Special Payment and the Tax Payment. In either case, the Province shall also (subject to paragraph 4.7.3(f)) direct the Decommissioning Segregated Fund Custodian to reduce or cancel the OEFC Commitment in Lieu by an amount equal to the Special Payment and, to the extent that the Special Payment exceeds the outstanding balance of the OEFC Commitment in Lieu, make a Disbursement of such excess in Cash to the OEFC. Upon receipt by the Province of any Disbursement under subparagraph 4.7.3(c)(ii), the Province shall make a Decommissioning Segregated Fund Matching Payment in an amount equal to the said Disbursement.
- (d) To the extent required to fund any such transfers or Decommissioning Segregated Fund Matching Payments to which OPG shall be entitled

under this subsection 4.7.3, the Province agrees to cause OEFC to make a payment in Cash under the OEFC Commitment in Lieu, within 45 Business Days of the Province receiving the notice from OPG under paragraph 4.7.3(b), to the Decommissioning Segregated Fund to the extent that the OEFC Commitment in Lieu is outstanding and not fully drawn.

- (e) Subject to paragraph 4.7.3(g), if at any time following any reduction or cancellation of the OEFC Commitment in Lieu or Disbursement to OEFC pursuant to paragraph 4.7.3(c), the Decommissioning Segregated Fund is Under-Funded, then (provided OPG and the OPG Nuclear Subsidiaries have made all Payments to the Decommissioning Segregated Fund required by the terms of this Agreement to be made by them as at the date in question) the Province shall, within 30 days of receiving written notice to that effect from OPG, cause OEFC to (i) re-instate the OEFC Commitment in Lieu to the extent it was reduced or cancelled pursuant to paragraph 4.7.3(c) (and not previously re-instated under this paragraph 4.7.3(e)) and (ii) make payments in Cash to the Decommissioning Segregated Fund up to the amount Disbursed to OEFC pursuant to paragraph 4.7.3(c) (and not previously repaid under this paragraph 4.7.3(e)), plus in each case the return that such amount would have earned (calculated at the Discount Rate) had the OEFC Commitment in Lieu not been so reduced or cancelled or had the Disbursement to the OEFC in question not been so made, provided that the aggregate amount of any re-instated OEFC Commitment in Lieu and the amount of any payments in Cash by OEFC to the Decommissioning Segregated Fund under this paragraph 4.7.3(e) shall not exceed 50% of the amount by which the Decommissioning Segregated Fund is Under-Funded.
- (f) Within five (5) Business Days of receiving the notice from OPG referred to in paragraph 4.7.3(b), OEFC shall be entitled to assign, by

notice in writing to OPG and the Province, any of its entitlement under paragraph 4.7.3(c) to the Province. Upon receipt of such OEFC notice of the said assignment, OEFC shall no longer be entitled to the reduction or cancellation of the OEFC Commitment in Lieu or to a Disbursement in Cash in the amount so assigned, and the Province shall direct the Decommissioning Segregated Fund Custodian instead to make a Disbursement in Cash to the Province in an amount equal to the amount so assigned by OEFC. To the extent that OEFC assigns to the Province pursuant to this paragraph 4.7.3(f) all or any part of the entitlement in question, such entitlement shall be by way of Disbursement in Cash and the Province agrees to cause OEFC to make a payment in Cash under the OEFC Commitment in Lieu to the Decommissioning Segregated Fund equal to the lesser of the amount so assigned and the outstanding balance of the OEFC Commitment in Lieu within 45 Business Days of the Province receiving the notice from OEFC under this paragraph 4.7.3(f).

- (g) If at any time following a Disbursement to the Province of any amount assigned by OEFC pursuant to paragraph 4.7.3(f), the Decommissioning Segregated Fund is Under-Funded, then (provided OPG and the OPG Nuclear Subsidiaries have made all Payments to the Decommissioning Segregated Fund required by the terms of this Agreement to be made by them as at the date in question) the Province shall, within the 30 day period referred to in paragraph 4.7.3(e), make a Provincial Payment in Cash to the Decommissioning Segregated Fund in such amount as represents the obligations that would otherwise have been imposed on OEFC under paragraph 4.7.3(e) had the Disbursement in question been received by OEFC and not by the Province. OPG and the OPG Nuclear Subsidiaries agree that the agreement by the Province in this paragraph 4.7.3(g) to make Provincial Payment(s) in substitution for OEFC shall fully release OEFC from its obligations under paragraph 4.7.3(e) to the extent of

such Provincial Payments. Upon the resulting Disbursement having been made to the Province, OPG and the OPG Nuclear Subsidiaries agree not claim (or cause the Decommissioning Segregated Fund Custodian to claim) reimbursement from OEFC under paragraph 4.7.3(e) in respect of the amount that would but for the assignment by OEFC have been the obligation of OEFC thereunder, but to look solely to the Province for any Provincial Payments to the Decommissioning Segregated Fund required pursuant to this paragraph 4.7.3(g), and, only after the Province has made all payments it is obligated to make in accordance with the foregoing, look to OEFC for the amount of any entitlement to any amount pursuant to paragraph 4.7.3(e) not so assigned by OEFC to the Province.

4.8 Provincial Security Interest in the Decommissioning Segregated Fund

4.8.1 Grant of Charge to Secure Payment of Decommissioning Eligible Costs and Certain Indemnities.

- (a)** Subject to Applicable Law restricting it from doing so, OPG (and each OPG Nuclear Subsidiary to the extent they have an interest in the DSF Collateral) hereby grants, assigns, mortgages and charges, by way of the DSF Security to and in favour of the Province and OEFC as a first charge and security interest in the DSF Collateral, as general and continuing security for (i) performance by OPG and each OPG Nuclear Subsidiary of their respective obligations to the Province and OEFC under this Agreement (including their obligations to indemnify the Province set out in subsection 7.4.3 and section 13.4), (ii) the rights and privileges conferred on the Province and OEFC by the terms of this Agreement and (iii) as security for the payment in accordance with the terms of this Agreement (including the provisions of paragraph 4.8.6(c)) of first, all Decommissioning Eligible Costs other than Other Fund Costs and, second, all Other Fund Costs.

(b) The DSF Security interest shall be perfected by registration of an appropriate financing statement against OPG (and any affected OPG Nuclear Subsidiary) under the *Personal Property Security Act* (Ontario), and by OPG (and each such affected OPG Nuclear Subsidiary) obtaining a discharge (or postponement on terms acceptable to the Province under subsection 4.8.5) of any competing security interests at any time and from time to time attaching to the DSF Collateral. OPG acknowledges that, except as set out in this Agreement, the Decommissioning Segregated Fund Custodial Agreement and except as otherwise permitted under Applicable Law, it has no right, power or authority to direct the Decommissioning Segregated Fund Custodian with respect to any Disbursement of any monies from the Decommissioning Segregated Fund.

4.8.2 Confirmation of Charge on Fund Assets. For greater certainty, each OPG Nuclear Subsidiary represents and warrants to the Province and OEFC that it has no interest in any of the DSF Collateral. Apart from the DSF Collateral, other than by operation of the provisions of section 4.2, no other assets or property in which OPG or any OPG Nuclear Subsidiary has an interest shall at any time form part of the DSF Collateral or be subject to the charge of the DSF Security.

4.8.3 Certain Representations and Warranties. OPG represents and warrants to the Province and OEFC that except for the rights conferred on the Province and OEFC by the DSF Security and the obligations otherwise imposed by this Agreement, the Decommissioning Segregated Fund Custodial Agreement and by Applicable Law in relation to the Decommissioning Segregated Fund, OPG is, and insofar as any DSF Collateral acquired after the date hereof will be, the owner of the DSF Collateral, free from any adverse lien, security, interest, encumbrance or claim of any nature whatsoever apart from the Permitted Encumbrances and the DSF Security, and OPG agrees that it will defend the DSF Collateral against all claims and demands of all Persons

other than the Province, OEFC and the Decommissioning Segregated Fund Custodian.

- 4.8.4 Attachment Not Postponed. The attachment of the security interest constituted by the DSF Security has not been postponed and the DSF Security shall attach to any particular DSF Collateral as soon as OPG or any OPG Nuclear Subsidiary has rights in that DSF Collateral. Any Disbursements from the Decommissioning Segregated Fund in compliance with the provisions of this Agreement shall be free of the charge of the DSF Security.
- 4.8.5 Further Assurances. The Parties undertake to execute and deliver such further assurances in respect of the DSF Security as the Province may from time to time reasonably require. OPG (and each of the OPG Nuclear Subsidiaries to the extent it has an interest in any of the DSF Collateral) agrees to use commercially reasonable efforts to obtain such postponement(s) of claims in favour of the Province and OEFC from any Person claiming a competing interest in the DSF Collateral (or any part thereof) as the Province may reasonably require from time to time to confirm the first charge of the DSF Security in the DSF Collateral.
- 4.8.6 Rights and Remedies. The DSF Security shall be enforceable on demand by the Province on its behalf or on behalf of OEFC at any time that an Event of Default described in any of item nos. (a), (b), (d) (insofar as compliance with subsection 4.7.1 is concerned) or (g) of the definition of Event of Default has occurred and has not been cured within the cure periods set out therein or as otherwise agreed to in writing by the Parties. If the Event of Default in question has been cured, without derogation to its other rights under this Agreement, the Province shall not be entitled to enforce, or continue to enforce, the DSF Security. If at any time the DSF Security shall become enforceable, then in addition to the rights conferred on the Province and OEFC under the *Personal Property Security Act* (Ontario), the following provisions shall apply (subject to, and in compliance with, Applicable Law, this

Agreement, the Decommissioning Segregated Fund Custodial Agreement, the Decommissioning Segregated Fund Management Agreement and the requirements of any Applicable Regulator):

- (a) the Province may appoint, by notice in writing to OPG and to the Decommissioning Segregated Fund Custodian, a Receiver of all or any part of the DSF Collateral and remove or replace such Receiver from time to time or may institute proceedings in any court of competent jurisdiction for the appointment of the Receiver or any replacement Receiver;
- (b) where the Province is in this section 4.8 referred to, such term shall, where the context permits, be deemed to include reference to any Receiver appointed by the Province and the officers, employees, servants or agent of such Receiver;
- (c) if appointed, such Receiver shall (i) preserve the DSF Collateral, (ii) continue the management of the Decommissioning Segregated Fund in accordance with the terms of both this Agreement and the Decommissioning Segregated Fund Management Agreement(s), and (iii) use the DSF Collateral and its proceeds first to fund the payment of all Decommissioning Eligible Costs other than Other Fund Costs and second to fund the payment of all Other Fund Costs, each at that time outstanding or incurred during the term of its appointment as Receiver (and the performance of the other obligations and rights secured by the DSF Security) in accordance with the terms of this Agreement;
- (d) the Province may seize, collect, realize, sell, release to third parties or otherwise deal with the DSF Collateral or any part thereof in such manner, upon such terms and conditions and at such time or times as may seem to it advisable and without notice to OPG or any of the OPG Nuclear Subsidiaries except as otherwise required by any Applicable

Law (provided that the DSF Collateral and any proceeds thereof shall be applied in accordance with subsection 4.8.8), and may charge on its behalf (and pay to others) all reasonable sums for expenses incurred and for services rendered (expressly including legal advice and services, and receivers and accounting fees) in or in connection with taking, perfecting, seizing, collecting, realizing, selling or obtaining payment of the DSF Collateral, which charges shall be deemed to be Decommissioning Eligible Costs;

- (e) the Province shall not be liable or accountable for any failure to seize, collect, realize, sell or obtain payment of the DSF Collateral or any part thereof and shall not be bound to institute proceedings for the purpose of seizing, collecting, realizing or obtaining possession or payment of the same or for the purpose of preserving any rights of the Province, OPG or any of the OPG Nuclear Subsidiaries or any other Person in respect of same;
- (f) the Province may grant extensions of time and other indulgences, take and give up securities, accept compositions, grant releases and discharges, release any part of the DSF Collateral to third parties and otherwise deal with the debtors of OPG or any OPG Nuclear Subsidiaries, sureties and others and with the DSF Collateral as the Province may see fit without prejudice to the liability of OPG or any of the OPG Nuclear Subsidiaries or the Province's right to realize against the DSF Collateral under the terms of this Agreement;
- (g) the Province may, if it deems it necessary for the proper realization of all or any part of the DSF Collateral in accordance with this subsection 4.8.6, pay any encumbrance, lien, claim or charge that may exist or be threatened against the same and in every such case the amounts so paid together with costs, charges and expenses incurred

in connection therewith shall be deemed to be Decommissioning Eligible Costs; and

- (h) if after all the expenses of the Province in connection with the preservation and realization of the DSF Collateral as above described shall have been satisfied, all obligations of OPG or all of the OPG Nuclear Subsidiaries secured by the DSF Security shall have been satisfied and all Decommissioning Eligible Costs have been paid in full, any remaining DSF Collateral shall be dealt with in accordance with the applicable provisions of this Agreement.

4.8.7. Disbursements Following Default or an Event of Default. Notwithstanding a Default or an Event of Default has occurred and has not been cured within the period provided for under the terms of this Agreement, but subject to the rights conferred on the Province under subsection 4.7.1 and paragraphs 4.8.6(d) and (g), the Province agrees to permit Disbursements to be made to any Payee (including, but subject to subparagraph 4.7.1(c)(iv), OPG or any OPG Nuclear Subsidiary) under subsection 4.7.1.

4.8.8. Applications of Proceeds. Any DSF Collateral and any proceeds received by the Decommissioning Segregated Fund Custodian or by the Province in respect of any sale of, collection from, or other realization upon all or any part of the DSF Collateral shall be applied by the Province first to the payment of any Disbursement required to be made pursuant to section 4.7 or permitted to be made pursuant to either paragraphs 4.8.6(d) or (g), second to the payment and discharge of all the obligations of OPG and the OPG Nuclear Subsidiaries under the terms of this Agreement in respect of Decommissioning Segregated Fund other than Other Fund Costs, third to the payment and discharge of all the obligations of OPG and the OPG Nuclear Subsidiaries under the terms of this Agreement in respect of Other Fund Costs, and fourth to the payment and discharge of all other obligations of OPG and the OPG Nuclear Subsidiaries under the terms of this Agreement.

Article 5 -

REFERENCE PLANS AND ANNUAL BUDGETS

5.1 Reference Plans and Annual Budgets

5.1.1 Preparation of Draft Reference Plans and Annual Budgets. OPG agrees to prepare or cause to be prepared (a) when so required by Nuclear Legislation or any Applicable Regulator under Nuclear Legislation, or every five (5) years, whichever is earlier, Reference Plans for Nuclear Waste Management and for Decommissioning Stations and Other Facilities, including Cost Estimates at a level of detail reasonable in the circumstances, and (b) for each calendar year, Annual Budgets consistent with any applicable guidelines established from time to time by the Applicable Regulator under Nuclear Legislation. Any such Reference Plan so prepared by OPG shall, if OPG proposes to have such Reference Plan approved by Applicable Regulators under Nuclear Legislation and/or the Province, be subject to the provisions of sections 5.2, 5.3 and 5.4. The Parties acknowledge that OPG may, subject to section 5.4, submit Reference Plans prepared by the WMO for approval by the Province and then by the Applicable Regulator under Nuclear Legislation.

5.1.2 Preparation of Draft Reference Plans Following a Material Change. Notwithstanding the provisions of subsection 5.1.1, if a material change occurs, OPG agrees to immediately notify the Province in writing to that effect and to prepare or cause to be prepared a new or amended Reference Plan for the Management of Nuclear Waste and/or Decommissioning of Stations and Other Facilities (whichever is affected by the material change) as soon as practically possible and, in any event, prior to any deadline for doing so under Nuclear Legislation. For this purpose, a "material change" includes (a) any reduction in the Remaining Operating Period for any Station that would result in a change in Original Payment Schedule 3.3, the Amended Payment Schedule 3.6, the Original Payment Schedule 4.6 or Amended Payment Schedule 4.6 and (b) any change in circumstances or assumptions which

would reasonably be expected to result in an increase in either the Used Fuel Balance to Complete Cost Estimate or the Decommissioning Balance to Complete Cost Estimate from that based on the then current Approved Reference Plan by more than such percentage (which shall in no case be less than five (5%) per cent) as OPG and the Province agree, acting reasonably, from time to time in writing, and failing agreement such percentage shall be five (5%) per cent.

5.2 Draft Reference Plans and Annual Budgets

5.2.1 Reference Plans. OPG agrees to consult with the Province throughout OPG's preparation of draft Reference Plan documentation and to provide copies of all such then current documentation to the Province from time to time, as and when available, prior to submission to the Applicable Regulator under Nuclear Legislation. It is anticipated by the Parties that the next Reference Plans will be prepared within five (5) years following the execution and delivery of this Agreement unless otherwise agreed to by OPG and the Province in writing or required by Nuclear Legislation or by any Applicable Regulator thereunder.

5.2.2 Annual Budgets. OPG agrees to consult with the Province throughout OPG's preparation of draft Budget documentation and to provide copies of all such then current documentation to the Province no later than 60 days prior to the date on which such draft Annual Budget is to take effect, provided that OPG may submit revised Annual Budget materials to the Province up to 30 days prior to the date such Budget is to take effect. OPG may also submit to the Province revisions to the Approved Budget for a calendar year at any time during that year to the extent necessary.

5.2.3 Estimated Provincial Payments and OEFC Payments in Cash. For each Fiscal Year in which OPG anticipates that either the Province or OEFC shall be required to make payments in Cash, at the time that OPG prepares and delivers each draft Annual Budget it shall prepare draft schedules allocated

by Fiscal Quarters for the Fiscal Year in question for such anticipated payments in Cash by the Province to the Used Fuel Segregated Fund and by OEFC to the Decommissioning Segregated Fund under the OEFC Commitment in Lieu. The Province shall review and, acting reasonably, approve each such schedule. Following such approval, OPG shall provide copies of each such schedule to each of the Province, OEFC and the respective Segregated Fund Custodian. Unless otherwise agreed to in writing by the Province or OEFC, as the case may be, the Segregated Fund Custodian in question shall not be entitled to require a payment in Cash under either paragraph 6.1.2(a) or 6.1.3(a) in any Fiscal Quarter that exceeds the estimate therefor set out in the schedule of payments in Cash so approved by the Province for the Fiscal Year in question.

5.3 Content of Reference Plans

- 5.3.1 General. Each Reference Plan for Nuclear Waste Management and/or Decommissioning Stations and Other Facilities shall, to the extent possible, contain the same type and detail of information as that contained in the 1999 Reference Plans. Each Reference Plan and Annual Budget shall state all material assumptions upon which it is premised and shall include all information which the Province or its agent would reasonably require to make (or confirm) all the calculations required to prepare updated copies of each of Amended Payment Schedule 3.6, Original Payment Schedule 4.6 or Amended Payment Schedule 4.6.
- 5.3.2 Reference Plan Contents. Each Reference Plan for Nuclear Waste Management and/or Decommissioning Stations and Other Facilities shall include (a) the Present Value of the aggregate of all Used Fuel Eligible Costs incurred at any time between April 1, 1999 and the date of the Reference Plan, (b) the Present Value of the aggregate of all Decommissioning Eligible Costs incurred at any time between April 1, 1999 and the date of the Reference Plan, (c) the Used Fuel Balance to Complete Cost Estimate as of the date of the Reference Plan, (d) the Decommissioning Balance to

Complete Cost Estimate as of the date of the Reference Plan, and (e) such other information necessary to meet the requirements of any Applicable Regulator under Nuclear Legislation.

- 5.3.3 Updating Inflation Rate, CPI (Ontario) and the Discount Rate. Based on independent advice and with the approval of the Province, OPG agrees, each time it prepares a new or amended Reference Plan, to update each of (a) the Inflation Rate for each year from the immediately preceding Approved Reference Plan; (b) its forecast of the of the long-term average annual change in CPI (Ontario); and (c) the Discount Rate.

5.4 Approval of Reference Plans and Annual Budgets

- 5.4.1 Review Procedure and Provincial Approval of Reference Plans. As part of the consultation process contemplated by subsection 5.2.1, OPG and each OPG Nuclear Subsidiary agree to make available to the Province and its advisors, employees, representatives and agents, at their request, all relevant OPG/OPG Nuclear Subsidiary personnel and advisors, and all such underlying data and technical material relied upon by OPG (or such other Person who is preparing the draft Reference Plan in question) in preparing the draft Reference Plan in question. OPG shall formally submit the draft Reference Plan to the Province and request its written approval for such draft Reference Plan. Based on the information available to the Province, including any independent advice taken by the Province, the Province will consult with OPG about, and may, acting reasonably, require OPG to make changes to any part of the subject draft Reference Plan and, subject to Applicable Law, OPG agrees to make the changes to such draft Reference Plan so required by the Province. The Province or its agent shall approve, in writing, the Reference Plan as so changed. OPG agrees to obtain such written approvals for each Reference Plan from the Province or its agent prior to submitting it to the Applicable Regulator under Nuclear Legislation for approval, provided that the Province shall be deemed to have approved a draft Reference Plan submitted for formal approval unless the Province notifies OPG in writing to

the contrary describing in reasonable detail the nature of its objection, within 60 days of the Province receiving the draft Reference Plan for approval from OPG.

5.4.2 Review Procedure and Provincial Approval of Annual Budgets. The Province shall be entitled to review the draft Annual Budget, and to consult with its advisors, Applicable Regulators and with OPG regarding the draft Annual Budget in question. For the purposes of such review, OPG agrees to make available to the Province and its advisors, employees, representatives and agents, at their request, all relevant OPG/OPG Nuclear Subsidiary personnel and advisors, and all such underlying data, technical material, financial information and analyses relied upon by OPG in preparing the draft Annual Budget in question. OPG shall formally submit the draft Annual Budget to the Province and request its written approval for such draft Annual Budget. For purposes of paragraph (a) of the definition of Approved Budget, the Province shall be deemed not to have objected to any amount in the Annual Budget unless the Province notifies OPG in writing of the objection in reasonable detail within 30 days of receiving OPG's request for formal approval. For purposes of paragraph (b) of the definition of Approved Budget, the Province shall be deemed to have approved an Annual Budget unless the Province notifies OPG in writing to the contrary within 30 days of receiving OPG's request for formal approval. OPG agrees to submit only an Approved Budget to an Applicable Regulator under Nuclear Legislation.

5.4.3 Changes Required by Applicable Regulator Under Nuclear Legislation. The Province acknowledges that any Applicable Regulator under Nuclear Legislation may require changes to, or impose conditions on OPG in respect of, any Reference Plan. Subject to the Province's right to appeal the decision of the Applicable Regulator as hereinafter provided, the Province agrees to accept the requirements of the Applicable Regulator imposed on OPG or on an OPG Nuclear Subsidiary. Where the Applicable Regulator under Nuclear Legislation has done so, OPG agrees upon the request of the Province to appeal such of the changes and conditions, as the Province may specify, to a

court of competent jurisdiction or other adjudicative body with jurisdiction to deal with the subject matter of the appeal. In the alternative, OPG and each OPG Nuclear Subsidiary hereby grant to the Province the right and power to initiate and prosecute such appeal procedures in its own name and/or in the names of any OPG Nuclear Subsidiaries. The acceptance by the Province of such change or condition(s) required or imposed by the Applicable Regulator shall be deemed to be deferred pending the outcome of any such appeal; provided, however, OPG and each affected OPG Nuclear Subsidiary agree and shall be permitted to take all necessary action to comply with the requirements of the Applicable Regulator under Nuclear Legislation pending the outcome of any such appeal and any costs incurred in connection therewith shall be deemed to be Used Fuel Eligible Costs to the extent related to the Management of Used Fuel and, otherwise, Decommissioning Eligible Costs.

5.4.4 Delivery of Certified Copies. OPG agrees to provide a copy (certified by a senior officer of OPG without personal liability to be a true and complete copy) of each Approved Reference Plan to the Province forthwith upon its final approval, if any, by any Applicable Regulator.

5.5 Acceptance of Reference Plans and Approval of Annual Budgets

If with respect to any of the obligations of OPG in sections 5.1 to 5.4, a Person other than OPG or any OPG Nuclear Subsidiary, including the WMO, is the relevant person who is required by Applicable Law to perform such obligations, then OPG shall be deemed to have satisfied its obligations if it uses reasonable efforts to cause that Person to comply with those obligations.

Article 6 -
COMMITMENTS IN LIEU

6.1 Commitments in Lieu

6.1.1 Documentation.

- (a) If the Province executes and delivers any Provincial Commitment in Lieu permitted under subsection 3.9.2, the Province agrees to ensure that each such Provincial Commitment in Lieu complies with Applicable Law in effect at any time during which the Provincial Commitment in Lieu is issued and outstanding, and continues to comply with Applicable Law for so long as it remains outstanding.
- (b) If OEFC does not make the OEFC Payment in Cash upon this Agreement becoming effective, the Province agrees to cause OEFC to execute and deliver the OEFC Commitment in Lieu at the time contemplated by subsection 4.4.1. The Province also agrees to cause OEFC to ensure that the OEFC Commitment in Lieu complies with Applicable Law in effect at any time during which the OEFC Commitment in Lieu is issued and outstanding, and continues to comply with Applicable Law for so long as it remains outstanding.
- (c) Pursuant to the terms of any Commitment in Lieu delivered by the Province or OEFC under subsections 3.9.2 or 4.4.2, the Province or OEFC (as the case may be) agrees, subject to and in accordance with the provisions of this Agreement, to make payments in Cash to the applicable Segregated Fund in an amount up to the amount of the Commitment in Lieu (as increased or decreased and recorded on the grid forming part of the Commitment in Lieu in accordance with subsections 6.1.2 or 6.1.3, as applicable) plus interest calculated thereon at an annual rate equal to the Discount Rate, calculated daily,

from and after the date of the Commitment in Lieu, all in accordance with the terms of the Commitment in Lieu and this Agreement.

6.1.2 Payments Under Any Provincial Commitment in Lieu.

- (a) Either OPG or the Used Fuel Segregated Fund Custodian shall give not less than 45 Business Days prior written notice to the Province with respect to each payment in Cash to be made by the Province under any Provincial Commitment in Lieu. The Province agrees to pay in Cash the amount set out in the said notice in writing subject to compliance with the provisions of subsections 3.9.3 and 5.2.3 and provided all other assets in the Used Fuel Segregated Fund have been converted to Cash and fully paid by Disbursement (subject only to maintenance of a reasonable and prudent reserve in the Used Fuel Segregated Fund based on the then current Approved Budget). Only then shall the Province be obligated to make a payment or payments in Cash under any outstanding Provincial Commitment in Lieu under this paragraph 6.1.2(a). If the Province makes a payment in Cash to the Used Fuel Segregated Fund under a Provincial Commitment in Lieu, the financial obligation represented by such Provincial Commitment in Lieu shall be reduced by the amount so paid, as provided in paragraph 6.1.2(b), and the proceeds of such payment in Cash (and any returns thereon) shall be used to satisfy Used Fuel Eligible Cost Disbursement requirements until all other assets in the Used Fuel Segregated Fund have been converted to Cash and fully paid by Disbursement (subject only to maintenance of a reasonable and prudent reserve in the Used Fuel Segregated Fund based on the then current Approved Budget).
- (b) Unless a Provincial Commitment in Lieu has been surrendered to the Province for cancellation, the applicable Segregated Fund Custodian shall record and initial any payment in Cash by the Province thereunder and the resulting reduction in the amount thereof on the

grid forming part of the subject Provincial Commitment in Lieu. If the undrawn balance of a Provincial Commitment in Lieu is to be increased, the applicable Segregated Fund Custodian shall record and initial such increase on the grid forming part of the subject Provincial Commitment in Lieu provided, however, that no such increase shall be recorded in an amount that would result in the undrawn balance thereof exceeding the face amount of the subject Provincial Commitment in Lieu. In any circumstance where the face amount of the Provincial Commitment in Lieu would be exceeded or where a cancelled Provincial Commitment in Lieu is to be re-instated, the Province agrees to deliver a new or replacement Provincial Commitment in Lieu with a face amount sufficient to reflect the increase in its obligations to the Segregated Fund in question against delivery to the Province by the Segregated Fund Custodian in question of the then outstanding Provincial Commitment in Lieu (if any). Where there has been a reduction (or an increase) in the undrawn balance of a Provincial Commitment in Lieu arising from the operation of the provisions of subsection 3.10.3, the applicable Segregated Fund Custodian shall make an annotation in the manner provided for on the grid where the reduction (or increase, as the case may be) so arises. All such recorded changes in the undrawn balance of any Provincial Commitment in Lieu shall only be effective if done in accordance with the provisions of the applicable Segregated Fund Custodial Agreement. Where a Provincial Commitment in Lieu is surrendered for cancellation by the Province, the Province agrees to cause the Provincial Commitment in Lieu to be so endorsed as cancelled, and such cancelled Provincial Commitment in Lieu shall be placed in safekeeping for reference should the need arise. The Province shall provide a photocopy of such cancelled Provincial Commitment in Lieu to each of OPG and the applicable Segregated Fund Custodian for their records.

- (c) The Province may at any time and from time to time discharge all or any part of its obligations under a Provincial Commitment in Lieu without notice or bonus by making a payment or payments in Cash to the Used Fuel Segregated Fund.

6.1.3 Payments Under the OEFC Commitment in Lieu.

- (a) Either OPG or the Decommissioning Segregated Fund Custodian shall give not less than 45 Business Days prior written notice to OEFC and to the Province with respect to each payment in Cash to be made by OEFC under any OEFC Commitment in Lieu. The Province agrees to cause OEFC to pay in Cash the amount set out in the said notice in writing subject to compliance with the provisions of subsections 4.4.3 and 5.2.3 and provided all other assets in the Decommissioning Segregated Fund have been converted to Cash and fully paid by Disbursement (subject only to maintenance of a reasonable and prudent reserve in the Decommissioning Segregated Fund based on the then current Approved Budget). Only then shall OEFC be obligated to make a payment or payments in Cash under any outstanding OEFC Commitment in Lieu under this paragraph 6.1.3(a). If OEFC makes a payment in Cash to the Decommissioning Segregated Fund under the OEFC Commitment in Lieu, the financial obligation represented by the OEFC Commitment in Lieu shall be reduced by the amount so paid and recorded on the grid on the reverse side thereof, as provided in paragraph 6.1.3(b), and the proceeds of such payment in Cash (and any returns thereon) shall be used to satisfy Decommissioning Eligible Cost Disbursement requirements until all other assets in the Decommissioning Segregated Fund have been converted to Cash and fully paid by Disbursement (subject only to maintenance of a reasonable and prudent reserve in the Decommissioning Segregated Fund based on the then current Approved Budget).

- (b) Unless the OEFC Commitment in Lieu has been surrendered to OEFC for cancellation, the Decommissioning Segregated Fund Custodian shall record and initial any payment in Cash by OEFC thereunder and the resulting reduction in the amount thereof on the grid forming part of the OEFC Commitment in Lieu. If the undrawn balance of the OEFC Commitment in Lieu is to be increased, the Decommissioning Segregated Fund Custodian shall record and initial such increase on the grid forming part of the OEFC Commitment in Lieu provided, however, that no such increase shall be recorded in an amount that would result in the undrawn balance thereof exceeding the face amount of the OEFC Commitment in Lieu. In any circumstance where the face amount of the OEFC Commitment in Lieu would be exceeded or where a cancelled OEFC Commitment in Lieu is to be re-instated, OEFC agrees to deliver a new or replacement OEFC Commitment in Lieu with a face amount sufficient to reflect the increase in its obligations to the Decommissioning Segregated Fund against delivery to OEFC by the Decommissioning Segregated Fund Custodian of the then outstanding OEFC Commitment in Lieu (if any). Where there has been a reduction (or an increase) in the undrawn balance of the OEFC Commitment in Lieu arising from the operation of the provisions of subsection 4.7.3, the Decommissioning Segregated Fund Custodian shall make an annotation in the manner provided for on the grid where the reduction (or increase, as the case may be) so arises. All such recorded changes in the undrawn balance of the OEFC Commitment in Lieu shall only be effective if done in accordance with the provisions of the Decommissioning Segregated Fund Custodial Agreement. Where the OEFC Commitment in Lieu is surrendered for cancellation by OEFC, the Province agrees to cause the OEFC Commitment in Lieu to be so endorsed as cancelled, and such cancelled OEFC Commitment in Lieu shall be placed in safekeeping for reference should the need arise. The Province agrees to cause a photocopy of such cancelled

OEFC Commitment in Lieu to be provided to each of OPG and the Decommissioning Segregated Fund Custodian for their records.

- (c) OEFC may at any time and from time to time discharge all or any part of its obligations under an OEFC Commitment in Lieu without notice or bonus by making payments in Cash to the Decommissioning Segregated Fund.

6.2 Amount and Fair Market Value of Commitment in Lieu

For all purposes of this Agreement a Commitment in Lieu shall form part of the assets of any Segregated Fund to which the Commitment in Lieu was delivered and the Fair Market Value of the Commitment in Lieu shall equal the Present Value of the Commitment in Lieu.

6.3 Confirmation

The Province agrees to confirm, or to cause OEFC to confirm, its obligations under any Commitment in Lieu as OPG or any Applicable Regulator may reasonably request.

Article 7 -

FINANCIAL GUARANTEE

7.1 Provincial Guarantee

- 7.1.1 Obligation of the Province to Provide the Provincial Guarantee. The Province, if requested in writing by OPG, agrees to provide the Provincial Guarantee for OPG and/or any OPG Nuclear Subsidiary on terms to be settled between the Province and the CNSC until the Used Fuel Segregated Fund and/or the Decommissioning Segregated Fund, or any other fund established under sections 3.2 or 4.2, are in the opinion of the CNSC sufficiently funded so as not to require the Provincial Guarantee from the Province.

7.1.2 Financial Guarantee – OPG Nuclear Subsidiaries – Change in Controlling

Interest. Notwithstanding subsection 7.1.1, where any Person other than OPG or an OPG Nuclear Subsidiary proposes to acquire a Controlling Interest in an OPG Nuclear Subsidiary owned in whole or in part by OPG, the written consent of the Province to such proposed change in Controlling Interest of an OPG Nuclear Subsidiary under this subsection 7.1.2 shall be required in those circumstances where immediately prior to completion of the transaction that gives rise to such acquisition of a Controlling Interest:

- (a) a Provincial Guarantee is then outstanding directly in favour of the OPG Nuclear Subsidiary in question;
- (b) a CNSC Access Agreement is then outstanding to which the OPG Nuclear Subsidiary in question is a party; or
- (c) OPG and the OPG Nuclear Subsidiary in question have failed to execute and deliver to the Province an acknowledgement in writing to the effect that such OPG Nuclear Subsidiary shall have no entitlement, following such acquisition of a Controlling Interest, to require the Province to provide a Provincial Guarantee to such OPG Nuclear Subsidiary under subsection 7.1.1 or to become party to any CNSC Access Agreement, even if it continues to be an OPG Nuclear Subsidiary following such acquisition of a Controlling Interest.

For greater certainty, the Parties agree that the foregoing right of the Province to give or withhold its consent pursuant to this subsection 7.1.2, being the exercise of an absolute discretion by the Province, cannot be the subject matter of a Dispute or Financial Issue under this Agreement or of any other proceeding at law initiated by OPG or any OPG Nuclear Subsidiary.

7.2 Provincial Guarantee Fee

OPG and the OPG Nuclear Subsidiaries agree to pay an annual fee to the Province equal to one-half of one (0.5%) per cent of the amount of such Provincial Guarantee outstanding during any Fiscal Year. The amount of the Provincial Guarantee shall be determined by the CNSC in the circumstances. If the CNSC fails or declines to reduce the amount of the Provincial Guarantee by all or any part of the property and assets in the subject Segregated Fund (or other fund constituted under sections 3.2 or 4.2, as the case may be), there shall be no reduction in the amount of the Provincial Guarantee on which the fee is calculated under this section 7.2, except as provided for in the next sentence. Where the CNSC fails or refuses to reduce the amount of the Provincial Guarantee by all or any part of any Commitment in Lieu, a sum equal to the amount by which the CNSC so fails or refuses to reduce the amount of the Provincial Guarantee shall be deducted from the amount of the Provincial Guarantee on which the fee is calculated under this section 7.2. For part years, the fee shall be prorated by reference to the number of days in the year the Provincial Guarantee was outstanding. Such annual fee shall be payable by OPG and the OPG Nuclear Subsidiaries at the time the Provincial Guarantee is given and annually thereafter on or before January 31 of each calendar year for that calendar year until the Provincial Guarantee is no longer required. The Parties agree to re-adjust the fee payments as at December 31 in each year on or before January 31 of the following year to reflect the amount of the Provincial Guarantee in effect from time to time during the year then ended. OPG and the OPG Nuclear Subsidiaries agree to pay interest on any overdue payments under this section 7.2 at an annual rate equal to the Prime Rate of Interest plus two (2%) per cent per annum until paid.

7.3 CNSC Access Agreement

7.3.1 CNSC Access Agreement. If the CNSC accepts a right of access to one or more of the Segregated Funds (or any of the funds contemplated by either section 3.2 or section 4.2) as satisfying all or part of OPG's Financial Guarantee requirement, OPG and the Province agree to enter into one or more CNSC Access Agreements with the CNSC on terms to be settled

between OPG, the Province and the CNSC. During the term of any such CNSC Access Agreement, OPG and the Province agree, to the extent permitted by Applicable Law, to (i) cause the applicable Segregated Fund Custodians to make all such Disbursements from the applicable Segregated Fund to the appropriate CNSC Payee as required by the terms of the CNSC Access Agreement in question, (ii) to waive any provision of ONFA that would prohibit a CNSC Payee from receiving any Disbursements it is entitled to receive under the CNSC Access Agreement at the time it is entitled to receive them, and (iii) otherwise to take all steps necessary under this Agreement to permit the Province and OPG to comply with their respective obligations under any CNSC Access Agreement.

7.3.2 CNSC Disbursements and Refundable Amounts. Where any amount is Disbursed to a CNSC Payee from the Used Fuel Segregated Fund (or any other fund contemplated by section 3.2) or from the Decommissioning Segregated Fund (or any other fund contemplated by section 4.2) in each case in accordance with a CNSC Access Agreement, to the extent that any such Disbursement is or will be used to pay for:

- (a) any activity required or permitted to be funded from the Used Fuel Segregated Fund, such Disbursement shall be deemed to be a Used Fuel Eligible Cost; and
- (b) any activity required or permitted to be funded from the Decommissioning Segregated Fund, such Disbursement shall be deemed to be a Decommissioning Eligible Cost;

in each case adjusted from time to time to reflect the most recent CNSC Reconciliation Statement or CNSC Reconciliation Update Statement relating to such Disbursement approved or deemed to be approved by the Province, regardless of the Segregated Fund from which the Disbursement was originally made.

To the extent that any Disbursement (and any interest accrued thereon) is not so used or will not be used to pay for any such activity (each, a “**Refundable Amount**”), OPG and the OPG Nuclear Subsidiaries agree to make payments to the Used Fuel Segregated Fund or the Decommissioning Segregated Fund (as the case may be) in accordance with the provisions of subsection 7.3.4, the Refundable Amounts and payments in respect thereof to be allocated between the Segregated Funds as the Province and OPG shall agree to give effect to the rebalancing principles set out in subsection 7.3.5.

7.3.3 CNSC Disbursements Reconciliations. Within 120 days of a CNSC Payee receiving a Disbursement pursuant to the CNSC Access Agreement or the CNSC or a person designated by it receiving a payment pursuant to a Provincial Guarantee, OPG shall prepare or cause to be prepared a draft statement (a “**CNSC Reconciliation Statement**”) based on all information then available to it (including information from the CNSC and any CNSC Payee) setting out (a) actual expenditures made out of the Disbursement or Provincial Guarantee payment proceeds and any income accrued thereon, allocated among the following costs; and (b) as to the remaining proceeds of such Disbursement or Provincial Guarantee and any income accrued thereon, expenditures budgeted by the CNSC or its agent with respect to each of:

- (i) Used Fuel Eligible Costs;
- (ii) Incremental Costs;
- (iii) Decommissioning Eligible Costs; and
- (iv) Refundable Amounts;

together with such background information as OPG or the Province may reasonably require. Within 120 days after the end of each Fiscal Year or a refund being made in accordance with subsection 7.3.6, OPG shall provide a draft statement (a “**CNSC Reconciliation Update Statement**”) updating the last CNSC Reconciliation Statement and any prior CNSC Reconciliation Update Statement, including explanation of the changes, for each Disbursement or Provincial Guarantee payment based and relying on the then current information available to OPG (including information from the

CNSC). The Province shall have a period of 90 days following receipt of each draft CNSC Reconciliation Statement or draft CNSC Reconciliation Update Statement to conduct a review of each such draft statement, and to consult with its advisors, Applicable Regulators and with OPG regarding the draft statement in question. For the purposes of such review, OPG agrees to make available to the Province and its advisors, employees, representatives and agents, at their request, all relevant OPG/OPG Nuclear Subsidiary personnel and advisors, and all underlying data, information and analyses relied upon by OPG in preparing the draft statement in question. Based on the information available to the Province, the Province may, acting reasonably on notice to OPG within the 90 day period following its receipt of the relevant draft statement, require OPG to make changes to any part of the draft statement. The Province shall in the notice describe in reasonable detail the reason for the change and the information on which the Province has based its requirement for the change. The Province shall be deemed to have approved any draft statement provided to it by OPG under this subsection unless the Province notifies OPG in writing to the contrary in accordance with the foregoing provisions, within 90 days of the Province receiving the draft statement from OPG. OPG agrees to make the changes to such draft statement required by the Province in accordance with this subsection 7.3.3. The Province or its agent shall approve, in writing, the revised statement within 30 days of receiving it, or shall be deemed to have approved such revised statement on the 30th day after receiving it, unless the Province notifies OPG in writing to the contrary describing in reasonable detail the nature of its objection, within 30 days of receiving the revised statement. The Province and OPG shall determine, confirm or recalculate and Refundable Amounts and the schedule of payments required under subsection 7.3.4 on the basis of each CNSC Reconciliation Statement or CNSC Reconciliation Update Statement approved or deemed to be approved by the Province.

7.3.4 Refundable Amount Payments. OPG and the OPG Nuclear Subsidiaries agree to make payments to the Segregated Fund in question on account of each Refundable Amount as follows:

- (a) interest shall be paid to the Segregated Fund in question annually on the principal unpaid balance of each Refundable Amount (except to the extent that such principal amount has been repaid to the Segregated Fund in question pursuant to paragraph 7.3.4(b)) from time to time outstanding at an annual rate equal to the Discount Rate; and
- (b) the principal amount of the Refundable Amount shall be repaid to the Segregated Fund in question in ten equal annual payments, the first such payment to be made on December 31 of the year next following the calendar year in which the Disbursement was made, and the last such payment to be made on the tenth anniversary of the first payment.

The annual payment of principal and interest to the Segregated Fund for each Refundable Amount shall be made on or before December 31 of the year in question, and shall be adjusted annually to reflect any changes in arising out of the provisions of subsection 7.3.3 and subsection 7.3.5.

7.3.5 Re-Balancing of Segregated Funds. If any Disbursements are made from a Segregated Fund to a CNSC Payee pursuant to a CNSC Access Agreement, then notwithstanding any other provisions of this Agreement the Province and OPG agree to cause assets to be transferred between Segregated Funds and all other steps to be taken (including the allocation and recording of amounts in the Segregated Funds) as necessary so that the Parties and each of the Segregated Funds are in the position they would have been in if the Disbursement to the CNSC Payee had been made from the appropriate

Segregated Fund in accordance with this Agreement. To give effect to this principle, within 10 Business Days of a CNSC Reconciliation Statement or CNSC Reconciliation Update Statement being approved or deemed to have been approved by the Province, OPG and the Province shall execute and deliver one or both of the following joint written directions, based on the most recent statement approved or deemed to have been approved:

- (a) direct the Used Fuel Segregated Fund Custodian to transfer assets from the Used Fuel Segregated Fund to the Decommissioning Segregated Fund having a value equal to

$$A - B$$

where,

A is the aggregate of Used Fuel Eligible Costs (including Incremental Costs) Disbursed to any CNSC Payee in accordance with section 7.3.2 as reported in the CNSC Reconciliation Statement or CNSC Reconciliation Update Statement most recently approved or deemed to be approved by the Province; and

B is the total amount Disbursed from the Used Fuel Segregated Fund to any CNSC Payee pursuant to section 7.3.2,

provided that such amount shall not be less than nil; and

- (b) direct the Decommissioning Segregated Fund Custodian to transfer assets from the Decommissioning Segregated Fund to the Used Fuel Segregated Fund having a value equal to

C - D

where,

C is the aggregate of Decommissioning Eligible Costs (including Other Fund Costs) Disbursed to any CNSC Payee in accordance with section 7.3.2 as reported in the CNSC Reconciliation Statement or CNSC Reconciliation Update Statement most recently approved or deemed to be approved by the Province; and

D is the total amount Disbursed from the Decommissioning Segregated Fund to any CNSC Payee pursuant to section 7.3.2,

provided that such amount shall not be less than nil;

such transfer to include in each case an amount equal to the interest which would have been earned on the amount equal to the value of the assets to be transferred from the date of the Disbursement to the CNSC Payee to the date of the transfer, at a rate equal to the Discount Rate for the Segregated Fund from which the assets are to be transferred.

7.3.6 CNSC Surplus Payments. If the CNSC, a CNSC Payee or any person designated by the CNSC refunds to or at the direction of OPG, an OPG Nuclear Subsidiary or the Province (i) any part of any Disbursement received by a CNSC Payee pursuant any CNSC Access Agreement or (ii) any payment received by the CNSC or a person designated by it pursuant to a Provincial Guarantee, including in either case the proceeds of such Disbursement or payment, the Parties agree that any such refunded amount shall promptly be directed or paid or retained as follows:

- (a) first, to the Province up to the aggregate of (A) the then outstanding balance of the amount plus any accumulated interest payable to the Province by OPG and the OPG Nuclear Subsidiaries under subsection 7.4.1 (but without regard to subsection 7.4.2), and (B) the outstanding principal amount plus accumulated interest of any indemnity payment payable to the Province under subsection 7.4.4;
- (b) secondly, to each Segregated Fund up to the amount by which such Segregated Fund is then Under-Funded, in each case pro rata to the amount by which each Segregated Fund is Under-Funded;
- (c) thirdly, to OPG up to the aggregate Present Value of all amounts previously paid by OPG or the OPG Nuclear Subsidiaries to reimburse the Province under subsections 7.4.1 and 7.4.4; and
- (d) the balance, if any, to the Decommissioning Segregated Fund.

The parties agree that any amount paid to or retained by the Province under paragraph subsection 7.3.6 (a) shall reduce the outstanding amounts required to be reimbursed to the Province under subsection 7.4.1 and 7.4.4.

7.4 Provincial Guarantee Reimbursement Obligation

7.4.1 Payment from Fund to Extent of Fund Assets. If at any time the Province is required to make a payment following a claim under a Provincial Guarantee, to the extent such payment is or will be used to pay for:

- (a) an activity required or permitted to be funded from the Used Fuel Segregated Fund, such payment shall be deemed to be a Used

Fuel Eligible Cost in respect of which the Province shall have a right to be reimbursed out of the Used Fuel Segregated Fund; and

- (b) an activity required or permitted to be funded from the Decommissioning Segregated Fund, such payment shall be deemed to be a Decommissioning Eligible Cost in respect of which the Province shall have a right to be reimbursed out of the Decommissioning Segregated Fund;

in each case adjusted from time to time to reflect the most recent CNSC Reconciliation Statement or CNSC Reconciliation Update Statement relating to such payment approved or deemed to be approved by the Province. The Province shall be reimbursed pursuant to the foregoing provisions of this subsection 7.4.1:

- (a) from the Used Fuel Segregated Fund notwithstanding subsection 5.2.3 and paragraph 6.1.2(a), firstly, by reducing the amount outstanding under any Provincial Commitment in Lieu by an amount equal to the lesser of (i) the amount by which the Province is to be reimbursed hereunder and (ii) the said amount outstanding under any Provincial Commitment in Lieu; and secondly, from the assets of the Used Fuel Segregated Fund, to the extent that any part of the amount to be reimbursed to the Province under this paragraph 7.4.1(a) remains outstanding after giving effect to the foregoing; and
- (b) from the Decommissioning Segregated Fund notwithstanding subsection 5.2.3 and paragraph 6.1.3(a), firstly, from the assets of the Decommissioning Segregated Fund, and secondly to the extent that any part of the amount to be reimbursed to the Province under this paragraph 7.4.1(b) remains outstanding after giving effect to the foregoing and an OEFC Commitment in Lieu is then

outstanding, the Province shall cause OEFC make a payment in Cash to the Decommissioning Segregated Fund up to the lesser of (i) an amount equal to the said reimbursement amount outstanding to the Province and (ii) the amount outstanding under any Commitment in Lieu. The Cash so paid by OEFC shall then be used to reimburse the Province from the Decommissioning Segregated Fund pursuant to the foregoing provisions of this subsection 7.4.1.

To the extent that such reimbursement is prohibited by Applicable Law or the applicable Segregated Fund Custodian otherwise fails to reimburse the Province, OPG and the OPG Nuclear Subsidiaries agree to pay an amount equal to the amount of the payment made by the Province following a claim under a Provincial Guarantee plus interest on the balance thereof from time to time (taking into account each such payment by OPG or any of the OPG Nuclear Subsidiaries as it is made) at a rate equal to the Discount Rate for the applicable Segregated Fund (for a period of time commencing on the date on which the Provincial Guarantee payment in question was made and ending on the date on which the Province is paid) but only up to the amount of Payments to the subject Segregated Fund next falling due until the amount in question plus interest (calculated as aforesaid) is paid to the Province in full.

7.4.2 Payment Credits. Except as set out in subsection 7.4.3, the Province shall bear the risk that OPG and the OPG Nuclear Subsidiaries are not obligated to make Payments equal to the amount of the required reimbursement. The Parties shall require the Used Fuel Segregated Fund Custodian or Decommissioning Segregated Fund Custodian, as applicable, to credit the amount of such payments by OPG to the Province pursuant to subsection 7.4.1 as if such payments had been made as Payments to the Used Fuel Segregated Fund or Decommissioning Segregated Fund, as applicable, and OPG and the OPG Nuclear Subsidiaries shall be deemed to have discharged

their obligations to make such Payments to the amount of each such payment so made. However, to the extent Applicable Law does not permit such amounts to be credited against Payments to the applicable Segregated Fund or to the extent complying with subsection 7.4.1 does not fully discharge any obligation of OPG and the OPG Nuclear Subsidiaries to make such payments under Applicable Law, OPG and the OPG Nuclear Subsidiaries shall not be obligated to pay such amounts to the Province.

7.4.3 Indemnity to Extent No Fund Assets. OPG and each OPG Nuclear Subsidiary agree to indemnify the Province from and against any payment made by the Province under a Provincial Guarantee which cannot be reimbursed out of either of the Segregated Funds and which is not reimbursed by OPG and the OPG Nuclear Subsidiaries pursuant to subsection 7.4.1, but only to the extent the payment required to be made by the Province under a Provincial Guarantee exceeds the Fair Market Value of the Used Fuel Segregated Fund (excluding any fund established under section 3.2 where the terms of the Financial Guarantee require the fair market value of such fund to be applied to reduce the amount of Financial Guarantee required by the CNSC) or the Fair Market Value of the Decommissioning Segregated Fund (excluding any fund established under section 4.2 where the terms of the Financial Guarantee require the fair market value of such fund to be applied to reduce the amount of Financial Guarantee required by the CNSC), as the case may be, determined at the time the payment is made and is not so reimbursed, together with interest thereon calculated as set out in subsection 7.4.4. However, OPG agrees to fully indemnify the Province under a Provincial Guarantee when such payment does not relate to an activity required or permitted to be funded from either the Used Fuel Segregated Fund or the Decommissioning Segregated Fund.

7.4.4 Indemnity Payments. OPG and the OPG Nuclear Subsidiaries agree to make payments to the Province on account of the said indemnity as follows:

- (a) interest shall be paid to the Province annually on the principal amount of each payment made by the Province under a Provincial Guarantee for which OPG is required to indemnify the Province under subsection 7.4.3, except to the extent that such principal amount has been repaid to the Province pursuant to paragraph 7.4.4(b), from time to time outstanding at an annual rate equal to the then current Prime Rate of Interest plus two (2%) per cent not in advance; and
- (b) the principal amount of each such payment made by the Province under a Provincial Guarantee for which OPG is required to indemnify the Province under subsection 7.4.3 shall be repaid in equal annual payments for each of the ten years ending after the end of the year in which the Province has made the Provincial Guarantee payment in question. The annual payment of principal and interest to the Province for a year shall be made on or before December 31 of such year.

7.5 Financial Guarantee Confirmation

- 7.5.1 Confirmation - Province. The Province further agrees to confirm its obligations under any Provincial Guarantee or CNSC Access Agreement as any Applicable Regulator may reasonably require.
- 7.5.2 Confirmation - OPG. OPG further agrees to confirm its obligations under any CNSC Access Agreement as any Applicable Regulator may reasonably require.

Article 8-

TERM AND TERMINATION OF THIS AGREEMENT

8.1 Term

- 8.1.1. Term. Once the conditions precedent to this Agreement taking effect set out in subsection 8.1.2 have been satisfied (or waived in writing by both OPG and the Province), this Agreement shall be effective as of April 1, 1999

and subject to any contrary requirement of Applicable Law or of any Applicable Regulator that this Agreement remain in force and effect) shall continue in force until the earlier of:

- (a) the date on which this Agreement is terminated by written agreement of all the Parties; or
- (b) if a request for termination is made by a Party and all Parties then agree in writing that substantially all of the Decommissioning Eligible Costs and substantially all of the Used Fuel Eligible Costs to be paid from the respective Segregated Funds or any other fund established under the terms of this Agreement have been paid in full, and any amount owing by OPG and the OPG Nuclear Subsidiaries to the Province or OEFC under section 2.4 have been paid in full, the date agreed to by the Parties,

provided, however, on such date no CNSC Access Agreement or Provincial Guarantee is then outstanding.

8.1.2. Conditions Precedent to Binding Agreement. This Agreement shall not take effect until OPG and the Province have executed and delivered each of the Segregated Fund Custodial Agreements and each of the Segregated Fund Management Agreements on terms and conditions acceptable to the Province and OPG. Notwithstanding subsection 8.1.1, upon this Agreement taking effect, OPG and the OPG Nuclear Subsidiaries shall be deemed to have complied with all of their respective obligations under this Agreement relating to the period prior to the date on which the foregoing conditions precedent are satisfied or waived. The Province and OPG shall use all reasonable efforts to have executed and delivered each of the Segregated Fund Custodial Agreements and each of the Segregated Fund Management Agreements as soon as practical after the execution and delivery of this Agreement.

8.2 Final Accounting

Not less than 180 days prior to the termination of this Agreement under section 8.1, OPG agrees to prepare a written report and accounting (in form and content satisfactory to the Province, acting reasonably) addressed to the Province and OEFC in respect of each of the Segregated Funds, which report shall include a determination of each of (a) the aggregate of all Used Fuel Eligible Costs incurred up to that time (b) a current Used Fuel Balance to Complete Cost Estimate (c) the aggregate of all Decommissioning Eligible Costs incurred up to that time (d) a current Decommissioning Balance to Complete Cost Estimate and (e) similar reports in respect of any other fund established under the terms of this Agreement. Based on the foregoing report and accounting, the Province and OPG agree to determine, acting reasonably, the extent (if any) to which any Segregated Fund is Under-Funded and the extent (if any) to which the then Fair Market Value of the assets of any Segregated Fund exceeds the Balance to Complete Cost Estimate of such Segregated Fund in each case after giving effect to subsection 4.7.3 without the requirement for a new Approved Reference Plan (for the purposes of this section 8.2, an “**Excess**”). Having made the foregoing determinations in respect of each Segregated Fund, the Parties obligated by the terms of this Agreement to make any Payment or a Provincial Payment in Cash to any such Segregated Fund shall do so and, in the case of the Province, the Province shall, and shall cause OEFC to, make any payments to such Segregated Fund pursuant to subsections 6.1.2 and 6.1.3 in each case within 120 days of the said report and accounting having been accepted by the Province. Once all such payments in Cash have been made, the Province and OPG shall cause the Segregated Fund Custodian to deliver any then outstanding Commitment in Lieu in the subject Segregated Fund to its issuer for cancellation. Subject to Applicable Law and the requirements of any Applicable Regulator under Nuclear Legislation, for each Segregated Fund with an Excess, the Province shall then have the right to requisition a Disbursement to it and/or to OEFC (as the Province may determine) in an aggregate amount equal to the Excess in question by notice in writing to the subject Segregated Fund Custodian with a copy to OPG. Each such Excess so requisitioned by the Province shall be paid to the Province (and/or OEFC, as the case may be) within 30 Business Days of the requisition in

question having been made (or any Dispute of Financial Issue in respect thereof completed). This section 8.2 shall govern the distribution of any Excess in any Segregated Fund notwithstanding any other provision of this Agreement otherwise governing the entitlement and procedures relating to the Surplus (including subsection 4.7.3) and Used Fuel Segregated Fund surplus (including subsection 3.10.3).

Article 9 -

RECORDS AND AUDITS

9.1 General

With respect to each of the Segregated Funds and any other fund established pursuant to the terms of this Agreement, OPG and each OPG Nuclear Subsidiary shall maintain, or cause to be maintained, (and to the extent that OPG can so direct any Payee and the WMO, if and when constituted, shall cause the Payee and WMO to maintain) accurate and complete accounting records for all Eligible Costs, Incremental Costs, Other Fund Costs, Station Amounts, Payments, Provincial Payments, the OEFC Payment (and any payments in Cash made by OEFC under the OEFC Commitment in Lieu), Segregated Fund and other fund returns, Disbursements and all other relevant information relating to this Agreement and its administration, all in accordance with GAAP for the period ending on a date not less than six (6) years following termination of this Agreement. OPG and each OPG Nuclear Subsidiary shall permit the Province and its employees, representatives and agents, upon giving at least 24 hours prior notice, to have access to, to inspect and to make extracts from and copies of its books, records and accounts in which such records are maintained (wheresoever located) during normal business hours on any Business Day, and to have access to all appropriate personnel and advisors to answer questions regarding such books and records. OPG and each OPG Nuclear Subsidiary agree to provide the Province and its employees, representatives and agents with the opportunity to ask questions of, and be briefed by appropriate OPG or OPG Nuclear Subsidiary personnel and advisors in respect of such books, records and accounts.

9.2 Separate Accounts

9.2.1 Used Fuel Segregated Fund. OPG shall maintain or cause to be maintained separate accounting records for the Used Fuel Segregated Fund in which it will be recorded and allocated on a Station-by-Station basis (a) each Payment and each Provincial Payment to the Used Fuel Segregated Fund, (b) each Disbursement from the Used Fuel Segregated Fund, (c) each Disbursement from the Used Fuel Segregated Fund to the Province (including any indemnity payment made to the Province under the terms of this Agreement), (d) receipt of each Decommissioning Segregated Fund Matching Payment, (e) each transfer of assets to another Segregated Fund or receipt of a transfer of assets from another Segregated Fund, and (f) the fees and any indemnified amount owed to the Province in respect of any Provincial Guarantee. OPG shall also record or cause to be recorded the assets and liabilities of the Used Fuel Segregated Fund, including returns earned by the Used Fuel Segregated Fund. OPG shall adjust or cause to be adjusted the accounts to reflect any change which should be made to its records as a result of any matter set out in any Disbursement Reconciliation.

9.2.2 Decommissioning Segregated Fund. OPG shall maintain or cause to be maintained separate accounting records for the Decommissioning Segregated Fund in which it will be recorded and allocated on a Station by Station basis (a) the OEFC Payment, each Payment to the Decommissioning Segregated Fund, and any Provincial Payment to the Decommissioning Segregated Fund, (b) each Decommissioning Segregated Fund Matching Payment, (c) each Disbursement from the Decommissioning Segregated Fund, (d) each Disbursement from the Decommissioning Segregated Fund to the Province and/or OEFC (including any indemnity payment made to the Province and/or OEFC under the terms of this Agreement), (e) each transfer of assets to another Segregated Fund or receipt of a transfer of assets from another Segregated Fund, and (f) the fees and any indemnified amount owed to the Province in respect of any Provincial Guarantee. OPG shall also record or cause to be recorded the assets and liabilities of the

Decommissioning Segregated Fund, including returns earned by the Decommissioning Segregated Fund. OPG shall adjust or cause to be adjusted the accounts to reflect any change which should be made to its records as a result of any matter set out in any Disbursement Reconciliation.

9.2.3 Allocation for Incremental Costs and Tax Costs. OPG shall maintain or cause to be maintained separate accounts for Incremental Costs and for Tax Costs and shall allocate or cause to be allocated to each such account: (a) all Payments to the applicable Segregated Fund made to fund Incremental Costs or Tax Costs, as applicable; and (b) an amount equal to the income which would have been earned on such Payments from time to time if they had earned a rate of return equal to the Used Fuel Segregated Fund Rate of Return or the Decommissioning Segregated Fund Rate of Return, as applicable, during the period from the date of receipt of the Payment. OPG shall deduct or cause to be deducted from each such account each Disbursement for Incremental Costs or Tax Costs, as applicable. The relevant Balance to Complete Cost Estimate and the relevant Cost Estimate shall notionally be allocated to the account for Incremental Costs or Tax Costs, as applicable, among the Stations in accordance with then current Approved Reference Plan.

9.2.4 Effect of Allocations. The Parties agree that notwithstanding that separate accounts may be maintained for each Station and Other Facility or otherwise (including as required by Nuclear Legislation or an Applicable Regulator under Nuclear Legislation) (a) the entire Used Fuel Segregated Fund is available for Disbursements to pay any Used Fuel Eligible Costs; and (b) the entire Decommissioning Segregated Fund is available for Disbursements to pay any Decommissioning Eligible Costs. The Decommissioning Segregated Fund shall not be available for Disbursements to pay any Used Fuel Eligible Costs other than as may be specifically provided in this Agreement. The Used Fuel Segregated Fund shall not be available for Disbursements to pay any Decommissioning Eligible Costs, save as otherwise permitted by the terms of this Agreement. Notwithstanding the foregoing, subject to and in compliance

with the terms of any CNSC Access Agreement then in effect, the CNSC has the right on demand from time to time in those circumstances described in the CNSC Access Agreement to have paid to a CNSC Payee up to the entire balance of each of the Used Fuel Segregated Fund and Decommissioning Segregated Fund.

- 9.2.5 GST Payments. To the extent that OPG or any OPG Nuclear Subsidiary has received a Disbursement from the Segregated Funds to compensate it for the payment of any goods and services taxes imposed by the *Excise Tax Act* (Canada), any rebate of such payment or input tax credit in respect thereof received or claimed by OPG or any OPG Nuclear Subsidiary shall forthwith on receipt by it, or upon the benefit of any such claim being enjoyed by it, be paid to the Segregated Fund in question in an amount equal to such refund or claim and the corresponding Disbursement shall not be treated as Eligible Costs for any purpose, provided that OPG and the OPG Nuclear Subsidiaries shall have no further obligation to reimburse such amount to the relevant Segregated Fund (pursuant to section 9.3.4 or otherwise) if the payment required by this subsection 9.2.5 is made.

9.3 Auditor

- 9.3.1 Auditor. The Province and OPG shall jointly appoint an auditor (the “**Auditor**”) who shall have the right to conduct those audits permitted by the terms of this Agreement (other than under subsections 9.3.3 and 9.3.4), and to prepare annual reports in respect of each of Used Fuel Eligible Costs and Decommissioning Eligible Costs, and in respect of payments to, earnings by and Disbursements from each of the Segregated Funds and any other funds established in accordance with the terms of this Agreement. Unless otherwise waived in writing by the Province, any Auditor so appointed shall not otherwise have a business relationship with OPG. If the Province and OPG cannot agree on the selection of an Auditor, the names of each of the major accounting firms qualified to practice in the Province of Ontario shall be typed on cards and placed in a sealed container, and the first name drawn by lot

from such container by a representative of the Province shall be the Auditor appointed under this subsection 9.3.1 subject only to settling terms and conditions of such appointment with the Auditor in question. Each Auditor's appointment shall be for a term of one year unless renewed by agreement of such Auditor and each of OPG and the Province. The foregoing process shall be followed by OPG and the Province for the appointment of each replacement Auditor under the terms of this Agreement, provided only that the name of the outgoing Auditor shall not be included in the roster of candidates submitted for drawing by lot, as aforesaid.

9.3.2 Auditor Expenses. All reasonable costs and expense of an Auditor appointed under subsection 9.3.1 shall be deemed to be Eligible Costs of the Segregated Fund in respect of which the Auditor has provided services.

9.3.3 Disbursement Reconciliations. Commencing with the Fiscal Quarter during which the conditions precedent set out in subsection 8.1.2 have been satisfied (or waived in writing by both OPG and the Province), within 30 days after the end of each Fiscal Quarter and within 90 days following the end of each Fiscal Year, OPG agrees to provide to the Province a Disbursement Reconciliation for each Segregated Fund for the preceding Fiscal Quarter or Fiscal Year, as the case may be, including for greater certainty all fund or funds contemplated by this Agreement, from which Disbursements may be made. Notwithstanding the foregoing, if the date on which the conditions precedent set out in subsection 8.1.2 have been satisfied (or waived in writing by both OPG and the Province) occurs after December 31, 2002, it shall, nevertheless be deemed for the purposes of this subsection 9.3.3 to have occurred on January 1, 2003, and the Province shall then be entitled to receive Disbursement Reconciliations for each Fiscal Year commencing with OPG's 2002 Fiscal Year and for each Fiscal Quarter commencing with OPG's Fiscal Quarter ending March 31, 2003. The Parties agree to take such steps and enter into such agreements as may be necessary to ensure that the Province, its advisors, employees, representatives and agents and those of any Applicable Regulator shall, at all times on reasonable notice to OPG or

any other Payee (as the case may be) have the right to have access to, to inspect, to audit and to make extracts from, and copies of, all relevant books and records of OPG or the Payee (as the case may be) and the right to interview and obtain information from the subject Segregated Fund Custodian, OPG personnel and advisors, employees and representatives of the Payee regarding such books and records and the use to which any Disbursement has been put. Insofar as Payees who are the WMO or who are at arm's length with OPG or with any OPG Nuclear Subsidiary are concerned, the foregoing obligations shall be limited to reasonable efforts in the circumstances.

9.3.4 Audit of Eligible Costs. Once a Disbursement has been paid from a Segregated Fund, all amounts included in that Disbursement shall be deemed for all purposes to be Eligible Costs, except as provided in this subsection 9.3.4 or in section 7.3. If the Province conducts an audit pursuant to subsection 9.3.3 and the Province's auditor for this purpose determines that an amount included in a Disbursement from the subject fund (other than a Disbursement to a CNSC Payee pursuant to a CNSC Access Agreement) was not applied to pay an Eligible Cost or was not properly Disbursed, the Province shall notify OPG to that effect and OPG shall within 10 Business Days reimburse the fund in question in Cash in an amount equal to the amount in question plus interest thereon calculated at the Discount Rate from the date of the Disbursement to the date of the reimbursement. If the auditor has not made such a determination and the Province has not so notified OPG within 180 days after the Province receives a Disbursement Reconciliation for the subject fund for a Fiscal Year, all amounts included in that Disbursement Reconciliation shall, notwithstanding subsection 9.3.3, be deemed for all purposes to be Eligible Costs and, where they are Used Fuel Eligible Costs, no such amount shall be excluded from the Approved Cost Estimate.

9.4 Financial Statements and Other Information

9.4.1 Financial Statements. OPG shall, as soon as practicable and in any event within 120 days after the end of each Fiscal Year, prepare or cause to be prepared annual financial statements for the Segregated Fund in question (including any fund referred to in or constituted under either section 3.2 or section 4.2), which annual financial statements shall be audited, and reported on by the Auditor in accordance with GAAP. The audited annual financial statements shall include a statement of assets, a statement of investment income, a statement of the investment portfolio, a statement of changes in assets to the end of the Fiscal Year, a statement of Disbursements, and any other statement or statements which may be required by Applicable Law, GAAP or requested by OPG or the Province in writing, acting reasonably. If requested by OPG or the Province and so required under the relevant Segregated Fund Management Agreement, the Segregated Fund Managers shall provide to OPG and the Province an estimate of the Fair Market Value of one or more assets in a Segregated Fund (including any fund referred to in or constituted under either section 3.2 or section 4.2) for the most recent Fiscal Quarter then ended to each of OPG and the Province, regardless of who may have made the request for the value of the fund in question, within 30 days of the end of such Fiscal Quarter. In addition to the foregoing, OPG shall provide, or cause to be provided, to the Province all other reports and information regarding the Segregated Funds (including any fund referred to in or constituted under either section 3.2 or section 4.2), including actuarial reports, as OPG or the Province may from time to time reasonably request in writing.

9.4.2 Reports. OPG shall, as soon as practicable and in any event within 30 days after the end of each Fiscal Quarter, prepare or cause to be prepared, a report in form and content acceptable to the Province, acting reasonably, addressed to the Province, setting out (a) all Payments and Provincial Payments, and any payments in Cash made by the Province under any Provincial Commitment in Lieu or the OEFC Payment and any payments in

Cash made by OEFC under the OEFC Commitment in Lieu, (b) all Disbursements, (c) all Decommissioning Segregated Fund Matching Payments, (d) all transfers of assets from one Segregated Fund to another, and (e) all earnings or losses on the assets of the Segregated Fund (including any fund referred to in or constituted under either section 3.2 or section 4.2).

Article 10 -

REPRESENTATIONS AND WARRANTIES

10.1 Representations and Warranties of OPG and the OPG Nuclear Subsidiaries

Each OPG Nuclear Subsidiary and OPG represents and warrants to the Province (in its own right and for the benefit and account of OEFC) as follows and acknowledges that the Province is relying upon the following representations and warranties in connection with the execution of this Agreement:

- 10.1.1 Incorporation. Each OPG Nuclear Subsidiary and OPG is duly incorporated and validly exists under the laws of the Province of Ontario.
- 10.1.2 Corporate Power, Due Authorization and Binding Agreement. Each OPG Nuclear Subsidiary and OPG has the corporate power and capacity to enter into and perform its obligations under this Agreement. This Agreement has been duly authorized, executed and delivered by each OPG Nuclear Subsidiary and OPG and is a valid and binding obligation of each of them enforceable in accordance with its terms, subject to the usual exceptions as to bankruptcy and the availability of equitable remedies.
- 10.1.3 No Contravention. The execution, delivery and performance of this Agreement by each OPG Nuclear Subsidiary and OPG does not and will not contravene the provisions of its respective articles, by-laws, constating documents or other organizational documents or any other agreement to which it is a party or by which it is bound.

10.1.4 Approvals and Consents. All necessary authorizations, consents or approvals of, or filings with or notices to, any Governmental Body, including the Applicable Regulator, or any other Person, have been obtained to permit the execution, delivery and performance of this Agreement by each OPG Nuclear Subsidiary and OPG.

10.1.5 No Defaults. OPG and the OPG Nuclear Subsidiaries (and, to the best of OPG's knowledge, any other Person operating any Station or Other Facility), hold all necessary Licences required by the *Nuclear Safety and Control Act* (Canada) for their respective Stations and Other Facilities and none of them is in material violation of any such Licence or any Applicable Law. No Default or Event of Default has occurred and remains outstanding.

10.2 Investigation Does Not Affect Representations

Any investigation by a Party and/or its advisors shall not mitigate, diminish or affect the representations and warranties of the other Parties.

10.3 Survival

Each of the following shall survive the termination of this Agreement and be enforceable by the Province and OEFC against OPG and each OPG Nuclear Subsidiary and where applicable by OPG against the Province and OEFC: the representations and warranties of OPG and each OPG Nuclear Subsidiary contained in this Agreement; and the provisions of each of sections 2.4, 3.11, 4.8, 7.4, 9.4, 13.4, 14.4 and Article 11 and Schedule 11.2.

Article 11 -

VALUATION AND DISPUTE RESOLUTION

11.1 Valuation Procedures

11.1.1 Financial Issue. Any dispute relating to any matter that is a Financial Issue shall be resolved under subsection 11.1.3.

- 11.1.2 Disputes Other Than Financial Issues. Any dispute relating to any matter that is not a Financial Issue shall be resolved under section 11.2.
- 11.1.3 Financial Professional. Any Financial Issue shall be determined by a Financial Professional. Either OPG or the Province may notify the other Party that a Financial Issue has arisen. The Province shall select the Financial Professional to adjudicate the Financial Issue in question within five (5) Business Days of the notice being delivered. As soon as practically possible after the selection of the Financial Professional by the Province, each of OPG and the Province agrees to provide the other and the Financial Professional with its calculation of the relevant amount, together with all backup information required or reasonably requested by the Financial Professional, to the extent it has previously performed such calculation. Each of the Province and OPG shall have the right to provide to the other and to the Financial Professional such response to the materials previously provided by the other Party within 30 days of receipt thereof. The Province and OPG otherwise agree to provide the Financial Professional and each other with all relevant information in a timely manner and in form and content reasonably required by the Financial Professional. Based and relying on such filed material, the Financial Professional will make its preliminary determination on the Financial Issue within 30 days after receiving the responding materials, if any, or the deadline for receiving responding materials having expired or, if not applicable, within 30 days after receiving all relevant information from the Province and OPG. Each of OPG and the Province shall have the right to make further written submissions to the Financial Professional within 10 days following delivery of its preliminary determination. The Financial Professional shall consider any such further written submissions and shall within 10 days after receipt thereof either confirm or vary its initial determination. Subject to section 44 of the *Arbitration Act, 1991* (Ontario), the final determination of the Financial Professional shall be final and binding on OPG and the Province and there shall be no appeal of the Financial Professional's decision whatsoever, including any appeal to a court on a question of law, a question

of fact, or a question of mixed law and fact. The application of subsection 7(2) of the *Arbitration Act, 1991* (Ontario) is expressly excluded. The expenses of the Financial Professional shall be borne by the Segregated Fund(s) in question and shall be deemed to be an Eligible Cost of the subject Segregated Fund.

11.2 Dispute Resolution Procedure

Any Dispute shall be determined in accordance with Schedule 11.2 that sets out the sole and exclusive procedure for the resolution of Disputes. The resolution of a Dispute pursuant to the terms of Schedule 11.2 shall, subject to section 44 of the *Arbitration Act, 1991* (Ontario), be final and binding upon the Parties and there shall be no appeal from the decision of the Arbitrator(s), including any appeal to a court on a question of law, a question of fact, or a question of mixed law and fact. The application of subsection 7(2) of the *Arbitration Act, 1991* (Ontario) is expressly excluded.

11.3 Exercise of Discretion

The exercise of a discretion expressly conferred on one Party alone by the terms of this Agreement cannot, for the purposes of this Agreement, be the subject matter of a Dispute or a Financial Issue. Notwithstanding the foregoing, where a Party is required by the terms of this Agreement to act reasonably in making a decision or providing an approval, the question of whether it has acted reasonably may be the subject matter of a Dispute or a Financial Issue.

11.4 OPG and the Province Alone

Any Dispute and any Financial Issue that an OPG Nuclear Subsidiary may wish to initiate shall only be done by it through OPG as agent or otherwise. Any Dispute or Financial Issue that OEFC may wish to initiate shall only be done by it through the Province as agent or otherwise.

Article 12 -
Transferability

12.1 Transfers - General

Neither this Agreement nor the rights and obligations of OPG or any OPG Nuclear Subsidiary under this Agreement may be Transferred, amended or otherwise changed, in whole or in part, without the prior written approval of the Province, which approval may be granted, with or without conditions, or withheld in the sole discretion of the Province. For greater certainty, the Parties agree that the foregoing right of the Province, being the exercise of an absolute discretion by the Province, cannot be the subject matter of a Dispute, either under this Agreement or under any other proceeding at law initiated by OPG or any OPG Nuclear Subsidiary.

12.2 Prompt Notification

12.2.1 Notice of Certain Transactions.

- (a) OPG agrees promptly to notify and advise the Province in writing upon OPG or any OPG Nuclear Subsidiary entering into serious discussions relating to any of the following events and such notice shall include copies of relevant documents and a brief description of the event and OPG's views regarding the impact of the event on the matters dealt with in this Agreement:
 - (i) if the licensed operator for any Station or Other Facility changes to a Person other than OPG or an OPG Nuclear Subsidiary;
 - (ii) if any Person other than OPG or an OPG Nuclear Subsidiary acquires a Controlling Interest in a Station or Other Facility;
 - (iii) if any Person other than OPG or an OPG Nuclear Subsidiary acquires a Controlling Interest in any OPG Nuclear Subsidiary;or

(iv) a subsidiary of OPG becomes an OPG Nuclear Subsidiary;

provided that an acquisition of a Controlling Interest in OPG shall be deemed to not constitute any of the foregoing events (i), (ii) or (iii).

- (b) At least 30 Business Days prior to the closing of any transaction arising out of any of the events referred to in subparagraphs 12.2.1(a)(i), (ii) or (iii), OPG agrees to provide to the Province copies of the then current agreements and other documents proposed to be or which have been executed and delivered by OPG or any OPG Nuclear Subsidiary owned in whole or in part by OPG in respect of the proposed transaction. OPG agrees to provide the Province and its advisors with a reasonable opportunity prior to the said closing to ask questions of, and be briefed by, appropriate personnel and advisors of OPG or any such OPG Nuclear Subsidiary in respect of the event in question.
- (c) Notwithstanding anything to the contrary in this subsection 12.2.1, if neither OPG nor any OPG Nuclear Subsidiary owned in whole or in part by OPG is a party to any of the agreements relating to any of the events referred to in subparagraphs 12.2.1(a)(i), (ii) or (iii), OPG shall not be required to comply with any of the foregoing provisions of this subsection 12.2.1.
- (d) With respect to any Transfer to which section 12.1 applies, OPG agrees to provide such notices, documentation, analysis, copies of documentation and opportunity to the Province to meet with appropriate personnel and ask questions in respect of the transaction giving rise to the Transfer in the manner and at the times described in paragraphs 12.2.1(a) and (b) as if such paragraphs applied to the transaction giving rise to such Transfer.

12.3 Provincial Consent to Certain Transactions

Unless the Province has first provided to OPG or an OPG Nuclear Subsidiary, as applicable, its prior written consent, with or without conditions (any such conditions to be reasonable in the circumstances) and such consent not to be unreasonably withheld or delayed, neither OPG nor any applicable OPG Nuclear Subsidiary shall close any transaction referred to in any of subparagraphs 12.2.1(a)(i), (ii) or (iii). In determining whether or not to provide its consent or whether or not to impose conditions on its consent under this section 12.3, the Province shall only consider the effect, if any, of the transaction on the ability of OPG, and the ability of any applicable OPG Nuclear Subsidiary, to perform its obligations under this Agreement.

12.4 Written Acknowledgement

No approval of any Transfer under section 12.1 shall be effective unless the proposed Transferee (or Person who acquires the interest in question) has first executed and delivered an acknowledgement addressed to the Parties (in form and substance acceptable to the Province) under which such Transferee or Person agrees to be bound by the provisions of this Agreement. Upon any subsidiary of OPG becoming an OPG Nuclear Subsidiary, such subsidiary shall execute and deliver an acknowledgement, as aforesaid.

Article 13 - EVENTS OF DEFAULT

13.1 Events of Default

If any Event of Default shall occur and be continuing, then the Province may in its sole discretion by delivery of a Default Notice exercise any one or more of the remedies provided for in section 13.3. For greater certainty, the Parties agree that the foregoing right of the Province to exercise its remedies (but for greater certainty not its determination as to whether an Event of Default has occurred), being the exercise of an absolute discretion by the Province, cannot be the subject matter of a Dispute or

Financial Issue under this Agreement or of any other proceeding at law initiated by OPG or any OPG Nuclear Subsidiary. Any Event of Default that is cured within the applicable cure period (or within such further or other cure period consented to in writing to by the Province, or compliance in respect of which is waived by the Province) shall be deemed not to be a continuing Event of Default under the terms of this Agreement.

13.2 Notice of Default

Each of OPG and the OPG Nuclear Subsidiaries agrees that it shall, as soon as practicable and in any event within five (5) Business Days after the occurrence of each Default or Event of Default, deliver a written statement of its chief financial officer or its chief operating officer or any other senior officer (given by such officer on behalf of OPG or the subject OPG Nuclear Subsidiary without personal liability) setting forth the details of such Default or Event of Default and the action which OPG or any OPG Nuclear Subsidiary proposes to take or has taken with respect thereto.

13.3 Remedies Upon Default

13.3.1 Provincial Right to Initiate Actions. At any time following the delivery of a Default Notice, the Province may, at its discretion, commence such legal action or proceedings as it, in its sole discretion, may deem expedient, including, the commencement of enforcement proceedings under this Agreement, or making of an application for a mandatory injunction to require OPG and/or one or more of the OPG Nuclear Subsidiaries to comply with any obligation imposed on it by the terms of this Agreement. For greater certainty, the Parties agree that the foregoing right of the Province, being the exercise of an absolute discretion by the Province, cannot be the subject matter of a Dispute or Financial Issue under this Agreement or of any other proceeding at law initiated by OPG or any OPG Nuclear Subsidiary.

13.3.2 Rights Cumulative. The rights and remedies of the Province hereunder are cumulative and are in addition to and not in substitution for any other rights or remedies available to the Province by contract, Applicable Law or either of

section 3.11 or 4.8. Nothing contained herein nor any act or omission of the Province shall in any way prejudice or affect the rights, remedies and powers of the Province hereunder.

13.3.3 Injunctive Relief. Each Party acknowledges and agrees that any material breach by OPG or any of the OPG Nuclear Subsidiaries of their respective material obligations under this Agreement would constitute immediate and irreparable harm to the Province, and that the Province shall be entitled to specific performance or injunctive relief to enforce any such material obligation in addition to whatever remedies the Province may be otherwise entitled to at law or in equity, without being required to prove irreparable harm or to post a bond or other security.

13.4 Indemnity

OPG and each OPG Nuclear Subsidiary hereby jointly and severally covenant and agree to indemnify and hold each of the Indemnified Parties harmless from, and to pay to each such Indemnified Party on demand any amounts required to compensate such Indemnified Party for any claim or loss suffered by, imposed on or asserted against such Indemnified Party as a result of, in respect of, connected with or arising out of any of: (a) a default (whether or not constituting a Default or an Event of Default) by OPG or any OPG Nuclear Subsidiary hereunder; (b) any proceedings brought by a third party against the Province as a result of its performance of its obligations under this Agreement or providing any Commitment in Lieu or the Financial Guarantee; (c) any proceedings brought by a third party against OEFC due to OEFC performing its obligations under this Agreement or providing an OEFC Commitment in Lieu; or (d) any proceedings brought by a third party against the Province or OEFC arising as a result of the use of the proceeds from either of the Segregated Funds, provided that if any amount required to compensate an Indemnified Party under any of the foregoing provisions would, if incurred by OPG, be a Used Fuel Eligible Cost or a Decommissioning Eligible Cost, such amount will not be indemnified under this section 13.4, but instead shall be deemed to be a Used Fuel Eligible Cost or Decommissioning Eligible Cost, as the case may be, in respect of which the Province

shall have a right to be reimbursed out of the Used Fuel Segregated Fund or Decommissioning Fund, as applicable.

Article 14 - GENERAL

14.1 Compliance with this Agreement

OPG and each OPG Nuclear Subsidiary agree to comply at all times with the terms and conditions of this Agreement and if an obligation of OPG must be performed by an OPG Nuclear Subsidiary, OPG agrees to cause that OPG Nuclear Subsidiary to perform such obligation and OPG agrees to cause any required meetings to be held, votes to be cast, resolutions to be passed, documents to be executed and all other things and acts to be done to ensure that OPG and each affected OPG Nuclear Subsidiary does so. The Province agrees to comply at all times with the terms and conditions of this Agreement and to cause OEFC to comply with all obligations to be performed under the Agreement by OEFC and agrees to make all reasonable efforts in the circumstances to cause any required meetings to be held, votes to be cast, resolutions to be passed, documents to be executed and all other things and acts to be done to ensure that both it and OEFC do so.

14.2 Compliance with Applicable Law

Each Party agrees to comply at all times with the requirements of all Applicable Law in performing its obligations under this Agreement.

14.3 Changes in Applicable Law

If it becomes necessary to change the structure of the Segregated Funds to comply with the requirements of Applicable Law or any Applicable Regulator, the Province and OPG agree to negotiate in good faith such amendments to this Agreement as may be necessary to comply with such changes.

14.4 Confidential Information

14.4.1 Confidential Information. Except to the extent required to perform its obligations under this Agreement, and subject to the right to disclose Confidential Information to any Financial Professional, Arbitrator, outside counsel, auditor, financial consultant or other advisor, each Party agrees not to disclose to any Person Confidential Information which is provided to it to assist it in performing its duties under this Agreement, including Reference Plans, Annual Budgets and Cost Estimates, unless and to the extent that (a) the Confidential Information is or becomes publicly known through no fault of such Party or (b) such Party (as the case may be) is required to disclose such Confidential Information by the order of a court of competent jurisdiction or Applicable Law, including the *Freedom of Information and Protection of Privacy Act* (Ontario). Each page of Confidential Information shall be clearly and prominently marked with the legend "CONFIDENTIAL", but failure to so mark each page shall in no way diminish a Party's obligations with respect to that Confidential Information.

14.4.2 Prejudice to Competitive Position. The Province acknowledges that OPG has informed it that the Confidential Information to be supplied to the Province (or to its representatives) by OPG (or by its representatives) under the terms of this Agreement will include trade secrets, scientific information, technical information, commercial information and/or financial information, the disclosure of which would either prejudice OPG's competitive position or interfere significantly with OPG's contractual or other negotiations and such disclosure would result in undue loss to OPG or gain for OPG's competitors.

14.5 OPG Reports

Each of OPG and the OPG Nuclear Subsidiaries agrees promptly upon the issuance thereof, to provide to the Province as reasonably requested by the Province copies of all notices, reports, press releases, circulars, offering documents and other documents filed by OPG or any OPG Nuclear Subsidiary with, or delivered to, any

Governmental Body in any jurisdiction relating to Management of Nuclear Waste or Decommissioning of Stations or Other Facilities, including copies of all WMO documentation which in any way relates to the subject matter of this Agreement. In addition to the foregoing, OPG and each OPG Nuclear Subsidiary agree to provide, and to cause the WMO (if and when constituted and to the extent that OPG is able) to provide to the Province as reasonably requested by the Province all other reports and information regarding Management of Nuclear Waste or Decommissioning of Stations or Other Facilities by OPG and the OPG Nuclear Subsidiaries as the Province may from time to time reasonably request in writing, including draft documents shared with staff of any Applicable Regulator under Nuclear Legislation relating to the Management of Nuclear Waste or the Decommissioning of Stations or Other Facilities.

14.6 Notices

Any notice or other communication required or permitted to be given under this Agreement shall be in writing and shall be given by facsimile or by delivery by hand to the applicable address noted below either to the individual designated below or to an individual at that address having apparent authority to accept deliveries on behalf of the addressee. Any notice or other communication if sent by facsimile after 4:00 p.m. (Toronto time) shall be deemed to have been received on the Business Day following the successful transmission thereof, or if delivered by hand after 4:00 p.m. (Toronto time) shall be deemed to have been received on the next Business Day. Notice of change of address shall also be governed by this section 14.6. Notices and other communications shall be addressed as follows:

(a) If to the Province:

Ministry of Finance
6th Floor, Frost Building South
7 Queen's Park Crescent East
Toronto ON
M7A 1Y7

Attention: The Assistant Deputy Minister
Ontario Electricity Restructuring Secretariat
Telecopier No.: (416) 325-1565

(b) If to OEFC:

Ontario Electricity Financial Corporation
14th Floor
1 Dundas Street West
Toronto, ON
M7A 1Y7

Attention: Chief Executive Officer
Telecopier No.: (416) 325-8327

(c) If to OPG or to any of the OPG Nuclear Subsidiaries:

Ontario Power Generation Inc.
700 University Avenue
Toronto, ON
M5G 1X6

Attention: General Counsel
Telecopier No.: (416) 592-1466

14.7 Time of Essence

Time is of the essence of this Agreement.

14.8 Headings and Table of Contents

The inclusion of headings and a table of contents in this Agreement are for convenience of reference only and shall not affect its construction or interpretation.

14.9 Gender, Number and Persons

In this Agreement, unless the context otherwise requires, words importing the singular include the plural and *vice versa* and words importing gender include all genders. Any reference to a Person in this Agreement shall be deemed to be reference

to the respective heirs, executors, administrators, personal representatives, successors and permitted assigns of such Person. The Parties agree that each of the Province and OEFC shall have the right to delegate any of their respective rights and obligations under this Agreement to an agent duly appointed by the Province or OEFC, as the case may be, and the Province agrees to provide (and agrees to cause OEFC to provide) confirmation in writing to OPG as it may reasonably require of the authority and power of any such agent so appointed by the Province or OEFC, as aforesaid, provided that any such delegation shall in no way relieve, release or discharge either the Province or OEFC from any of its respective liabilities or obligations under this Agreement.

14.10 Currency

All references to “dollars”, “Dollars”, “\$” or amounts referred to in currency shall mean references to Canadian currency.

14.11 “Including”

The words “including”, “include”, “includes” and “included” when used in this Agreement mean “including, without limitation,” “include, without limitation”, “includes without limitation,” and “included, without limitation,” respectively.

14.12 Generally Accepted Accounting Principles

Except as otherwise specifically provided in this Agreement, all accounting terms shall be applied and construed in accordance with GAAP.

14.13 Statutes

Any reference in this Agreement to a statute or to a regulation or rule promulgated under a statute or to any provision of a statute, regulation or rule shall be a reference to the statute, regulation, rule or provision, as amended, re-enacted or replaced from time to time.

14.14 Entire Agreement

This Agreement, each of the agreements referred to in subsection 8.1.2, any documentation arising out of the operation of either of sections 3.2 and 4.2, the OEFC Commitment in Lieu, any Provincial Commitment in Lieu, any Financial Guarantee, any side letter or other agreement in writing exchanged between the Province and OPG relating to the sharing of certain indemnity costs and any amendment to any of the foregoing made in compliance with section 14.15 constitute the entire agreement among the parties hereto pertaining to the subject matter of this Agreement and supersedes and replaces all other prior agreements and understandings. There are no representations, warranties or conditions (expressed or implied) and there are no agreements in connection with that subject matter except as specifically set forth or referred to in this Agreement or the agreements referred to above. No reliance is placed on any representation, warranty, opinion, advice or assertion of fact made either before, at the time of, or after entering into this Agreement, or any amendment or supplement to it, by any Party or its employees, directors, officers or agents, to any other Party or its directors, officers or agents, except to the extent reduced to writing and included as a term of this Agreement, or the agreements referred to above. None of the Parties has been induced to enter into this Agreement or any amendment or supplement by reason of any representation, warranty, opinion, advice or assertion of fact not specifically set forth or referred to in this Agreement, or the agreements referred to above. Accordingly, there shall be no liability, either in tort or in contract, assessed in relation to any representation, warranty, opinion, advice or assertion of fact not specifically set forth or referred to in this Agreement, or the agreements referred to above.

14.15 Waiver and Amendment

Except as expressly provided in this Agreement, no amendment or waiver of this Agreement shall be binding unless executed in writing by the Party to be bound by the amendment or waiver. No waiver of any provision of this Agreement shall constitute a waiver of any other provision nor shall any waiver of any provision of this Agreement constitute a continuing waiver unless otherwise expressly provided.

14.16 Payments in Cash

Wherever this Agreement requires an amount to be paid (including any Payment, the OEFC Payment, any Provincial Payment, any payment under the Financial Guarantee or any Disbursement), such payment shall be made when due in Cash unless otherwise expressly provided for by the terms of this Agreement.

14.17 Determination of Rates of Return

The assumptions and methodology used by any Party in calculating any of the Used Fuel Segregated Fund Rate of Return, the Decommissioning Segregated Fund Rate of Return, and all historical and other rates of return for the purposes of this Agreement shall in all circumstances be to the satisfaction of the Province, acting reasonably.

14.18 Compliance with the Requirements of Applicable Regulator

The Parties acknowledge that Applicable Law or an Applicable Regulator may require OPG to structure one or more of the Segregated Funds or any other funds established under this Agreement in a manner otherwise than as provided by this Agreement, the Segregated Fund Custodial Agreements and the Segregated Fund Management Agreements. The Province agrees to take into account any such requirement of Applicable Law or the Applicable Regulator in effect from time to time, and to facilitate OPG's or an OPG Nuclear Subsidiary's compliance therewith. OPG and the OPG Nuclear Subsidiaries acknowledge that earnings of the Segregated Funds may

be adversely affected by the treatment of the Segregated Funds under the *Income Tax Act* (Canada).

14.19 Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable in the Province of Ontario.

14.20 Further Assurances

Each of the Parties otherwise agrees to promptly do, make, execute, deliver, or cause to be done, made, executed or delivered, all such further acts, documents and things another Party may reasonably require from time to time for the purpose of giving effect to this Agreement and agrees to use reasonable efforts and to take all the steps as may be reasonably within its power to implement to the fullest extent the provisions of this Agreement.

14.21 Invalidity of Provisions

Each of the provisions contained in this Agreement is distinct and severable and a declaration of invalidity or unenforceability of any provision or part of a provision by a court of competent jurisdiction shall not affect the validity or enforceability of any other provision of this Agreement. To the extent permitted by Applicable Law, the parties waive any provision of Applicable Law that renders any provision of this Agreement invalid or unenforceable in any respect. The parties shall engage in good faith negotiations to replace any provision which is declared invalid or unenforceable with a valid and enforceable provision, the economic effect of which comes as close as possible to that of the invalid or unenforceable provision which it replaces. No Arbitrator shall have the authority to, and no Arbitrator shall, make a determination that any provision of this Agreement (or part thereof) is invalid or unenforceable.

14.22 Enurement

This Agreement shall enure to the benefit of and be binding upon the Parties and their respective successors and permitted assigns.

14.23 No Duplication

For greater certainty, the Province acknowledges that any obligations required to be performed by OPG and the OPG Nuclear Subsidiaries are to be performed without duplication.

14.24 Counterpart Execution

The Parties agree that this Agreement may be executed in one or more counterparts and the execution of at least one counterpart copy of this Agreement by each of the Parties shall constitute full and proper execution of the Agreement.

IN WITNESS WHEREOF the parties have executed this Agreement

SCHEDULE 1
OPG NUCLEAR SUBSIDIARIES

OPG DARLINGTON INC.

OPG DARLINGTON WASTE INC.

OPG PICKERING INC.

OPG PICKERING WASTE INC.

OPG-HURON A INC.

OPG-HURON B INC.

OPG WASTE INC.

OPG-HURON COMMON FACILITIES INC

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SCHEDULE 1.1

DEFINITIONS

In this Agreement capitalized terms have the meanings set out in this Schedule 1.1:

- 1.1 **“1999 Reference Plans”** means the Reference Plans issued by OPG as at January 1, 1999, copies of which have been provided to the Province.
- 1.2 **“Actual Used Fuel Fund Value”** has the meaning attributed thereto in paragraph 3.7.1(a).
- 1.3 **“Adjusted Cost Estimate”** means, at any time, the Approved Cost Estimate minus the January 1, 1999 Present Value of any Incremental Costs calculated on the basis of the then current Approved Reference Plan.
- 1.4 **“Agreement”** means this agreement and all Schedules attached to this Agreement, in each case as they may be amended, restated or supplemented from time to time, and unless otherwise indicated, references to Articles, sections and Schedules are to Articles, sections and Schedules in this Agreement.
- 1.5 **“Annual Budget”** means a calendar year Budget.
- 1.6 **“Answer”** means a written response by the Respondent who is subject to a Dispute Resolution stating in sufficient detail its position with respect to the material facts in the Claim and the material facts on which it intends to rely, and the relief, if any, being sought by it.
- 1.7 **“Applicable Law”** means for any Person, property, agreement, transaction or event, all applicable Canadian federal, provincial or municipal laws, statutes, by-laws, codes, ordinances, decrees, rules, regulations, policies, guidelines and judicial, arbitral, administrative, ministerial, departmental or regulatory judgments, orders, decisions, directives, rulings or awards, general principles of common law and conditions of any grant of approval, permission, authority or License of any

Canadian federal or provincial court, statutory body, self-regulatory authority or other Governmental Body, including, for greater certainty, the Applicable Regulator.

- 1.8 **“Applicable Regulator”** means the CNSC, any successor thereto appointed under the *Nuclear Safety and Control Act* (Canada), and any other Person with authority under Applicable Law and including, for greater certainty, all such enactments of any regional or municipal government or their respective agencies and boards.
- 1.9 **“Approved Budget”** means, subject to subsection 5.4.2, an Annual Budget, including any revisions thereto, which:
- (a) implements an Approved Reference Plan except to the extent that the Province, acting reasonably, objects that the amount allocated to a particular item in the Annual Budget is not in accordance with Good Utility Practices; or
 - (b) implements a Reference Plan which OPG reasonably expects will, in substance, be submitted to and approved by the Province or its agent under Article 5, acting reasonably, providing that the Province or its agent under Article 5 has approved the Annual Budget.
- 1.10 **“Approved Cost Estimate”** means the Present Value (as of January 1, 1999) of the estimate of the aggregate of all Used Fuel Eligible Costs (other than (a) all brokerage fees paid in respect of the Used Fuel Segregated Fund, (b) fees paid or payable to the Used Fuel Segregated Fund Managers or Used Fuel Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds, and (c) fees paid or payable to any other Person which are Used Fuel Eligible Costs pursuant to paragraph 3.1.1(f)) calculated on the basis of the then current Approved Reference Plan.

- 1.11 **“Approved Reference Plan”** means a Reference Plan for Nuclear Waste Management and/or Decommissioning of Stations and Other Facilities that has been approved by the Province (or its agent) as provided in Article 5 and thereafter approved, if required, by the Applicable Regulator under Nuclear Legislation. The 1999 Reference Plan shall be deemed for the purposes of this Agreement to be the Approved Reference Plan as at the date of the execution and delivery of this Agreement.
- 1.12 **“Arbitrator”** and **“Arbitrators”** mean the arbitrator or arbitrators (as the case may be) appointed under item 4 of Part II of Schedule 11.2.
- 1.13 **“Auditor”** means the Person appointed as auditor under subsection 9.3.1.
- 1.14 **“Balance to Complete Cost Estimate”** means the Decommissioning Balance to Complete Cost Estimate or the Used Fuel Balance to Complete Cost Estimate, as the case may be.
- 1.15 **“Bruce Extraordinary Payment”** shall have the meaning attributed to it in paragraph 3.4.2(a).
- 1.16 **“Budget”** means, for the period covered by the budget in question, a projection at a level of detail reasonable in the circumstances of Eligible Costs, Incremental Costs, costs other than Eligible Costs and Disbursements.
- 1.17 **“Business Day”** means any day, other than Saturday, Sunday or any other holiday (as such term is used in the Rules of Civil Procedure for the Province of Ontario).
- 1.18 **“CANDU Reactor”** means a pressurized heavy water reactor located at a Station that is commonly known as a CANDU reactor.
- 1.19 **“Cash”** means cash, certified cheque, bank draft or wire transfer.
- 1.20 **“Claim”** means a written statement setting out in detail the material facts on which a Claimant intends to rely and the relief that it claims under a Dispute Resolution.

- 1.21 **“Claimant”** means the Party submitting a claim in respect of a Dispute subject to Dispute Resolution under item 2 of Part I of Schedule 11.2.
- 1.22 **“CNSC”** means the Canadian Nuclear Safety Commission established under the *Nuclear Safety and Control Act* (Canada) and any successor agency, board or commission.
- 1.22.1 **“CNSC Payee”** means the CNSC or any Person designated by the CNSC as entitled to receive Disbursements pursuant to a CNSC Access Agreement.
- 1.23 **“Commitment in Lieu”** means any written commitment executed and delivered by the Province in respect of the Used Fuel Segregated Fund or by OEFC in respect of the Decommissioning Segregated Fund (as the case may be) pursuant to which the Province agrees to make a payment in Cash to the Used Fuel Segregated Fund or OEFC agrees to make a payment in Cash to the Decommissioning Segregated Fund (as the case may be), each in accordance with the terms of the subject Commitment in Lieu and this Agreement.
- 1.24 **“Committee”** means a committee comprised of the President of OPG (or his/her designate) and the Deputy Minister of Finance (or his/her designate).
- 1.25 **“Compliance Certificate”** means a certificate of OPG signed on its behalf by its chief financial officer, chief operating officer or any other senior officer (given by such senior officer on behalf of OPG without personal liability) stating that (a) the representations and warranties contained in this Agreement are true and correct in all material respects on and as of such date (unless they relate solely to a prior time) or if they are not true and correct, how they are not true and correct; (b) neither OPG nor any OPG Nuclear Subsidiary is in material breach of any of the material covenants contained in this Agreement or in any document delivered pursuant to this Agreement as at the date of the certificate in question, or if OPG or any OPG Nuclear Subsidiary is in material breach of any of the material covenants contained in this Agreement or any document delivered pursuant to this Agreement, as of the date of the certificate in question, stating how OPG or any OPG Nuclear Subsidiary is in material breach of such material covenant; and

(c) no Default or Event of Default has occurred and is continuing or if a Default or Event of Default has occurred and is continuing, states the nature of the Default or Event of Default, giving reasonable details in respect thereof.

- 1.26 **“Confidential Information”** means all confidential or proprietary information, intellectual property (including trade secrets), financial or business information, and confidential facts relating to either (a) the business and affairs of OPG or any OPG Nuclear Subsidiary, (b) a Station or Other Facility, (c) Decommissioning, (d) Nuclear Waste Management or (e) the business and affairs of the Province or OEFC.
- 1.27 **“Controlling Interest”** means *de facto* control of the Person, Station or Other Facility in question, provided a body corporate shall for the purposes of this Agreement be deemed to be controlled by another Person, or by two or more Persons, if, but only if, voting securities of the first-mentioned body corporate carrying more than 20% of the votes for the election of directors are held (other than by way of security) by or for the benefit of such other Person or Persons.
- 1.28 **“Cost Estimate”** means at any time the Decommissioning Cost Estimate, the Decommissioning Balance to Complete Cost Estimate, the Used Fuel Cost Estimate or the Used Fuel Balance to Complete Cost Estimate, as the case may be, at that time.
- 1.29 **“Counter-Claim”** means a written submission in which a Respondent in a Dispute Resolution sets out in detail any other Disputes that it wishes the Arbitrator(s) to decide during a Dispute Resolution initiated by a Claimant.
- 1.30 **“CPI (Ontario)”** shall be determined in accordance with this section, for any date, using the consumer price index for the Province of Ontario (time base 1992 = 100), or the price index most nearly corresponding thereto should the said consumer price index not be published for any time during the period in question, as published for that date by Statistics Canada or any successor or other body which may assume responsibility for the preparation and publishing of the said consumer price index or corresponding index, as the case may be. Where the

SCHEDULE 1.1 – Page 6

CPI (Ontario) is being determined for a date which is the first day of a month, the CPI (Ontario) for that date shall be the reference consumer price index value for the third month preceding that date. Where the CPI (Ontario) is being determined for a date which is not the first day of a month, the CPI (Ontario) for that day shall be the linear interpolation between the reference consumer price index value for the third month preceding that date and the reference consumer price index value for the second month preceding that date. This determination is expressed by the following formula:

$$\text{CPI (Ontario)}_{\text{Date}} = \text{Ref CPI}_{M-3} + \frac{t-1}{D} [\text{Ref CPI}_{M-2} - \text{Ref CPI}_{M-3}]$$

where,

Date = the date for which the CPI (Ontario) is being determined;

D = the number of days after the first day of the calendar month in which the Date falls;

t = the calendar day corresponding to the Date;

Ref CPI_{M-3} is the reference consumer price index for the third calendar month preceding the month in which the Date falls;

Ref CPI_{M-2} is the reference CPI (Ontario) for the second calendar month immediately preceding the month in which the Date falls.

For example, the CPI (Ontario) for October 20, 1994, is calculated as follows:

$$\text{CPI}_{\text{October 20, 1994}} = \text{CPI}_{\text{July, 1994}} + \frac{19}{31} [\text{CPI}_{\text{August, 1994}} - \text{CPI}_{\text{July, 1994}}].$$

1.30.1 “**CNSC Access Agreement**” means any agreement among OPG, the Province and CNSC providing a CNSC Payee a right to receive Disbursements from the Segregated Funds (or any other fund established under section 3.2 or 4.2) for the purposes of satisfying a financial guarantee requirement imposed by the CNSC

under the *Nuclear Safety and Control Act* (Canada) as a condition to the issuance, renewal or amendment of any Licence issued by the CNSC relating to one or more of the Stations or Other Facilities.

1.30.2 **“CNSC Reconciliation Statement”** has the meaning attributed to it in subsection 7.3.4.

1.30.3 **“CNSC Reconciliation Update Statement”** has the meaning attributed to it in subsection 7.3.4.

1.31 **“Decommissioning”** means to remove a Station or Other Facility from service and to reclaim, restore and rehabilitate the Site of such Station or Other Facility, in accordance with Applicable Law, including (a) Safe-Storage of a Station or Other Facility; (b) the dismantlement, decontamination, long-term storage or entombment of the Station or Other Facility, in whole or in part, and any reduction or removal of Radioactive material and other contaminants at the Station or Other Facility Sites, including Nuclear Waste; and (c) all activities necessary for the retirement, dismantlement and decontamination of the Station or Other Facility and any reclamation, restoration and rehabilitation of the Site in order to comply with all Applicable Law, the Licences for the Station or Other Facility, and the Approved Reference Plan, as determined by the Applicable Regulator under Nuclear Legislation. **“Decommission”** and **“Decommissioned”** have corresponding meanings.

1.32 **“Decommissioning Balance to Complete Cost Estimate”** means at any time, the aggregate Present Value of all Decommissioning Eligible Costs (other than (a) all brokerage fees paid in respect of the Decommissioning Segregated Fund, (b) fees paid or payable to the Decommissioning Segregated Fund Managers or Decommissioning Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds, and (c) fees paid or payable to any other Person which are Decommissioning Eligible Costs pursuant to paragraph 4.1.1(o)) that either (i) have been incurred but remain unpaid at the time in question, or (ii) are estimated to be incurred after that time in accordance with an Approved

Reference Plan, in each case other than those Decommissioning Eligible Costs that are to be paid from a Disbursement from the Decommissioning Segregated Fund prior to the time in question.

- 1.33 **“Decommissioning Cost Estimate”** means at any time the sum of (a) the aggregate Present Value of each Decommissioning Eligible Cost (other than (i) all brokerage fees paid in respect of the Decommissioning Segregated Fund, (ii) fees paid or payable to the Decommissioning Segregated Fund Managers or Decommissioning Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds, and (iii) fees paid or payable to any other Person which are Decommissioning Eligible Costs pursuant to paragraph 4.1.1(o)) incurred and paid at or prior to that date, but in no event prior to April 1, 1999, and (b) the Decommissioning Balance to Complete Cost Estimate as at that time.
- 1.34 **“Decommissioning Eligible Costs”** has the meaning attributed to it in subsection 4.1.1.
- 1.35 **“Decommissioning Excluded Costs”** has the meaning attributed to it in subsection 4.1.2.
- 1.36 **“Decommissioning Segregated Fund”** means, at any time, the fund or funds to be established pursuant to the terms of this Agreement to be held, subject to Applicable Law, by the Decommissioning Segregated Fund Custodian under the Decommissioning Segregated Fund Custodial Agreement, the property and assets of which are to be used to fund the payment or reimbursement of Decommissioning Eligible Costs.
- 1.37 **“Decommissioning Segregated Fund Custodial Agreement”** means any agreement to which the Province (or its agent), OPG and a Decommissioning Segregated Fund Custodian are parties providing for the custody and safekeeping of all or part of the property and assets of the Decommissioning Segregated Fund.

- 1.38 **“Decommissioning Segregated Fund Custodian”** means the custodian and/or trustee of the Decommissioning Segregated Fund from time to time under any then outstanding Decommissioning Segregated Fund Custodial Agreement.
- 1.39 **“Decommissioning Segregated Fund Management Agreement”** means any agreement(s) to which the Province (or its agent), OPG and a Decommissioning Segregated Fund Manager are parties fixing investment policies for the Decommissioning Segregated Fund and providing for the investment management (or supervision of the investment management) of all or part of the property and assets of the Decommissioning Segregated Fund.
- 1.40 **“Decommissioning Segregated Fund Manager”** means a manager of the Decommissioning Segregated Fund from time to time under any then outstanding Decommissioning Segregated Fund Management Agreement.
- 1.41 **“Decommissioning Segregated Fund Matching Payment”** means a Provincial Payment to the Used Fuel Segregated Fund made by the Province under subsection 4.7.3 in an amount equal to that sum Disbursed to the Province from the Decommissioning Segregated Fund pursuant to subsection 4.7.3 immediately prior to, or contemporaneously with, the said Provincial Payment to the Used Fuel Segregated Fund.
- 1.42 **“Decommissioning Segregated Fund Rate of Return”** means for any period the rate of return on investments in the Decommissioning Segregated Fund other than any Commitment in Lieu, during that period, net of (a) all brokerage fees paid in respect of the Decommissioning Segregated Fund, (b) fees paid or payable to the Decommissioning Segregated Fund Managers or Decommissioning Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds and (c) fees paid or payable to any other Person which are Decommissioning Eligible Costs pursuant to paragraph 4.1.1(o), expressed as an annual percentage which was compounded annually.

- 1.43 “**Default**” means an event which, with the giving of notice or passage of time, or both, would constitute an Event of Default.
- 1.44 “**Default Notice**” means a written notice delivered by the Province to OPG exercising its rights under Article 13.
- 1.45 “**Disbursement**” means a disbursement, payment or withdrawal pursuant to and in accordance with the terms of this Agreement or as provided for in any Segregated Fund Custodial Agreement or any Segregated Fund Management Agreement from the Used Fuel Segregated Fund or the Decommissioning Segregated Fund, as the case may be. “**Disburse**” and “**Disbursed**” have corresponding meanings.
- 1.46 “**Disbursement Reconciliation**” means a written statement in respect of such period specified by the Province for Disbursements from the Segregated Fund in question as the Province may from time to time request in writing or as otherwise provided by OPG pursuant to the provisions of subsection 9.3.3. The Disbursement Reconciliation shall contain a report for the Segregated Fund in question in form and content acceptable to the Province, acting reasonably, allocating Disbursements as being on account of Used Fuel Eligible Costs, Decommissioning Eligible Costs, Incremental Costs, or Other Fund Costs, and comparing the amounts in question against the corresponding expenses set out in the applicable Approved Budget and statement of intended expenses accompanying the Disbursement requests during the period in question.
- 1.47 “**Discount Rate**” means an annual rate, compounded annually, equal to: (a) for the purposes of calculations regarding the Used Fuel Segregated Fund or any Commitment in Lieu, (i) in respect of a future amount, 3.25% plus the forecasted long-term average Inflation Rate, and (ii) in respect of any amount that that has already been incurred, 3.25% plus the Inflation Rate for the period since the date the amount was incurred; and (b) for the purposes of calculations regarding the Decommissioning Segregated Fund, (i) in respect of a future amount, the forecasted real rate of return used in the then current Approved Reference Plan plus the forecasted long-term average Inflation Rate, and (ii) in respect of any

amount that has already been incurred, the real rate of return set out in each Approved Reference Plan plus the Inflation Rate during the term thereof. As at the effective date of this Agreement, the forecasted long-term average Inflation Rate is 2.5% and the forecasted real rate of return for the purposes of calculations regarding the Decommissioning Segregated Fund is 3.25%.

- 1.48 **“Dispute”** means any dispute arising under this Agreement other than a Financial Issue.
- 1.49 **“Dispute Resolution” or “Dispute Resolution Procedure”** means the Dispute resolution procedure set out in Part II of Schedule 11.2.
- 1.50 **“Disputed Disbursement”** means a Disbursement which the Province believes is not being made in accordance with the terms and conditions of this Agreement, as described in a Disputed Disbursement Notice.
- 1.51 **“Disputed Disbursement Notice”** means a notice in writing addressed by the Province to each of OPG and the Segregated Fund Custodian of a Disputed Disbursement.
- 1.52 **“DSF Collateral”** means, collectively:
- (a) the Decommissioning Segregated Fund;
 - (b) any fund described in subsection 4.2.1, provided only that some or all of the Decommissioning Eligible Costs are intended to be paid or reimbursed from such fund; and
 - (c) for each of the funds described in paragraphs (a) and (b) above, all the property and assets forming part thereof, including any proceeds derived from each such fund and its investments from time to time.

but only in each case to the extent OPG or any OPG Nuclear Subsidiary has an interest therein, including:

- (i) all of OPG's rights under the subject fund custodial agreement;
- (ii) all Payments from time to time once made by OPG or by any other Person to the subject fund and the proceeds therefrom;
- (iii) the subject fund and any Cash, credit balances or deposit accounts maintained pursuant to the provisions of the subject fund custodial agreement, the credit balances thereof and all amounts from time to time on deposit therein;
- (iv) any Yield at any time received and held by the subject fund custodian;
- (v) all instruments, securities and other investments in which all or part of the Cash or credit balances referred to in paragraph (iii) above have been invested and all instruments, securities and other investments held in substitution for any such instruments, securities and other investments previously held or resulting from the renewal or extension of or the investment, re-investment or management of any Cash, investments, Yield proceeds or other funds held by the subject fund custodian pursuant to the subject fund custodial agreement;
- (vi) all proceeds obtained upon the maturity or payment of or sale, disposition or realization of any security, instrument or investment held by the subject fund custodian pursuant to the subject fund custodial agreement;

(vii) all security or certificates for, or evidencing any of, the foregoing; and

(viii) the right to enforce or sue for the performance of any of the foregoing and the full benefit of all rights attaching thereto.

1.53 **“DSF Security”** means the security interest by way of grant, assignment, mortgage and charge in the DSF Collateral.

1.54 **“Eligible Cost”** means any Decommissioning Eligible Cost or any Used Fuel Eligible Cost, as the context requires.

1.55 **“Event of Default”** means any of the following:

- (a) OPG or any OPG Nuclear Subsidiary fails to make a Payment to either of the Segregated Funds or any other fund established under the terms of this Agreement when such amount becomes due and payable or within three (3) Business Days thereof;
- (b) OPG or any OPG Nuclear Subsidiary fails to pay or reimburse any indemnified sum under any of subsection 7.3.4, 7.4.3 or section 13.4, any reimbursement under subsection 9.3.4, or any other financial obligation under the terms of this Agreement including the Provincial Guarantee fee contemplated by section 7.2 when the same becomes due and payable hereunder and, in any case, such failure remains unremedied for a period of three (3) Business Days following written notice thereof to OPG;
- (c) any representation or warranty or certification made by OPG or by any OPG Nuclear Subsidiary or any director or officer of any of them in or pursuant to this Agreement is incorrect when made; unless the circumstances giving rise to such incorrect representation, warranty or certificate (i) would not have in the judgement of the Province (reasonably exercised) a material adverse effect on the rights, powers,

SCHEDULE 1.1 – Page 14

benefits and obligations conferred on the Province by this Agreement or (ii) are capable of modification or rectification (such that, thereafter such representation or warranty would be correct) and such representation or warranty is corrected during a period of 30 days following written notice thereof to OPG;

- (d) OPG or any OPG Nuclear Subsidiary obligated thereby fail to perform, observe or comply with the covenants contained in any of subsections 3.10.1 and 4.7.1 and sections 12.1 and 12.4 unless such failure (i) would not have in the judgement of the Province (reasonably exercised) a material adverse effect on the rights, powers, benefits and obligations conferred on the Province by this Agreement or (ii) is capable of being remedied and is remedied during the 10 days following written notice thereof to OPG;
- (e) OPG or any OPG Nuclear Subsidiary obligated thereby fail to perform, observe or comply with the covenants contained in any of sections 2.3, 2.4, 3.10.3, 9.3.3, 5.1, 5.2, 5.3, 5.4, 8.2, 9.1, 12.2, 14.2 and 14.5 unless such failure (i) would not have in the judgement of the Province (reasonably exercised) a material adverse effect on the rights, powers, benefits and obligations conferred on the Province by this Agreement or (ii) is capable of being remedied and is remedied during the 10 days following written notice thereof to OPG;
- (f) OPG or any OPG Nuclear Subsidiary obligated thereby fail to perform, observe or comply with any other term, covenant or agreement contained in this Agreement on its part to be performed, observed or complied with unless such failure (i) would not have in the judgement of the Province (reasonably exercised) a material adverse effect on the rights, powers, benefits and obligations conferred on the Province by this Agreement or (ii) is capable of being remedied and is remedied during the 30 days following written notice thereof to OPG; or

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- (g) OPG or any OPG Nuclear Subsidiary (i) becomes insolvent or generally fails to pay its debts as such debts become due; (ii) admits in writing its inability to pay its debts generally as such debts become due, or makes a general assignment for the benefit of creditors; (iii) institutes or has instituted against it any proceeding seeking (A) to adjudicate it a bankrupt or insolvent, (B) any liquidation, winding-up, reorganization, arrangement, adjustment, protection, relief or composition of it or its debts under any Applicable Law relating to bankruptcy, insolvency or reorganization or relief of debtors, (C) the entry of an order for relief or the appointment of a receiver, trustee or other similar official for it or for any substantial part of its property or assets, and in the case of any such proceeding instituted against it (but not instituted by it), any such proceeding shall remain undismissed or unstayed for a period of 45 days, or any of the actions sought in such proceeding (including the entry of an order for relief against it or the appointment of a receiver, receiver and manager, monitor, trustee, custodian or other similar official for it or for any substantial part of its property and assets) shall occur; or (D) takes any corporate action to authorize any of the foregoing actions.

1.56 **“Excess”** has the meaning attributed to it in section 8.2.

1.57 **“Excess Used Fuel”** means Used Fuel Bundles in excess of the Used Fuel Bundle Threshold.

1.58 **“Fair Market Value”** of an asset of a Segregated Fund at any time means the fair market value determined by the Segregated Fund Manager(s).

1.59 **“Financial Guarantee”** means one or more written financial commitments or assurances with respect to the Management of Nuclear Waste and/or Decommissioning of Stations and Other Facilities in favour of the CNSC as the CNSC may from time to time require under the *Nuclear Safety and Control Act* (Canada) as a condition to the issuance, renewal or amendment of any Licence

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issued by the CNSC relating to one or more of the Stations or Other Facilities, which may include a CNSC Access Agreement or a Provincial Guarantee.

- 1.60 **“Financial Issue”** means any dispute or failure to agree on a financial calculation, an estimate or a valuation or the amount of any payment, or Disbursement, including: (a) the Present Value of any amount, (b) the Fund Value, (c) the determination of the amount of Payments and Provincial Payments, (d) the determination of the amount of any Commitment in Lieu and any payments in Cash due thereunder, (e) the Fair Market Value of a Segregated Fund or an asset of a Segregated Fund, (f) any required adjustment to the Cost Estimates, (g) any calculation or other estimate required under the provisions of either Article 3 and Article 4, (h) any Disbursement Reconciliation, and (i) the amount of any excess or surplus under any of section 3.7, subsections 3.10.3 or 4.7.3 or section 8.2.
- 1.61 **“Financial Professional”** means an independent financial professional (being an accountant, actuary or other professional with expertise in the relevant area) who is a member of a nationally recognized firm and selected by the Province from a list of candidates agreed to in writing from time to time by OPG and the Province to adjudicate a Financial Issue.
- 1.62 **“Fiscal Quarter”** means each 3-month quarter of a Fiscal Year, which as of the date of this Agreement, shall be a calendar quarter.
- 1.63 **“Fiscal Year”** means the fiscal year of OPG, which as of the date of this Agreement, is the calendar year ending on December 31 in each year.
- 1.64 **“Fixed Used Fuel Fund Value”** has the meaning attributed thereto in paragraph 3.7.1(a).
- 1.65 **“Fund Value”** means, at any time, the Fair Market Value of the Decommissioning Segregated Fund assets at the time in question.

- 1.66 **“GAAP”** means generally accepted accounting principles approved from time to time by the Canadian Institute of Chartered Accountants or any successor institute, applied on a consistent basis.
- 1.67 **“Good Utility Practices”** means any of the practices, methods and activities adopted by a significant portion of the North American electric utility industry as good practices applicable to the Management of Nuclear Waste and Decommissioning of nuclear facilities, taking into account any differences in design, size and capacity of the Stations or Other Facilities or any of the practices, methods or activities which, in the exercise of skill, diligence, prudence, foresight and reasonable judgement by a prudent nuclear operator or used fuel waste facility operator, as the case may be, in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, expedition and Applicable Law. Good Utility Practices are not intended to be limited to the optimal practices, methods or acts to the exclusion of all others, but rather to be practices, methods or acts generally accepted in the North American electric utility industry.
- 1.68 **“Governmental Body”** means any Canadian federal or provincial, parliament or legislature, or any regulatory authority, agency, commission, tribunal board or department of any Canadian government, parliament or legislature, or any Canadian federal or provincial court, or any Canadian law, regulation or rule-making entity, having jurisdiction in the relevant circumstances, or any Person acting under the authority of any Governmental Body, including any regional or municipal governmental bodies.
- 1.69 **“Incremental Costs”** means (a) any costs payable out of any fund required to be established by OPG under any Nuclear Legislation that would not otherwise qualify as Used Fuel Eligible Costs under subsections 3.1.1(a) to (f) plus (b) all tax payments expected to be Disbursed out of the Used Fuel Segregated Fund if and to the extent that at any time either OPG or the Province, acting reasonably, makes a determination that the Used Fuel Segregated Fund is subject to tax of

any nature whatsoever, plus (c) costs described in section 3.1.1 but which would not have been incurred but for the creation of Excess Used Fuel and shall include but not be limited to:

- (i) all incremental costs incurred to expand an existing Used Fuel Repository or to design and construct one or more additional Used Fuel Repositories to store Excess Used Fuel;
- (ii) any incremental costs in obtaining amendment(s) to any Used Fuel Repository Licence to permit storage of Excess Used Fuel or to License an additional Repository for the storage of Excess Used Fuel;
- (iii) any incremental costs for containers for storage and disposal of Excess Used Fuel;
- (iv) any incremental transportation costs (including additional transportation containers and casks and vehicles) for Excess Used Fuel;
- (v) any incremental increase in Repository operating costs arising directly as a result of Excess Used Fuel;
- (vi) any incremental Repository closure, Decommissioning and monitoring costs arising directly as a result of Excess Used Fuel;
- (vii) any other incremental costs of Used Fuel storage, management, transportation and disposal arising directly as a result of Excess Used Fuel; and
- (viii) any incremental fees, commissions and expenses of the nature referred to in paragraph 3.1.1(f) incurred in respect of any assets of

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any fund out of which any of the foregoing Incremental Costs are paid.

- 1.70 **“Indemnified Parties”** means each of the Province, OEFC and their respective officers, directors, employees and advisors.
- 1.71 **“Inflation Rate”** for any period means the rate of change in CPI (Ontario) from the first day to the last day of that period and is expressed as an annual percentage rate. For example, if CPI (Ontario) (as determined in accordance with subsection 1.30) on the first day of the period were 105 and on the last day of the period were 107, and the period were one year, the Inflation Rate for that period would equal 1.90% $(107-105/105 \times 100)$.
- 1.72 **“Licences”** means all licences, permits, certificates, franchises, registrations, rights, privileges and other governmental authorizations, consents and approvals required by Applicable Law for Stations or Other Facilities.
- 1.73 **“Low and Intermediate Level Waste”** means Radioactive material (other than Used Fuel and Radioactive material resulting from chemical separation of Used Fuel into its constituent elements by reprocessing) derived from a Station or Other Facility or any Radioactive material as may be classified as “low level waste” or “intermediate level waste” by the CNSC.
- 1.74 **“Low and Intermediate Level Waste Facility”** means any facility or portion thereof approved by the Applicable Regulator under Nuclear Legislation:
 - (a) for deep geological disposal of some or all Low and Intermediate Level Waste, regardless of the location of the facility, or
 - (b) for the storage or disposal of some or all Low and Intermediate Level Waste where the facility is not at or adjacent to a Station Site.
- 1.75 **“Management”** means, with respect to Nuclear Waste, the removal, transportation, processing, storage or disposal of Nuclear Waste or any other

approach to addressing Nuclear Waste that is approved by an Applicable Regulator. “Manage” and “Managing” have corresponding meanings.

- 1.76 **“Minister of Finance”** means the Minister of Finance in right of Ontario.
- 1.77 **“NFWA Fund”** means the fund to be established by OPG under the *Nuclear Fuel Waste Act* (Canada), if and when enacted, and if such Act imposes an obligation on OPG to establish and maintain such fund.
 - 1.77.1 **“No-Fault Indemnity Payment”** means any amount paid or payable by either the Province or the Ontario Financing Authority or OPG pursuant to the indemnification provisions of (i) any Segregated Fund Custodial Agreement, (ii) any Segregated Fund Management Agreement, or (iii) any other written agreement approved by the Province (or its agent) and OPG with Persons dealing at arm’s length with OPG and each of the OPG Nuclear Subsidiaries for services relating to the custody and management of the Segregated Funds where the indemnification obligation does not arise out of (a) a direction from the Province or the Ontario Financing Authority or OPG or any other action or omission by the Province or the Ontario Financing Authority or OPG, or (b) a breach of the applicable agreement by the Province or the Ontario Financing Authority or OPG.
- 1.78 **“Nuclear Incident”** has the meaning attributed thereto in the *Nuclear Liability Act* (Canada).
- 1.79 **“Nuclear Legislation”** means (a) the *Nuclear Safety and Control Act* (Canada), (b) the *Nuclear Fuel Waste Act* (Canada), if and when enacted, (c) all other federal and/or provincial laws and statutes governing the Management of Nuclear Waste and/or the decontamination, restoration and/or Decommissioning of Stations and/or Other Facilities and/or related Sites, (d) all regulations, rules, decrees, policies, codes, guidelines, orders, decisions, directives, rulings or awards under (a), (b) and (c), and (e) any conditions of any grant of approval, permission, certification, consent, registration, authority or Licence under (a), (b),

(c) or (d), but excluding, for greater certainty, all such regional or municipal enactments.

- 1.80 **“Nuclear Waste”** means, collectively, Low and Intermediate Level Waste and Used Fuel.
- 1.81 **“Operating Period End Date”** for each Station, means the date when the last CANDU Reactor at that Station is expected to be Permanently Shutdown based on the current Approved Reference Plan.
- 1.82 **“OEFC”** means Ontario Electricity Financial Corporation.
- 1.83 Intentionally deleted.
- 1.84 **“OEFC Payment”** means any payment which OEFC is required to make (or has made) to the Decommissioning Segregated Fund in the aggregate amount set out in subsection 4.4.1, which payment may be made in the manner provided for in subsection 4.4.2;
- 1.85 **“OPG”** means Ontario Power Generation Inc.
- 1.86 **“OPG Nuclear Subsidiaries”** means, those corporations listed in Schedule 1, and, at any time following the execution and delivery of this Agreement, each subsidiary of OPG which at that time owns, leases or otherwise has an interest, directly or indirectly, in a Station or Other Facility or which has any responsibility under Applicable Law for Decommissioning a Station or Other Facility or for Management of Nuclear Waste produced at a Station or produced at an Other Facility directly or indirectly as a result of the Management of Nuclear Waste which was produced at a Station, or which undertakes any such Decommissioning or Nuclear Waste Management.

1.87 **“Other Facility”** means and shall be strictly limited to, at any time:

- (a) a Waste Management Facility,
- (b) a Low and Intermediate Level Waste Facility,
- (c) a Repository,
- (d) the tritium removal facility located at the Site of the Darlington Station,
and
- (e) any facility owned and/or operated or to be owned and/or operated by OPG or any OPG Nuclear Subsidiary or any other Person in connection with (i) one or more Stations, or (ii) Nuclear Waste Management, but shall in no circumstances include (A) a Station or (B) any facility which exists on the date of this Agreement and which would otherwise meet the criteria for an **“Other Facility”**, but the costs of which have not been included in the 1999 Reference Plan.

1.88 **“Other Fund Costs”** means (a) costs relating to Decommissioning imposed on OPG or on any OPG Nuclear Subsidiaries by Nuclear Legislation which would not, but for such Nuclear Legislation, have qualified as Decommissioning Eligible Costs, plus (b) all tax payments expected to be Disbursed out of the Decommissioning Segregated Fund if and to the extent that at any time either OPG or the Province, acting reasonably, makes a determination that the Decommissioning Segregated Fund is subject to tax of any nature whatsoever.

1.89 **“Party”** means, at any time, any Person who is a party to this Agreement at the time in question.

1.90 **“Payee”** means a Person or its agent not prohibited by Applicable Law to receive a payment out of a Segregated Fund, including, where so authorized, OPG, any OPG Nuclear Subsidiary, the WMO, the Province or CNSC.

- 1.91 **“Payment”** means any quarterly or other payment which OPG or any OPG Nuclear Subsidiary is required to make, or has made, to a Segregated Fund by the terms of this Agreement or by an Applicable Regulator under Nuclear Legislation.
- 1.92 **“Permanent Shutdown”** means (a) for a CANDU Reactor, the date on which the operator of the CANDU Reactor in question has obtained all necessary Licences from the Applicable Regulators under Nuclear Legislation to discontinue the operation of the CANDU Reactor in question and to Decommission it (or place it in Safe-Storage) in accordance with Applicable Law; (b) for a Station, the date on which the last CANDU Reactor at the Station is Permanently Shutdown and the operator has obtained all necessary Licences from the Applicable Regulators under Nuclear Legislation to Decommission the Site (or place it in Safe-Storage); and (c) in respect of any Other Facility, means the operator of the Other Facility has obtained all necessary Licences from the Applicable Regulators under Nuclear Legislation to Decommission the Site (or place it in Safe-Storage). **“Permanently Shutdown”** has a corresponding meaning.
- 1.93 **“Permitted Encumbrance”** means, with respect to any Person, liens or similar encumbrances arising by operation of law in the ordinary course of business of the Person including: (a) liens incurred and pledges and deposits made in connection with workplace safety insurance, employment insurance, old age pensions and similar legislation and mechanics’, workers’, repairers’ or other similar possessory liens arising in the ordinary course of business; (b) liens of any judgment creditors rendered or claims filed against the Person which the Person is contesting in good faith by proper legal proceedings; (c) inchoate liens and charges incidental to current operations of the Person which have not been filed or perfected pursuant to law against the Person or which relate to obligations which are not yet due and payable; (d) statutory liens of landlords, including rights of distress; and (e) security given in the ordinary course of business by the Person to a public utility or any municipal, regional or Governmental Body in connection with the current operations of the Person.

- 1.94 **“Person”** means (where the context so permits) any individual, partnership, limited partnership, corporation or company, with or without share capital, firm, association, syndicate, trust, trustee, executor, administrator or other legal personal representative, joint venture, sole proprietorship, limited liability company, foundation, unincorporated organization, regional or municipal government, or a Governmental Body (or any department, agency, or political subdivision thereof, or representative of such Governmental Body).
- 1.95 **“Present Value”** of a future or past cost or payment at any time means the value of the cost or payment taking into account the time-value of money, calculated using the Discount Rate during the period between that time and the date the cost was or is to be incurred or the payment was or is to be made, as the case may be. Present Value of a Commitment in Lieu at any time means the amount payable under the Commitment in Lieu if it were paid in Cash at that time, including for greater certainty any interest payable under the Commitment in Lieu as at that time.
- 1.96 **“Present Value Threshold Percentage”** means, at the time at which the calculation is done:
- (a) the Present Value of the assets of the Used Fuel Segregated Fund (calculated based on the assumption that the Used Fuel Segregated Fund has earned the Discount Rate regardless of its actual earnings), including the Present Value of any Used Fuel Segregated Fund Commitment in Lieu,
- expressed as a percentage of
- (b) the then current Used Fuel Balance to Complete Cost Estimate.
- 1.97 **“Prime Rate of Interest”** means the variable per annum reference rate of interest (as announced and adjusted by OPG’s Canadian banker from time to time) for Canadian dollar loans from such bank in Canada and designated by such bank as its “prime rate”, it being understood that such rates may not be

such bank's best or lowest rates. If OPG has more than one Canadian banker, then for the purposes of this definition the bank shall be the Canadian bank among the banks used by OPG with the highest asset value as at December 31 in the immediately preceding calendar year.

1.98 **"Province"** means Her Majesty the Queen in right of Ontario as represented by the Minister of Finance.

1.98.1 **"Provincial Guarantee"** means a written financial commitment or assurance with respect to the Management of Nuclear Waste and/or Decommissioning of Stations and Other Facilities executed and delivered by the Province in favour of the CNSC or such Person designated by the CNSC in a form acceptable to the Province and the CNSC in those circumstances where such financial commitment or assurance is required by the CNSC under the *Nuclear Safety and Control Act* (Canada) as a condition to the issuance, renewal or amendment of any Licence issued by the CNSC relating to one or more of the Stations or Other Facilities.

1.99 **"Provincial Payment"** means any payment which the Province is required to make, or has made, to a Segregated Fund under the terms of this Agreement, which payment may be made in the manner provided for in subsection 3.9.2.

1.100 **"Radioactive"** means a material containing nuclides emitting alpha, beta or gamma radiation, in concentrations or quantities that exceed CNSC regulations or other Nuclear Legislation for unrestricted release into the environment.

1.101 **"Receiver"** means a receiver or a receiver and manager appointed by the Province pursuant to either paragraphs 3.11.6(a) or 4.8.6(a) or by order of a court of competent jurisdiction.

1.102 **"Reference Plan"** means a reference plan at a level of detail reasonable in the circumstances for financial planning purposes, including Cost Estimates, compiled in accordance with this Agreement and Applicable Law, for Nuclear Waste Management and/or Decommissioning of Stations and Other Facilities.

- 1.102.1 **“Refundable Amount”** has the meaning attributed to it in subsection 7.3.3.
- 1.103 **“Remaining Operating Period”** means, subject to subparagraph 3.6.2(b)(ii), subsections 3.6.3 and 4.6.3, the period from that date to the Operating Period End Date.
- 1.104 **“Reply”** means a written submission setting forth a detailed reply, if any, to a Response under a Dispute Resolution.
- 1.105 **“Repository”** means a structure or location, including any central maintenance or other facility approved by the Applicable Regulator under Nuclear Legislation for the storage or disposal of Used Fuel and the storage or disposal of any co-located Low and Intermediate Level Waste, other than a wet bay or dry storage facility located at or adjacent to a Station Site.
- 1.106 **“Respondent”** means the Party receiving notice of a claim in respect of a Dispute subject to Dispute Resolution under item 4(a) of Part II of Schedule 11.2.
- 1.107 **“Safe-Storage”** means a period of time commencing at Permanent Shutdown of a CANDU Reactor, Station or Other Facility and ending on the commencement of dismantling or entombment of such CANDU Reactor, Station or Other Facility, during which time such CANDU Reactor, Station or Other Facility, including Nuclear Waste stored therein, must be safely and securely maintained pursuant to Applicable Law.
- 1.108 **“Segregated Fund”** means either the Used Fuel Segregated Fund, the Decommissioning Segregated Fund or any other fund deemed to be the part of either of the foregoing as the context requires.
- 1.109 **“Segregated Fund Custodial Agreements”** means the Used Fuel Segregated Fund Custodial Agreement and the Decommissioning Segregated Fund Custodial Agreement, as the case may be.
- 1.110 **“Segregated Fund Custodian”** means a custodian of either of the Segregated Funds appointed from time to time pursuant to a Used Fuel Segregated Fund

Custodial Agreement or a Decommissioning Segregated Fund Custodial Agreement.

- 1.111 **“Segregated Fund Management Agreements”** means the Used Fuel Segregated Fund Management Agreement(s) and the Decommissioning Segregated Fund Management Agreement(s).
- 1.112 **“Segregated Fund Manager”** means a manager of all or any part of either of the Segregated Funds appointed from time to time pursuant to either a Used Fuel Segregated Fund Management Agreement or a Decommissioning Segregated Fund Management Agreement.
- 1.113 **“Site”** means the real property forming a part, or used or usable in connection with the operation, of a Station or Other Facility, including any real property used for the disposal of solid or hazardous waste that is included in the real property comprising a Station or Other Facility. Any reference to a Site shall include the surface and subsurface elements including the soil and groundwater present at the Site, and any reference to materials or conditions “at the Site”, including hazardous substances and environmental conditions, shall include all materials and conditions “at, on, in, upon, over, across, under or within” the Site.
- 1.114 **“Special Payment”** has the meaning attributed to it in paragraph 4.7.3(c).
- 1.115 **“Station”** means, at any time, any of the Bruce A, Bruce B, Pickering A, Pickering B and Darlington nuclear generating stations.
- 1.116 **“Station Amount”** has the meaning attributed to it in paragraphs 3.6.2(a) and 4.6.2(a), as applicable.
- 1.117 **“Surplus”** means, at any time, the amount by which the Fund Value (excluding for this purpose assets of the Decommissioning Segregated Fund then allocated to Tax Costs) exceeds 120% of the Decommissioning Balance to Complete Cost Estimate (excluding for this purpose the amount of the Decommissioning Balance to Complete Cost Estimate then allocated to Tax Costs).

1.118 **“Tax Costs”** means those costs described in paragraph (b) of section 1.88 of Schedule 1.1.

1.119 **“Tax Payment”** has the meaning attributed to it in paragraph 4.7.3(c).

1.120 **“Tax Surplus”** means, at any time, the amount by which the Fair Market Value of the assets of the Decommissioning Segregated Fund then allocated to Tax Costs exceeds the portion of the Decommissioning Balance to Complete Cost Estimate then allocated to Tax Costs at that time.

1.121 **“Transfer”** includes any sale, assignment or disposition by which legal title or beneficial ownership passes from one Person to another, or to the same Person in a different capacity, whether or not voluntary and whether or not for value, including any Transfer in connection with the formation of a joint venture or a partnership or the entering into of a management, co-ownership, lease, licence or other agreement, and any agreement to effect any Transfer. The words **“Transferred”**, **“Transferring”**, **“Transferee”** and similar words have corresponding meanings.

1.122 **“Triggering Event”** has the meaning attributed to it in subsection 3.6.1 or subsection 4.6.1, as applicable.

1.123 **“UFSF Collateral”** means, collectively:

- (a) the Used Fuel Segregated Fund;
- (b) any fund described in subsection 3.2.1, provided only that some or all of the Used Fuel Eligible Costs are intended to be paid or reimbursed from such fund; and
- (c) for each of the funds described in paragraphs (a) and (b) above, all the property and assets forming part thereof, including any proceeds derived from each such fund and its investments from time to time,

but only in each case to the extent OPG or any OPG Nuclear Subsidiary has an interest therein, including:

- (i) all of OPG's rights under the subject fund custodial agreement;
- (ii) all Payments from time to time once made by OPG or by any other Person to the subject fund and the proceeds therefrom;
- (iii) the subject fund and any Cash, credit balances or deposit accounts maintained pursuant to the provisions of the subject fund custodial agreement, the credit balances thereof and all amounts from time to time on deposit therein;
- (iv) any Yield at any time received and held by the subject fund custodian;
- (v) all instruments, securities and other investments in which all or part of Cash or credit balances referred to in paragraph (iii) above have been invested and all instruments, securities and other investments held in substitution for any such instruments, securities and other investments previously held or resulting from the renewal or extension of or the investment, re-investment or management of any Cash, investments, Yield proceeds or other funds held by the subject fund custodian pursuant to the subject fund custodial agreement;
- (vi) all proceeds obtained upon the maturity or payment of or sale, disposition or realization of any security, instrument or investment held by the subject fund custodian pursuant to the subject fund custodial agreement;
- (vii) all security or certificates for, or evidencing any of, the foregoing; and
- (viii) the right to enforce or sue for the performance of any of the foregoing and the full benefit of all rights attaching thereto.

- 1.124 **“UFSF Security”** means the security interest by way of grant, assignment, mortgage, and charge in the UFSF Collateral.
- 1.125 **“Under-Funded”** means at the time in question that the Fair Market Value of the assets of the Segregated Fund in question (excluding for the purposes of the Decommissioning Segregated Fund, the assets of the Decommissioning Segregated Fund then allocated to Tax Costs) is less than the Present Value at the time in question of the Segregated Fund’s Balance to Complete Cost Estimate (excluding for the purposes of the Decommissioning Segregated Fund, the portion of the Decommissioning Balance to Complete Cost Estimate then allocated to Tax Costs).
- 1.126 **“Used Fuel”** or **“Used Fuel Bundle”** means natural uranium fuel and the other component parts of nuclear fuel bundles (a) that are withdrawn from a CANDU Reactor at a Station (following irradiation and generating power through nuclear fission) and discharged, and (b) which are not chemically separated into its constituent elements by reprocessing.
- 1.127 **“Used Fuel Balance to Complete Cost Estimate”** means at any time, the aggregate Present Value of all Used Fuel Eligible Costs (other than (a) all brokerage fees paid in respect of the Used Fuel Segregated Fund, (b) fees paid or payable to the Used Fuel Segregated Fund Managers or Used Fuel Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds, and (c) fees paid or payable to any other Person which are Used Fuel Eligible Costs pursuant to paragraph 3.1.1(f)) that either (i) have been incurred but remain unpaid at the time in question, or (ii) are estimated to be incurred after that time in accordance with an Approved Reference Plan, in each case other than those Used Fuel Eligible Costs that are to be paid from a Disbursement from the Used Fuel Segregated Fund prior to the time in question.
- 1.128 **“Used Fuel Bundle Threshold”** means the first 2,230,000 Used Fuel Bundles.

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- 1.129 **“Used Fuel Cost Estimate”** means at any time the sum of (a) the aggregate Present Value of each Used Fuel Eligible Cost (other than (i) all brokerage fees paid in respect of the Used Fuel Segregated Fund, (ii) fees paid or payable to the Used Fuel Segregated Fund Managers or Used Fuel Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds, and (iii) fees paid or payable to any other Person which are Used Fuel Eligible Costs pursuant to paragraph 3.1.1(f)) incurred and paid at or prior to that date, but in no event prior to April 1, 1999, and (b) the Used Fuel Balance to Complete Cost Estimate as at that time.
- 1.130 **“Used Fuel Eligible Costs”** has the meaning attributed to it in section 3.1.1.
- 1.131 **“Used Fuel Excluded Costs”** has the meaning attributed to it in section 3.1.2.
- 1.132 **“Used Fuel Segregated Fund”** means, at any time, the fund or funds to be established pursuant to the terms of this Agreement to be held, subject to Applicable Law, by the Used Fuel Segregated Fund Custodian under the Used Fuel Segregated Fund Custodial Agreement, the property and assets of which are to be used to fund the payment or reimbursement of Used Fuel Eligible Costs.
- 1.133 **“Used Fuel Segregated Fund Custodial Agreement”** means the agreement to which the Province (or its agent), OPG and a Used Fuel Segregated Fund Custodian are parties providing for the custody and safekeeping of all or part of the property and assets of the Used Fuel Segregated Fund.
- 1.134 **“Used Fuel Segregated Fund Custodian”** means the custodian and/or trustee of the Used Fuel Segregated Fund from time to time under any then outstanding Used Fuel Segregated Fund Custodial Agreement.
- 1.135 **“Used Fuel Segregated Fund Management Agreement”** means any agreement(s) to which the Province (or its agent), OPG and a Used Fuel Segregated Fund Manager are parties fixing investment policies for the Used

Fuel Segregated Fund and providing for the investment management (or supervision of the investment management) of all or part of the property and assets of the Used Fuel Segregated Fund.

- 1.136 **“Used Fuel Segregated Fund Manager”** means a manager of the Used Fuel Segregated Fund from time to time under any then outstanding Used Fuel Segregated Fund Management Agreement.
- 1.137 **“Used Fuel Segregated Fund Rate of Return”** means for any period the rate of return on investments in the Used Fuel Segregated Fund, other than any Commitment in Lieu, during that period, net of (a) all brokerage fees paid in respect of the Used Fuel Segregated Fund, (b) fees paid or payable to the Used Fuel Segregated Fund Managers or Used Fuel Segregated Fund Custodian, provided they are, where relating to a service shared among the Segregated Funds, reasonably allocated among the Segregated Funds and (c) fees paid or payable to any other Person which are Used Fuel Eligible Costs pursuant to paragraph 3.1.1(f), expressed as an annual percentage, which was compounded annually.
- 1.138 **“Valuation Date”** has the meaning attributed to it in paragraph 3.7.1(a).
- 1.139 **“Waste Management Facility”** means a facility or portion thereof at or adjacent to a Station Site approved by the Applicable Regulator under Nuclear Legislation for the processing, storage and/or disposal of Nuclear Waste, but does not include any facility or portion thereof for deep geological disposal of Low and Intermediate Level Waste.
- 1.140 **“WMO”** means the waste management organization designated under the *Nuclear Fuel Waste Act* (Canada), if and when enacted, for the Management of Used Fuel under the said Act.
- 1.141 **“Yield”** means, in the context of the Used Fuel Segregated Fund or the Decommissioning Segregated Fund, as the case may be, (a) any interest income received in respect of any Cash, UFSF Collateral or DSF Collateral accounts or

on any investment made pursuant to the provisions of this Agreement or the subject Segregated Fund Custodial Agreement, (b) the proceeds received upon maturity or upon payment or redemption of an investment made pursuant to the provisions of the subject Segregated Fund Custodial Agreement in excess of the price paid for such investment, (c) the proceeds received on the sale, disposition or collection of an investment made pursuant to the provision of the subject Segregated Fund Custodial Agreement in excess of the price paid for such investment, and (d) any other profit, income or yield received as the result of the purchase, holding, collection or disposition of any investment made pursuant to the provisions of the subject Segregated Fund Custodial Agreement.

SCHEDULE 3.3

USED FUEL SEGREGATED FUND ORIGINAL PAYMENT SCHEDULE
(ORIGINAL PAYMENT SCHEDULE 3.3)

The table below sets out the Payments to be made into the Used Fuel Segregated Fund at the end of each Fiscal Quarter of each Fiscal Year starting in 2002. For purposes of this Agreement, each quarterly Payment is allocated to each of the Stations. The January 1, 2002 balance in the Used Fuel Segregated Fund is \$597,769,347, allocated as follows:

Pickering A	Pickering B	Bruce A	Bruce B	Darlington
\$110,933,176	\$91,844,403	\$94,983,791	\$147,486,420	\$152,521,557

Quarterly Payments \$ - Station						
Year	Pickering A	Pickering B	Bruce A	Bruce B	Darlington	Total
2002	21,464,745	17,767,743	26,062,388	26,812,926	21,363,092	113,470,894
2003	21,464,745	17,767,743	26,062,388	26,812,926	21,363,092	113,470,894
2004	21,464,745	17,767,743	26,062,388	26,812,926	21,363,092	113,470,894
2005	21,464,745	17,767,743	26,062,388	26,812,926	21,363,092	113,470,894
2006	21,464,745	17,767,743	26,062,388	26,812,926	21,363,092	113,470,894
2007	21,464,745	17,767,743	26,062,388	26,812,926	21,363,092	113,470,894
2008	21,464,745	17,767,743	26,062,388	26,812,926	21,363,092	113,470,894
2009	21,464,745	17,767,743	-	26,812,926	21,363,092	87,408,506
2010	21,464,745	17,767,743	-	26,812,926	21,363,092	87,408,506
2011	21,464,745	17,767,743	-	26,812,926	21,363,092	87,408,506
2012	21,464,745	17,767,743	-	26,812,926	21,363,092	87,408,506
2013	-	-	-	26,812,926	21,363,092	48,176,018
2014	-	-	-	-	21,363,092	21,363,092
2015	-	-	-	-	21,363,092	21,363,092
2016	-	-	-	-	21,363,092	21,363,092
2017	-	-	-	-	21,363,092	21,363,092
2018	-	-	-	-	21,363,092	21,363,092
2019	-	-	-	-	21,363,092	21,363,092

SCHEDULE 3.3.1

SUMMARY OF 1999 ESTIMATED USED FUEL ELIGIBLE COSTS

The table below sets out the Used Fuel Eligible Costs consistent with the 1999 Reference Plan. The Used Fuel Eligible Costs are shown in both constant 1999 \$ and January 1, 1999 Present Value \$. For the purposes of this Agreement, the Used Fuel Eligible Costs in each year are allocated to each Station.

Year	Constant 1999 \$ Thousand					Total
	Pickering A	Pickering B	Station Bruce A	Bruce B	Darlington	
1999	5,007	4,218	4,362	6,833	6,995	27,416
2000	7,438	6,265	6,479	10,150	10,391	40,721
2001	11,951	10,066	10,410	16,309	16,696	65,432
2002	16,076	13,541	14,003	21,938	22,459	88,018
2003	17,805	14,997	15,510	24,298	24,875	97,485
2004	11,806	9,944	10,284	16,111	16,494	64,639
2005	14,144	11,913	12,320	19,302	19,760	77,439
2006	14,492	12,206	12,623	19,776	20,246	79,344
2007	16,192	13,638	14,104	22,096	22,621	88,652
2008	20,332	17,125	17,710	27,745	28,404	111,316
2009	24,838	20,921	21,635	33,895	34,699	135,987
2010	17,400	14,656	15,156	23,745	24,308	95,265
2011	17,408	14,662	15,163	23,755	24,319	95,307
2012	18,244	15,367	15,892	24,896	25,487	99,886
2013	21,799	18,361	18,989	29,748	30,454	119,351
2014	20,263	17,067	17,651	27,652	28,308	110,941
2015	20,353	17,144	17,729	27,775	28,434	111,436
2016	28,144	23,705	24,515	38,406	39,318	154,088
2017	30,931	26,053	26,943	42,210	43,212	169,348
2018	32,597	27,456	28,394	44,483	45,539	178,468
2019	30,157	25,401	26,268	41,153	42,130	165,108
2020	32,926	27,733	28,681	44,932	45,999	180,271
2021	27,203	22,913	23,696	37,123	38,004	148,938
2022	28,659	24,139	24,964	39,109	40,037	156,908
2023	29,663	24,985	25,838	40,479	41,440	162,404
2024	18,296	15,411	15,937	24,968	25,561	100,174
2025	25,350	21,352	22,081	34,593	35,414	138,791
2026	28,215	23,765	24,577	38,503	39,417	154,478
2027	28,215	23,765	24,577	38,503	39,417	154,478
2028	28,215	23,765	24,577	38,503	39,417	154,478
2029	31,594	23,837	25,147	38,619	39,535	158,731
2030	31,501	23,759	25,066	38,493	39,406	158,225

2031	31,664	23,896	25,208	38,715	39,634	159,117
2032	31,501	23,759	25,066	38,493	39,406	158,225
2033	31,501	23,759	25,066	38,493	39,406	158,225
2034	31,547	25,883	25,106	38,555	39,470	160,560
2035	31,952	26,129	25,066	38,493	39,406	161,046
2036	32,176	26,317	25,261	38,798	39,719	162,270
2037	32,364	26,476	25,425	39,055	39,982	163,302
2038	29,508	24,627	25,255	39,305	39,709	158,405
2039	29,592	24,698	25,866	39,813	39,826	159,795
2040	29,348	24,492	25,654	39,480	44,344	163,318
2041	29,348	24,492	25,654	39,480	44,344	163,318
2042	30,352	25,338	26,528	40,850	45,746	168,815
2043	30,352	25,338	26,528	40,850	45,746	168,815
2044	30,016	25,055	26,235	40,391	45,276	166,973
2045	28,781	24,014	25,159	38,706	40,186	156,846
2046	28,402	23,696	24,830	38,189	39,657	154,773
2047	28,565	23,833	24,971	38,411	39,884	155,664
2048	28,402	23,696	24,830	38,189	39,657	154,773
2049	28,466	23,750	24,886	38,277	39,747	155,125
2050	25,200	20,998	22,040	33,818	35,183	137,239
2051	22,887	19,050	20,026	30,663	31,952	124,579
2052	22,854	19,023	19,997	30,618	31,907	124,399
2053	24,181	20,140	21,153	32,428	33,760	131,661
2054	24,445	20,362	21,382	32,788	34,128	133,105
2055	16,274	13,480	14,967	22,485	22,977	90,182
2056	11,839	9,972	10,312	16,156	16,539	64,817
2057	11,134	9,378	9,698	15,194	15,554	60,958
2058	10,746	9,051	9,361	14,665	15,013	58,835
2059	11,152	9,393	9,714	15,219	15,580	61,059
2060	13,225	11,139	11,519	18,047	18,475	72,405
2061	13,235	11,147	11,528	18,061	18,489	72,460
2062	12,494	10,523	10,883	17,050	17,454	68,404
2063	13,882	11,693	12,092	18,944	19,394	76,005
2064	14,716	12,395	12,819	20,082	20,559	80,570
2065	14,248	12,001	12,411	19,443	19,905	78,007
2066	9,577	8,066	8,342	13,069	13,379	52,432
2067	9,274	7,811	8,078	12,656	12,956	50,775
2068	9,397	7,915	8,185	12,823	13,128	51,448
2069	7,691	6,478	6,700	10,496	10,745	42,111
2070	5,588	4,707	4,868	7,626	7,807	30,597
2071	4,349	3,663	3,788	5,935	6,076	23,811
2072	4,368	3,679	3,805	5,961	6,102	23,915
2073	4,311	3,631	3,756	5,884	6,023	23,605
2074	4,325	3,643	3,768	5,902	6,043	23,681
2075	4,639	3,908	4,041	6,331	6,481	25,400
2076	4,488	3,780	3,909	6,125	6,270	24,572
2077	4,814	4,055	4,194	6,570	6,726	26,358

2078	5,714	4,813	4,977	7,798	7,983	31,285
2079	6,284	5,293	5,474	8,576	8,779	34,407
2080	4,265	3,593	3,715	5,820	5,959	23,352
2081	3,009	2,534	2,621	4,106	4,203	16,473
2082	2,367	1,994	2,062	3,230	3,307	12,960
2083	1,909	1,608	1,663	2,605	2,667	10,453
2084	1,909	1,608	1,663	2,605	2,667	10,453
2085	1,284	1,082	1,119	1,752	1,794	7,031
2086	1,228	1,034	1,069	1,675	1,715	6,722
2087	1,222	1,029	1,064	1,667	1,707	6,688
2088	5,816	4,899	5,066	7,937	8,125	31,844
2089	169	142	147	231	236	925
2090	-	-	-	-	-	-
2091	-	-	-	-	-	-
2092	-	-	-	-	-	-
2093	-	-	-	-	-	-
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

January 1, 1999 Present Value \$ thousand						
Year	Pickering A	Pickering B	Station			Total
1999	4,735	3,988	Bruce A	Bruce B	Darlington	25,925
2000	6,842	5,763	5,960	9,338	9,559	37,463
2001	10,669	8,987	9,294	14,560	14,906	58,416
2002	13,867	11,680	12,079	18,924	19,373	75,924
2003	14,876	12,530	12,958	20,301	20,782	81,447
2004	9,608	8,093	8,369	13,111	13,422	52,603
2005	11,214	9,445	9,768	15,303	15,666	61,397
2006	11,216	9,447	9,770	15,305	15,669	61,406
2007	12,229	10,301	10,652	16,688	17,085	66,955
2008	14,642	12,333	12,754	19,981	20,456	80,167
2009	17,855	15,039	15,553	24,366	24,944	97,756
2010	12,128	10,216	10,565	16,551	16,944	66,403
2011	11,842	9,975	10,315	16,160	16,544	64,836
2012	12,170	10,251	10,601	16,608	17,002	66,632
2013	14,098	11,875	12,280	19,239	19,695	77,187
2014	12,890	10,857	11,228	17,590	18,008	70,573
2015	12,989	10,941	11,314	17,726	18,146	71,116
2016	17,045	14,357	14,848	23,261	23,813	93,324
2017	18,110	15,254	15,775	24,713	25,300	99,151
2018	18,314	15,426	15,953	24,993	25,586	100,272
2019	16,464	13,867	14,341	22,467	23,001	90,140
2020	17,267	14,544	15,041	23,563	24,122	94,537
2021	14,350	12,087	12,500	19,583	20,048	78,569
2022	14,621	12,315	12,736	19,952	20,426	80,051
2023	14,648	12,338	12,760	19,989	20,464	80,199
2024	8,704	7,331	7,581	11,877	12,159	47,652
2025	11,851	9,982	10,323	16,172	16,556	64,885
2026	12,950	10,908	11,280	17,672	18,092	70,903
2027	12,646	10,652	11,016	17,258	17,667	69,239
2028	12,350	10,403	10,758	16,854	17,254	67,619
2029	13,805	10,187	10,792	16,504	16,896	68,185
2030	13,459	9,920	10,512	16,072	16,454	66,418
2031	13,214	9,738	10,320	15,777	16,152	65,202
2032	12,863	9,466	10,034	15,337	15,701	63,400
2033	12,576	9,248	9,804	14,983	15,339	61,950
2034	12,313	10,042	9,594	14,660	15,008	61,617
2035	12,236	9,939	9,362	14,303	14,642	60,482
2036	12,042	9,782	9,215	14,079	14,413	59,530
2037	11,845	9,621	9,065	13,849	14,178	58,557
2038	10,343	8,611	8,810	13,686	13,775	55,225
2039	10,130	8,433	8,863	13,574	13,488	54,487
2040	9,838	8,188	8,608	13,180	15,183	54,997
2041	9,619	8,006	8,417	12,885	14,854	53,782

2042	9,618	8,006	8,415	12,887	14,828	53,754
2043	9,403	7,827	8,227	12,598	14,505	52,561
2044	9,145	7,611	8,002	12,250	14,122	51,131
2045	8,627	7,176	7,550	11,547	12,044	46,944
2046	8,330	6,928	7,291	11,145	11,629	45,323
2047	8,184	6,806	7,163	10,950	11,425	44,529
2048	7,971	6,629	6,977	10,663	11,128	43,368
2049	7,813	6,497	6,839	10,451	10,907	42,505
2050	6,870	5,704	6,017	9,167	9,589	37,347
2051	6,184	5,128	5,419	8,235	8,632	33,598
2052	6,043	5,010	5,295	8,046	8,435	32,829
2053	6,299	5,227	5,518	8,398	8,793	34,235
2054	6,268	5,202	5,490	8,359	8,749	34,069
2055	3,993	3,287	3,744	5,542	5,659	22,225
2056	2,726	2,296	2,375	3,721	3,809	14,927
2057	2,418	2,037	2,107	3,300	3,379	13,241
2058	2,249	1,894	1,959	3,069	3,142	12,313
2059	2,317	1,951	2,018	3,162	3,237	12,685
2060	2,707	2,280	2,358	3,693	3,781	14,818
2061	2,627	2,213	2,288	3,585	3,670	14,383
2062	2,360	1,988	2,056	3,221	3,297	12,922
2063	2,457	2,070	2,140	3,353	3,433	13,454
2064	2,691	2,267	2,344	3,672	3,760	14,734
2065	2,651	2,233	2,309	3,617	3,703	14,513
2066	1,793	1,510	1,562	2,447	2,505	9,816
2067	1,656	1,395	1,443	2,260	2,314	9,068
2068	1,667	1,404	1,452	2,275	2,329	9,126
2069	1,202	1,012	1,047	1,640	1,679	6,580
2070	794	669	692	1,084	1,109	4,348
2071	623	525	543	851	871	3,414
2072	615	518	535	839	859	3,366
2073	584	492	509	797	816	3,196
2074	574	484	500	784	802	3,144
2075	644	542	561	878	899	3,524
2076	587	494	511	801	820	3,212
2077	664	560	579	907	928	3,637
2078	897	756	782	1,225	1,254	4,913
2079	1,027	865	894	1,401	1,434	5,621
2080	493	415	430	673	689	2,701
2081	256	216	223	350	358	1,402
2082	202	170	176	276	283	1,108
2083	164	138	143	224	230	900
2084	160	135	139	219	224	877
2085	100	84	87	137	140	548
2086	92	78	81	126	129	506
2087	88	75	77	121	124	484
2088	812	684	708	1,109	1,135	4,448

2089	39	33	34	54	55	216
2090	-	-	-	-	-	-
2091	-	-	-	-	-	-
2092	-	-	-	-	-	-
2093	-	-	-	-	-	-
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

SCHEDULE 3.6

USED FUEL SEGREGATED FUND AMENDED PAYMENT SCHEDULE

Amended Payment Schedule 3.6 shall be inserted here if and when established and shall be replaced by any new Amended Payment Schedule 3.6, from time to time.

SCHEDULE 3.6.1

PROCEDURES FOR DETERMINING PAYMENTS BY OPG AND THE OPG NUCLEAR SUBSIDIARIES TO THE USED FUEL SEGREGATED FUND

Original Payment Schedule 3.3 and each Amended Payment Schedule 3.6 in effect from time to time shall be amended from time to time in compliance with the terms of the Agreement, including the following procedures:

1. No amendment to Original Payment Schedule 3.3 or an Amended Payment Schedule 3.6 shall be effective until approved in writing or deemed to have been approved by the Province in accordance with the provisions of this Schedule 3.6.1. Each Amended Payment Schedule 3.6 shall specify the Payment date (not earlier than the date on which the first draft of such Amended Payment Schedule 3.6 is first presented to the Province for approval, as hereinafter provided) from which it shall take effect.
2. If OPG is required pursuant to section 3.6 to prepare an Amended Payment Schedule 3.6, OPG agrees in a timely manner and, in any event, within 30 Business Days following a Triggering Event, to prepare and submit to the Province for its approval a draft Amended Payment Schedule 3.6. If OPG fails for any reason whatsoever to prepare and submit to the Province for its approval a draft Amended Payment Schedule 3.6 when so due, the Province shall have the right on two (2) Business Days notice in writing to OPG to engage such Person as the Province may then select to prepare the said draft Amended Payment Schedule 3.6 for review and approval by the Province, as aforesaid.
3. OPG and each OPG Nuclear Subsidiary agree on not less than one (1) Business Day prior written notice to OPG and to any OPG Nuclear Subsidiary to whom the Province addresses such written notice to provide to the Province and its advisors, employees, representatives and agents (and any Person appointed by the Province under item 2 above) (a) access to, and the right to inspect and to make extracts from and copies of, its respective books, records and reports (wheresoever located) during normal business hours on any Business Day, and (b) access to all

appropriate OPG and OPG Nuclear Subsidiary personnel and advisors to ask questions of, to receive full, accurate and complete answers to such questions and to be briefed by such personnel and advisors as may be necessary or of assistance in the preparation of a draft Amended Payment Schedule 3.6.

4. The Province shall approve the draft Amended Payment Schedule 3.6 submitted to it by OPG for approval if the draft Amended Payment Schedule 3.6 has been calculated in accordance with section 3.6. If the Province has not commenced a Financial Issue or Dispute regarding a draft Amended Payment Schedule 3.6 submitted to it by OPG within 30 days of receiving the draft, the Province shall be deemed to have approved the draft Amended Payment Schedule 3.6.
5. Once the Province has given written notice to OPG that the Province has approved, or once the Province has been deemed to have approved, an Amended Payment Schedule 3.6, OPG and the OPG Nuclear Subsidiaries shall immediately provide a copy of such Amended Payment Schedule 3.6 to the Used Fuel Segregated Fund Custodian and agree to make Payments thereunder commencing on the next Payment date under the Amended Payment Schedule 3.6, provided only that if such Payment date is less than five (5) Business Days following the date of receipt by OPG of the Province's written notice approving the Amended Payment Schedule 3.6, OPG and the OPG Nuclear Subsidiaries shall be entitled if they wish to do so to make such next Payment in accordance with the Original Payment Schedule 3.3 or the Amended Payment Schedule 3.6 in effect at the time of such notice and make its/their first Payment under the new Amended Payment Schedule 3.6 on the next Payment date falling due thereafter. If OPG and the OPG Nuclear Subsidiaries exercise this option, they shall on such next Payment date pay to the Used Fuel Segregated Fund any required amounts not paid in the first Payment plus interest calculated at a rate equal to the Discount Rate.

SCHEDULE 4.3

SUMMARY OF 1999 ESTIMATED DECOMMISSIONING ELIGIBLE COSTS

The table below sets out the Decommissioning Eligible Costs consistent with the 1999 Reference Plan. Costs are shown in both constant 1999 \$ and January 1, 1999 Present Value \$. For the purposes of this Agreement, the Decommissioning Eligible Costs in each year are allocated to each Station.

Year	Constant 1999 \$ Thousand					Total
	Pickering A	Pickering B	Bruce A	Bruce B	Darlington	
1999	833	833	12,023	386	436	14,510
2000	1,828	1,828	20,281	727	875	25,539
2001	1,607	1,607	29,717	657	781	34,369
2002	1,620	1,620	26,402	650	782	31,073
2003	2,198	2,198	23,293	820	1,020	29,529
2004	2,110	2,110	19,767	759	951	25,697
2005	1,944	1,944	17,532	708	882	23,009
2006	1,616	1,616	17,256	606	746	21,839
2007	2,677	2,677	18,950	1,059	1,293	26,657
2008	2,286	2,372	19,092	813	1,024	25,587
2009	1,854	2,127	17,179	654	809	22,624
2010	3,291	3,564	18,050	1,501	1,292	27,697
2011	3,305	17,564	17,558	1,291	1,185	40,902
2012	17,236	13,692	18,523	16,024	1,230	66,705
2013	28,706	28,999	22,621	28,591	4,193	113,110
2014	32,992	25,609	24,378	35,532	5,134	123,645
2015	17,562	15,928	20,692	60,503	1,438	116,125
2016	23,147	19,221	16,839	49,773	1,344	110,325
2017	18,605	16,971	17,679	18,090	2,425	73,770
2018	18,634	17,000	28,390	16,542	2,724	83,289
2019	23,617	19,687	28,274	16,055	29,227	116,859
2020	17,107	15,473	28,063	15,988	15,217	91,847
2021	17,244	15,614	28,202	15,972	27,373	104,405
2022	17,022	15,388	28,036	15,890	27,325	103,660
2023	15,896	14,687	28,085	15,892	16,556	91,116
2024	16,147	14,939	28,270	15,994	16,530	91,881
2025	15,970	14,761	17,302	12,108	16,972	77,113
2026	15,647	14,438	17,063	15,813	16,837	79,799
2027	16,074	14,866	17,382	15,943	17,014	81,279
2028	15,611	14,402	42,367	15,824	16,822	105,027
2029	12,650	14,735	74,037	15,900	15,363	132,686
2030	12,309	14,394	114,225	15,795	16,818	173,542

2031	12,715	14,801	173,501	15,918	16,986	233,922
2032	12,632	14,718	183,058	15,917	16,952	243,277
2033	12,589	14,674	138,548	15,877	16,933	198,620
2034	13,272	13,272	94,359	16,088	17,216	154,207
2035	10,734	10,734	75,602	15,328	16,170	128,569
2036	11,049	11,049	73,075	15,450	16,300	126,922
2037	11,808	11,808	73,636	15,660	16,615	129,526
2038	9,499	9,499	14,142	10,088	15,657	58,885
2039	9,499	9,499	880	10,088	15,657	45,623
2040	9,499	17,692	880	10,112	10,799	48,983
2041	17,692	24,043	880	25,083	10,799	78,498
2042	24,043	196,524	880	55,933	10,799	288,180
2043	194,738	149,765	57	91,286	9,968	445,813
2044	149,667	145,295	0	141,562	9,928	446,452
2045	145,291	113,237	0	181,635	9,928	450,091
2046	113,233	106,898	0	159,565	9,928	389,624
2047	106,890	102,657	0	111,335	9,928	330,809
2048	102,653	67,779	0	77,741	23,856	272,029
2049	67,775	69,661	0	72,263	32,118	241,817
2050	69,657	18,015	0	72,263	264,228	424,163
2051	18,015	0	0	49,297	255,534	322,846
2052	0	0	0	0	258,100	258,100
2053	0	0	0	0	250,268	250,268
2054	0	0	0	0	240,813	240,813
2055	0	0	0	0	211,573	211,573
2056	0	0	0	0	145,194	145,194
2057	0	0	0	0	149,743	149,743
2058	35,286	35,286	22,177	13,535	27,515	133,798
2059	-	-	-	-	-	-
2060	-	-	-	-	-	-
2061	-	-	-	-	-	-
2062	-	-	-	-	-	-
2063	-	-	-	-	-	-
2064	-	-	-	-	-	-
2065	-	-	-	-	-	-
2066	-	-	-	-	-	-
2067	-	-	-	-	-	-
2068	-	-	-	-	-	-
2069	-	-	-	-	-	-
2070	-	-	-	-	-	-
2071	-	-	-	-	-	-
2072	-	-	-	-	-	-
2073	-	-	-	-	-	-
2074	-	-	-	-	-	-
2075	-	-	-	-	-	-
2076	-	-	-	-	-	-
2077	-	-	-	-	-	-

2078	-	-	-	-	-	-
2079	-	-	-	-	-	-
2080	-	-	-	-	-	-
2081	-	-	-	-	-	-
2082	-	-	-	-	-	-
2083	-	-	-	-	-	-
2084	-	-	-	-	-	-
2085	-	-	-	-	-	-
2086	-	-	-	-	-	-
2087	-	-	-	-	-	-
2088	-	-	-	-	-	-
2089	-	-	-	-	-	-
2090	-	-	-	-	-	-
2091	-	-	-	-	-	-
2092	-	-	-	-	-	-
2093	-	-	-	-	-	-
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

January 1, 1999 Present Value \$ thousand						
Year	Station					Total
	Pickering A	Pickering B	Bruce A	Bruce B	Darlington	
1999	788	788	11,369	365	412	13,721
2000	1,648	1,648	18,391	656	789	23,132
2001	1,395	1,395	26,053	571	679	30,093
2002	1,340	1,340	22,167	538	648	26,033
2003	1,743	1,743	18,976	652	810	23,923
2004	1,612	1,612	15,477	581	727	20,009
2005	1,431	1,431	13,337	522	651	17,372
2006	1,146	1,146	12,733	432	530	15,987
2007	1,838	1,838	13,541	731	891	18,839
2008	1,513	1,572	13,265	540	680	17,570
2009	1,190	1,375	11,683	421	520	15,189
2010	2,048	2,227	11,909	946	801	17,930
2011	2,001	11,111	11,297	786	710	25,906
2012	10,608	8,405	11,551	9,807	720	41,091
2013	17,028	17,097	13,521	16,926	2,338	66,910
2014	18,942	14,490	14,087	20,842	2,767	71,127
2015	10,079	9,025	11,947	34,453	753	66,257
2016	13,193	10,796	9,514	27,645	685	61,833
2017	10,051	9,038	9,673	9,857	1,201	39,820
2018	9,792	8,798	15,452	8,967	1,317	44,326
2019	12,426	10,175	15,075	8,519	14,698	60,893
2020	8,600	7,643	14,609	8,276	7,871	46,999
2021	8,431	7,494	14,308	8,060	13,488	51,782
2022	8,117	7,196	13,889	7,825	13,116	50,142
2023	7,352	6,655	13,569	7,631	7,902	43,108
2024	7,253	6,569	13,309	7,481	7,685	42,297
2025	6,995	6,323	7,775	5,064	7,751	33,909
2026	6,695	6,034	7,493	7,048	7,511	34,781
2027	6,667	6,017	7,414	6,919	7,387	34,404
2028	6,336	5,698	16,284	6,710	7,140	42,168
2029	4,568	5,650	27,622	6,568	6,400	50,809
2030	4,326	5,390	41,499	6,374	6,793	64,383
2031	4,321	5,367	61,298	6,255	6,677	83,917
2032	4,168	5,197	62,838	6,103	6,503	84,810
2033	4,032	5,043	46,160	5,942	6,339	67,516
2034	4,099	4,099	30,457	5,854	6,261	50,770
2035	3,310	3,310	23,766	5,512	5,833	41,732
2036	3,294	3,294	22,299	5,412	5,727	40,026
2037	3,384	3,384	21,798	5,333	5,667	39,566
2038	2,738	2,738	4,046	2,871	5,303	17,697
2039	2,660	2,660	202	2,788	5,178	13,488
2040	2,584	4,915	195	2,714	2,964	13,372

2041	4,777	6,534	188	6,608	2,880	20,987
2042	6,352	52,750	182	14,371	2,799	76,454
2043	50,939	39,174	11	22,859	2,553	115,536
2044	38,076	36,964	0	34,441	2,474	111,956
2045	35,946	28,016	0	42,931	2,405	109,298
2046	27,244	25,719	0	36,640	2,338	91,941
2047	25,010	24,019	0	24,836	2,272	76,138
2048	23,358	15,422	0	16,848	5,307	60,935
2049	14,997	15,415	0	15,214	6,945	52,571
2050	14,989	3,877	0	14,781	55,539	89,186
2051	3,770	0	0	9,796	52,209	65,775
2052	0	0	0	0	51,258	51,258
2053	0	0	0	0	48,313	48,313
2054	0	0	0	0	45,187	45,187
2055	0	0	0	0	38,590	38,590
2056	0	0	0	0	25,742	25,742
2057	0	0	0	0	25,806	25,806
2058	4,224	4,224	2,655	1,620	3,874	16,597
2059	-	-	-	-	-	-
2060	-	-	-	-	-	-
2061	-	-	-	-	-	-
2062	-	-	-	-	-	-
2063	-	-	-	-	-	-
2064	-	-	-	-	-	-
2065	-	-	-	-	-	-
2066	-	-	-	-	-	-
2067	-	-	-	-	-	-
2068	-	-	-	-	-	-
2069	-	-	-	-	-	-
2070	-	-	-	-	-	-
2071	-	-	-	-	-	-
2072	-	-	-	-	-	-
2073	-	-	-	-	-	-
2074	-	-	-	-	-	-
2075	-	-	-	-	-	-
2076	-	-	-	-	-	-
2077	-	-	-	-	-	-
2078	-	-	-	-	-	-
2079	-	-	-	-	-	-
2080	-	-	-	-	-	-
2081	-	-	-	-	-	-
2082	-	-	-	-	-	-
2083	-	-	-	-	-	-
2084	-	-	-	-	-	-
2085	-	-	-	-	-	-
2086	-	-	-	-	-	-
2087	-	-	-	-	-	-

2088	-	-	-	-	-	-
2089	-	-	-	-	-	-
2090	-	-	-	-	-	-
2091	-	-	-	-	-	-
2092	-	-	-	-	-	-
2093	-	-	-	-	-	-
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

SCHEDULE 4.6

DECOMMISSIONING SEGREGATED FUND PAYMENT SCHEDULE

Original Payment Schedule 4.6 shall be inserted here if and when established. Original Payment Schedule 4.6 shall be replaced by any new Amended Payment Schedule 4.6, if and when established and from time to time thereafter.

SCHEDULE 4.6.1

PROCEDURES FOR DETERMINING PAYMENTS BY OPG AND THE OPG NUCLEAR SUBSIDIARIES TO THE DECOMMISSIONING SEGREGATED FUND

Original Payment Schedule 4.6 shall be established and Original Payment Schedule 4.6 and each Amended Payment Schedule 4.6 in effect from time to time shall be amended from time to time in compliance with the terms of the Agreement, including the following procedures:

1. Neither Original Payment Schedule 4.6 nor any Amended Payment Schedule 4.6 shall be effective until approved in writing or deemed to have been approved, by the Province under this Schedule 4.6.1. The Original Payment Schedule 4.6 and each Amended Payment Schedule 4.6 shall specify the Payment date (not earlier than the date on which the first draft of Original Payment Schedule 4.6 or an Amended Payment Schedule 4.6 is first presented to the Province for approval, as hereinafter provided) from which it shall take effect.
2. If OPG is required pursuant to section 4.6 to prepare an Original Payment Schedule 4.6 or an Amended Payment Schedule 4.6, OPG agrees in a timely manner and, in any event, within 30 Business Days following a Triggering Event, to prepare and submit to the Province for its approval a draft Original Payment Schedule 4.6 or an Amended Payment Schedule 4.6, as applicable. If OPG fails for any reason whatsoever to prepare and submit to the Province for its approval a draft Original Payment Schedule 4.6 or Amended Payment Schedule 4.6 when so due, the Province shall have the right on two (2) Business Days notice in writing to OPG to engage such Person as the Province may then select to prepare the said draft Original Payment Schedule 4.6 or Amended Payment Schedule 4.6 for review and approval by the Province, as aforesaid.
3. OPG and each OPG Nuclear Subsidiary agree on not less than one (1) Business Day prior written notice to OPG and to any OPG Nuclear Subsidiary to whom the Province addresses such written notice to provide to the Province and its

representatives and agents (and any Person appointed by the Province under item 2 above) (a) access to, and the right to inspect and to make extracts from and copies of, its respective books, records and reports (wheresoever located) during normal business hours on any Business Day, and (b) access to all appropriate OPG and OPG Nuclear Subsidiary personnel and advisors to ask questions of, to receive full, accurate and complete answers to such questions and to be briefed by such personnel and advisors as may be necessary or of assistance in the preparation of a draft Original Payment Schedule 4.6 or Amended Payment Schedule 4.6.

4. The Province shall approve the draft Original Payment Schedule 4.6 or Amended Payment Schedule 4.6 submitted to it by OPG for approval if the draft Original Payment Schedule 4.6 or Amended Payment Schedule 4.6 has been calculated in accordance with section 4.6. If the Province has not commenced a Financial Issue or Dispute regarding a draft Original Payment Schedule 4.6 or Amended Payment Schedule 4.6 submitted to it by OPG within 30 days of receiving the draft, the Province shall be deemed to have approved the draft Original Payment Schedule 4.6 or Amended Payment Schedule 4.6.
5. Once the Province has given written notice to OPG that the Province has approved, or once the Province has been deemed to have approved, an Original Payment Schedule 4.6 or Amended Payment Schedule 4.6, OPG and the OPG Nuclear Subsidiaries shall immediately provide a copy of such Original Payment Schedule 4.6 or Amended Payment Schedule 4.6 to the Decommissioning Segregated Fund Custodian and agree to make Payments thereunder commencing on the first or next Payment date under the Original Payment Schedule 4.6 or Amended Payment Schedule 4.6, as applicable, provided only that if such Payment date is less than five (5) Business Days following the date of receipt by OPG of the Province's written notice approving the Original Payment Schedule 4.6 or Amended Payment Schedule 4.6, OPG and the OPG Nuclear Subsidiaries shall (a) in the case of the Original Payment Schedule 4.6, have up to 10 Business Days following the first Payment date to make such first Payment plus interest calculated at a rate equal to the Discount Rate from the first Payment date to the date such Payment is made or (b) in all other cases, be entitled if they wish to do so to make such next

Payment in accordance with the Original Payment Schedule 4.6 or the Amended Payment Schedule 4.6 in effect at the time of such notice and make its/their first Payment under the new Amended Payment Schedule 4.6 on the next Payment date falling due thereafter. If OPG and the OPG Nuclear Subsidiaries exercise this option, they shall on such next Payment date pay to the Decommissioning Segregated Fund any required amounts not paid in the first Payment plus interest calculated at a rate equal to the Discount Rate.

SCHEDULE 6.1 **FORM OF COMMITMENT IN LIEU**

TO ONTARIO POWER GENERATION INC.

Pursuant to subsection **[3.9.2/4.4.2]** of the Ontario Nuclear Funds Agreement dated as of April 1, 1999 to which each of the Her Majesty in right of Ontario and Ontario Power Generation Inc. is a party (the “**Agreement**”), **[Her Majesty in right of Ontario/Ontario Electricity Financial Corporation]** hereby agrees, subject to and in accordance with the provisions of the Agreement, to make payments in Cash to the **[Used Fuel Segregated Fund/ Decommissioning Segregated Fund]** up to **[\$■]** plus interest thereon calculated at an annual rate equal to the Discount Rate (as defined in the Agreement), calculated daily, from and after **[insert date]** **[the date of this Commitment in Lieu]** to the date upon which a payment in Cash is made to the **[Segregated Fund in question]**.

This Commitment in Lieu is not transferable or negotiable without the written consent of **[the Province in right of Ontario/Ontario Electricity Financial Corporation]**.

DATED **[insert date]**

Reverse Side:

Date	Opening Undrawn Balance	Payment or Reduction	Increase	Annotation (1)	Initials	Closing Undrawn Balance

(1) Make annotation if change in undrawn balance arises as a result of the provisions of subsection **[3.10.3][4.7.3]**.

SCHEDULE 11.2
DISPUTE RESOLUTION PROCEDURE

PART I

1. Either OPG (on its own behalf and/or on behalf of any OPG Nuclear Subsidiary), or the Province (on its own behalf or on behalf of OEFC) may refer any Dispute that is not prohibited by the terms of the Agreement to be determined under the provisions of this Schedule 11.2 to a Committee by giving written notice to the other party to the Dispute and to both members of the Committee at the addresses of the members of the Committee provided to each party to the Dispute and otherwise in accordance with the notice provisions of the Agreement. Each party to the Dispute shall provide written information regarding its position in respect of the issue(s) in dispute to the Committee and the other party to the Dispute in a timely manner, and each party to the Dispute shall have a reasonable opportunity (not to exceed three (3) Business Days from the date the notice is provided) to prepare and deliver to the Committee and the other party to the Dispute such written responses to the material filed with the Committee by any other party to the Dispute. The Committee shall have responsibility and authority to hear and negotiate a resolution of any Dispute referred to it.
2. If the Committee cannot reach agreement on a resolution of the Dispute within 10 Business Days of receipt of the said notice then either party to the Dispute may, if it chooses to do so, refer the matter to Dispute Resolution in accordance with Part II of this Schedule 11.2 by delivery of written notice to the other party to the Dispute to such effect within 15 Business Days of receipt of the notice under item 1, unless the Committee has resolved the Dispute prior to the delivery of the written notice to the other party to the Dispute under this item 2.
3. If the Dispute is resolved in accordance with this Part I, then the settlement shall be rendered in writing, signed by each member of the Committee and such written decision shall be final and binding on OPG, each OPG Nuclear

Subsidiary, the Province and OEFC, and shall not be subject to any appeal or review procedure. The application of subsection 7(2) of the Arbitration Act, 1991 (Ontario) is expressly excluded.

PART II

The following rules and procedures shall govern any Dispute referred for Dispute Resolution by either OPG or the Province under Part I of this Schedule 11.2:

4. Initiation of Dispute Resolution Proceedings.

- (a) The Claimant shall in the notice given by it to the Respondent under item 2 of Part I specify particulars of the Dispute and give the name and address of the Person it wishes to be appointed as the Arbitrator. Within 10 Business Days immediately following receipt of such notice, the Respondent shall give notice to the Claimant advising either that the Respondent accepts the Arbitrator proposed by the Claimant, or that the Respondent wishes to appoint an additional Arbitrator, in which case, the Respondent shall appoint and provide the name of such additional Arbitrator in its responding notice. If no such notice is given within such 10 Business Day period, the Respondent shall be irrevocably deemed to have accepted the single Arbitrator proposed by the Claimant as the Arbitrator of the Dispute.
- (b) If the Respondent exercises its right to do so and appoints an additional Arbitrator pursuant to item 4(a) of this Part II, then the Arbitrators so appointed shall within 10 Business Days of the appointment of the second Arbitrator, meet and agree on the appointment of one additional Arbitrator as chair of the Dispute Resolution board, and the first two Arbitrators shall forthwith notify the Claimant and the Respondent in writing of such appointment. If the two Arbitrators cannot agree upon the appointment of a third Arbitrator to act as chair, either party to the Dispute shall have the right to apply

to the Ontario Superior Court of Justice under the *Arbitration Act, 1997* (Ontario) for the sole purpose of having the said Court appoint a third Arbitrator to act as chair of the Dispute Resolution board. The appointment of the chair by the Court shall be final and binding on both the Respondent and the Claimant and shall not be subject to any appeal or review procedure. Upon the appointment of the chair of the Dispute Resolution board, the chair and the two Arbitrators previously appointed shall constitute the board of Arbitrators for the purpose of hearing the Dispute.

5. Submission of Written Statements.

- (a) Within five (5) Business Days after the appointment of the last Arbitrator, the Claimant shall deliver to the Respondent and to each Arbitrator its Claim.
- (b) Within 15 Business Days after the receipt of the Claim, the Respondent shall deliver to the Claimant and to each Arbitrator its Answer.
- (c) If a Respondent fails to deliver an Answer within the time limit referred to in item 5(b) of this Part II, the Respondent shall be irrevocably deemed to have admitted the Claim unless within such time limit the Respondent shall have delivered a notice of intent to deliver the Answer, in which case the Answer shall be delivered within 10 Business Days of Claimant's receipt of such notice, and if the Respondent fails to deliver an Answer within such 10-Business Day period, the Respondent shall be irrevocably deemed to have admitted the Claim in full.
- (d) Within 10 Business Days after the delivery of the Answer, the Claimant may deliver to the Respondent and to each Arbitrator a Reply.

- (e) Within the time provided for the delivery of the Answer, the Respondent may also deliver to the Claimant and to each Arbitrator a Counter-Claim. Within 15 Business Days of the delivery of a Counter-Claim, the Claimant shall deliver to the Respondent and to each Arbitrator an answer to the Counter-Claim unless within such time the Claimant shall have delivered a notice of intent to deliver an answer to the Counter-Claim, in which case such answer shall be delivered within 10 Business Days of the Claimant's receipt of such notice, and if the Claimant fails to deliver its answer to the Counter-Claim within such 10 Business Day period, the Claimant shall be irrevocably deemed to have admitted the Counter-Claim in full. Within 10 Business Days after the delivery by the Claimant of an answer to the Counter-Claim, the Respondent may deliver to the Claimant and to each Arbitrator a reply to the answer to the Counter-Claim.
- (f) Within 10 Business Days after the delivery of the last of the Claim, Answer, Counter-Claim, answer to the Counter-Claim and Reply, each party to the Dispute shall produce a list of all relevant documents in its possession, power or control, excluding documents which are the subject of claims for privilege. A party to the Dispute may specify any document or documents on the list of the other party of which it desires to be provided a copy, and copies shall be provided subject to payment for the reasonable costs thereof.
- (g) Following delivery of the last of the Claim, Answer, Counter-Claim, answer to the Counter-Claim and Reply or expiry of the time for such delivery, the Arbitrator(s) shall give directions for the further conduct of the Dispute Resolution, provided that in any event the hearing shall take place within 45 Business Days after the delivery of the last of the Claim, Answer, Counter-Claim, answer to the Counter-Claim and Reply or expiry of the time for such delivery.

- (h) The time limits set for the delivery of the documents referred to in item 5(a) to (f) inclusive of this Part II may be extended by the Arbitrator(s) for such period and for such reasons as they in their discretion may determine upon application made to them by either the Claimant or a Respondent, as the case may be, on written notice to the other, before the expiry of the time limit in issue or within three (3) Business Days thereafter and, in the event that the other wishes to oppose the application, it or they shall be given an opportunity to be heard on the application. Any failure to comply with such time limits pursuant to the terms of this Schedule 11.2 that is subject to such an extension shall be cured by that extension. For greater certainty, the Parties agree that the foregoing right of the Arbitrator(s), being the exercise of an absolute discretion, cannot be the subject matter of a Dispute or Financial Issue under this Agreement or of any other proceeding at law initiated by any party to the Dispute.

6. Meetings and Hearings.

- (a) The hearing will take place in Toronto, Ontario or in such other place as the Claimant, Respondent and Arbitrator(s) unanimously agree to in writing. Subject to any adjournments that the Arbitrator(s) allow, the hearing will be continued on successive Business Days until it is concluded.
- (b) All meetings and hearings will be private and confidential unless all parties to the Dispute Resolution otherwise agree.
- (c) Any party to the Dispute may be represented at any meetings or hearings by legal counsel.
- (d) To the extent that the Arbitrator(s) determine in good faith that it is in the interests of the parties and expeditious to do so, the Arbitrator(s) shall have the right to (i) vary the rules and procedures set out in the

Arbitration Act, 1991 (Ontario) and (ii) prescribe such additional rules and procedures relating to the conduct of the Dispute Resolution (including rules permitting the compulsion of witnesses, discovery of witnesses under oath, cross-examination and re-examination of witnesses).

7. The Decision.

- (a) Any decision of the Arbitrator(s) made with respect to any Dispute or with respect to any aspect of, or any issue related to, the Dispute (including the procedures that shall govern the Dispute resolution) shall be made by either the Arbitrator or by the majority of the Arbitrators (or in default of agreement by such majority, then by the chair of the Dispute Resolution board), as the case may be. The reasons for the decisions of the Arbitrator(s) with respect to the Dispute shall within 10 Business Days of the completion of the hearing be rendered in writing and delivered to the parties unless that time period is extended for a fixed period by the Arbitrator(s) on written notice to each party to the Dispute because of illness or other cause beyond the control of the Arbitrator(s).
- (b) The decision shall be final and binding on the parties to the Dispute Resolution (including OEFC and each OPG Nuclear Subsidiary) and shall not be subject to any appeal or review procedure.

8. The Award.

The Arbitrator(s) shall have jurisdiction to award costs of the Dispute Resolution Procedure, including the fees of the Arbitrator(s), as between the Claimant and the Respondent as the Arbitrator(s) see fit, and to direct the payment of interest in respect of any award at such rates and from and to such dates as are determined by the Arbitrator(s) to be appropriate. Subject to Applicable Law, the Arbitrator(s) may deem in

writing all or any part of such awarded costs to be Used Fuel Eligible Costs or Decommissioning Eligible Costs, as the Arbitrator so designates.

9. Application of the *Arbitration Act, 1991* (Ontario).

The Dispute Resolution Procedure provided for in this Part II shall be governed by the provisions of the *Arbitration Act, 1991* (Ontario) except to the extent that the provisions of the *Arbitration Act, 1991* (Ontario) are inconsistent with the terms of the Dispute Resolution Procedure set forth in this Schedule 11.2, in which case, to the extent permitted by law, the terms of this Schedule 11.2 shall govern. The application of subsection 7(2) of the *Arbitration Act, 1991* (Ontario) is expressly excluded.

PART III

10. Computation of Time.

- (a) For the purposes of computation of time under the provisions of this Schedule 11.2, except where a contrary intention appears:
 - (i) where there is a reference to a number of Business Days between two events, they shall be counted by excluding the Business Day on which the first event happens and including the Business Day on which the second event happens; and
 - (ii) Service of a document made after 4 p.m. (Toronto time) or at any time on a day that is not a Business Day shall be deemed to have been made on the next Business Day.
- (b) The Parties may by mutual agreement (or the Arbitrator(s) may by the exercise of their discretion) extend any time limit set forth in this Schedule 11.2. For greater certainty, the Parties agree that the foregoing right of the Arbitrator(s), being the exercise of an absolute discretion, cannot be the subject matter of a Dispute or Financial Issue

under this Agreement or of any other proceeding at law initiated by any
of the Parties.

11. Notice.

Notice and the service of documents shall be governed by the applicable provisions of
the Agreement.



Report

Document Number:	
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Sheet Number:	Revision:
N/A	R01

Title:

2012 ONFA REFERENCE PLAN UPDATE PROGRAM SUMMARY COST ESTIMATE REPORT

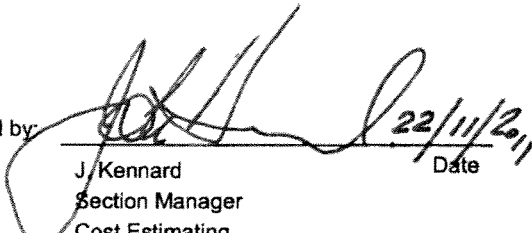
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2012 ONFA Reference Plan Update Program Summary Cost Estimate Report

W-REP-00400-00004-R00

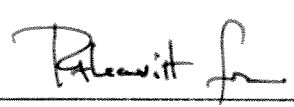
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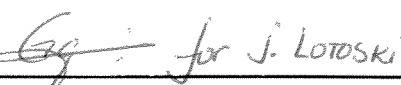
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Revision Summary

Revision Number	Date	Comments
R00	July 2011	Initial issue.
R01	November 2011	Final Submission

Summary of Changes from initial ONFA Submission

Provided below is a summary of the changes that were made to the initial 2012 ONFA submission for each Cost Estimate program. The revised submission amounts to \$ 35,931 (2012 M\$, 2012 onwards), which is a net increase of approximately \$261M over the initial submission of \$35,670 (2012 M\$, 2012 onwards).

Decommissioning Program – \$1M decrease:

1. Adjustment to align with revised final OPG/NWMO Business Plan for oversight costs resulted in a cost decrease of \$1M.

Low & Intermediate Level Waste Long Term Management Program – \$44M incremental:

1. Adjustment to include construction insurance cost resulted in a cost increase of \$23 M in the capital expenditure stage.
2. Incorporation of additional insurance costs in DGR operations period resulted in a cost increase of \$21M.
3. Adjustment to align with Business Plan numbers resulted in a cost reduction of \$3.2M
4. Inclusion of office unit B25 lease cost in Bruce Power site resulted in a cost increase of \$3.4M .

Low & Intermediate Level Waste Storage Program – \$32M incremental:

1. Roadrunner package replacement used in the transportation of ILW is not expected to occur given the current condition of existing packages. Replacement costs of \$11.6M (\$5.8M in 2013 and \$5.8M in 2018) were removed from the Operations Estimate.
2. Revised LLW Transportation cost estimates for LLW Shipment resulted in a reduction from \$14.6M to \$2.6M. Overall adjustment of \$12M.
3. Adjustments to align (2011-2015) OPG/NWMO BP with revised (2012-2014) OPG/NWMO BP resulted in a cost increase of \$13M.
4. The Bruce Site Warehouse Operation is presently overseen by IMS and provides a service to NWMD Operations. Nuclear Supply Chain has agreed to operate the Bruce Warehouse resulting in a cost increase of approx. \$13.14M.
5. Business Plan re-alignment resulted in approx. \$11M in project costs that were expected to occur in 2011 to be shifted to later years (2012-2014).
6. Previous ONFA submission did not factor in total cost to construct LLSB#15 due to timing uncertainty. Operations estimate assumes building will be erected in 2015 resulting in a cost increase of approx. \$5M.
7. Addition of Nuclear Support Group Costs of approximately \$8M.

Used Fuel Long Term Management Program – \$138M incremental:

1. Adjustment to align with revised final OPG/NWMO Business Plan for oversight costs resulted in a cost increase of \$1 M.

2. Refinement of cost scaling methodology from 3.6 million to 4.02 million bundles resulted in an approximate \$137 M cost increase to the used fuel long-term management liability.

Used Fuel Storage Program – \$47M incremental:

1. Adjustment to align with revised final Business Plan projections resulted in a cost increase of \$54 M.
2. Refinement on model calculation logic to remove Wet Bay Security costs in the year of shutdown, i.e. the annual security costs should occur after station shutdown year. This caused a cost reduction of approximately \$6M.
3. Update on DWMF decommissioning cost based on TLG input, which resulted in cost reduction of approximately \$1M.

1.0 PURPOSE

This report provides a summary of the 2012 Ontario Nuclear Funds Agreement (ONFA) cost estimates and the associated variance from the currently approved 2007 ONFA cost estimates for the purpose of review by the Ontario Financing Authority (OFA).

2.0 BACKGROUND

With the establishment of Ontario Power Generation (OPG) in early 1999, the Province and OPG negotiated ONFA. This agreement established funding obligations for the long term management of nuclear waste and decommissioning of nuclear generating stations. At that time life cycle cost estimates were provided by OPG and approved by the Province which formed the basis for the baseline approved funding contribution levels.

OPG has work programs in place to continually improve the quality of the life-cycle cost estimates as well as incorporating changes to plans, technology changes, waste volume projection changes, and international and internal experience.

Since 1999, key OPG program plans have changed and these changes have been captured in the approved 2007 and proposed 2012 ONFA cost estimates. This report summarizes the proposed changes to the current approved 2007 ONFA cost estimates to establish the 2012 ONFA cost estimates.

3.0 SUMMARY OF LIFE CYCLE CHANGES

This section summarizes the high level changes from the currently approved 2007 ONFA cost estimates to the 2012 ONFA cost estimates. The remainder of the report provides a more detailed variance analysis of the changes for each program.

3.1 1999 Principle Program Assumptions

The ONFA plans established in 1999 were based on:

- Station End of Life (EOL) assumptions as shown in Section 3.5
- Interim storage of used fuel at Pickering, Bruce (Western) and Darlington Waste Management Facilities (WMFs)
- Centralized interim storage of low and intermediate level waste (L&ILW) at the Western WMF
- Permanent disposal starting in 2025 for used fuel
- Permanent disposal starting in 2015 for low level waste (LLW)

- Co-location of long lived intermediate level waste (ILW) for disposal with used fuel starting in 2034
- Reactors were assumed to be placed in safe storage for 30 years after shutdown, and then sequentially dismantled.

Since 1999, baseline cost estimates have been regularly updated to address program planning assumptions, actual experience, economic/escalation changes, and benchmarked against industry practice.

3.2 2007 ONFA Assumption Changes

After the original 1999 ONFA cost estimates were established, a number of changes occurred in OPG planning assumptions which were reflected in the 2007 ONFA cost estimates [R-11].

These included:

- The establishment of new assumed station EOL dates as indicated in Section 3.5 including the rehabilitation of Bruce A.
- The increase to station EOL dates resulted in increased used fuel, L&ILW waste volume, and associated storage and disposal costs.
- The 1999 ONFA Used Fuel Disposal (UFD) Cost Estimate assumed a disposal facility for used fuel would be in-service by 2025. The passage of the Nuclear Fuel Waste Act (NWFA) by Natural Resources Canada in 2002 resulted in the establishment of the Nuclear Waste Management Organization (NWMO) and outlined the need for completion of an options study for used fuel long term management. A new Deep Geological Repository (DGR) UFD Cost Estimate was created by the Nuclear Waste Management Organization (NWMO) which reflected the cost of implementing the NFWA recommendation and assumed the earliest possible disposal facility in-service as 2035. This change also resulted in changes to the used fuel interim storage estimates to account for the prolonged storage period.
- The 1999 ONFA ILW Disposal Cost Estimate was based on an estimate created in May 1999 to reflect the co-location of this waste stream with UFD. The 1999 ONFA estimate for LLW disposal was created in 1998 for an in-service date of 2015. OPG's long-term plan for L&ILW is for a DGR at the Western Waste Management Facility (WWMF). An L&ILW repository cost estimate was prepared by Golder Associates/Morrison Knudsen in 2004 for the facility, based on

conceptual designs of possible facilities and on actual disposal experience in other countries. A 2007 ONFA L&ILW disposal cost estimate was created in 2005 based on the 2004 cost estimate using new planning assumptions including an in-service date of the DGR of 2017.

- A 2007 ONFA L&ILW Operations cost estimate was created in 2006 to reflect the new L&ILW Disposal Facility, and revised waste volume projections.
- In 2005 the decision was made to permanently shut down Pickering units 2 and 3. This decision resulted in amended decommissioning costs which were reflected in the 2007 ONFA cost estimates.

3.3 2012 ONFA Assumption Changes

Since the 2007 ONFA cost estimates were established, a number of changes have occurred in OPG planning assumptions which are reflected in the 2012 ONFA cost estimates.

These include:

- The establishment of new assumed station EOL dates as indicated in Section 3.5 including the refurbishment of Bruce A and Darlington. Pickering B will operate longer to align with a Pickering A shutdown at 2019.
- The increase to station EOL dates has resulted in increased used fuel and L&ILW waste volumes along with associated storage and disposal costs.
- An in-service date of the L&ILW DGR is projected to be 2018.
- All fuel from those generating stations which shutdown prior to the used fuel DGR in-service date of 2035 (i.e. Pickering A, Pickering B, and Bruce B), will be placed in dry storage rather than remain in the wet bays until retrieved.
- Cost estimates have been updated to address program planning assumptions, actual experience, economic/escalation changes, and latest industry practice.

3.4 Economic Assumptions

ONFA cost estimates are developed in constant dollar cash flows. Three different escalators are currently used to determine the costs of decommissioning and nuclear waste management in escalated dollars. After escalation, future costs are discounted to arrive at the present value (PV) of these costs.

In 2010/2011, the Economic Assumptions Working Group (EAWG) provided recommendations for economic assumptions used for development of the liabilities for

the 2012 ONFA Reference Plan Update, and can be found in the “ONFA 2011 Reference Plan Update – Review of Economic Assumptions” [R-51]. The escalation rates applied against the 2012 ONFA reference plan update cost estimates are based on the University of Toronto’s Institute of Policy Analysis Economic Forecasting Series for Ontario dated January 2011. These rates are applied to cost flows for each program cost estimate. Refer to the “2012 ONFA Reference Plan Update Segregated Funds Contribution” report for further details [R-52].

3.5 2012 ONFA Cost Estimate Preparation

The 2012 ONFA summary cost estimate report is based on waste program baseline cost estimates. The baseline cost estimates for long term programs were prepared by external contractors which include:

1. Decommissioning,
2. L&ILW DGR Capex and Decommissioning, and
3. Used Fuel Management DGR and Used Fuel Transportation

and by OPG for operational programs which include:

1. Used Fuel Management - Used Fuel Interim Storage and Retrieval
2. L&ILW waste retrieval from storage and DGR operations (Readiness and Operations)
3. L&ILW operations

The baseline cost estimates were prepared in constant dollars of a reference year. The set of 2012 baseline cost estimates including the reference year are shown in the following table.

Program	Dollars of Year
L&ILW DGR	2010
L&ILW Operations	2010
Used Fuel Management – Long Term Management	2010
Used Fuel Management – Used Fuel Interim Storage	2010
Station Decommissioning	2010

For the purpose of 2012 ONFA Reference Plan Update the cost estimates were adjusted and escalated to 2012 constant dollars for a common basis to align with ONFA planning assumptions and waste volumes.

3.6 Station End of Life Planning Assumptions

Generating Station EOL planning assumptions for the 1999 ONFA scenario, the currently approved 2007 ONFA scenario and the 2012 ONFA scenario are shown in the following table [R-23].

Station /Unit	1999 ONFA Reference Plan Baseline	Currently Approved 2007 ONFA Reference Plan	2012 ONFA Reference Plan Update
Pickering A1	2012	2021	2019
Pickering A2	2012	2005	2005
Pickering A3	2012	2005	2005
Pickering A4	2012	2021	2019
Pickering B5	2012	2013	2017
Pickering B6	2012	2014	2017
Pickering B7	2012	2013	2019
Pickering B8	2012	2015	2019
Bruce A1	1998	2034	2042
Bruce A2	1998	2034	2042
Bruce A3	1998	2036	2054
Bruce A4	1998	2017	2054
Bruce B5	2013	2011	2018
Bruce B6	2013	2011	2019
Bruce B7	2013	2012	2019
Bruce B8	2013	2013	2021
Darlington 1	2019	2018	2050
Darlington 2	2019	2019	2048
Darlington 3	2019	2019	2051
Darlington 4	2019	2020	2053

3.7 Variance Overview and Structure by Program

A variance analysis is included in this report comparing the previous 2007 ONFA estimates against those submitted for the 2012 ONFA update. This analysis is shown for each of the following programs:

1. Station Decommissioning
2. L&ILW DGR (previously referred to as L&ILW Disposal)
3. L&ILW Operations (previously referred to as L&ILW Storage)
4. Used Fuel Management – Long Term Management (previously referred to as Used Fuel Disposal)
5. Used Fuel Management – Interim Storage (previously referred to as Used Fuel Storage)

Each program section is structured to provide a high level description of the associated ONFA cost estimates as follows:

1. Provide a description of the currently approved 1999 and 2007 ONFA cost estimates.
2. Provide a description of the basis and projected costs for the newly proposed 2012 ONFA cost estimates.
3. Provide cost details of the variance from the currently approved 2007 ONFA cost estimates to the newly proposed 2012 ONFA cost estimates.

For each program a cash flow for the newly proposed 2012 ONFA cost estimate is also provided in the report appendices.

3.8 Cost Estimate Changes – Constant \$

The following table summarizes the life cycle changes to cost estimates in constant 2012\$. The approved 1999 and 2007 ONFA cost estimates include estimated costs from 01 April 1999 forward. The 2012 ONFA cost estimates are shown including future costs from 2012 forward and total costs from 01 April 1999. Total costs include actual costs to y/e 2010, budgeted costs for 2011, and future costs from 2012 forward.

By Program	ONFA 1999 (1999M\$)	ONFA 1999 (2012M\$)	2007 ONFA Approved Costs 2007 Forward (2007M\$)	2007 ONFA Approved Costs 1999 Forward (2012M\$)	Actual and Budgeted Costs From 01 April 1999 to Y/E 2011 (2012M\$)	2012 ONFA Costs 2012 Forward (2012M\$)	2012 ONFA Costs 1999 Forward (2012M\$)	Change 2012 ONFA – Approved 2007 ONFA (2012M\$)
Decommissioning Fund								
Station Decommissioning	7,379	10,025	9,124	10,507	227	8,946	9,173	-1,334
Low & Intermediate Level Waste – Disposal	547	689	943	1,112	176	2,076	2,252	1,140
Low & Intermediate Level Waste – Storage (after Station Life)	239	301	208	236	0	479	479	242
Used Fuel Storage (After Station Life)	569	853	278	325	0	690	690	365
Decommissioning Fund Total	8,734	11,867	10,552	12,180	403	12,191	12,594	414
Used Fuel Management Fund								
Used Fuel Disposal (UFD)	8,766	12,460	12,099	14,015	289	15,286	15,576	1,561
Used Fuel Storage (After Station Life) (UFS)	153	234	402	471	0	373	373	-98
UFD in Excess of 2.23 M bundles	0	0	2,008	2,302	0	5,715	5,715	3,413
UFS in Excess of 2.23 M bundles	0	0	21	25	0	81	81	57
Used Fuel Management Fund Total	8,919	12,694	14,530	16,813	289	21,455	21,745	4,932
Sub-Total ONFA Estimate	17,652	24,561	25,082	28,993	692	33,647	34,339	5,346
OPG Internally Funded								
Low & Intermediate Level Waste – Processing & Storage (during Station Life)	257	324	390	717	501	752	1,253	537
Used Fuel – Storage (during Station Life)	518	748	1,026	1,461	624	1,532	2,156	695
Internally Funded Total	775	1,072	1,415	2,178	1,126	2,284	3,410	1,232
Grand Total	18,427	25,633	26,498	31,171	1,818	35,931	37,748	6,578

3.9 Cost Estimate Changes - Present Value

The following table summarizes the life cycle changes to cost estimates in January 2012 PV \$. The approved 1999 and 2007 ONFA cost estimates include costs from 01 April 1999 forward. The 2012 ONFA cost estimates are shown including both future costs from 2012 forward and total costs from 01 April 1999 forward. Total costs include actual costs to y/e 2010, budgeted costs for 2011, and future costs from 2012 forward.

By Program	ONFA Approved 1999 (1999 PVM\$)	ONFA Approved 1999 (2012 PVM\$)	2007 ONFA Approved Costs 2007 Forward (2007 PVM\$)	2007 ONFA Approved Costs 1999 Forward (2012 PVM\$)	Actual and Budgeted Costs From 01 April 1999 to Y/E 2011 (2012 PVM\$)	2012 ONFA Costs 2012 Forward (2012 PVM\$)	2012 ONFA Costs 1999 Forward (2012 PVM\$)	Change 2012 ONFA- Approved 2007 ONFA (2012 PVM\$)
Decommissioning Fund								
Station Decommissioning	2,126	4,397	3,925	5,054	242	3,323	3,565	-1,488
Low & Intermediate Level Waste – Disposal	240	497	655	884	190	1,383	1,574	689
Low & Intermediate Level Waste – Storage (after Station Life)	86	177	106	136	0	224	224	88
Used Fuel Storage (After Station Life)	336	696	188	242	0	518	518	276
Decommissioning Fund Total	2,788	5,768	4,875	6,317	432	5,449	5,881	-436
Used Fuel Management Fund								
Used Fuel Disposal (UFD)	3,671	7,594	4,981	6,593	327	6,362	6,689	97
Used Fuel Storage (After Station Life) (UFS)	64	132	180	231	0	188	188	-43
UFD in Excess of 2.23 M bundles	0	0	704	906	0	1,932	1,932	1,027
UFS in Excess of 2.23 M bundles	0	0	9	12	0	39	39	27
Used Fuel Management Fund Total	3,735	7,726	5,874	7,740	327	8,521	8,848	1,108
Sub-Total ONFA Estimate	6,523	13,494	10,748	14,056	760	13,969	14,729	672
OPG Internally Funded								
Low & Intermediate Level Waste – Processing & Storage (during Station Life)	193	399	328	779	599	567	1,166	388
Used Fuel - Storage (during Station Life)	386	799	831	1,386	688	1,237	1,925	539
Internally Funded Total	580	1,198	1,159	2,165	1,287	1,804	3,091	927
Grand Total	7,103	14,692	11,908	16,221	2,047	15,774	17,820	1,599

4.0 STATION DECOMMISSIONING

4.1 Changes to Approved Estimate

The 1999 ONFA cost estimate for decommissioning was established at \$7,379M in 1999M\$ (\$10,025M in 2012M\$) from April 1, 1999 forward. The currently approved 2007 ONFA estimate by OPG for decommissioning was determined to be \$9,124M in 2007M\$ (\$10,507M in 2012M\$) from April 1, 1999 forward. The 2012 ONFA estimate for decommissioning is projected to be \$9,173M in 2012M\$ from April 1, 1999 forward.

For a summary of the 2012 ONFA decommissioning cost estimates refer to the “2012 ONFA Reference Plan Update Decommissioning Summary Cost Estimate Report” [R-45] and supporting decommissioning cost estimate study reports prepared by TLG Services. [R-35 – R-44]

The following sections detail the major changes which have occurred to generate the variance between the 1999 ONFA, 2007 ONFA approved estimate and the current 2012 ONFA estimate.

4.1.1 Approved ONFA Estimates (1999M\$ and 2007M\$)

In 1997 and early 1998, TLG Services, a US based consultant with extensive nuclear decommissioning expertise, completed estimates for Bruce A and Bruce B station decommissioning assuming a 40 year reactor operating life. These estimates were approximately 70% higher than 1985 estimates previously prepared by Ontario Hydro.

At the time of ONFA negotiations, estimates for Pickering and Darlington had not been established. The 1985 decommissioning cost estimates for Pickering and Darlington were prorated in anticipation of similar increases applied to the Bruce estimates.

The total decommissioning costs are included in the Decommissioning Program Cost Estimate Report – May 1999 [R-34]. The program reference document for Bruce is provided in [R-57].

The 25 year reactor operating life approved ONFA estimate was derived from the 40 year reactor operating life estimate. This resulted in the start of decommissioning for 25 year life nominally 15 years before 40 year life. The approved ONFA future cost from April 1, 1999 forwards was established as \$ 7,379M in 1999 M\$.

Station Decommissioning	1999M\$ April 1, 1999 Forward
Bruce A	1,291
Bruce B	1,423
Pickering A	1,247
Pickering B	1,247
Darlington	2,172
Total	7,379

This value adjusts to \$10,025M in 2012 M\$ from April 1, 1999 forward.

4.1.2 Update to ONFA Estimate – 1st Post 1999 ONFA Estimate

In late 1999, TLG Services Inc. completed decommissioning cost estimates for the Pickering A and B; and in 2000 for the Darlington Nuclear Generating Station [R-58]. These updated estimates were consistent in methodology with those prepared previously by TLG for the Bruce stations. The Pickering and Darlington estimates were within the total approved ONFA constant dollar estimates but annual cost flow differences resulted in an increase in present value costs.

These estimates established the first post-ONFA estimates for station decommissioning. Estimate summary by station as documented in TLG reports is provided below:

Station Decommissioning	Dollars of Year	M\$
Bruce A	1997	1,397
Bruce B	1997	1,372
Pickering A	1998	1,192
Pickering B	1998	1,259
Darlington	1999	2,191

4.1.3 Update to Estimate – 2nd Post 1999 ONFA Estimate

In 2001, TLG Services Inc. issued a detailed report for all stations in 2000 dollars that incorporated updated economic data and several changes in assumptions as identified below [R-58]:

- a) L&ILW management costs in year 2000 dollars were estimated at \$3,380/m³ and \$12,980/m³ respectively to reflect latest cost estimates for these programs. These values were calculated as an incremental cost to those costs estimated for management of operational waste;
- b) With changes to the energy markets in Ontario, the 1999 ONFA cost estimate assumed energy could be purchased at the marginal cost. As a result, all estimates were updated to account for a full energy cost of \$40 per MWh, which is based on an energy cost drawn from the grid rather than an internal cost;
- c) Labour rates were updated to reflect negotiated changes which had occurred post 1999 ONFA;
- d) Municipal tax values were changed to reflect taxes associated with the land only portion of each station after the operating life of each station; and
- e) Financial risk of 5.2% was removed as major known risk elements were covered by the identified changes above. Contingency was left unchanged at about 23%.

The estimate summary by station was as follows:

Station Decommissioning	2000M\$
Bruce A	1,378
Bruce B	1,374
Pickering A	1,262
Pickering B	1,305
Darlington	1,958
Total	7,277

4.1.4 2007 ONFA Station Decommissioning Cost Estimates

In 2005, TLG Services Inc. was retained by OPG to conduct studies of all station decommissioning costs. In 2006 TLG completed the decommissioning cost estimate studies for all stations, including comparison reports to previous cost estimates [R-1-R-10].

The 2006 cost estimates [R-12] included updates to both economic and technical assumptions. The economic update reflected the current conditions and costs in 2005 dollars. (e.g., waste disposal, labor, insurance, regulatory agency fees, property taxes, energy costs). The technical update reflected current industry practice and experience primarily in the United States.

The comparison reports detailed the changes from the original TLG station decommissioning cost estimates to the 2006 cost estimates. For the Bruce stations the comparison was to the ONFA basis 1997/1998 cost estimates produced by TLG. The Pickering and Darlington Station comparison reports were drafted using the decommissioning cost estimates produced by TLG in 1999 and 2000 respectively for the stations.

The combined decommissioning cost estimate total for the 2007 ONFA scenario including costs from 2005 forward was projected to be \$8,960M in 2005 M\$.

Station Decommissioning	2005 M\$ 2005 Forward
Bruce A	1,710
Bruce B	1,749
Pickering A	1,739
Pickering B	1,620
Darlington	2,142
Total	8,960

This value adjusts to \$9,124M in 2007M\$ from January 1, 2007 forward (\$10,501M in 2012M\$ from January 1, 2007 forward), and \$9,129M in 2007M\$ from April 1, 1999 forward (\$10,507M in 2012M\$ from April 1, 1999 forward).

4.2 2012 ONFA Station Decommissioning Cost Estimates

In 2010/11 new decommissioning cost estimates were prepared by TLG Services Inc. for all OPG owned generating stations and waste management facilities.

The basis of the cost estimates including comparisons to the previous cost estimates is detailed by station in the station cost estimate reports prepared by TLG [R-35 – R-44]. The 2011 decommissioning cost estimates were prepared using OPG station EOL assumed dates as found in Section 3.5. The 2011 cost estimates include updates to both economic and technical assumptions. The economic update reflects current conditions and costs in 2010 dollars. (i.e. disposal, labor, insurance, regulatory agency fees, property taxes, and energy costs). The technical update reflects current industry practice and experience in the United States. Decommissioning cost estimate summary details can be found in the “2012 ONFA Reference Plan Update Decommissioning Summary Cost Estimate Report” [R-45].

The comparison reports detail the changes from the approved 2007 to the 2012 ONFA Station Decommissioning Cost Estimates.

The Bruce A and B stations are currently operated under lease by Bruce Power. Under the current lease agreement, Bruce Power is required to turn over both stations to OPG approximately 1 year after the last unit shuts down. As a result of this the decommissioning costs under 2012 ONFA have been reduced to reflect the costs incurred by Bruce Power during the initial preparation for safe storage until the stations are turned over to OPG. The principal cost items during the initial preparation for safe storage period are the de-fuelling and dewatering costs for the units.

The following table summarizes the decommissioning cost adjustment for Bruce A and Bruce B generating stations.

Station	Full Decommissioning Cost 2010 M\$	Decommissioning Cost Post Turnover 2010 M\$
Bruce A	1,785	1,709
Bruce B	1,853	1,462

For Financial Guarantee scenario purposes, TLG decommissioning cost estimates and resulting cash flows have been historically based on a nominal 40 year life for all stations assuming rehabilitation would occur at some stations. The decommissioning cash flows were adjusted to align with different ONFA planning dates for the purpose of the ONFA

updates. The 2011 planning dates for both the 2012 ONFA Update and the 2013 Financial Guarantee Update are the same.

For ONFA 2012, the financial planning end of life for unrefurbished Bruce B units is in the 2018 to 2021 time frame; the end of life of fully refurbished Bruce A units will be extended to a 2042 to 2054 time frame. At this time Bruce Power has made no formal commitment to refurbish and life extend any of the Bruce B units. For the purpose of this ONFA update it is assumed the current lease agreement between Bruce Power and OPG will be amended to provide for operational service of the Bruce A units beyond the current maximum end of lease date in 2043; renewals and extensions of the lease term being at the sole discretion of Bruce Power giving notice to OPG. In addition, the Bruce A and B units would be returned by Bruce Power to OPG at the end of the lease term as a full package (i.e. 1 year after the last unit is shut down, or when Bruce Power serves notice to OPG that the lease is to terminate earlier than the end of term date). For clarity on this point, the lease does not currently provide for Bruce Power to return part of the leased facilities (i.e. a shutdown station) to OPG while retaining the other parts (i.e. an operational station); the leased facilities can only be returned to OPG as a full and complete package.

From a financial perspective, the annual safe storage cost (estimated at approximately \$2M per unit per year) for out of service Bruce B units prior to these being returned to OPG are eliminated, as this cost will instead be incurred by Bruce Power until the leased facilities are all returned to OPG at the end of lease term. This process results in a net reduction of the costs incurred by OPG. For financial planning purposes, and assuming Bruce Power operates the refurbished Bruce A station to 2054, the nominal 30 years safe storage period for the Bruce B units will have already been achieved by 2055.

The following table provides the estimated OPG cost to decommission the generating stations for the period from 2011 forward (in constant 2010M\$) and for the 2012 ONFA reference plan update period from 2012 forward (in 2012 constant M\$).

Generating Station	TLG 2010 / 2011 Estimates 2010 constant M\$ (2011 forward)	2012 ONFA Reference Plan Update 2012 constant M\$ (2012 forward)
Pickering A	1,520	1,592
Pickering B	1,580	1,664
Bruce A	1,709	1,800
Bruce B	1,462	1,541
Darlington	2,084	2,193
Total	8,355	8,790

For ONFA 2012, oversight costs specific to the OPG decommissioning program were removed from the TLG Services cost estimates. These costs include oversight by the OPG Nuclear Decommissioning Organization (NDO), OPG Corporate Finance, the Ontario Financing Authority (OFA) and the NWMO. Details regarding the oversight costs are found in “2012 ONFA Reference Plan Update Operational Oversight Cost Estimate Report” [R-46].

For ONFA 2012, a heavy water allowance at Pickering has also been included to address caretaking costs for the storage of D2O post shutdown. Details regarding the heavy water costs are found in “Long Term Strategy for D2O Storage upon Station Shutdown” [R-47].

The additional decommissioning costs specific to heavy water handling at Pickering A and B, and Decommissioning Oversight for all OPG stations are shown in the following table.

Activity	2012 ONFA Reference Plan Update 2012 constant M\$ (2012 forward)
Station Decommissioning	8,790
Heavy Water Management at Pickering A and B*	40
Decommissioning Oversight**	116
Total Decommissioning Cost	8,946

* Cost allocated equally to Pickering A and B units.

** Cost allocated equally to all OPG nuclear station units.

4.3 Variance of Approved 2007 ONFA to 2012 ONFA Estimate

The total variance between the 1999, 2007 and 2012 ONFA Decommissioning Cost Estimates, from April 1, 1999 forward in 2012\$ is shown in the following table.

Station	1999 ONFA Estimate (2012M\$)	Approved 2007 ONFA Estimate (2012M\$)	2012 ONFA Estimate (2012M\$)	Change 2012 ONFA – Approved 2007 ONFA (2012M\$)
Total	10,025	10,507	9,173	-1,334

For a summary of the 2012 ONFA cost estimate refer to “2012 ONFA Reference Plan Update Decommissioning Summary Cost Estimate Report” [R-45], and supporting decommissioning cost estimate study reports prepared by TLG Services [R-35 – R-44]. Decommissioning cash flows for the 2012 ONFA scenario by station are provided in Appendix A.

5.0 LOW AND INTERMEDIATE LEVEL WASTE – DEEP GEOLOGIC REPOSITORY

5.1 1999 L&ILW ONFA Disposal Cost Estimate

The 1999 approved ONFA cost estimate for L&ILW Disposal was established based on separate L&ILW waste stream cost estimates.

The 1999 Disposal Cost Estimate for LLW was established at \$388M in 1999M\$. In 1998 Golder Associates completed an estimate for LLW Disposal based on a 40 year reactor operating life. This estimate was scaled from a reference volume of 115,000 m³ for a 40 year reactor operating life to 81,000 m³ for a 25 year reactor operating life resulting in a cost estimate of \$388M (1999M\$).

The 1999 Disposal Cost Estimate for ILW was established at \$159M in 1999M\$. The estimate was based on the co-location of short lived ILW in the LLW disposal facility and long-lived ILW in the UFD facility. The ONFA estimate was scaled from the 40 year reference life estimate to a 25 year estimate, and escalated to 1999M\$ resulting in the approved ONFA estimate total of \$159M in 1999M\$ from April 1, 1999 forward.

The combined approved liability for L&ILW Disposal totalled \$547M in 1999M\$ from April 1, 1999 forward.

5.1.1 Update to ONFA Estimate – 1st Post 1999 ONFA Estimate – Intermediate Level Waste Disposal

OPG established plans in 1999 to develop a comprehensive set of four conceptual estimates for the disposal of ILW. The estimates addressed the 25 and 40 year reactor life scenarios for operational ILW, and combined operational and decommissioning ILW. The estimates were completed in June 2000 following the establishment of the approved 1999 ONFA total for ILW disposal.

The new cost estimate for ILW disposal was completed by OPG in 2000 to become the current baseline cost estimate for ILW disposal (Intermediate Level Radioactive Waste Disposal Program Life Cycle Cost Estimate – 06819-REP-00400-10000 R00). At that time the projected ILW disposal cost was \$274M in 2000M\$, 2000 forward.

Intermediate Level Waste Disposal	2000M\$ January 1, 2000 forward
Total	274

5.2 2007 ONFA Low and Intermediate Level Waste Disposal Cost Estimate

In 2005 an agreement was reached with the Municipality of Kincardine for the location of an L&ILW DGR at the Bruce nuclear site. A conceptual design and cost estimate for the repository were prepared by external consultants in 2004 [R-25]. This estimate was adapted to become the 2007 ONFA L&ILW DGR cost estimate.

The 2004 DGR design and cost estimate were based on 40 year station operating life assumptions that were valid in 2003. In 2006 an L&ILW Disposal Cost Estimate was prepared by OPG based on the adaptation of the 2004 repository design for an updated 40 year operating life and 2007 ONFA planning and waste assumptions.

The cost estimate included incremental cost information related to preparing and packaging additional L&ILW, transportation costs for the resultant waste packages, construction for emplacement rooms to store additional L&ILW and additional property tax. The updated cost estimate became the 2007 ONFA L&ILW DGR cost estimate [R-26].

The major planning assumptions for the 2007 ONFA L&ILW DGR cost estimate included:

- The DGR facility would be located at the Bruce nuclear site with an in-service date of 2017. The DGR design was based on the assumption that approximately 106,000 m³ (repository volume of waste packages) of operational wastes would be placed in the repository during the 18-year period, 2018 to 2035.
- The repository would receive operational and refurbishment L&ILW.
- Following emplacement of all operational waste, it was assumed that the DGR facility would enter into a 5-year period of extended monitoring in years 2036 to 2040. The entire facility was planned to be decommissioned and closed during the 4-year period, 2041 to 2044 given current station life planning assumptions.

The 2007 ONFA L&ILW DGR cost estimate totalled \$943M in 2007M\$ as shown in the following table.

Program	2007 ONFA (2004M\$)	2007 ONFA (2007M\$ 2007 forward)
L&ILW Disposal	883	943

The total projected cost based on the 2007 ONFA L&ILW DGR estimate for costs from April 1, 1999 forward was estimated to be \$1,112 M in 2012M\$.

For a summary of the 2007 ONFA cost estimate refer to “L&ILW Disposal Cost Estimate Report for ONFA 2007” [R-16].

5.2.1 2012 ONFA Low and Intermediate Level Waste DGR Cost Estimate

The 2012 ONFA L&ILW DGR cost estimate is based on component cost estimates developed in 2010/2011. The six component cost estimates include (developed by):

- 1) DGR Retrieval (OPG)
- 2) DGR Operational Readiness and Operations (OPG)
- 3) DGR Design and Construction – CAPEX (Hatch)
- 4) Decommissioning (NWMO and Candesco)
- 5) Community Payments (OPG)
- 6) Oversight (OPG)

Major cost estimate assumptions include:

- (1) The DGR waste inventory is based on the OPG Low and Intermediate level waste inventory for the deep geologic repository [R-18]
- (2) The inventory includes all current and potential future waste, including reactor retube and steam generator refurbishment waste.
- (3) Waste forecasts are based on refurbishment of all reactor units (except Pickering A, Pickering B and Bruce B) with operation for a further nominal 30 calendar years after refurbishment and includes the effect of current nuclear unit layups, re-start dates and end-of-life dates.
- (4) The projected total disposal volume will be approximately 200,000 m³ of operational L&ILW and refurbishment waste.
- (5) The in-service date of the repository will be 2018.

The following sections detail the component cost estimates and their variance to the approved 2007 ONFA cost estimate.

5.2.2 DGR Design and Construction - CAPEX

The CAPEX component of the 2007 ONFA cost estimate for the design and construction of a L&ILW DGR at the Bruce site was estimated at \$544M (2006M\$).

The 2012 ONFA CAPEX cost estimate was developed by Hatch in 2010 based on a repository design volume of 200,000 m³ of packaged waste [R-22]. The 200,000 m³ is consistent with OPG's current projection for all existing L&ILW at the Western Waste Management Facility (WWMF) and waste expected from on-going plant operations.

The 2012 ONFA CAPEX cost estimate totalled \$925M (2010M\$, 2010 forward).

After review of the cost estimate, OPG decided that a P50 cost estimate be used for the 2012 ONFA submission. A P50 estimate resulted in an overall CAPEX cost of \$809M (2012C\$, 2012 forward). For final submission, the number has been further revised to \$832M (2012C\$, 2012 forward) to incorporate latest business plan and construction insurance costs.

5.2.3 DGR Retrieval

The 2012 DGR Retrieval cost estimate was compiled by OPG in 2010 based on industry best practices and knowledge gained from performing similar work activities in past operations [R-19]. The general waste retrieval methodology is that each waste type will be retrieved from its respective waste storage structure, assessed, and over-packed or processed as required, ensuring all waste arrives at a Staging Building in packages which meet the DGR Waste Acceptance Criteria (WAC). The estimate includes waste retrieval activities and processes up to the point at which each waste type is in a DGR-ready package at the Staging Building, awaiting pick-up by the DGR Operations staff. Transfer and emplacement in the DGR is addressed under the DGR Operations cost estimate.

The Retrieval cost estimate has increased from the 2007 ONFA Retrieval cost estimate by \$168M (2012 M\$, 2012 forward) due to a revised assessment of retrieving each waste type, an increase in the number of over-packs required along with specialized equipment and additional labour that was not factored in previously. The DGR Retrieval component of the 2012 ONFA cost estimate is estimated as \$250M (2012M\$, 2012 forward).

5.2.4 DGR Operational Readiness and Normal Operations

The 2012 DGR Operational Readiness and Normal Operations (ORNO) cost estimate was compiled by OPG in 2010 and includes Operational Readiness activities as well as Operations activities from the point of waste package pick-up at the Staging Building in the WWMF, to emplacement in designated rooms below ground in the DGR. [R-20]

The 2007 ONFA DGR ORNO cost estimate of \$198M (2012M\$, 2012 forward) assumed a DGR operating life of 22 years and a staffing level of 15. The DGR ORNO component of the 2012 ONFA cost estimate has increased to \$551M (2012M\$, 2012 forward) due primarily to the DGR operating period being extended to 35 years with a staffing level of 36 along with increases in property tax re-estimates and insurance rates.

5.2.5 DGR Decommissioning

The 2012 DGR Decommissioning cost estimate developed by the NWMO and Candesco in 2011 [R-21] includes direct/indirect costs associated with decommissioning and closure of the DGR facility, including extended monitoring, geosciences support, licensing and DGR related activities (i.e. hoisting, sealing and excavation).

The 2007 ONFA DGR Decommissioning cost estimate of \$76M (2012M\$, 2012 forward) was based on a high level preliminary design including a capped only design for shaft sealing. The 2012 DGR Decommissioning cost estimate has increased to \$337M (2012M\$, 2012 forward) largely due to a more detailed design and an associated increase in the number of direct/indirect costs.

5.2.6 DGR Community Payment

DGR Community Payments of \$31M (2012M\$, 2012 forward) for the 2012 ONFA cost estimate have remained relatively consistent with only a slight variance in costs from the 2007 ONFA cost estimate of \$32M (2012M\$, 2012 forward).

5.2.7 DGR Oversight

DGR Oversight costs for the 2012 ONFA cost estimate are approximately \$74M (2012M\$, 2012 forward).

5.3 Variance of Approved 2007 ONFA to 2012 ONFA cost estimate

The variance from currently approved 2007 ONFA L&ILW DGR cost estimate to the proposed 2012 ONFA L&ILW DGR cost estimate is shown in the following table (2012 M\$, 2012 forward).

Program Estimate	2007 ONFA (2012M\$) 2012 Forward	2012 ONFA (2012M\$) 2012 Forward	Change 2012 ONFA – Approved 2007 ONFA (2012M\$)
CAPEX	548	832	284
Retrieval	82	250	168
DGR Operational Readiness and Normal Operations	198	551	353
Decommissioning	76	337	262
Community Payments	32	31	-1
Oversight	-	74	74
Total	936	2,076	1,140

For a summary of the 2012 ONFA cost estimate refer to “2012 ONFA Reference Plan Update Long Term L&ILW Management Summary Cost Estimate Report “[R-24].

For complete details of basis of the 2012 L&ILW DGR Estimate refer to documents [R-18-R-22].

6.0 LOW AND INTERMEDIATE LEVEL WASTE – OPERATIONS

6.1 Approved 1999 and 2007 Cost Estimates

The 1999 ONFA cost estimate for L&ILW Operations was established at \$496M in 1999 M\$ from April 1, 1999. The 2007 ONFA L&ILW Operations Cost Estimate was projected at \$605M in 2007 M\$ from April 1, 1999 forward.

The 2012 ONFA L&ILW Operations Cost Estimate is projected at \$1,231M in 2012M\$, from January 1, 2012 forward. Refer to the “2012 ONFA Reference Plan Update L&ILW Operations Summary Cost Estimate Report” [R-17] for more detail.

The following sections detail the changes which have occurred to account for the variance between the 2007 ONFA approved cost estimate and the current 2012 ONFA cost estimate.

6.1.1 1999 L&ILW ONFA Operations Estimate

An L&ILW Operations cost estimate was prepared by OPG in 2000 based on internal operating experience and OPG planning assumptions including a nominal 25- year reactor operating life scenario. The estimate identified future costs from 2001 forward for transport, process and storage of L&ILW at the WWMF until long term storage repositories were available. Costs to decommission the WWMF were included. It was assumed that LLW and short-lived ILW would ultimately be co-located at an L&ILW repository starting in 2015. Long lived ILW was assumed to be co-located with used fuel at separate repository expected to be in operation by 2034.

The total estimated cost of 496 M\$ in 1999\$ was established as the approved ONFA Estimate. The total approved 1999 ONFA estimate for L&ILW Operations adjusts to \$625M in 2012 M\$, 2012 forward as shown in the following table.

Program	During Station Life (2012C\$, M\$)	After Station Life (2012C\$,M\$)	Total (2012 C\$,M\$)
Low Level Waste Operations	188	189	377
Intermediate Level Waste Operations	136	112	248
Total	324	301	625

6.1.2 2007 L&ILW ONFA Operations Cost Estimate

The 2007 ONFA L&ILW Operations cost estimate was developed to capture changes in plant operating lives, waste volumes, and the projected L&ILW DGR in-service date. The 2007 estimate was based on a 25 year nominal operating life for Pickering B, Bruce B, and Darlington, with two units at Pickering A operating until 2021 and Bruce A units operating until 2017/2034/2034 and 2036. It was also assumed that an L&ILW DGR would be established at Kincardine in 2017.

The total costs by L&ILW program for the 2007 ONFA cost estimate are summarized in the following table for the period of 2007 forward in 2007M\$ and 2012 forward in 2012M\$.

Program	2007 ONFA Costs 2007 forward (2007 M\$)	2007 ONFA Costs 2012 forward (2012 M\$)
Low and Intermediate Level Waste Operations during station life	390	216
Low and Intermediate Level Waste Operations after station life	208	236
Total	598	452

6.1.3 2012 ONFA L&ILW Operations Cost Estimate

The 2012 ONFA L&ILW Operations cost estimate was developed in 2011 by OPG. Generating station operating life assumptions, waste volumes, and operating methods have been updated for the 2012 ONFA L&ILW Operations cost estimate. The L&ILW DGR is expected to be in-service by 2018 to which all OPG operational and refurbishment L&ILW will be sent for long term management.

An analysis of the 2012 ONFA L&ILW Operations cost estimate identifies expenditures and cost increases as a result of new activities and waste program assumption changes. The following items provide a summary of the major assumptions included for the 2012 ONFA L&ILW Operations cost estimate.

- The station operating life assumptions have changed since the 2007 ONFA update with both Bruce and Darlington Stations extending operations. In February 2010, OPG announced its decision to commence the detailed planning phase for the refurbishment of the Darlington nuclear generating station. The February announcement also included OPG's decision to continue the safe and reliable

operation of the Pickering B station. The life of the Pickering A units would be aligned to the EOL of Pickering B.

- Fabrication and procurement of Darlington Storage Over-packs (DSOs) and Re-tube Waste Containers (RWCs) required for the refurbishment of four (4) DN units which is planned to start by Oct 2016 are included.
- The long term management costs of the 36 Dry Storage Modules (DSM) from the Pickering Re-tube Component Storage Facility are included.
- L&ILW Operations Support and Divisional Overhead have been aligned with NWMD business planning practices and are required beyond the 2015 planning cycle to the end of operations in 2054. In the 2007 ONFA estimate, divisional overhead costs and WWMF operating costs were estimated to be 15% and 150% of the direct costs related to transportation, processing and storage and care-taking respectively.

The total cost estimate for both L&ILW programs is summarized in the following table for the period of 2012 forward (in 2010M\$ and 2012M\$).

Waste Type	2010 M\$ (2012 forward)	2012 M\$ (2012 forward)
Low Level Waste	679	714
Intermediate Level Waste	492	516
Total	1,171	1,231

6.2 Variance of Approved 2007 ONFA to 2012 ONFA Estimate

The total variance from the currently approved 2007 ONFA L&ILW Operations cost estimate to the proposed 2012 ONFA L&ILW Operations cost estimate is shown in the following table (2012 M\$, 2012 forward) :

Program	2007 ONFA (2012M\$) 2012 Forward	2012 ONFA (2012M\$) 2012 Forward	Change 2012 ONFA – Approved 2007 ONFA (2012M\$) 2012 Forward
Low and Intermediate Level Operations During Station Life	216	752	537
Low and Intermediate Level Operations After Station Life	236	479	242
Total	452	1,231	779

For a summary of the 2007 ONFA L&ILW Operations cost estimate refer to “Low and Intermediate Level Waste Operations Lifecycle Estimate for 2007 ONFA Update” [R-27].

For complete details of basis of the L&ILW Operations estimate refer to “2012 ONFA Reference Plan Update Low & Intermediate Waste Operations Cost Estimate Report” [R-56].

The L&ILW operations cash flow for the 2012 ONFA scenario is provided in Appendix C.

7.0 USED FUEL MANAGEMENT – LONG TERM MANAGEMENT

7.1 Summary of Changes to Approved Cost Estimates

The 1999 approved ONFA cost estimate for Used Fuel Long term Management (i.e. Used Fuel Disposal (UFD)) was established at \$8,766 in 1999 M\$ (\$12,460M in 2012 M\$) from April 1, 1999 forward. The currently approved 2007 ONFA estimate for Used Fuel Long-term Management was determined to be \$14,234M in 2007M\$ (\$16,317M in 2012M\$) from April 1, 1999 forward. The 2012 ONFA estimate is projected to be \$21,291M in 2012M\$ from April 1, 1999 forward.

For a summary of the 2012 ONFA cost estimate refer to “2012 ONFA Reference Plan Update Long Term Used Fuel Management Summary Cost Estimate” [R-48].

The following sections detail the changes which have occurred to account for the variance between the 1999 ONFA, the 2007 ONFA approved estimate and the 2012 ONFA cost estimate.

7.2 Approved ONFA cost estimates (1999 through 2007)

In May 1996 an internal UFD estimate was completed by OPG for a 40 year reactor operating life scenario (06819-REP-00400-10010-R00 Used Fuel Disposal Project Cost Estimate Report – 1996). Based upon previous work by AECL and a benchmarking program with SKB (Sweden), the estimate included two scenarios for both road and rail transportation of used fuel to a disposal facility. The estimate was based upon 3.6 M fuel bundles representing the projected Canadian fuel arisings, and was subsequently adjusted for the OPG projected volume of 3.3M bundles based on nominal 40 year life assumptions. The disposal facility was projected to be in-service in 2025. The estimated cost was determined as \$9,750M in 1995M\$.

The estimate was subsequently adjusted for a 25 year reactor operating life scenario assuming 2.23 M fuel bundles. The facility costs were reduced to reflect the reduction in projected volumes. The estimated cost for this scenario for costs from 1994 forward was determined as \$9,000M in 1995M\$.

The future costs from April 1, 1999 forward were determined at \$8,766M in 1999M\$ to become the first approved ONFA estimate. In 2012\$, this adjusted approved ONFA cost is \$12,460M in 2012M\$ from April 1, 1999 forward.

Program	1999M\$	2012M\$
UFM - Disposal	8,766	12,460

In November 2000, the ONFA estimate for UFD was revised to reflect changes in used fuel projections and the disposal facility in-service date (N-00531 P CD# N-CORR-00531-00879). The 1999 estimate was escalated to year 2000M\$, and the projected fuel arising for the Canadian 40 year reactor operating life scenario was adjusted to 3.2M bundles. The in-service date for the disposal facility was revised to 2035 from 2025. The estimate total was determined as \$10,700M in 2000M\$. The cost estimate was adjusted for the OPG projected fuel arisings of 2.23 M bundles in a 25 year reactor operating life scenario for all stations which is the risk shared quantity within ONFA. The cost estimate total for 2.23 M bundles was determined as \$9,229M in 2000M\$.

Program	2000M\$
UFM – Disposal of 2.23 m bundles	9,229

In 2006, the 2007 ONFA Long Term Used Fuel Management (LTUFM) cost estimate was prepared by OPG based on an Adaptive Phased Management (APM) concept including a DGR with an earliest likely in-service date of 2035. The NWMO approach is documented in NWMO's report "Choosing a way Forward – The Future Management of Canada's Used Nuclear Fuel – Final Study" [R-28].

A summary of the 2007 ONFA LTUFM cost estimate is provided in the "Long Term Used Fuel Management Report for ONFA 2007" [R-13].

The APM-DGR cost estimate included the following cost estimate models:

- A used fuel storage cost estimate prepared by OPG
- A used fuel retrieval cost estimate prepared by OPG
- A road transportation mode cost estimate prepared by Cogema Logistics [R-49]
- A long term used fuel disposal cost estimate prepared by CTECH [R-50]

The OPG, COGEMA, and CTECH cost estimate models were developed using a scalable Work Breakdown Structure (WBS) in order to estimate costs for varying bundle production totals. The original OPG, Cogema, and CTECH cost estimates were based on a nominal Canadian total used fuel production of 3.6 M used fuel bundles.

The 2007 ONFA long term used fuel management lifecycle cost estimate model was implemented by scaling the appropriate NWMO DGR cost estimate models for an OPG only bundle capacity of 2.95 M used fuel bundles. The 2007 ONFA cost estimate includes scaled cost estimates for:

- Retrieval of used fuel from storage
- Transportation of used fuel by road to the DGR, and
- Siting, construction, operation, extended monitoring, closure and decommissioning of the DGR facility.

The total projected cost for the 2007 ONFA long term used fuel management cost estimate from 2007 forward assuming 2.95 M bundles is shown in the following table.

Fuel Bundles (millions)	Estimated Cost from January 2007 Forward				
	Retrieval 2002 M\$	Road Transportation 2002 M\$	Disposal 2002 M\$	Total 2002 M\$	Total 2007 M\$
2.95	450	750	11,170	12,370	14,107

The total projected cost for the 2007 ONFA long term used fuel management cost estimate for costs from April 1, 1999 forward based on 2.95 M bundles is shown in the following table.

Program	2007 ONFA (2007M\$) April 1, 1999 Forward	2007 ONFA (2012M\$) April 1, 1999 Forward
Long Term Used Fuel Management	14,234	16,317

7.3 2012 ONFA Reference Plan Update Long Term Used Fuel Management Cost Estimate

From 2009 to 2011, NWMO and SNC-Lavalin updated the previous design and cost estimate for the APM deep geological repository (APM DGR) in crystalline rock prepared by CTECH and for the APM used fuel transportation system prepared by Cogema Logistics. The cost estimate activities for the APM update were allocated as follows:

1. NWMO was responsible for estimating APM costs for siting, design development, safety assessments, licensing, approvals, program management and related support to APM facility construction, operation decommissioning and closure.
2. SNC-Lavalin was responsible for estimating APM costs for final design, construction, operation, extended monitoring, decommissioning and closure of the APM facility and for the used fuel transportation system.

Two used nuclear fuel inventory scenarios are considered in the APM cost analysis for long term management. The Base Case assumes 3.6 M used CANDU fuel bundles and the Alternate Case assumes 7.2 M used CANDU fuel bundles.

The resulting APM cost estimate excluding interim used fuel storage and retrieval, is \$17.9B in 2010 constant dollars under the Base Case scenario. Under the Alternate Case, the cost estimate would be \$29.3B in 2010 constant dollars.

The APM cost estimate includes allowances and contingencies which, on an aggregated basis, are 29% of the total estimate.

Three separate detailed cost estimate reports have been submitted that were used in the formation of the APM cost estimate for ONFA purposes:

1. NWMO Input to Cost Estimate [R-55]
2. Deep Geological Repository Lifecycle Cost and Schedule [R-54]
3. Lifecycle Cost Estimate for Used Fuel Transportation System [R-53]

NWMO formally transmitted the APM cost estimate in final form to OPG in November. This ONFA Reference Plan Update submission reflects the final estimate from NWMO. The updated estimate will be included in the 2011 NWMO Annual Report to be submitted to the Minister of Natural Resources Canada.

In 2010/2011, a 2012 ONFA long term used fuel management cost estimate was prepared by OPG. A summary of the 2012 ONFA cost estimate is provided in the “2012 ONFA Reference Plan Update Long Term Used Fuel Management Summary Cost Estimate Report” [R-48].

7.3.1 Adjustments to NWMO APM Cost Estimate for 2012 ONFA Purposes

For the purpose of developing an estimate for OPG’s 2012 ONFA reference used fuel volume of 4.02 M bundles, the NWMO APM cost estimates for 3.6 M and 7.2 M bundles were used to determine the incremental cost of volume increase. The Base Case APM cost estimate at 3.6 M bundles was scaled up to 4.02 M bundles by the incremental costs on a straight-line basis.

In addition to the scaling to a 4.02 M bundle lifecycle bundle volumes, the APM cost estimate was adjusted as follows:

- Removal of non-OPG specific transportation costs
- Adjustment of fixed costs to reflect OPG's cost sharing percentage (90.78%) according to the Membership Agreement and the NFWA Funding Formula

The following summarizes the impacts in 2010 constant dollars of the different adjustments for 2012 ONFA purposes:

Cost Adjustment	2010 Constant Dollars (\$M) 2010 Forward
NWMO APM Cost Estimate for 3.6 M bundles	17,933
Adjustments:	
Removal of non-OPG transportation costs	(121)
Adjustment of fixed cost to reflect cost sharing percentages	(402)
Scaling up to 4.02 M bundles	1,450
2012 ONFA Reference Plan Update APM Cost Estimate	18,860

7.3.2 Other Long Term Used Fuel Management Cost Estimates

In addition to the APM cost estimates, the derivation of the 2012 ONFA long term used fuel management cost estimate required the integration of a number of other cost estimates:

- Retrieval of used fuel from wet and dry storage at OPG reactor sites
- OPG's APM program oversight costs

7.3.3 Retrieval of Used Fuel at Reactor sites

OPG used fuel is stored in both dry storage containers (DSCs) at OPG dry storage facilities and in OPG wet bays at reactor sites. The road mode of transportation assumed for the 2012 ONFA reference plan update requires that used fuel be retrieved from DSCs and wet bays and reloaded into a certified transportation cask for shipment to the APM-DGR.

The retrieval of used fuel from interim storage begins when the APM DGR facility is in-service. Used fuel will be retrieved from wet bays first and then from dry storage to ensure operating stations can discharge their fuel as early as possible after required cooling period. The used fuel will be transferred to an Irradiated Fuel Transportation Cask (IFTC) through the use of a hot cell at each OPG reactor site, as detailed in the APM Used Fuel Transportation cost estimate [R-53].

The 2012 ONFA reference plan update cost estimate for used fuel retrieval includes all program related costs including facility sustaining capital and operations, system support and common divisional costs. Details of the retrieval process and costs are documented in the "2012 ONFA Reference Plan Update Used Fuel Operations Cost Estimate Report" [R-31].

The following table shows the work breakdown structure and total estimated cost for retrieval of used fuel for 4.02 M used fuel bundles to be \$1,213 M in 2010 constant M \$ and \$1,285 in 2012 M constant \$.

Retrieval WBS	2012 ONFA Reference Plan Update 2010 M\$	2012 ONFA Reference Plan Update 2012 M\$
Facility Sustaining Capital	100	
DSF Operations	372	
Retrieval from Wet Bays	188	
Retrieval from DSCs	354	
Dry Storage Support	69	
Common Costs	203	
Total	1,213	1,285

7.3.4 APM Program Oversight Cost Estimate

APM oversight cost is estimated to be \$22 M in 2010 constant dollars over the course of the program. Details of the APM oversight cost estimate are documented in the Nuclear Waste Management and Decommissioning – Oversight Cost Estimate Report. [R-46]

7.4 Cost Summary

The 2012 ONFA reference plan update long term used fuel management lifecycle cost estimate summarizes the long term management costs for an OPG bundle total of 4.02 M used fuel bundles. The cost estimate includes estimated costs for:

- Used fuel retrieval from wet and dry storage at OPG reactor sites
- APM lifecycle costs (including transportation of used fuel from OPG reactor sites to the APM DGR)
- Program oversight

7.4.1 2012 ONFA Long Term Used Fuel Management Lifecycle Costs

The overall lifecycle cost for the long term management of 4.02 M fuel bundles is summarized in the following table in 2010 constant M\$ and in 2012 constant M\$ from 2012 forward.

Fuel Bundles (millions)	Estimated Cost (2012 Onwards Liability)				
	Retrieval 2010 M\$	APM 2010 M\$	Program Oversight 2010M\$	Total 2010 M\$	Total 2012 M\$
4.02	1,213	18,790	22	20,025	21,001

7.4.2 Variance of Approved 2007 ONFA to 2012 ONFA Estimate

The total UF Long term management cost estimate variance from the currently approved ONFA estimate to proposed 2012 ONFA for costs from April 1, 1999 is shown in the following table.

UFM Cost Component	1999 ONFA (2012M\$)	Approved 2007 ONFA (2012M\$) 1999 Forward	2012 ONFA (2012M\$) 1999 Forward	Change 2012 ONFA – Approved 2007 ONFA (2012M\$)
UFM - Disposal of 2.23 m bundles	12,460	14,015	15,576	1,561
UFM - Disposal bundles in excess of 2.23 m bundles		2,302	5,715	3,413
UFM – Disposal of 2.95 m bundles		16,317		4,974
UFM – Disposal of 4.02 m bundles			21,291	

For a summary of the 2012 ONFA cost estimate refer to “2012 ONFA Reference Plan Update Long Term Used Fuel Management Summary Cost Estimate Report” [R-48].

The Used Fuel Long Term Management cash flow for the 2012 ONFA scenario is provided in Appendix D.

8.0 USED FUEL MANAGEMENT – INTERIM STORAGE

8.1 Changes to Approved Estimates

The currently approved 2007 ONFA cost estimate for Used Fuel Interim Storage from April 1, 1999 was determined as \$1,948M in 2007M\$, or \$2,282M in 2012M\$ from April 1, 1999 forward. The 2012 ONFA estimate for used fuel interim storage is projected as \$2,677M in 2012M\$ from January 1, 2012 forward (\$3,300 M in 2012M\$ from April 1, 1999 forward).

For a summary of the 2012 ONFA cost estimate refer to “2012 ONFA Reference Plan Update Used Fuel Storage Summary Cost Estimate Report” [R-30].

The following sections detail the changes which have occurred to account for the variance between the 2007 ONFA approved cost estimate and the 2012 ONFA cost estimate.

8.1.1 Approved ONFA Estimates (1999 through 2007)

In May 1999 an OPG internal UFS Life Cycle Cost Estimate and Benchmarking Report was completed [R-32]. The report was based on internal experience and provided a 40 year reactor operating life estimate of \$302M in 1998M\$ for post station life costs. The estimate was based on an in-service date of 2025 for a UFD facility.

A 25 year reactor operating life scenario was derived from the 40 year reactor operating life estimate and assumed 2.23M bundles would be generated over the station financial planning life. In the 25 year life scenario a larger number of dry storage containers (DSC) needed to be processed in post-station life which would begin earlier than for the 40 year life program. As a result the Post Station Life portion of the UFS estimate was higher than for the 40 year life scenario.

The future cost estimate for the total UFS program from April 1, 1999 forward totaled \$1,240M (1999M\$). This consisted of \$518M during station life and \$722M Post-Station Life in 1999M\$ per the division of costs under the current ONFA agreement.

1999 Used Fuel Storage	1999M\$ April 1, 1999 Forward	2012M\$ April 1, 1999 Forward
UFM - Storage (During Station Life)	518	748
UFM - Storage (Decommissioning Fund)	569	853
UFM - Storage (Used Fuel Fund)	153	234
UFM – Total Storage	1,240	1,835

When adjusted to 2007\$, the 1999 ONFA cost for Used Fuel Management Storage cost is \$1,539M in 2007M\$ from April 1, 1999 forward.

In 2001, an estimate titled “Used Fuel Storage Life Cycle Cost Estimate Report” [R-33] was produced by OPG. This estimate included the impact of a revised in-service date of 2035 for a UFD facility.

Based on this estimate, the scaled cost for UFS assuming a nominal 25 year reactor operating life (except PA) with disposal in 2035 for 2.23 M bundles was \$1,349M in 2000 M\$.

Program	2000M\$
UFM - Storage (During Station Life)	386
UFM - Storage (Decommissioning Fund)	746
UFM - Storage (Used Fuel Fund)	217
UFM – Total Storage	1,349

In 2006, a 2007 ONFA Used Fuel Management Storage Cost Estimate was prepared by OPG. A summary of the 2007 ONFA cost estimate is provided in the “Used Fuel Storage Cost Estimate Basis Report” [R-29]. The cost estimate assumed that 2.95 M bundles would be generated over the station operating lives.

The 2007 ONFA UFS costs expressed in 2006M\$ for costs from y/e 2005 forward, and expressed in 2007M\$ for costs from January 1, 2007 forward for 2.95 M bundles are shown in the following table [R-14].

2007 ONFA Used Fuel Storage Costs by Facility	2006M\$ January 1 2006 Forward	2007M\$ January 1 2007 Forward
Pickering Dry Storage Facility	502	496
Western Dry Storage Facility	778	780
Darlington Dry Storage Facility	445	451
Total UFM – Storage of 2.95 M bundles	1,725	1,727

The 2007 ONFA UFS costs expressed in 2007M\$ and 2012M\$ and for costs from April 1, 1999 forward by fund for 2.95M bundles are shown in the following table.

2007 ONFA Used Fuel Storage	2007M\$ April 1, 1999 Forward	2012M\$ April 1, 1999 Forward
Decommissioning Fund - Storage after station life	278	325
Used Fuel Fund – Storage after station life	423	496
OPG Internally Funded – Storage during station life	1,247	1,461
Total UFM – Storage of 2.95 M bundles	1,948	2,282

8.1.2 2012 ONFA Reference Plan Update Used Fuel Management Interim Storage Cost Estimate

In 2011, a 2012 ONFA used fuel interim storage estimate was prepared by OPG. A summary of the 2012 ONFA cost estimate is provided in the “2012 ONFA Reference Plan Update Used Fuel Storage Summary Cost Estimate Report” [R-30].

An analysis of the currently approved ONFA UFS lifecycle cost estimate identified opportunities for estimate improvement as a result of changes in OPG ONFA planning assumptions and estimating methodology. The following items provide a summary of the assumptions and improvements to the currently approved 2007 ONFA cost estimate within the 2012 ONFA cost estimate. Refer to the detailed report “2012 ONFA Reference Plan Update Used Fuel Operations Cost Estimate” [R-31] for further information.

- The cost estimate assumes that 4.02 M bundles will be generated over the station operating lives.
- Adjustments were made to update the estimate to reflect current economic information based on recent costs in the used fuel storage program, including staffing details for each waste facility, Security details supplied by OPG Security, Wet Bay costs supplied by Pickering Operations, as well as current operational staffing and expenditures data from the NWMD 2011-2015 Business Plan.
- Darlington units plan to be refurbished and operate for an additional 30 years, with the latest shutdown date in 2053.
- Pickering B Units will operate longer and will shut down between 2017-2019.
- Pickering A Units 1 and 4 will operate for a slightly shorter time period, shutting down in alignment with Pickering B at 2019.

- Bruce A U1/U2 will operate until 2042 and U3/U4 will operate until 2054.
- A used fuel processing and storage facility has been constructed at the DWMF and became operational in 2008.
- A long-term DGR for used fuel is assumed to be in-service in 2035.
- All fuel from stations shutdown before the used fuel long term management facility is in- service (Pickering A, Pickering B, and Bruce B) will be placed in dry storage.
- Adjustments were made to costs specific to the following:
 - Security
 - Facility Construction
 - Dry Storage Container procurement and processing
 - Dry Storage Facility Operations
 - Decommissioning
 - Wet Bay Islanding and Operations
 - Common Indirect Costs

The total costs by used fuel dry storage facility for the used fuel interim storage lifecycle cost estimate are summarized in the following table for the 2012 ONFA reference plan update period from 2012 forward in 2010 constant dollars and in 2012 constant dollars. Costs are presented per waste facility. Although certain costs such as security and wet bay operations costs are incurred per station, the costs have been summed and represented per facility.

2012 ONFA Used Fuel Storage Costs by Facility	2010M\$ January 1 2012 Forward	2012M\$ January 1 2012 Forward
Pickering Used Fuel Dry Storage Facility	760	803
Western Used Fuel Dry Storage Facility	1,095	1,157
Darlington Used Fuel Dry Storage Facility	679	717
Total UFM – Interim Storage of 4.02 M bundles	2,534	2,677

The 2012 ONFA used fuel interim storage costs expressed in 2012M\$ for costs from April 1, 1999 forward by fund for 4.02M bundles are shown in the following table.

2012 ONFA Used Fuel Storage	2012M\$ April 1, 1999 Forward
Decommissioning Fund - Storage after station life	690
Used Fuel Fund – Storage after station life	454
OPG Internally Funded – Storage during station life	2,156
Total UFM – Interim Storage of 4.02 M bundles	3,300

8.2 Variance of Approved 2007 ONFA to 2012 ONFA Estimate

The total used fuel storage cost estimate variance from the currently approved ONFA cost estimate to the proposed 2012 ONFA cost estimate from April 1, 1999 is shown in the following table.

Used Fuel Storage	1999 ONFA 2012M\$	2007 ONFA 2012M\$	2012 ONFA 2012M\$	Change 2012 ONFA – Approved 2007 ONFA (2012M\$)
Decommissioning Fund - Storage after station life	853	325	690	365
Used Fuel Fund – Storage after station life	234	496	454	-41
OPG Internally Funded – Storage during station life	748	1,461	2,156	695
Number of Fuel Bundles (Millions)	2.23	2.95	4.02	1.07
Total UFM Storage	1,835	2,282	3,300	1,019

For a summary of the 2012 ONFA cost estimate refer to “2012 ONFA Reference Plan Update Used Fuel Storage Summary Cost Estimate Report” [R-30].

For complete details of basis of the used fuel interim storage estimate refer to “2012 ONFA Reference Plan Update Used Fuel Operations Cost Estimate” [R-31].

The used fuel storage cash flow for the 2012 ONFA scenario is provided in Appendix E.

9.0 REFERENCES

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10.0 APPENDICES

10.1 Appendix A – Pickering A/B – Bruce A/B - Darlington Decommissioning Cash Flows

2012 constant dollar (,000)						
	PA	PB	BA	BB	DA	Total
INTERNAL						
DECOM	1,634,985	1,707,210	1,823,462	1,564,144	2,216,638	8,946,439
USED FUEL						
Total	1,634,985	1,707,210	1,823,462	1,564,144	2,216,638	8,946,439
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	9,530	414	414	414	414	11,188
2013	9,428	337	337	337	337	10,776
2014	9,424	333	333	333	333	10,758
2015	10,572	341	341	341	341	11,935
2016	9,492	3,871	376	376	376	14,492
2017	9,425	7,311	335	335	335	17,740
2018	9,425	79,705	335	335	335	90,134
2019	9,408	9,628	318	318	318	19,989
2020	96,332	106,849	302	302	302	204,087
2021	11,444	11,046	332	332	332	23,487
2022	11,422	11,024	311	311	311	23,378
2023	11,422	11,024	311	311	311	23,378
2024	11,434	11,035	294	294	294	23,350
2025	11,389	10,992	278	278	278	23,214
2026	11,444	11,046	332	332	332	23,487
2027	11,422	11,024	311	311	311	23,378
2028	11,451	11,052	311	311	311	23,435
2029	11,405	11,007	294	294	294	23,293
2030	11,389	10,992	278	278	278	23,214
2031	11,444	11,046	332	332	332	23,487
2032	11,451	11,052	311	311	311	23,435
2033	11,422	11,024	311	311	311	23,378

2034	11,405	11,007	294	294	294	23,293
2035	11,389	10,992	278	278	278	23,214
2036	11,473	11,074	332	332	332	23,544
2037	11,422	11,024	311	311	311	23,378
2038	11,422	11,024	311	311	311	23,378
2039	11,405	11,007	294	294	294	23,293
2040	11,418	11,019	278	278	278	23,271
2041	11,444	11,046	332	332	332	23,487
2042	11,422	11,024	311	311	311	23,378
2043	52,498	11,024	311	311	311	64,453
2044	54,381	11,035	294	294	294	66,297
2045	70,917	10,992	278	278	278	82,743
2046	104,054	11,046	332	332	332	116,097
2047	95,539	36,844	311	311	3,382	136,386
2048	95,799	61,130	311	311	6,489	164,039
2049	95,522	87,397	294	294	48,485	231,991
2050	95,507	149,168	278	278	4,197	249,428
2051	95,561	172,457	332	332	44,967	313,650
2052	95,799	172,905	1,438	1,438	48,221	319,799
2053	95,539	172,435	2,572	2,572	11,996	285,114
2054	87,974	149,931	6,437	5,692	94,404	344,437
2055	58,499	61,713	10,348	8,861	13,716	153,137
2056	58,712	61,935	158,961	146,848	13,808	440,263
2057	44,766	61,746	10,874	53,969	13,749	185,103
2058	778	15,310	10,874	65,805	13,749	106,517
2059	239	239	10,857	96,715	13,732	121,782
2060	223	223	10,871	163,593	13,753	188,664
2061	278	278	10,896	199,098	13,771	224,320
2062	256	256	10,874	198,532	13,749	223,668
2063	256	256	10,874	198,532	13,749	223,668
2064	239	239	10,886	176,998	13,872	202,234
2065	223	223	10,749	84,926	13,819	109,941
2066	278	278	10,804	84,749	13,874	109,982
2067	256	256	10,782	56,724	13,852	81,870
2068	256	256	10,811	256	13,889	25,468
2069	239	239	10,765	239	13,835	25,317
2070	223	223	10,749	223	13,819	25,238
2071	278	278	10,804	278	13,874	25,511
2072	256	256	10,811	256	13,889	25,468
2073	256	256	10,782	256	13,852	25,402
2074	239	239	10,765	239	13,835	25,317
2075	223	223	10,749	223	13,819	25,238
2076	278	278	10,833	278	13,911	25,577
2077	256	256	10,782	256	13,852	25,402
2078	256	256	10,782	256	13,852	25,402
2079	239	239	10,765	239	13,835	25,317

2080	223	223	10,778	223	13,856	25,305
2081	278	278	10,804	278	58,469	70,107
2082	256	256	52,999	256	75,658	129,426
2083	256	256	64,641	256	113,887	179,296
2084	239	239	95,845	239	189,447	286,010
2085	223	223	162,296	223	273,982	436,948
2086	278	278	197,901	278	274,037	472,772
2087	256	256	197,879	256	274,015	472,663
2088	256	256	198,421	256	93,558	292,747
2089	239	239	175,081	239	88,731	264,530
2090	223	223	83,962	223	88,716	173,348
2091	278	278	84,017	278	53,131	137,982
2092	256	256	47,517	256	256	48,541
2093	256	256	256	256	256	1,280
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

	2012 PV (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL						
DECOM	838,903	856,831	475,341	577,383	574,961	3,323,419
USED						
FUEL						
Total	838,903	856,831	475,341	577,383	574,961	3,323,419
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	9,063	394	394	394	394	10,640
2013	8,746	314	314	314	314	10,002
2014	8,539	305	305	305	305	9,758
2015	9,388	305	305	305	305	10,609
2016	8,219	3,398	330	330	330	12,609
2017	7,975	6,292	293	293	293	15,146
2018	7,789	67,280	288	288	288	75,934
2019	7,594	8,022	269	269	269	16,422
2020	77,772	86,532	250	250	250	165,055
2021	8,687	8,326	267	267	267	17,815
2022	8,460	8,102	249	249	249	17,311
2023	8,253	7,898	245	245	245	16,886
2024	8,059	7,704	227	227	227	16,445
2025	7,830	7,479	211	211	211	15,941
2026	7,676	7,328	243	243	243	15,734
2027	7,480	7,135	229	229	229	15,302
2028	7,318	6,974	225	225	225	14,968
2029	7,111	6,771	209	209	209	14,508
2030	6,928	6,591	193	193	193	14,099
2031	6,795	6,460	222	222	222	13,921
2032	6,642	6,309	211	211	211	13,583
2033	6,468	6,139	207	207	207	13,228
2034	6,302	5,977	192	192	192	12,854
2035	6,142	5,819	177	177	177	12,494
2036	6,041	5,720	203	203	203	12,370
2037	5,879	5,562	194	194	194	12,022

2038	5,741	5,427	191	191	191	11,740
2039	5,596	5,285	176	176	176	11,410
2040	5,469	5,160	163	163	163	11,119
2041	5,354	5,048	186	186	186	10,959
2042	5,226	4,924	179	179	179	10,686
2043	29,336	4,806	176	176	176	34,669
2044	28,438	4,693	163	163	163	33,619
2045	36,148	4,561	150	150	150	41,159
2046	52,617	4,475	170	170	170	57,602
2047	45,304	18,356	165	165	1,615	65,604
2048	44,582	29,692	162	162	3,024	77,622
2049	43,627	41,394	150	150	22,238	107,559
2050	42,812	70,874	138	138	1,730	115,693
2051	42,043	76,748	156	156	18,936	138,039
2052	41,382	75,562	607	607	19,783	137,942
2053	40,515	73,996	1,045	1,045	4,693	121,293
2054	36,105	62,521	3,056	2,653	38,474	142,808
2055	21,499	22,478	5,034	4,240	4,350	57,600
2056	21,137	22,094	66,074	62,426	4,276	176,007
2057	15,786	21,584	3,621	23,992	4,163	69,146
2058	228	5,214	3,543	26,768	4,065	39,819
2059	101	101	3,460	38,204	3,961	45,826
2060	91	91	3,387	64,725	3,871	72,165
2061	105	105	3,322	73,568	3,786	80,887
2062	104	104	3,252	72,072	3,698	79,230
2063	102	102	3,184	70,802	3,612	77,804
2064	93	93	3,118	61,087	3,599	67,990
2065	84	84	3,018	24,619	3,500	31,305
2066	97	97	2,970	24,069	3,435	30,667
2067	96	96	2,909	15,798	3,358	22,257
2068	94	94	2,857	94	3,291	6,431
2069	86	86	2,783	86	3,201	6,241
2070	77	77	2,719	77	3,122	6,073
2071	89	89	2,677	89	3,065	6,008
2072	89	89	2,630	89	3,006	5,903
2073	87	87	2,570	87	2,932	5,764
2074	79	79	2,512	79	2,860	5,609
2075	71	71	2,454	71	2,790	5,458
2076	82	82	2,423	82	2,748	5,415
2077	82	82	2,370	82	2,682	5,298
2078	81	81	2,323	81	2,623	5,188
2079	73	73	2,270	73	2,560	5,049
2080	66	66	2,225	66	2,505	4,927
2081	75	75	2,186	75	17,443	19,854
2082	76	76	16,105	76	20,106	36,438
2083	75	75	17,536	75	29,239	46,998

2084	68	68	25,066	68	48,817	74,086
2085	61	61	42,736	61	64,598	107,517
2086	69	69	47,755	69	63,517	111,478
2087	70	70	46,970	70	62,449	109,630
2088	69	69	46,325	69	18,762	65,294
2089	63	63	39,368	63	17,324	56,880
2090	56	56	15,046	56	17,010	32,224
2091	64	64	14,776	64	10,009	24,977
2092	65	65	8,215	65	65	8,476
2093	64	64	64	64	64	320
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

10.2 Appendix B – L&ILW DGR Cash Flow

	2012 constant dollar (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL						
DECOM	445,928	438,336	705,259	132,492	353,832	2,075,847
USED FUEL						
Total	445,928	438,336	705,259	132,492	353,832	2,075,847
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	11,020	10,876	17,451	3,279	8,748	51,373
2013	6,417	6,310	10,150	1,907	5,092	29,876
2014	34,325	34,197	54,521	10,244	27,281	160,568
2015	39,271	38,894	62,259	11,697	31,190	183,311
2016	53,042	52,637	84,144	15,809	42,137	247,769
2017	49,451	48,729	78,270	14,705	39,250	230,404
2018	9,795	9,265	15,305	2,874	7,736	44,975
2019	6,582	6,025	10,181	1,911	5,178	29,877
2020	7,117	7,117	11,318	2,127	5,659	33,338
2021	9,031	9,308	14,504	2,726	7,209	42,779
2022	9,916	8,911	15,255	2,863	7,785	44,730
2023	6,711	6,210	10,416	1,955	5,287	30,578
2024	8,466	8,305	13,380	2,514	6,716	39,380
2025	8,470	8,310	13,388	2,515	6,719	39,403
2026	8,443	8,280	13,343	2,507	6,697	39,269
2027	8,465	7,536	12,986	2,437	6,639	38,064
2028	6,792	6,291	10,545	1,980	5,351	30,959
2029	6,359	5,858	9,856	1,850	5,007	28,929
2030	5,815	5,644	9,160	1,721	4,607	26,947
2031	4,779	4,261	7,335	1,376	3,749	21,500
2032	3,338	3,331	5,304	997	2,653	15,623
2033	3,294	3,287	5,235	984	2,619	15,418
2034	3,294	3,287	5,235	984	2,619	15,418
2035	3,039	3,033	4,829	907	2,416	14,223
2036	3,062	3,056	4,867	914	2,434	14,334

2037	3,032	3,026	4,819	905	2,410	14,192
2038	3,720	3,713	5,913	1,111	2,958	17,414
2039	3,066	3,060	4,873	916	2,438	14,354
2040	2,999	2,993	4,766	895	2,384	14,037
2041	3,028	3,022	4,813	904	2,407	14,175
2042	3,308	3,301	5,257	988	2,630	15,484
2043	2,998	2,992	4,765	895	2,384	14,035
2044	2,980	2,974	4,736	890	2,369	13,948
2045	2,981	2,975	4,738	890	2,370	13,955
2046	3,077	3,071	4,890	919	2,446	14,402
2047	2,982	2,976	4,739	890	2,370	13,957
2048	3,413	3,406	5,424	1,019	2,713	15,975
2049	2,975	2,969	4,729	889	2,365	13,927
2050	2,974	2,968	4,726	888	2,364	13,921
2051	3,010	3,004	4,784	899	2,393	14,090
2052	2,965	2,959	4,712	885	2,357	13,880
2053	1,566	1,563	2,489	468	1,245	7,330
2054	1,535	1,532	2,440	458	1,220	7,185
2055	2,691	2,686	4,277	804	2,139	12,596
2056	2,668	2,662	4,240	797	2,121	12,487
2057	3,451	3,444	5,484	1,030	2,743	16,153
2058	6,553	6,540	10,414	1,957	5,209	30,672
2059	16,054	16,022	25,514	4,794	12,762	75,147
2060	19,610	19,571	31,165	5,856	15,589	91,791
2061	15,649	15,618	24,870	4,673	12,440	73,250
2062	10,275	10,254	16,329	3,068	8,168	48,094
2063	2	2	3	1	1	9
2064	2	2	3	1	1	9
2065	3	3	5	1	3	16
2066	3	3	5	1	3	16
2067	2	2	3	1	1	9
2068	2	2	3	1	1	9
2069	2	2	3	1	1	9
2070	3	3	5	1	3	16
2071	3	3	5	1	3	16
2072	2	2	3	1	1	9
2073	2	2	3	1	1	9
2074	2	2	3	1	1	9
2075	3	3	5	1	3	16
2076	3	3	5	1	3	16
2077	2	2	3	1	1	9
2078	2	2	3	1	1	9
2079	2	2	3	1	1	9
2080	3	3	5	1	3	16
2081	3	3	5	1	3	16
2082	2	2	3	1	1	9

2083	2	2	3	1	1	9
2084	2	2	3	1	1	9
2085	3	3	5	1	3	16
2086	3	3	5	1	3	16
2087	2	2	3	1	1	9
2088	2	2	3	1	1	9
2089	2	2	3	1	1	9
2090	3	3	5	1	3	16
2091	3	3	5	1	3	16
2092	2	2	3	1	1	9
2093	2	2	3	1	1	9
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

	2012 PV (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL						
DECOM	297,245	291,926	469,976	88,290	235,830	1,383,267
USED FUEL						
Total	297,245	291,926	469,976	88,290	235,830	1,383,267
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	10,480	10,343	16,596	3,118	8,320	48,857
2013	5,933	5,834	9,385	1,763	4,708	27,623
2014	30,836	30,721	48,979	9,203	24,508	144,247
2015	34,372	34,042	54,492	10,238	27,299	160,443
2016	45,122	44,778	71,580	13,449	35,845	210,774
2017	41,026	40,430	64,937	12,200	32,563	191,155
2018	8,136	7,712	12,722	2,389	6,428	37,386
2019	5,239	4,805	8,109	1,522	4,123	23,798
2020	5,480	5,477	8,713	1,637	4,357	25,665
2021	6,744	6,937	10,824	2,035	5,382	31,922
2022	7,196	6,478	11,075	2,078	5,651	32,478
2023	4,821	4,471	7,487	1,406	3,799	21,984
2024	5,927	5,823	9,372	1,761	4,703	27,585
2025	5,774	5,673	9,130	1,715	4,581	26,874
2026	5,610	5,511	8,870	1,666	4,451	26,108
2027	5,457	4,892	8,388	1,574	4,283	24,593
2028	4,287	3,983	6,661	1,251	3,379	19,560
2029	3,938	3,643	6,111	1,147	3,102	17,940
2030	3,542	3,436	5,579	1,048	2,806	16,411
2031	2,775	2,496	4,270	801	2,179	12,522
2032	1,937	1,934	3,079	579	1,540	9,068
2033	1,872	1,868	2,975	559	1,488	8,763
2034	1,828	1,825	2,905	546	1,453	8,557
2035	1,669	1,665	2,652	498	1,327	7,811
2036	1,637	1,634	2,602	489	1,302	7,665
2037	1,590	1,586	2,526	475	1,264	7,441
2038	1,835	1,831	2,916	548	1,459	8,588

2039	1,528	1,525	2,428	456	1,215	7,151
2040	1,462	1,460	2,324	437	1,163	6,846
2041	1,438	1,435	2,285	429	1,143	6,731
2042	1,509	1,506	2,399	451	1,200	7,064
2043	1,366	1,363	2,171	408	1,086	6,395
2044	1,324	1,322	2,105	395	1,053	6,199
2045	1,295	1,293	2,058	387	1,030	6,062
2046	1,298	1,296	2,063	388	1,032	6,076
2047	1,239	1,236	1,969	370	985	5,799
2048	1,344	1,341	2,135	401	1,068	6,289
2049	1,181	1,179	1,877	353	939	5,529
2050	1,154	1,152	1,834	345	918	5,402
2051	1,138	1,136	1,808	340	905	5,326
2052	1,100	1,098	1,748	328	874	5,148
2053	709	707	1,126	212	563	3,317
2054	686	685	1,091	205	546	3,212
2055	1,225	1,223	1,947	366	974	5,734
2056	1,209	1,207	1,922	361	961	5,661
2057	1,628	1,625	2,587	486	1,294	7,620
2058	2,546	2,541	4,046	760	2,024	11,916
2059	4,339	4,330	6,895	1,296	3,449	20,308
2060	4,981	4,971	7,916	1,487	3,959	23,314
2061	4,001	3,993	6,359	1,195	3,181	18,730
2062	2,473	2,468	3,930	738	1,966	11,575
2063	0	0	1	0	0	2
2064	0	0	1	0	0	2
2065	1	1	1	0	0	3
2066	1	1	1	0	0	3
2067	0	0	0	0	0	1
2068	0	0	0	0	0	1
2069	0	0	0	0	0	1
2070	1	1	1	0	0	2
2071	0	0	1	0	0	2
2072	0	0	0	0	0	1
2073	0	0	0	0	0	1
2074	0	0	0	0	0	1
2075	0	0	1	0	0	2
2076	0	0	1	0	0	2
2077	0	0	0	0	0	1
2078	0	0	0	0	0	1
2079	0	0	0	0	0	1
2080	0	0	1	0	0	2
2081	0	0	1	0	0	2
2082	0	0	0	0	0	1
2083	0	0	0	0	0	1
2084	0	0	0	0	0	1

2085	0	0	1	0	0	2
2086	0	0	0	0	0	1
2087	0	0	0	0	0	1
2088	0	0	0	0	0	1
2089	0	0	0	0	0	1
2090	0	0	0	0	0	1
2091	0	0	0	0	0	1
2092	0	0	0	0	0	1
2093	0	0	0	0	0	1
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

10.3 Appendix C – L&ILW Operations Cash Flow

2012 constant dollar (,000)						
	PA	PB	BA	BB	DA	Total
INTERNAL	94,465	83,939	365,598	30,620	177,658	752,281
DECOM	176,926	163,887	53,914	48,118	35,804	478,648
USED FUEL						
Total	271,391	247,826	419,512	78,738	213,462	1,230,929
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	13,524	13,215	21,348	4,010	10,723	62,821
2013	12,611	11,529	19,501	3,660	9,921	57,222
2014	15,894	13,551	24,075	4,515	12,406	70,441
2015	15,805	13,524	23,965	4,494	12,341	70,129
2016	6,667	6,530	10,532	1,978	5,288	30,995
2017	9,735	8,044	14,615	2,740	7,573	42,706
2018	7,524	7,661	12,036	2,262	5,997	35,480
2019	12,705	9,885	18,760	3,514	9,823	54,687
2020	4,540	4,429	7,163	1,345	3,599	21,075
2021	7,428	6,238	11,203	2,101	5,788	32,757
2022	4,855	4,661	7,622	1,431	3,842	22,410
2023	4,431	4,376	7,018	1,318	3,518	20,661
2024	4,364	4,284	6,899	1,296	3,462	20,306
2025	4,317	4,225	6,818	1,281	3,424	20,065
2026	4,194	4,136	6,640	1,247	3,329	19,546
2027	4,069	4,049	6,461	1,214	3,234	19,026
2028	4,097	4,068	6,501	1,221	3,255	19,143
2029	4,173	4,177	6,638	1,247	3,319	19,554
2030	4,032	4,013	6,402	1,203	3,204	18,852
2031	3,960	3,957	6,296	1,183	3,149	18,546
2032	3,915	3,912	6,224	1,170	3,113	18,333
2033	3,843	3,836	6,108	1,148	3,055	17,990
2034	3,825	3,826	6,083	1,143	3,042	17,919
2035	3,757	3,782	5,988	1,125	2,990	17,643
2036	3,725	3,763	5,944	1,117	2,966	17,515

2037	3,722	3,760	5,939	1,116	2,964	17,501
2038	4,755	4,255	7,305	1,371	3,731	21,417
2039	3,325	3,355	5,302	996	2,647	15,625
2040	3,357	3,377	5,349	1,005	2,671	15,759
2041	3,324	3,354	5,301	996	2,646	15,622
2042	3,096	3,090	4,921	925	2,461	14,493
2043	3,070	3,072	4,883	918	2,441	14,383
2044	3,223	3,239	5,133	965	2,564	15,124
2045	3,071	3,072	4,885	918	2,442	14,388
2046	3,094	3,088	4,917	924	2,459	14,481
2047	3,070	3,072	4,883	918	2,441	14,383
2048	3,097	3,090	4,922	925	2,462	14,495
2049	3,054	3,057	4,859	913	2,429	14,313
2050	3,058	3,061	4,864	914	2,432	14,329
2051	3,039	3,044	4,836	909	2,417	14,245
2052	3,027	3,033	4,817	905	2,407	14,189
2053	4,633	4,639	7,371	1,385	3,685	21,712
2054	9,257	8,384	14,274	2,679	7,274	41,868
2055	20,027	14,565	29,050	5,438	15,383	84,464
2056	15,428	10,877	22,202	4,155	11,816	64,477
2057	1,674	1,671	2,661	500	1,331	7,838
2058	-	-	-	-	-	-
2059	-	-	-	-	-	-
2060	-	-	-	-	-	-
2061	-	-	-	-	-	-
2062	-	-	-	-	-	-
2063	-	-	-	-	-	-
2064	-	-	-	-	-	-
2065	-	-	-	-	-	-
2066	-	-	-	-	-	-
2067	-	-	-	-	-	-
2068	-	-	-	-	-	-
2069	-	-	-	-	-	-
2070	-	-	-	-	-	-
2071	-	-	-	-	-	-
2072	-	-	-	-	-	-
2073	-	-	-	-	-	-
2074	-	-	-	-	-	-
2075	-	-	-	-	-	-
2076	-	-	-	-	-	-
2077	-	-	-	-	-	-
2078	-	-	-	-	-	-
2079	-	-	-	-	-	-
2080	-	-	-	-	-	-
2081	-	-	-	-	-	-
2082	-	-	-	-	-	-

2083	-	-	-	-	-	-
2084	-	-	-	-	-	-
2085	-	-	-	-	-	-
2086	-	-	-	-	-	-
2087	-	-	-	-	-	-
2088	-	-	-	-	-	-
2089	-	-	-	-	-	-
2090	-	-	-	-	-	-
2091	-	-	-	-	-	-
2092	-	-	-	-	-	-
2093	-	-	-	-	-	-
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

	2012 PV (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL	82,881	73,947	256,302	26,567	127,538	567,234
DECOM	90,775	86,705	13,195	24,023	9,255	223,953
USED FUEL						
Total	173,655	160,652	269,497	50,590	136,794	791,187
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	12,862	12,568	20,303	3,814	10,198	59,744
2013	11,667	10,669	18,043	3,386	9,178	52,944
2014	14,289	12,195	21,651	4,060	11,155	63,350
2015	13,839	11,859	20,994	3,937	10,808	61,438
2016	5,802	5,681	9,165	1,722	4,601	26,971
2017	8,169	6,786	12,283	2,303	6,359	35,899
2018	6,216	6,317	9,937	1,868	4,953	29,291
2019	10,036	7,871	14,850	2,782	7,765	43,304
2020	3,669	3,578	5,788	1,087	2,908	17,031
2021	5,669	4,805	8,573	1,608	4,422	25,077
2022	3,788	3,628	5,942	1,116	2,996	17,470
2023	3,371	3,327	5,338	1,003	2,676	15,714
2024	3,250	3,189	5,138	965	2,578	15,121
2025	3,151	3,083	4,976	935	2,499	14,643
2026	2,995	2,954	4,741	891	2,377	13,958
2027	2,846	2,833	4,519	849	2,262	13,309
2028	2,804	2,787	4,451	836	2,228	13,107
2029	2,788	2,789	4,434	833	2,217	13,060
2030	2,653	2,641	4,213	792	2,108	12,407
2031	2,553	2,553	4,060	763	2,030	11,960
2032	2,476	2,476	3,938	740	1,969	11,600
2033	2,381	2,378	3,785	711	1,893	11,148
2034	2,321	2,324	3,693	694	1,846	10,878
2035	2,233	2,251	3,560	669	1,777	10,491
2036	2,167	2,194	3,460	650	1,726	10,196
2037	2,123	2,150	3,390	637	1,691	9,991
2038	2,477	2,277	3,837	720	1,950	11,260

2039	1,838	1,862	2,935	552	1,464	8,651
2040	1,819	1,837	2,902	545	1,448	8,551
2041	1,770	1,792	2,826	531	1,410	8,329
2042	1,601	1,600	2,545	478	1,273	7,497
2043	1,558	1,561	2,479	466	1,239	7,302
2044	1,584	1,591	2,523	474	1,260	7,432
2045	1,499	1,502	2,386	448	1,193	7,029
2046	1,481	1,481	2,355	443	1,178	6,937
2047	1,443	1,446	2,296	431	1,148	6,764
2048	1,423	1,424	2,263	425	1,132	6,667
2049	1,383	1,386	2,200	413	1,100	6,482
2050	1,358	1,361	2,161	406	1,080	6,366
2051	1,325	1,330	2,110	396	1,054	6,215
2052	1,295	1,300	2,062	388	1,030	6,075
2053	1,710	1,715	2,722	512	1,360	8,019
2054	2,882	2,673	4,476	840	2,271	13,142
2055	4,978	3,616	7,219	1,351	3,823	20,987
2056	3,726	2,624	5,360	1,003	2,853	15,566
2057	388	387	616	116	308	1,815
2058	-	-	-	-	-	-
2059	-	-	-	-	-	-
2060	-	-	-	-	-	-
2061	-	-	-	-	-	-
2062	-	-	-	-	-	-
2063	-	-	-	-	-	-
2064	-	-	-	-	-	-
2065	-	-	-	-	-	-
2066	-	-	-	-	-	-
2067	-	-	-	-	-	-
2068	-	-	-	-	-	-
2069	-	-	-	-	-	-
2070	-	-	-	-	-	-
2071	-	-	-	-	-	-
2072	-	-	-	-	-	-
2073	-	-	-	-	-	-
2074	-	-	-	-	-	-
2075	-	-	-	-	-	-
2076	-	-	-	-	-	-
2077	-	-	-	-	-	-
2078	-	-	-	-	-	-
2079	-	-	-	-	-	-
2080	-	-	-	-	-	-
2081	-	-	-	-	-	-
2082	-	-	-	-	-	-
2083	-	-	-	-	-	-
2084	-	-	-	-	-	-

2085	-	-	-	-	-	-
2086	-	-	-	-	-	-
2087	-	-	-	-	-	-
2088	-	-	-	-	-	-
2089	-	-	-	-	-	-
2090	-	-	-	-	-	-
2091	-	-	-	-	-	-
2092	-	-	-	-	-	-
2093	-	-	-	-	-	-
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-

10.4 Appendix D – Used Fuel Long Term Management Cash Flow

	2012 constant dollar (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL						
DECOM						
USED FUEL	1,919,792	2,258,939	5,991,427	4,055,607	6,775,325	21,001,090
Total	1,919,792	2,258,939	5,991,427	4,055,607	6,775,325	21,001,090
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	3,986	4,693	12,604	8,363	13,920	43,566
2013	4,806	5,659	15,198	10,084	16,785	52,532
2014	6,147	7,239	19,441	12,899	21,470	67,195
2015	9,124	10,745	28,856	19,146	31,867	99,738
2016	9,930	11,693	31,403	20,836	34,681	108,543
2017	12,244	14,419	38,723	25,693	42,764	133,842
2018	13,405	15,786	42,395	28,129	46,820	146,535
2019	11,218	13,211	35,479	23,540	39,182	122,631
2020	11,181	13,167	35,360	23,462	39,051	122,221
2021	11,296	13,302	35,723	23,703	39,452	123,476
2022	9,829	11,575	31,085	20,625	34,329	107,442
2023	9,001	10,599	28,465	18,887	31,436	98,388
2024	8,963	10,554	28,344	18,807	31,303	97,970
2025	41,299	48,633	130,609	86,660	144,241	451,441
2026	21,460	25,271	67,867	45,030	74,951	234,578
2027	20,141	23,718	63,697	42,263	70,345	220,163
2028	15,973	18,809	50,515	33,517	55,787	174,600
2029	45,864	54,010	145,049	96,240	160,188	501,351
2030	39,222	46,181	123,964	82,263	136,935	428,565
2031	34,767	40,929	109,796	72,875	121,321	379,687
2032	63,426	74,670	200,351	132,970	221,360	692,777
2033	30,346	35,710	95,658	63,518	105,772	331,005
2034	18,876	22,196	59,304	39,409	65,656	205,440

2035	37,117	42,494	106,659	67,590	117,656	371,515
2036	37,102	42,476	106,612	67,559	117,604	371,353
2037	37,675	43,048	107,173	68,126	118,742	374,764
2038	37,097	42,470	106,595	67,547	117,585	371,294
2039	37,018	42,391	106,595	67,547	117,585	371,136
2040	37,019	42,392	105,747	68,335	117,587	371,079
2041	37,023	42,397	104,462	69,546	117,604	371,033
2042	37,018	42,391	104,445	69,535	117,585	370,974
2043	37,018	42,391	104,445	69,535	117,585	370,974
2044	36,939	42,312	104,445	69,535	117,585	370,817
2045	36,940	42,313	104,447	69,536	117,587	370,824
2046	36,945	42,319	104,383	69,468	117,604	370,718
2047	37,518	42,891	104,945	70,035	118,742	374,130
2048	35,920	43,175	104,366	69,456	117,585	370,502
2049	35,920	41,945	104,366	69,456	117,585	369,273
2050	35,920	41,874	104,368	69,458	116,264	367,883
2051	35,925	41,807	104,383	69,468	115,051	366,633
2052	34,136	43,512	104,366	69,456	115,032	366,502
2053	30,255	46,841	104,473	69,206	115,344	366,119
2054	30,255	35,628	103,583	70,029	119,897	359,392
2055	30,256	35,629	103,585	70,031	119,899	359,399
2056	30,260	35,634	103,600	70,041	119,916	359,451
2057	30,255	35,628	103,583	70,029	119,897	359,392
2058	30,255	35,628	103,504	69,951	120,084	359,421
2059	30,255	35,628	103,504	69,951	120,259	359,597
2060	30,256	35,629	103,506	69,952	120,360	359,702
2061	30,260	35,634	103,521	69,962	120,368	359,745
2062	30,255	35,628	103,504	69,951	120,438	359,776
2063	30,255	35,628	103,425	69,872	120,537	359,717
2064	30,255	35,628	102,484	70,813	120,370	359,551
2065	30,256	35,629	102,671	70,643	120,471	359,670
2066	30,256	35,629	101,781	71,466	120,471	359,603
2067	30,255	35,628	101,701	71,386	119,240	358,209
2068	30,255	35,628	98,988	74,099	119,010	357,979
2069	30,255	35,628	95,683	76,174	118,937	356,678
2070	30,256	35,629	95,685	76,103	118,867	356,540
2071	2,712	3,194	8,578	18,077	21,662	54,223
2072	2,657	3,129	8,404	17,889	9,281	41,362
2073	2,219	2,613	7,018	15,121	7,751	34,722
2074	2,183	2,570	6,902	4,580	7,623	23,858
2075	2,221	2,616	7,025	4,661	7,758	24,282
2076	2,246	2,644	7,102	4,712	7,843	24,546
2077	2,177	2,564	6,885	4,568	7,604	23,799
2078	2,177	2,564	6,885	4,568	7,604	23,799
2079	2,191	2,580	6,928	4,597	7,651	23,947
2080	2,270	2,673	7,179	4,763	7,928	24,813

2081	2,232	2,628	7,059	4,684	7,796	24,398
2082	2,191	2,580	6,928	4,597	7,651	23,947
2083	2,177	2,564	6,885	4,568	7,604	23,799
2084	2,177	2,564	6,885	4,568	7,604	23,799
2085	2,229	2,625	7,051	4,678	7,787	24,370
2086	2,232	2,628	7,059	4,684	7,796	24,398
2087	2,177	2,564	6,885	4,568	7,604	23,799
2088	2,191	2,580	6,928	4,597	7,651	23,947
2089	2,177	2,564	6,885	4,568	7,604	23,799
2090	2,270	2,673	7,179	4,763	7,928	24,813
2091	2,246	2,644	7,102	4,712	7,843	24,546
2092	2,177	2,564	6,885	4,568	7,604	23,799
2093	2,177	2,564	6,885	4,568	7,604	23,799
2094	2,190	2,579	6,926	4,595	7,649	23,938
2095	2,214	2,608	7,003	4,647	7,734	24,207
2096	2,231	2,627	7,054	4,681	7,791	24,383
2097	2,190	2,579	6,926	4,595	7,649	23,938
2098	2,176	2,563	6,883	4,567	7,601	23,790
2099	2,176	2,563	6,883	4,567	7,601	23,790
2100	2,282	2,687	7,217	4,789	7,970	24,946
2101	2,231	2,627	7,054	4,681	7,791	24,383
2102	2,176	2,563	6,883	4,567	7,601	23,790
2103	2,190	2,579	6,926	4,595	7,649	23,938
2104	2,176	2,563	6,883	4,567	7,601	23,790
2105	2,214	2,608	7,003	4,647	7,734	24,207
2106	2,244	2,643	7,097	4,709	7,838	24,531
2107	2,166	2,550	6,849	4,544	7,563	23,671
2108	2,166	2,550	6,849	4,544	7,563	23,671
2109	2,179	2,566	6,891	4,572	7,611	23,820
2110	2,258	2,659	7,140	4,737	7,885	24,679
2111	2,220	2,614	7,020	4,658	7,753	24,264
2112	2,179	2,566	6,891	4,572	7,611	23,820
2113	2,166	2,550	6,849	4,544	7,563	23,671
2114	2,166	2,550	6,849	4,544	7,563	23,671
2115	2,217	2,611	7,012	4,652	7,744	24,236
2116	2,220	2,614	7,020	4,658	7,753	24,264
2117	2,166	2,550	6,849	4,544	7,563	23,671
2118	2,179	2,566	6,891	4,572	7,611	23,820
2119	2,166	2,550	6,849	4,544	7,563	23,671
2120	2,258	2,659	7,140	4,737	7,885	24,679
2121	2,233	2,630	7,063	4,686	7,800	24,412
2122	2,166	2,550	6,849	4,544	7,563	23,671
2123	2,166	2,550	6,849	4,544	7,563	23,671
2124	2,179	2,566	6,891	4,572	7,611	23,820
2125	2,204	2,595	6,969	4,624	7,696	24,088
2126	2,220	2,614	7,020	4,658	7,753	24,264

2127	2,179	2,566	6,891	4,572	7,611	23,820
2128	2,166	2,550	6,849	4,544	7,563	23,671
2129	2,166	2,550	6,849	4,544	7,563	23,671
2130	2,271	2,675	7,183	4,766	7,933	24,827
2131	2,220	2,614	7,020	4,658	7,753	24,264
2132	2,166	2,550	6,849	4,544	7,563	23,671
2133	2,179	2,566	6,891	4,572	7,611	23,820
2134	2,166	2,550	6,849	4,544	7,563	23,671
2135	2,204	2,595	6,969	4,624	7,696	24,088
2136	2,502	2,946	7,913	5,250	8,739	27,350
2137	2,510	2,956	7,939	5,267	8,767	27,439
2138	2,510	2,956	7,939	5,267	8,767	27,439
2139	2,622	3,087	8,292	5,502	9,157	28,660
2140	2,700	3,179	8,538	5,665	9,429	29,510
2141	30,822	36,296	97,477	64,676	107,651	336,922
2142	6,709	7,900	21,217	14,078	23,432	73,336
2143	7,349	8,654	23,240	15,420	25,666	80,329
2144	6,940	8,172	21,948	14,562	24,239	75,861
2145	8,085	9,521	25,568	16,965	28,237	88,376
2146	7,657	9,017	24,217	16,068	26,744	83,704
2147	6,705	7,896	21,205	14,069	23,418	73,293
2148	5,596	6,590	17,697	11,742	19,544	61,169
2149	5,310	6,252	16,792	11,141	18,544	58,039
2150	2,867	3,376	9,068	6,017	10,014	31,342
2151	2,607	3,070	8,246	5,471	9,107	28,501
2152	637	751	2,016	1,338	2,226	6,968
2153	603	710	1,908	1,266	2,107	6,595
2154	617	726	1,951	1,294	2,155	6,743
2155	625	736	1,977	1,312	2,183	6,833
2156	598	704	1,891	1,255	2,088	6,536
2157	611	720	1,934	1,283	2,136	6,684
2158	598	704	1,891	1,255	2,088	6,536
2159	598	704	1,891	1,255	2,088	6,536
2160	675	795	2,136	1,417	2,359	7,383
2161	640	754	2,024	1,343	2,235	6,997
2162	640	754	2,024	1,343	2,235	6,997
2163	742	873	2,345	1,556	2,590	8,106
2164	728	857	2,302	1,528	2,543	7,958
2165	750	883	2,371	1,573	2,619	8,196
2166	5,542	6,526	17,527	11,630	19,357	60,582
2167	107	126	339	225	375	1,173
2168	107	126	339	225	375	1,173
2169	107	126	339	225	375	1,173
2170	35	42	112	74	124	388

	2012 PV (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL						
DECOM						
USED FUEL	765,752	899,249	2,359,372	1,593,608	2,676,419	8,294,400
Total	765,752	899,249	2,359,372	1,593,608	2,676,419	8,294,400
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	3,790	4,463	11,987	7,953	13,238	41,432
2013	4,454	5,245	14,086	9,346	15,556	48,687
2014	5,548	6,534	17,547	11,642	19,378	60,649
2015	7,988	9,406	25,262	16,761	27,898	87,315
2016	8,459	9,961	26,751	17,750	29,543	92,464
2017	10,157	11,961	32,121	21,313	35,474	111,025
2018	10,851	12,778	34,317	22,769	37,899	118,614
2019	8,934	10,521	28,256	18,748	31,205	97,664
2020	8,685	10,227	27,466	18,224	30,333	94,936
2021	8,543	10,060	27,017	17,926	29,836	93,381
2022	7,257	8,546	22,951	15,228	25,346	79,328
2023	6,513	7,670	20,599	13,668	22,749	71,199
2024	6,329	7,453	20,016	13,281	22,105	69,184
2025	27,555	32,449	87,145	57,821	96,241	301,212
2026	13,810	16,263	43,676	28,979	48,235	150,963
2027	12,521	14,744	39,598	26,273	43,731	136,867
2028	9,768	11,502	30,891	20,496	34,115	106,772
2029	26,337	31,014	83,292	55,264	91,985	287,892
2030	22,050	25,961	69,677	46,240	76,973	240,902
2031	19,595	23,066	61,860	41,061	68,362	213,945
2032	33,101	38,966	104,519	69,375	115,497	361,459
2033	16,215	19,077	51,065	33,915	56,484	176,757
2034	9,937	11,680	31,160	20,717	34,523	108,018
2035	20,162	22,935	56,666	35,448	62,443	197,653
2036	19,681	22,381	55,255	34,544	60,885	192,746
2037	19,543	22,174	54,233	34,005	60,044	189,999
2038	18,777	21,340	52,610	32,851	57,965	183,543

2039	18,292	20,790	51,345	32,041	56,568	179,037
2040	17,871	20,306	49,585	31,744	55,210	174,716
2041	17,463	19,837	47,602	31,712	53,893	170,508
2042	17,062	19,375	46,449	30,945	52,599	166,431
2043	16,673	18,928	45,334	30,203	51,347	162,484
2044	16,246	18,445	44,249	29,480	50,128	158,547
2045	15,878	18,021	43,193	28,778	48,942	154,813
2046	15,520	17,611	42,123	28,050	47,793	151,098
2047	15,432	17,470	41,381	27,644	47,188	149,115
2048	14,325	17,229	40,145	26,734	45,569	144,002
2049	14,002	16,296	39,198	26,104	44,504	140,104
2050	13,688	15,890	38,277	25,491	42,757	136,102
2051	13,382	15,495	37,384	24,897	41,113	132,271
2052	12,152	16,037	36,506	24,312	40,144	129,152
2053	9,882	17,390	35,708	23,616	39,367	125,963
2054	9,641	11,353	34,429	23,483	40,755	119,662
2055	9,407	11,077	33,629	22,943	39,831	116,887
2056	9,180	10,810	32,854	22,419	38,935	114,196
2057	8,956	10,547	32,091	21,903	38,053	111,550
2058	8,740	10,293	31,313	21,364	37,287	108,997
2059	8,530	10,045	30,594	20,878	36,536	106,583
2060	8,326	9,804	29,894	20,405	35,768	104,198
2061	8,128	9,571	29,215	19,946	34,973	101,834
2062	7,933	9,342	28,548	19,495	34,236	99,554
2063	7,745	9,120	27,864	19,021	33,526	97,275
2064	7,561	8,904	26,887	18,942	32,713	95,007
2065	7,383	8,694	26,359	18,448	32,039	92,924
2066	7,209	8,490	25,389	18,388	31,340	90,816
2067	7,040	8,290	24,781	17,949	30,271	88,333
2068	6,876	8,097	23,106	18,675	29,515	86,268
2069	6,715	7,908	21,237	19,244	28,847	83,951
2070	6,559	7,724	20,744	18,814	28,195	82,037
2071	767	903	2,426	6,492	7,492	18,081
2072	745	878	2,357	6,347	2,603	12,929
2073	637	750	2,013	5,342	2,224	10,965
2074	616	725	1,947	1,292	2,150	6,729
2075	610	718	1,929	1,280	2,130	6,667
2076	602	709	1,905	1,264	2,103	6,583
2077	583	687	1,844	1,224	2,037	6,375
2078	573	675	1,812	1,203	2,002	6,264
2079	565	665	1,786	1,185	1,972	6,173
2080	564	664	1,783	1,183	1,969	6,164
2081	550	648	1,739	1,154	1,920	6,011
2082	536	631	1,695	1,125	1,872	5,859
2083	525	619	1,662	1,102	1,835	5,743
2084	516	608	1,633	1,084	1,804	5,645

2085	513	604	1,621	1,076	1,791	5,604
2086	504	594	1,594	1,058	1,761	5,510
2087	491	578	1,551	1,029	1,713	5,362
2088	483	569	1,529	1,014	1,688	5,285
2089	474	558	1,499	995	1,656	5,183
2090	474	558	1,498	994	1,655	5,179
2091	464	546	1,467	973	1,620	5,070
2092	451	531	1,425	946	1,574	4,926
2093	443	522	1,401	930	1,548	4,844
2094	437	514	1,381	916	1,525	4,774
2095	431	508	1,364	905	1,506	4,713
2096	425	501	1,344	892	1,485	4,647
2097	415	489	1,313	872	1,451	4,540
2098	408	480	1,289	855	1,424	4,456
2099	401	472	1,268	841	1,400	4,382
2100	401	472	1,267	841	1,399	4,380
2101	391	460	1,237	821	1,366	4,274
2102	382	449	1,207	801	1,333	4,171
2103	376	443	1,189	789	1,314	4,111
2104	369	435	1,168	775	1,290	4,036
2105	365	430	1,155	766	1,276	3,992
2106	361	425	1,141	757	1,260	3,943
2107	351	413	1,110	737	1,226	3,838
2108	345	407	1,092	725	1,207	3,776
2109	341	401	1,077	715	1,189	3,722
2110	339	399	1,071	710	1,182	3,700
2111	331	390	1,048	695	1,158	3,623
2112	324	382	1,026	681	1,133	3,546
2113	319	375	1,008	669	1,113	3,484
2114	314	369	992	658	1,095	3,429
2115	311	366	982	652	1,085	3,395
2116	306	360	967	642	1,068	3,342
2117	299	352	946	627	1,044	3,268
2118	295	347	932	619	1,029	3,222
2119	290	341	916	608	1,012	3,166
2120	288	339	911	604	1,006	3,149
2121	283	333	894	593	988	3,091
2122	276	325	874	580	965	3,020
2123	272	320	860	571	950	2,973
2124	268	316	848	563	936	2,931
2125	265	312	837	555	924	2,892
2126	261	307	825	547	911	2,852
2127	256	301	809	537	893	2,796
2128	251	296	795	528	878	2,749
2129	248	292	783	520	865	2,707
2130	246	290	779	517	860	2,692

2131	241	284	763	506	843	2,637
2132	236	278	747	496	825	2,584
2133	233	274	737	489	814	2,547
2134	229	270	725	481	800	2,505
2135	226	267	716	475	791	2,475
2136	233	274	736	488	813	2,544
2137	233	275	738	489	815	2,550
2138	230	270	726	482	802	2,510
2139	228	269	721	478	796	2,493
2140	226	266	714	474	789	2,468
2141	1,176	1,385	3,720	2,468	4,109	12,859
2142	775	912	2,450	1,626	2,706	8,469
2143	842	991	2,661	1,766	2,939	9,199
2144	778	917	2,462	1,634	2,719	8,510
2145	841	990	2,658	1,764	2,936	9,188
2146	751	884	2,374	1,575	2,622	8,206
2147	702	827	2,220	1,473	2,451	7,673
2148	566	667	1,791	1,188	1,978	6,189
2149	531	625	1,678	1,113	1,853	5,800
2150	236	278	747	496	825	2,582
2151	88	103	277	184	306	958
2152	63	74	199	132	219	687
2153	58	68	183	122	203	634
2154	57	67	181	120	200	627
2155	57	67	179	119	198	618
2156	55	65	175	116	194	606
2157	55	65	173	115	191	599
2158	54	63	170	113	188	589
2159	53	63	168	111	186	581
2160	58	68	183	121	202	632
2161	57	67	179	119	198	620
2162	56	66	177	117	195	611
2163	60	71	190	126	210	658
2164	59	70	187	124	207	647
2165	59	69	185	123	204	640
2166	47	56	150	100	166	519
2167	6	7	20	13	22	69
2168	6	7	20	13	22	68
2169	6	7	19	13	21	67
2170	3	3	8	6	9	29

10.5 Appendix E – Used Fuel Management Interim Storage Cash Flow

2012 constant dollar (,000)						
	PA	PB	BA	BB	DA	Total
INTERNAL	149,455	142,161	433,793	230,446	576,012	1,531,867
DECOM	189,499	192,817	-	308,105	-	690,421
USED FUEL	82,642	46,515	110,023	74,109	140,992	454,281
Total	421,595	381,493	543,816	612,661	717,004	2,676,569
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	8,687	11,833	26,973	26,973	24,373	98,839
2013	13,457	16,607	21,975	21,975	29,043	103,056
2014	12,507	15,731	22,004	22,004	33,919	106,166
2015	13,407	18,111	17,540	17,540	20,356	86,954
2016	13,279	16,393	15,363	20,575	23,208	88,819
2017	27,511	20,505	15,889	21,101	20,961	105,967
2018	17,502	13,498	23,417	28,629	20,218	103,263
2019	43,106	29,483	15,435	20,647	19,909	128,580
2020	24,259	13,638	15,435	20,647	20,218	94,196
2021	30,663	23,341	15,435	30,355	19,909	119,703
2022	22,366	15,674	24,792	35,056	20,218	118,105
2023	22,394	15,645	10,546	33,683	19,909	102,177
2024	22,581	15,459	10,546	31,591	19,909	100,084
2025	17,249	15,447	15,506	26,355	39,007	113,564
2026	14,346	14,424	23,560	34,409	23,042	109,781
2027	22,884	22,962	16,104	26,952	24,094	112,996
2028	12,758	15,838	15,578	26,426	23,042	93,643
2029	15,024	13,489	15,578	24,785	23,042	91,919
2030	13,482	14,949	22,463	29,104	20,856	100,854
2031	3,984	3,984	14,440	14,471	20,774	57,652
2032	3,984	3,984	14,398	14,678	20,692	57,735
2033	3,984	3,984	14,357	4,435	36,717	63,476
2034	3,984	3,984	14,316	4,394	20,518	47,195
2035	1,609	1,609	589	589	1,178	5,573
2036	1,609	1,609	589	589	1,178	5,573

2037	1,609	1,609	589	589	1,178	5,573
2038	1,609	1,609	589	589	1,178	5,573
2039	1,609	1,609	589	589	1,178	5,573
2040	1,609	1,609	877	877	1,178	6,149
2041	1,609	1,609	1,317	1,317	1,178	7,029
2042	1,609	1,609	1,317	1,317	1,178	7,029
2043	1,609	1,609	1,317	1,317	1,178	7,029
2044	1,609	1,609	1,317	1,317	1,178	7,029
2045	1,609	1,609	1,317	1,317	1,178	7,029
2046	1,609	1,609	1,317	1,317	1,178	7,029
2047	1,609	1,609	1,317	1,317	1,178	7,029
2048	1,609	1,609	1,317	1,317	1,178	7,029
2049	1,609	1,609	1,317	1,317	1,178	7,029
2050	1,609	1,609	1,317	1,317	1,178	7,029
2051	1,609	1,609	1,317	1,317	1,178	7,029
2052	998	2,220	1,317	1,317	1,178	7,029
2053	-	3,107	1,254	1,254	10,886	16,502
2054	9,853	9,853	11,264	1,556	8,074	40,599
2055	-	-	8,452	1,556	8,074	18,082
2056	-	-	8,452	1,556	8,074	18,082
2057	-	-	8,452	1,556	8,074	18,082
2058	-	-	8,452	1,556	8,645	18,653
2059	-	-	8,452	1,556	9,180	19,188
2060	-	-	8,452	1,556	9,481	19,489
2061	-	-	8,452	1,556	9,453	19,461
2062	-	-	8,452	1,556	9,726	19,734
2063	-	-	8,452	1,556	10,027	20,035
2064	-	-	8,452	1,556	9,999	20,007
2065	-	-	8,390	1,493	3,404	13,286
2066	-	-	1,794	1,794	3,404	6,992
2067	-	-	1,794	1,794	3,404	6,992
2068	-	-	800	2,788	3,404	6,992
2069	-	-	-	3,589	3,404	6,992
2070	-	-	-	3,589	3,404	6,992
2071	-	-	-	3,589	3,087	6,676
2072	-	-	-	3,589	18,674	22,262
2073	-	-	-	2,938	-	2,938
2074	-	-	12,722	12,722	-	25,444
2075	-	-	-	-	-	-
2076	-	-	-	-	-	-
2077	-	-	-	-	-	-
2078	-	-	-	-	-	-
2079	-	-	-	-	-	-
2080	-	-	-	-	-	-
2081	-	-	-	-	-	-
2082	-	-	-	-	-	-

2083	-	-	-	-	-	-	-
2084	-	-	-	-	-	-	-
2085	-	-	-	-	-	-	-
2086	-	-	-	-	-	-	-
2087	-	-	-	-	-	-	-
2088	-	-	-	-	-	-	-
2089	-	-	-	-	-	-	-
2090	-	-	-	-	-	-	-
2091	-	-	-	-	-	-	-
2092	-	-	-	-	-	-	-
2093	-	-	-	-	-	-	-
2094	-	-	-	-	-	-	-
2095	-	-	-	-	-	-	-
2096	-	-	-	-	-	-	-
2097	-	-	-	-	-	-	-
2098	-	-	-	-	-	-	-
2099	-	-	-	-	-	-	-
2100	-	-	-	-	-	-	-

	2012 PV (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL	131,008	126,117	334,554	201,169	444,297	1,237,145
DECOM	146,329	145,249	-	226,302	-	517,879
USED FUEL	52,846	26,751	49,737	33,881	63,280	226,495
Total	330,182	298,117	384,291	461,351	507,577	1,981,519
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	8,261	11,254	25,652	25,652	23,179	93,998
2013	12,526	15,458	20,452	20,452	27,035	95,924
2014	11,424	14,368	20,088	20,088	30,961	96,929
2015	12,033	16,280	15,766	15,766	18,337	78,183
2016	11,711	14,454	13,569	18,151	20,553	78,437
2017	23,735	17,684	13,758	18,248	18,220	91,645
2018	14,892	11,501	19,782	24,181	17,269	87,624
2019	36,427	25,117	12,870	17,181	16,698	108,293
2020	19,941	11,296	12,627	16,852	16,647	77,362
2021	24,558	18,714	12,389	24,598	16,099	96,358
2022	17,742	12,504	19,334	27,641	16,051	93,271
2023	17,444	12,263	8,201	26,219	15,525	79,651
2024	17,270	11,908	8,052	24,173	15,247	76,651
2025	13,023	11,692	11,546	19,882	28,736	84,878
2026	10,714	10,771	16,986	25,186	16,988	80,644
2027	16,395	16,451	11,539	19,606	17,406	81,397
2028	9,241	11,388	10,973	18,909	16,387	66,898
2029	10,634	9,585	10,772	17,460	16,095	64,547
2030	9,416	10,401	15,005	19,870	14,396	69,089
2031	2,803	2,803	9,658	10,114	14,087	39,466
2032	2,759	2,759	9,456	10,083	13,785	38,843
2033	2,716	2,716	9,258	3,032	23,242	40,963
2034	2,674	2,674	9,064	2,957	13,195	30,563
2035	1,081	1,081	395	395	791	3,743
2036	1,064	1,064	390	390	779	3,687
2037	1,048	1,048	384	384	767	3,632

2038	1,033	1,033	378	378	756	3,578
2039	1,017	1,017	372	372	745	3,524
2040	1,002	1,002	546	546	734	3,831
2041	987	987	808	808	723	4,314
2042	973	973	796	796	712	4,250
2043	958	958	784	784	701	4,187
2044	944	944	773	773	691	4,125
2045	930	930	761	761	681	4,064
2046	916	916	750	750	671	4,004
2047	903	903	739	739	661	3,945
2048	890	890	728	728	651	3,887
2049	877	877	717	717	642	3,830
2050	864	864	707	707	632	3,773
2051	851	851	697	697	623	3,718
2052	520	1,157	686	686	614	3,663
2053	-	1,596	644	644	5,590	8,474
2054	4,985	4,985	5,699	787	4,085	20,542
2055	-	-	4,214	776	4,025	9,015
2056	-	-	4,152	764	3,967	8,883
2057	-	-	4,092	753	3,909	8,754
2058	-	-	4,032	742	4,124	8,898
2059	-	-	3,973	731	4,315	9,020
2060	-	-	3,915	721	4,392	9,028
2061	-	-	3,858	710	4,315	8,884
2062	-	-	3,802	700	4,375	8,877
2063	-	-	3,747	690	4,445	8,882
2064	-	-	3,693	680	4,368	8,741
2065	-	-	3,612	643	1,465	5,720
2066	-	-	761	761	1,444	2,967
2067	-	-	750	750	1,423	2,924
2068	-	-	330	1,149	1,403	2,882
2069	-	-	-	1,458	1,382	2,840
2070	-	-	-	1,436	1,362	2,799
2071	-	-	-	1,416	1,218	2,634
2072	-	-	-	1,395	7,260	8,656
2073	-	-	-	1,126	-	1,126
2074	-	-	4,805	4,805	-	9,610
2075	-	-	-	-	-	-
2076	-	-	-	-	-	-
2077	-	-	-	-	-	-
2078	-	-	-	-	-	-
2079	-	-	-	-	-	-
2080	-	-	-	-	-	-
2081	-	-	-	-	-	-
2082	-	-	-	-	-	-
2083	-	-	-	-	-	-

2084	-	-	-	-	-	-	-
2085	-	-	-	-	-	-	-
2086	-	-	-	-	-	-	-
2087	-	-	-	-	-	-	-
2088	-	-	-	-	-	-	-
2089	-	-	-	-	-	-	-
2090	-	-	-	-	-	-	-
2091	-	-	-	-	-	-	-
2092	-	-	-	-	-	-	-
2093	-	-	-	-	-	-	-
2094	-	-	-	-	-	-	-
2095	-	-	-	-	-	-	-
2096	-	-	-	-	-	-	-
2097	-	-	-	-	-	-	-
2098	-	-	-	-	-	-	-
2099	-	-	-	-	-	-	-
2100	-	-	-	-	-	-	-

10.6 Appendix F – Total Cash Flow

	2012 constant dollar (,000)					
	PA	PB	BA	BB	DA	Total
INTERNAL	243,920	226,100	799,391	261,067	753,670	2,284,148
DECOM	2,447,337	2,502,250	2,582,635	2,052,859	2,606,274	12,191,355
USED FUEL	2,002,434	2,305,454	6,101,450	4,129,717	6,916,317	21,455,371
Total	4,693,691	5,033,804	9,483,476	6,443,643	10,276,260	35,930,875
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	46,746	41,032	78,791	43,039	58,179	267,787
2013	46,718	40,443	67,161	37,963	61,177	253,463
2014	78,298	71,051	120,374	49,996	95,409	415,127
2015	88,179	81,614	132,961	53,219	96,094	452,066
2016	92,409	91,125	141,819	59,576	105,690	490,618
2017	108,366	99,007	147,832	64,572	110,882	530,659
2018	57,652	125,915	93,487	62,229	81,105	420,388
2019	83,019	68,232	80,172	49,930	74,409	355,763
2020	143,428	145,200	69,578	47,883	68,829	474,917
2021	69,862	63,235	77,198	59,217	72,691	342,203
2022	58,388	51,845	79,063	60,285	66,484	316,065
2023	53,958	47,855	56,755	56,154	60,460	275,181
2024	55,807	49,637	59,463	54,500	61,683	281,090
2025	82,724	87,607	166,599	117,088	193,669	647,687
2026	59,886	63,157	111,742	83,525	108,351	426,660
2027	66,981	69,290	99,558	73,176	104,622	413,627
2028	51,072	56,059	83,449	63,454	87,746	341,780
2029	82,825	88,542	177,414	124,416	191,849	665,046
2030	73,941	81,778	162,266	114,568	165,880	598,433
2031	58,934	64,176	138,199	90,238	149,325	500,872
2032	86,112	96,949	226,588	150,125	248,128	807,902
2033	52,889	57,841	121,669	70,396	148,473	451,267
2034	41,383	44,300	85,231	46,224	92,128	309,266
2035	56,911	61,909	118,343	70,489	124,517	432,169
2036	56,971	61,979	118,344	70,511	124,514	432,319

2037	57,460	62,467	118,830	71,046	125,604	435,407
2038	58,602	63,071	120,712	70,928	125,762	439,075
2039	56,423	61,422	117,653	70,342	124,141	429,980
2040	56,401	61,390	117,016	71,390	124,098	430,295
2041	56,428	61,429	116,225	73,096	124,167	431,346
2042	56,453	61,415	116,250	73,075	124,164	431,358
2043	97,193	61,088	115,720	72,975	123,898	470,875
2044	99,132	61,169	115,924	73,000	123,989	473,214
2045	115,519	60,961	115,664	72,939	123,855	488,938
2046	148,778	61,132	115,839	72,960	124,019	522,728
2047	140,717	87,391	116,194	73,470	128,113	545,885
2048	139,837	112,410	116,339	73,028	130,427	572,041
2049	139,081	136,978	115,564	72,868	172,042	636,533
2050	139,067	198,680	115,554	72,855	126,434	652,590
2051	139,145	221,920	115,652	72,925	166,005	715,647
2052	136,924	224,629	116,650	74,001	169,195	721,399
2053	131,993	228,584	118,159	74,886	143,155	696,777
2054	138,873	205,328	137,997	80,414	230,869	793,481
2055	111,473	114,593	155,712	86,689	159,211	627,677
2056	107,067	111,109	297,455	223,396	155,734	894,760
2057	80,146	102,489	131,054	127,084	145,794	586,568
2058	37,586	57,478	133,244	139,268	147,686	515,262
2059	46,548	51,890	148,327	173,015	155,933	575,713
2060	50,089	55,423	153,994	240,956	159,183	659,646
2061	46,187	51,530	147,740	275,288	156,032	676,777
2062	40,786	46,139	139,160	273,107	152,081	651,272
2063	30,513	35,886	122,755	269,961	144,314	603,429
2064	30,496	35,869	121,826	249,367	144,243	581,800
2065	30,482	35,856	121,815	157,063	137,697	482,913
2066	30,537	35,910	114,385	158,010	137,751	476,593
2067	30,513	35,886	114,280	129,905	136,497	447,080
2068	30,513	35,886	110,601	77,144	136,304	390,448
2069	30,496	35,869	106,451	80,002	136,177	388,995
2070	30,482	35,856	106,439	79,916	136,092	388,786
2071	2,994	3,475	19,387	21,945	38,626	86,426
2072	2,915	3,387	19,218	21,735	41,845	89,101
2073	2,477	2,871	17,803	18,316	21,604	63,071
2074	2,423	2,811	30,392	17,541	21,459	74,627
2075	2,448	2,843	17,779	4,886	21,580	49,536
2076	2,527	2,926	17,939	4,991	21,756	50,139
2077	2,435	2,822	17,670	4,825	21,457	49,209
2078	2,435	2,822	17,670	4,825	21,457	49,209
2079	2,432	2,821	17,696	4,836	21,487	49,272
2080	2,497	2,900	17,962	4,988	21,787	50,133
2081	2,513	2,910	17,868	4,963	66,267	94,521
2082	2,449	2,838	59,930	4,854	83,311	153,381

2083	2,435	2,822	71,529	4,825	121,492	203,103
2084	2,418	2,805	102,733	4,808	197,053	309,817
2085	2,456	2,852	169,352	4,903	281,772	461,334
2086	2,513	2,910	204,965	4,963	281,835	497,186
2087	2,435	2,822	204,768	4,825	281,621	496,470
2088	2,449	2,838	205,352	4,854	101,211	316,703
2089	2,418	2,805	181,970	4,808	96,337	288,337
2090	2,497	2,900	91,146	4,988	96,646	198,177
2091	2,527	2,926	91,124	4,991	60,976	162,544
2092	2,435	2,822	54,405	4,825	7,862	72,348
2093	2,435	2,822	7,144	4,825	7,862	25,088
2094	2,190	2,579	6,926	4,595	7,649	23,938
2095	2,214	2,608	7,003	4,647	7,734	24,207
2096	2,231	2,627	7,054	4,681	7,791	24,383
2097	2,190	2,579	6,926	4,595	7,649	23,938
2098	2,176	2,563	6,883	4,567	7,601	23,790
2099	2,176	2,563	6,883	4,567	7,601	23,790
2100	2,282	2,687	7,217	4,789	7,970	24,946
2101	2,231	2,627	7,054	4,681	7,791	24,383
2102	2,176	2,563	6,883	4,567	7,601	23,790
2103	2,190	2,579	6,926	4,595	7,649	23,938
2104	2,176	2,563	6,883	4,567	7,601	23,790
2105	2,214	2,608	7,003	4,647	7,734	24,207
2106	2,244	2,643	7,097	4,709	7,838	24,531
2107	2,166	2,550	6,849	4,544	7,563	23,671
2108	2,166	2,550	6,849	4,544	7,563	23,671
2109	2,179	2,566	6,891	4,572	7,611	23,820
2110	2,258	2,659	7,140	4,737	7,885	24,679
2111	2,220	2,614	7,020	4,658	7,753	24,264
2112	2,179	2,566	6,891	4,572	7,611	23,820
2113	2,166	2,550	6,849	4,544	7,563	23,671
2114	2,166	2,550	6,849	4,544	7,563	23,671
2115	2,217	2,611	7,012	4,652	7,744	24,236
2116	2,220	2,614	7,020	4,658	7,753	24,264
2117	2,166	2,550	6,849	4,544	7,563	23,671
2118	2,179	2,566	6,891	4,572	7,611	23,820
2119	2,166	2,550	6,849	4,544	7,563	23,671
2120	2,258	2,659	7,140	4,737	7,885	24,679
2121	2,233	2,630	7,063	4,686	7,800	24,412
2122	2,166	2,550	6,849	4,544	7,563	23,671
2123	2,166	2,550	6,849	4,544	7,563	23,671
2124	2,179	2,566	6,891	4,572	7,611	23,820
2125	2,204	2,595	6,969	4,624	7,696	24,088
2126	2,220	2,614	7,020	4,658	7,753	24,264
2127	2,179	2,566	6,891	4,572	7,611	23,820
2128	2,166	2,550	6,849	4,544	7,563	23,671

2129	2,166	2,550	6,849	4,544	7,563	23,671
2130	2,271	2,675	7,183	4,766	7,933	24,827
2131	2,220	2,614	7,020	4,658	7,753	24,264
2132	2,166	2,550	6,849	4,544	7,563	23,671
2133	2,179	2,566	6,891	4,572	7,611	23,820
2134	2,166	2,550	6,849	4,544	7,563	23,671
2135	2,204	2,595	6,969	4,624	7,696	24,088
2136	2,502	2,946	7,913	5,250	8,739	27,350
2137	2,510	2,956	7,939	5,267	8,767	27,439
2138	2,510	2,956	7,939	5,267	8,767	27,439
2139	2,622	3,087	8,292	5,502	9,157	28,660
2140	2,700	3,179	8,538	5,665	9,429	29,510
2141	30,822	36,296	97,477	64,676	107,651	336,922
2142	6,709	7,900	21,217	14,078	23,432	73,336
2143	7,349	8,654	23,240	15,420	25,666	80,329
2144	6,940	8,172	21,948	14,562	24,239	75,861
2145	8,085	9,521	25,568	16,965	28,237	88,376
2146	7,657	9,017	24,217	16,068	26,744	83,704
2147	6,705	7,896	21,205	14,069	23,418	73,293
2148	5,596	6,590	17,697	11,742	19,544	61,169
2149	5,310	6,252	16,792	11,141	18,544	58,039
2150	2,867	3,376	9,068	6,017	10,014	31,342
2151	2,607	3,070	8,246	5,471	9,107	28,501
2152	637	751	2,016	1,338	2,226	6,968
2153	603	710	1,908	1,266	2,107	6,595
2154	617	726	1,951	1,294	2,155	6,743
2155	625	736	1,977	1,312	2,183	6,833
2156	598	704	1,891	1,255	2,088	6,536
2157	611	720	1,934	1,283	2,136	6,684
2158	598	704	1,891	1,255	2,088	6,536
2159	598	704	1,891	1,255	2,088	6,536
2160	675	795	2,136	1,417	2,359	7,383
2161	640	754	2,024	1,343	2,235	6,997
2162	640	754	2,024	1,343	2,235	6,997
2163	742	873	2,345	1,556	2,590	8,106
2164	728	857	2,302	1,528	2,543	7,958
2165	750	883	2,371	1,573	2,619	8,196
2166	5,542	6,526	17,527	11,630	19,357	60,582
2167	107	126	339	225	375	1,173
2168	107	126	339	225	375	1,173
2169	107	126	339	225	375	1,173
2170	35	42	112	74	124	388

2012 PV (,000)						
	PA	PB	BA	BB	DA	Total
INTERNAL	213,888	200,064	590,856	227,736	571,836	1,804,379
DECOM	1,373,251	1,380,711	958,512	915,997	820,046	5,448,518
USED FUEL	818,598	926,000	2,409,109	1,627,489	2,739,699	8,520,895
Total	2,405,737	2,506,774	3,958,477	2,771,222	4,131,581	15,773,792
1999						
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012	44,457	39,022	74,932	40,931	55,329	254,671
2013	43,326	37,521	62,279	35,262	56,791	235,178
2014	70,637	64,122	108,569	45,298	86,306	374,933
2015	77,620	71,893	116,819	47,008	84,647	397,987
2016	79,313	78,273	121,395	51,401	90,873	421,254
2017	91,061	83,153	123,392	54,356	92,909	444,871
2018	47,885	105,589	77,045	51,495	66,836	348,850
2019	68,230	56,336	64,354	40,502	60,059	289,481
2020	115,547	117,110	54,845	38,051	54,496	380,050
2021	54,202	48,841	59,070	46,433	56,007	264,552
2022	44,443	39,258	59,551	46,312	50,293	239,858
2023	40,402	35,629	41,870	42,540	44,994	205,434
2024	40,835	36,078	42,805	40,407	44,860	204,985
2025	57,332	60,377	113,008	80,564	132,267	443,547
2026	40,805	42,826	74,517	56,966	72,294	287,407
2027	44,698	46,054	64,273	48,532	67,910	271,468
2028	33,418	36,635	53,202	41,717	56,334	221,306
2029	50,808	53,802	104,817	74,913	113,608	397,948
2030	44,590	49,031	94,667	68,143	96,477	352,908
2031	34,522	37,378	80,071	52,962	86,881	291,814
2032	46,916	52,444	121,203	80,987	133,002	434,553
2033	29,652	32,178	67,290	38,425	83,315	250,859
2034	23,062	24,479	47,014	25,105	51,209	170,870
2035	31,286	33,751	63,451	37,188	66,515	232,191
2036	30,591	32,993	61,910	36,276	64,895	226,664
2037	30,183	32,520	60,727	35,694	63,960	223,085

2038	29,862	31,908	59,931	34,687	62,320	218,710
2039	28,272	30,479	57,257	33,598	60,168	209,774
2040	27,624	29,765	55,520	33,435	58,717	205,062
2041	27,012	29,100	53,708	33,667	57,355	200,842
2042	26,371	28,378	52,368	32,849	55,963	195,929
2043	49,891	27,617	50,944	32,037	54,549	215,037
2044	48,536	26,995	49,811	31,285	53,294	209,922
2045	55,750	26,307	48,549	30,525	51,995	213,127
2046	71,833	25,779	47,462	29,801	50,844	225,718
2047	64,320	39,411	46,550	29,349	51,596	231,226
2048	62,564	50,575	45,434	28,451	51,444	238,467
2049	61,070	61,132	44,144	27,737	69,422	263,504
2050	59,875	90,141	43,118	27,087	47,116	267,337
2051	58,739	95,559	42,155	26,485	62,630	285,568
2052	56,449	95,154	41,609	26,322	62,446	281,980
2053	52,815	95,404	41,245	26,028	51,573	267,065
2054	54,299	82,217	48,751	27,968	86,131	299,366
2055	37,109	38,394	52,042	29,675	53,004	210,224
2056	35,252	36,735	110,362	86,973	50,992	320,314
2057	26,758	34,142	43,007	47,251	47,727	198,885
2058	11,514	18,047	42,934	49,635	47,500	169,629
2059	12,969	14,476	44,922	61,109	48,261	181,737
2060	13,398	14,866	45,112	87,339	47,990	208,704
2061	12,235	13,670	42,755	95,420	46,255	210,335
2062	10,510	11,914	39,532	93,005	44,275	199,236
2063	7,847	9,223	34,795	90,513	41,584	183,962
2064	7,655	8,997	33,698	80,709	40,680	171,739
2065	7,467	8,779	32,991	43,710	37,005	129,952
2066	7,307	8,587	29,121	43,219	36,220	124,453
2067	7,136	8,387	28,441	34,498	35,053	113,515
2068	6,970	8,191	26,293	19,918	34,209	95,582
2069	6,801	7,994	24,021	20,787	33,430	93,034
2070	6,637	7,802	23,464	20,327	32,680	90,911
2071	856	993	5,104	7,996	11,776	26,725
2072	834	966	4,988	7,831	12,869	27,488
2073	724	837	4,584	6,555	5,155	17,856
2074	695	804	9,264	6,176	5,010	21,949
2075	682	790	4,384	1,351	4,921	12,127
2076	684	791	4,328	1,345	4,851	12,001
2077	665	769	4,215	1,306	4,719	11,674
2078	654	756	4,136	1,283	4,625	11,454
2079	638	738	4,057	1,258	4,533	11,224
2080	630	730	4,009	1,249	4,475	11,093
2081	625	723	3,925	1,229	19,364	25,867
2082	612	707	17,800	1,201	21,978	42,298
2083	600	694	19,197	1,177	31,074	52,742

2084	584	676	26,700	1,151	50,621	79,732
2085	574	665	44,358	1,137	66,389	113,122
2086	574	663	49,349	1,127	65,277	116,990
2087	561	648	48,522	1,100	64,162	114,993
2088	553	639	47,854	1,084	20,450	70,579
2089	537	621	40,868	1,057	18,981	62,063
2090	530	614	16,545	1,050	18,665	37,405
2091	528	610	16,244	1,037	11,629	30,048
2092	516	596	9,641	1,011	1,639	13,403
2093	507	586	1,466	994	1,612	5,165
2094	437	514	1,381	916	1,525	4,774
2095	431	508	1,364	905	1,506	4,713
2096	425	501	1,344	892	1,485	4,647
2097	415	489	1,313	872	1,451	4,540
2098	408	480	1,289	855	1,424	4,456
2099	401	472	1,268	841	1,400	4,382
2100	401	472	1,267	841	1,399	4,380
2101	391	460	1,237	821	1,366	4,274
2102	382	449	1,207	801	1,333	4,171
2103	376	443	1,189	789	1,314	4,111
2104	369	435	1,168	775	1,290	4,036
2105	365	430	1,155	766	1,276	3,992
2106	361	425	1,141	757	1,260	3,943
2107	351	413	1,110	737	1,226	3,838
2108	345	407	1,092	725	1,207	3,776
2109	341	401	1,077	715	1,189	3,722
2110	339	399	1,071	710	1,182	3,700
2111	331	390	1,048	695	1,158	3,623
2112	324	382	1,026	681	1,133	3,546
2113	319	375	1,008	669	1,113	3,484
2114	314	369	992	658	1,095	3,429
2115	311	366	982	652	1,085	3,395
2116	306	360	967	642	1,068	3,342
2117	299	352	946	627	1,044	3,268
2118	295	347	932	619	1,029	3,222
2119	290	341	916	608	1,012	3,166
2120	288	339	911	604	1,006	3,149
2121	283	333	894	593	988	3,091
2122	276	325	874	580	965	3,020
2123	272	320	860	571	950	2,973
2124	268	316	848	563	936	2,931
2125	265	312	837	555	924	2,892
2126	261	307	825	547	911	2,852
2127	256	301	809	537	893	2,796
2128	251	296	795	528	878	2,749
2129	248	292	783	520	865	2,707

2130	246	290	779	517	860	2,692
2131	241	284	763	506	843	2,637
2132	236	278	747	496	825	2,584
2133	233	274	737	489	814	2,547
2134	229	270	725	481	800	2,505
2135	226	267	716	475	791	2,475
2136	233	274	736	488	813	2,544
2137	233	275	738	489	815	2,550
2138	230	270	726	482	802	2,510
2139	228	269	721	478	796	2,493
2140	226	266	714	474	789	2,468
2141	1,176	1,385	3,720	2,468	4,109	12,859
2142	775	912	2,450	1,626	2,706	8,469
2143	842	991	2,661	1,766	2,939	9,199
2144	778	917	2,462	1,634	2,719	8,510
2145	841	990	2,658	1,764	2,936	9,188
2146	751	884	2,374	1,575	2,622	8,206
2147	702	827	2,220	1,473	2,451	7,673
2148	566	667	1,791	1,188	1,978	6,189
2149	531	625	1,678	1,113	1,853	5,800
2150	236	278	747	496	825	2,582
2151	88	103	277	184	306	958
2152	63	74	199	132	219	687
2153	58	68	183	122	203	634
2154	57	67	181	120	200	627
2155	57	67	179	119	198	618
2156	55	65	175	116	194	606
2157	55	65	173	115	191	599
2158	54	63	170	113	188	589
2159	53	63	168	111	186	581
2160	58	68	183	121	202	632
2161	57	67	179	119	198	620
2162	56	66	177	117	195	611
2163	60	71	190	126	210	658
2164	59	70	187	124	207	647
2165	59	69	185	123	204	640
2166	47	56	150	100	166	519
2167	6	7	20	13	22	69
2168	6	7	20	13	22	68
2169	6	7	19	13	21	67
2170	3	3	8	6	9	29



Report

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2012 ONFA Reference Plan Update Summary Report

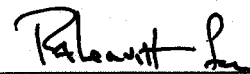
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2012 ONFA Reference Plan Update Summary Report

W-REP-08620.05-00003

November 2011

Prepared by:

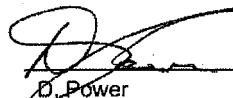


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Revision Summary

Revision Number	Date	Comments
R00	July 2011	Initial Issue
R01	November 2011	<p>To incorporate alignments with the current OPG business plan, refinements to the cost estimating models, and the updated Decommissioning Fund year-end balance projection.</p> <p>Refer to the 2012 ONFA Reference Plan Update Cover Letter (November submission) for the summary of updates.</p> <p>Refer to the supporting cost estimate reports for the details of the updates.</p>

1.0 INTRODUCTION

The Ontario Nuclear Funds Agreement (ONFA) between the Province of Ontario and Ontario Power Generation became effective 01 April 1999.

The Parties entered into the Ontario Nuclear Funds Agreement (a) to ensure that sufficient funds are accumulated or otherwise are readily available to pay for the costs of managing nuclear waste and decommissioning each of the stations and other facilities; (b) to limit the financial exposure that OPG faces with respect to the cost of managing used fuel; and (c) to permit OPG to meet the requirements for a financial guarantee under the *Nuclear Safety and Control Act* (Canada).

OPG has agreed to make payments to segregated funds so that when combined with the return on the assets of the funds, there will be sufficient assets in the applicable segregated fund to pay, when due, all used fuel eligible costs and all decommissioning eligible costs.

The liability of the Province for provincial payments to the used fuel segregated fund under the terms of ONFA is based on the assumption that the total number of used fuel bundles discharged and projected to be discharged from all stations will be 2,230,000. OPG will pay all incremental costs for management of used fuel bundles in excess of this amount and make payments to the used fuel segregated fund for these incremental costs.

The baseline reference plans, cost estimates and fund contributions are defined by the following:

- (1) Ontario Nuclear Funds Agreement: Baseline Cost Estimates
W-REP-00400-10002-R00
March 2002
- (2) Ontario Nuclear Funds Agreement: Baseline Segregated Fund Contributions
W-REP-03462-10012-R00
March 2002

ONFA includes provisions where reference plan cost estimates and fund contributions can be amended under certain conditions through agreed processes. These conditions include nuclear legislation changes or every five years whichever is earlier, operating period changes, and changes in balance to complete cost estimates.

The financial reference plans established in 1999 were based on interim storage of used fuel at Pickering, Bruce (Western) and Darlington Waste Management Facilities, centralized interim storage of low- and intermediate-level waste (L&ILW) at the Western WMF, and the assumption of permanent disposal starting in 2025 for used fuel and 2015 for low-level waste. Reactors were assumed to be placed in safe storage for 30 years after shutdown, then dismantled. The plan was incorporated into the Ontario

Nuclear Funds Agreement and remains the baseline for administration of this agreement, including fund contributions.

After the ONFA reference plan was established in 1999, many changes have occurred as a result of reactor life extensions, changes in plans and changes in cost estimates. The 2007 ONFA reference plan update included the following changes: the in-service date assumption of the used fuel deep geological repository was updated to 2035, the decision to pursue a L&ILW deep geological repository (L&ILW DGR) with the in-service assumption of 2017 year-end was incorporated, and the decision to refurbish units of Bruce A and to permanently shut down Pickering Units 2 and 3 was also included.

Further changes have occurred since the 2007 ONFA reference plan update. The impacts of these changes are incorporated into this 2012 ONFA reference plan update submission. These changes include the decision to refurbish Darlington, the life extension of Pickering B and Bruce B under a continued operations scenario and the revised end of life of Bruce A and Pickering A. Other changes include the updated mine design with respect to repository depth and emplacement method for the long term used fuel management program (by NWMO), the updated initial build out size of the L&ILW DGR, and the decision to accelerate the movement of used fuel from wet bays to dry storage containers (DSC). In addition to the change of planning assumptions, all the base line cost estimates have been re-estimated to reflect the latest available information. The impact of these and other changes are fully documented in this submission.

The following sections of this document summarize:

- Section 2.0 - planning assumptions agreed for use in the reference plan;
- Section 3.0 - updated cost estimates developed based on the planning assumptions;
- Section 4.0 - the results of a study on economic indices which resulted in updated application methods for economic indices and updated projections on those economic indices to be applied; and
- Section 5.0 - revised contribution schedules based on fund levels assumed as of the effective date of this update, updated cost estimates and contribution period based on latest station end of life dates embedded within the planning assumptions.

2.0 PLANNING ASSUMPTIONS

The initiation of the reference plan update demanded the requirement to update planning assumptions in a number of key areas including:

- (a) station end of life assumptions;
- (b) assumptions on timing for dismantling of stations after shutdown;
- (c) key assumptions within individual cost estimates;
- (d) economic indices to be applied (reference Section 4.0);
- (e) agreed fund balances at effective date for the reference plan update (reference Section 5.0).

For Items (a) and (b) a key reference document is “2012 Ontario Nuclear Funds Update Nuclear Waste Forecasts” which details the planning assumptions and background for these items as well as resulting waste quantities which need to be built into waste management cost estimates. Item (c) is documented in the individual cost estimate reports included in this submission.

(a) Station End of Life Assumptions

The following table summarizes the end of life dates for all stations owned by OPG for 1999 ONFA (baseline), 2007 ONFA reference plan update, and proposed for the 2012 ONFA reference plan update.

Station	End of Life Dates		
	1999 ONFA	2007 ONFA Update	2012 ONFA Update – By Unit
Bruce A	No return to service	2036	2042 / 2042 / 2054 / 2054
Bruce B	2013	2013	2018 / 2019 / 2019 / 2021
Pickering A	2012	2021	2019 / - / - / 2019
Pickering B	2012	2015	2017 / 2017 / 2019 / 2019
Darlington	2019	2020	2050 / 2048 / 2051 / 2053

The above dates for the reference plan update have been provided by subject matter experts within OPG and Bruce Power based on current status of station operating plans.

(b) Station Dismantling Assumptions

The current strategy for decommissioning OPG owned stations is based on a deferred dismantling strategy which assumes a 30 year safe storage period. The 30 year deferred strategy runs from unit shut down date to the start of dismantlement date. Each of the 5 generating stations will be decommissioned on their own, based on the same 30 year deferred dismantlement approach. The 2012 ONFA reference plan also included a change in assumption regarding the long term management of L&ILW resulting from decommissioning activities. The assumptions now reflect the currently planned L&ILW DGR in Kincardine to accommodate decommissioning waste with a cost for expansion if required. Previous ONFA reference plans had the assumption of decommissioning waste disposal at a separate DGR.

(c) Program Cost Estimates – Key Assumptions

High level planning assumptions include the following:

- Used Fuel Long-Term Management estimates are based on the Adaptive Phased Management approach which was recommended by the Nuclear Waste Management Organization (NWMO) in response to the Nuclear Fuel Waste Act (NFWA). This plan was selected by the Government of Canada in

June 2007. Under this approach, long-lived copper disposal containers will be placed in the floor of a deep geological repository with an in-service date of 2035.

- Low and Intermediate Level Waste (L&ILW) management estimates are based on the plan of emplacement in a deep geological repository (DGR) in Kincardine with a target in-service date of 2018. This facility will have a capacity to accommodate 200,000m³ of L&ILW. The Environmental Assessment and Preliminary Safety Report were completed in 2010 and were submitted to the Joint Review Panel in 2011. The public comment period, public hearing review for EA approval and site licence for construction will follow in 2012.
- Decommissioning estimates are based on the 30-year deferred dismantling strategy as indicated in (b) above. For the Bruce A and B stations, it is assumed that stations will be handed back to OPG by Bruce Power at the end of the final unit shutdown on the site with all units having been defuelled and dewatered. OPG would conduct final activities to place units into safe store. Safe store and dismantling assumptions are similar to those for OPG operated stations.
- Used Fuel Interim Storage and Retrieval estimates are based on the assumption that interim used fuel storage is provided on-site until the long-term used fuel management facility is available, at which time retrieval of used fuel activities will commence. Interim used fuel storage is achieved through storage in water filled bays within the station or in dry storage containers in dry storage facilities at the station site. The costs to decommission used fuel interim storage facilities are included in this estimate.
- L&ILW operation estimates are based on the assumption that L&ILW will be transported, processed and stored at the Western Waste Management Facility until the long-term L&ILW management facility is available. As a result of reactor life extension, the operating period of waste management facility is also extended. The costs to decommission the waste management facility are included in this estimate.

3.0 COST ESTIMATES UPDATE

All cost estimates have been updated based on planning assumptions included in Section 2.0 of this document. The results of this update are documented in the report titled "2012 ONFA Reference Plan Update Program Summary Cost Estimate Report" dated November 2011 which forms part of this reference plan submission. Program-specific cost estimate reports are also prepared. Used fuel and L&ILW operations cost estimates are prepared internally. Cost estimates for the long term management of used fuel and L&ILW are supported by technical/estimate documents prepared by NWMO/SNC-Lavalin Nuclear and Hatch respectively. Station decommissioning estimates have been prepared by TLG Services, a recognized subject matter expert in decommissioning.

On a present value basis, the cost estimates for individual programs are presented below for the 1999 baseline ONFA, 2007 ONFA reference plan update and the 2012 ONFA reference plan update.

Program	Funding Source	Program Cost Estimate from 01 April, 1999 Onwards (01 January, 2012 PV \$M)				
		1999 ONFA	2007 ONFA Update	2012 ONFA Update	April 1999 -2011 Expenditures	2012 ONFA Cost to Completion (2012 Onwards)
Used Fuel Storage	Internal	799	1,386	1,925	688	1,237
	ONFA					
	- Decommissioning Fund	696	242	518	0	518
	- Used Fuel Fund	132	242	226	0	226
Used Fuel Long-Term Management	ONFA					
	- Used Fuel Fund	7,594	7,498	8,622	327	8,294
L&ILW Operations	Internal	399	779	1,166	599	567
	ONFA					
	- Decommissioning Fund	177	136	224	0	224
L&ILW Long Term Management	ONFA					
	- Decommissioning Fund	497	884	1,574	190	1,383
Station Decommissioning	ONFA					
	- Decommissioning Fund	4,397	5,054	3,565	242	3,323
TOTALS*	INTERNAL TOTAL	1,198	2,165	3,091	1,287	1,804
	ONFA					
	- Decommissioning Fund	5,768	6,317	5,881	432	5,449
	- Used Fuel Fund	7,726	7,740	8,848	327	8,521
	ONFA TOTAL	13,494	14,056	14,729	760	13,969
	TOTAL (INTERNAL + ONFA)	14,692	16,221	17,820	2,047	15,774

*Details may not add up to subtotals and totals due to rounding.

The future costs from 01 January 2012 onward are estimated at \$8,521 M for the Used Fuel Fund and \$5,449 M for the Decommissioning Fund (both in 01 January 2012 PV\$).

Details on variances are documented in the summary cost estimate document referenced above. Impacts on funding will be discussed in Section 5 of this document.

4.0 ECONOMIC INDICES

The Economic Assumptions Working Group (EAWG) with members from both OPG and the Province reviewed the methodology of applying economic indicators within ONFA and the supplier of forecasts for these economic indices. A report containing

recommendations by the EAWG has been prepared titled “ONFA 2011 Reference Plan Update – Review of Economic Assumptions”. The recommendations included within this report have been used to escalate and subsequently discount constant dollar estimates. The report by the EAWG forms part of the submission.

Key recommendations include:

1. Continue to employ the University of Toronto’s Institute of Policy Analysis Economic Forecasting Series
2. Ontario forecast as the source of escalation indices and restore CPI- Ontario as the means of adjusting the real discount rate to a nominal discount rate.
3. Return to the previous practice of applying escalation indices as per the forecast source used to all years of programs cost flows, rather than applying the “long-term” trend escalators to all cost flows.

5.0 FUND LEVELS AND CONTRIBUTION PROFILES

5.1 Used Fuel Fund

The Used Fuel Fund balance is projected to be \$6,498 M as of December 31, 2011. This amount consists of \$6,183 M for the initial 2.23 million bundles with a guaranteed real rate of return of 3.25% by the Province and a fair value of \$315 M for the incremental bundles.

The 2011 year-end fund balance consists of the balance at year-end 2010 plus contributions and projected fund growth less disbursements in 2011.

As indicated in the table below, the Used Fuel Fund is projected to be 76 percent funded as at December 31, 2011 based on the 2012 ONFA reference plan update cost estimates.

Used Fuel Fund Programs Cost Estimates (2012 onwards) and Fund Balance	2012 ONFA Reference Plan Update
	(January 1, 2012 PV \$M)
Used Fuel Fund Program Costs (January 2012 onwards)	
Long-Term Used Fuel Management	8,294
Used Fuel Storage post station life	226
Total	8,521
December 31, 2011 Used Fuel Fund Balance	6,498

5.2 Decommissioning Fund

Based on the end of October 2011 fund value and assuming zero growth until year-end, the projected balance of the Decommissioning Fund as at December 31, 2011 is \$5,295 M. As indicated in the table below, the Decommissioning Fund is projected to be 97 percent funded as at December 31, 2011 based on the 2012 ONFA reference plan update cost estimates.

Decommissioning Fund Programs Cost Estimates (2012 Onward) and Fund Balance	2012 ONFA Reference Plan Update
	(January 1, 2012 PV \$M)
Decommissioning Fund Program Costs (January 2012 onwards)	
Used Fuel Storage (Post-Station Life)	518
L&ILW Storage post station life	224
L&ILW Long Term Management	1,383
Decommissioning of Facilities	3,323
Total	5,449
December 31, 2011 Decommissioning Fund Balance	5,295

5.3 Contribution Profiles

Based on the fund balances, future liabilities as summarized in Section 3.0, rate of return based on ONFA, and remaining station life included in Section 2.0 over which to make fund contributions, contribution profiles have been calculated and are shown on the following appendices.

Due to the risk sharing arrangement prescribed under ONFA between OPG and the Province, the used fuel management liability is further segregated between the portions attributable to the first 2.23 M bundles and the incremental bundles.

The Used Fuel Fund contribution profiles for the initial 2.23 M bundles is presented in Appendix B and the funding for excess fuel bundles is presented in Appendix C. The aggregated contribution profile for Used Fuel Fund is presented in Appendix A.

The Decommissioning Fund contribution profile based on the strict interpretation of ONFA is presented in Appendix D. Appendix D shows that the notional allocation of fund assets and liability to the stations resulted in contributions in 2012 to 2019 even though the fund will be 100% funded by 2013. This is due to the underfunded stations, namely Pickering A and Pickering B, have shorter station lives and thus shorter contribution periods. Given the original intent of ONFA was not to make further contributions to a fund that is fully funded, the proposed contribution schedule (Appendix E) shows no future contributions after 2013.

The “2012 ONFA Reference Plan Update Segregated Funds Contribution Report” dated November 2011 provides full details on segregated fund contribution requirements and resulting profiles.

APPENDIX A: USED FUEL FUND – ANNUAL CONTRIBUTIONS

Annual Payment (\$) - Station						
Year	PA	PB	BA	BB	DA	Total
Liability	818,598,298	925,999,640	2,409,108,813	1,627,489,072	2,739,699,184	8,520,895,007
Projected Fund Balance	926,481,622	905,752,758	2,104,937,430	1,364,844,317	1,196,445,470	6,498,461,597
2012	(192,047,906)	(63,732,220)	56,260,316	109,595,178	264,741,645	174,817,012
2013	12,698,735	13,302,641	(24,573,720)	17,920,575	173,355,840	192,704,071
2014	5,960,766	6,244,239	(36,871,798)	9,741,878	159,466,982	144,542,066
2015	7,026,107	7,360,243	(36,203,033)	11,101,653	160,225,812	149,510,781
2016	8,625,609	9,035,811	(35,326,282)	12,985,397	161,220,300	156,540,835
2017	3,900,349	4,085,835	4,172,471	5,290,520	152,814,870	170,264,044
2018	11,331,488	11,870,372	8,360,633	12,545,359	157,554,679	201,662,531
2019	55,677,803	58,325,637	9,203,418	16,029,277	158,511,409	297,747,543
2020	-	-	31,696,095	69,360,466	35,879,784	136,936,345
2021	-	-	31,696,095	69,360,466	35,879,784	136,936,345
2022	-	-	31,696,095	-	35,879,784	67,575,879
2023	-	-	31,696,095	-	35,879,784	67,575,879
2024	-	-	31,696,095	-	35,879,784	67,575,879
2025	-	-	31,696,095	-	35,879,784	67,575,879
2026	-	-	31,696,095	-	35,879,784	67,575,879
2027	-	-	31,696,095	-	35,879,784	67,575,879
2028	-	-	31,696,095	-	35,879,784	67,575,879
2029	-	-	31,696,095	-	35,879,784	67,575,879
2030	-	-	31,696,095	-	35,879,784	67,575,879
2031	-	-	31,696,095	-	35,879,784	67,575,879
2032	-	-	31,696,095	-	35,879,784	67,575,879
2033	-	-	31,696,095	-	35,879,784	67,575,879
2034	-	-	31,696,095	-	35,879,784	67,575,879
2035	-	-	31,696,095	-	35,879,784	67,575,879
2036	-	-	31,696,095	-	35,879,784	67,575,879
2037	-	-	31,696,095	-	35,879,784	67,575,879
2038	-	-	31,696,095	-	35,879,784	67,575,879
2039	-	-	31,696,095	-	35,879,784	67,575,879
2040	-	-	31,696,095	-	35,879,784	67,575,879

Appendix A (Continued)
Used Fuel Fund – Annual Contributions

Annual Payment (\$) - Station						
Date	PA	PB	BA	BB	DA	Total
2041	-	-	31,696,095	-	35,879,784	67,575,879
2042	-	-	31,696,095	-	35,879,784	67,575,879
2043	-	-	31,696,095	-	35,879,784	67,575,879
2044	-	-	31,696,095	-	35,879,784	67,575,879
2045	-	-	31,696,095	-	35,879,784	67,575,879
2046	-	-	31,696,095	-	35,879,784	67,575,879
2047	-	-	31,696,095	-	35,879,784	67,575,879
2048	-	-	31,696,095	-	35,879,784	67,575,879
2049	-	-	31,696,095	-	35,879,784	67,575,879
2050	-	-	31,696,095	-	35,879,784	67,575,879
2051	-	-	31,696,095	-	35,879,784	67,575,879
2052	-	-	31,696,095	-	35,879,784	67,575,879
2053	-	-	31,696,095	-	35,879,784	67,575,879
2054	-	-	31,696,095	-	-	31,696,095

**APPENDIX B: USED FUEL FUND – ANNUAL CONTRIBUTIONS FOR THE FIRST
2.23 MILLION FUEL BUNDLES**

Annual Payment (\$) - Station						
Year	PA	PB	BA	BB	DA	Total
Liability	635,500,932	714,007,620	1,848,034,920	1,242,166,178	2,109,933,398	6,549,643,048
Projected Fund Balance	891,764,020	849,196,905	2,054,338,200	1,248,046,271	1,140,026,128	6,183,371,524
2012	(264,316,776)	(139,437,935)	(46,937,104)	(3,108,488)	148,097,017	(305,703,286)
2013	-	-	(46,937,104)	(3,108,488)	148,097,017	98,051,425
2014	-	-	(46,937,104)	-	148,097,017	101,159,913
2015	-	-	(46,937,104)	-	148,097,017	101,159,913
2016	-	-	(46,937,104)	-	148,097,017	101,159,913
2017	-	-	-	-	148,097,017	148,097,017
2018	-	-	-	-	148,097,017	148,097,017
2019	-	-	-	-	148,097,017	148,097,017

**APPENDIX C: USED FUEL FUND – ANNUAL CONTRIBUTIONS FOR THE
INCREMENTAL FUEL BUNDLES**

Annual Payment (\$) - Station						
Year	PA	PB	BA	BB	DA	Total
Liability	183,097,366	211,992,020	561,073,893	385,322,894	629,765,787	1,971,251,959
Projected Fund Balance	34,717,601	56,555,853	50,599,230	116,798,046	56,419,342	315,090,073
2012	72,268,870	75,705,715	103,197,420	112,703,665	116,644,628	480,520,298
2013	12,698,735	13,302,641	22,363,384	21,029,063	25,258,822	94,652,645
2014	5,960,766	6,244,239	10,065,306	9,741,878	11,369,964	43,382,153
2015	7,026,107	7,360,243	10,734,071	11,101,653	12,128,795	48,350,868
2016	8,625,609	9,035,811	11,610,822	12,985,397	13,123,283	55,380,922
2017	3,900,349	4,085,835	4,172,471	5,290,520	4,717,853	22,167,027
2018	11,331,488	11,870,372	8,360,633	12,545,359	9,457,662	53,565,514
2019	55,677,803	58,325,637	9,203,418	16,029,277	10,414,392	149,650,526
2020	-	-	31,696,095	69,360,466	35,879,784	136,936,345
2021	-	-	31,696,095	69,360,466	35,879,784	136,936,345
2022	-	-	31,696,095	-	35,879,784	67,575,879
2023	-	-	31,696,095	-	35,879,784	67,575,879
2024	-	-	31,696,095	-	35,879,784	67,575,879
2025	-	-	31,696,095	-	35,879,784	67,575,879
2026	-	-	31,696,095	-	35,879,784	67,575,879
2027	-	-	31,696,095	-	35,879,784	67,575,879
2028	-	-	31,696,095	-	35,879,784	67,575,879
2029	-	-	31,696,095	-	35,879,784	67,575,879
2030	-	-	31,696,095	-	35,879,784	67,575,879
2031	-	-	31,696,095	-	35,879,784	67,575,879
2032	-	-	31,696,095	-	35,879,784	67,575,879
2033	-	-	31,696,095	-	35,879,784	67,575,879
2034	-	-	31,696,095	-	35,879,784	67,575,879
2035	-	-	31,696,095	-	35,879,784	67,575,879
2036	-	-	31,696,095	-	35,879,784	67,575,879
2037	-	-	31,696,095	-	35,879,784	67,575,879
2038	-	-	31,696,095	-	35,879,784	67,575,879
2039	-	-	31,696,095	-	35,879,784	67,575,879
2040	-	-	31,696,095	-	35,879,784	67,575,879

Appendix C (Continued)
Used Fuel Fund – Annual Contributions for the Incremental Fuel Bundles

Annual Payment (\$) - Station						
Year	PA	PB	BA	BB	DA	Total
2041	-	-	31,696,095	-	35,879,784	67,575,879
2042	-	-	31,696,095	-	35,879,784	67,575,879
2043	-	-	31,696,095	-	35,879,784	67,575,879
2044	-	-	31,696,095	-	35,879,784	67,575,879
2045	-	-	31,696,095	-	35,879,784	67,575,879
2046	-	-	31,696,095	-	35,879,784	67,575,879
2047	-	-	31,696,095	-	35,879,784	67,575,879
2048	-	-	31,696,095	-	35,879,784	67,575,879
2049	-	-	31,696,095	-	35,879,784	67,575,879
2050	-	-	31,696,095	-	35,879,784	67,575,879
2051	-	-	31,696,095	-	35,879,784	67,575,879
2052	-	-	31,696,095	-	35,879,784	67,575,879
2053	-	-	31,696,095	-	35,879,784	67,575,879
2054	-	-	31,696,095	-	-	31,696,095

APPENDIX D: DECOMMISSIONING FUND – ANNUAL CONTRIBUTIONS (BASED ON NOTIONAL ALLOCATION TO STATIONS)

The Decommissioning Fund balance is projected to be 97 per cent funded as of December 31, 2011. The table below is the contribution schedule based on the 2012 ONFA reference plan update according to the strict interpretation of ONFA. Under the strict interpretation of ONFA, \$102 M annual contributions will be made to the Decommissioning Fund for years 2012 to 2019. Then the contribution will be reduced to nil for years 2020 to 2054. The Decommissioning Fund will become over funded by year 2013. The fund will be 109% funded by year-end 2019 and remained overfunded for the remaining operating period as negative aggregate contributions are not permitted.

Annual Payment (\$) - Station						
Year	PA	PB	BA	BB	DA	Total
Liability	1,373,250,665	1,380,710,921	958,512,389	915,997,470	820,046,284	5,448,517,728
Projected Fund Balance	791,584,025	908,058,179	1,465,507,875	1,018,287,389	1,111,600,745	5,295,038,214
2012	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2013	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2014	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2015	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2016	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2017	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2018	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2019	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2020	-	-	(28,953,971)	(13,089,345)	(16,762,977)	-
2021	-	-	(28,953,971)	(13,089,345)	(16,762,977)	-
2022	-	-	(28,953,971)	-	(16,762,977)	-
2023	-	-	(28,953,971)	-	(16,762,977)	-
2024	-	-	(28,953,971)	-	(16,762,977)	-
2025	-	-	(28,953,971)	-	(16,762,977)	-
2026	-	-	(28,953,971)	-	(16,762,977)	-
2027	-	-	(28,953,971)	-	(16,762,977)	-
2028	-	-	(28,953,971)	-	(16,762,977)	-
2029	-	-	(28,953,971)	-	(16,762,977)	-
2030	-	-	(28,953,971)	-	(16,762,977)	-
2031	-	-	(28,953,971)	-	(16,762,977)	-
2032	-	-	(28,953,971)	-	(16,762,977)	-
2033	-	-	(28,953,971)	-	(16,762,977)	-
2034	-	-	(28,953,971)	-	(16,762,977)	-
2035	-	-	(28,953,971)	-	(16,762,977)	-

Appendix D (Continued)

Decommissioning Fund – Annual Contributions (Based on Notional Allocation to Stations)

Annual Payment (\$) - Station						
Date	PA	PB	BA	BB	DA	Total
2036	-	-	(28,953,971)	-	(16,762,977)	-
2037	-	-	(28,953,971)	-	(16,762,977)	-
2038	-	-	(28,953,971)	-	(16,762,977)	-
2039	-	-	(28,953,971)	-	(16,762,977)	-
2040	-	-	(28,953,971)	-	(16,762,977)	-
2041	-	-	(28,953,971)	-	(16,762,977)	-
2042	-	-	(28,953,971)	-	(16,762,977)	-
2043	-	-	(28,953,971)	-	(16,762,977)	-
2044	-	-	(28,953,971)	-	(16,762,977)	-
2045	-	-	(28,953,971)	-	(16,762,977)	-
2046	-	-	(28,953,971)	-	(16,762,977)	-
2047	-	-	(28,953,971)	-	(16,762,977)	-
2048	-	-	(28,953,971)	-	(16,762,977)	-
2049	-	-	(28,953,971)	-	(16,762,977)	-
2050	-	-	(28,953,971)	-	(16,762,977)	-
2051	-	-	(28,953,971)	-	(16,762,977)	-
2052	-	-	(28,953,971)	-	(16,762,977)	-
2053	-	-	(28,953,971)	-	(16,762,977)	-
2054	-	-	(28,953,971)	-	-	-

APPENDIX E: DECOMMISSIONING FUND – ANNUAL CONTRIBUTIONS (PROPOSED)

As shown in the table in Appendix D, the notional allocation of the Decommissioning Fund assets and liability resulted in contributions in 2014 to 2019 even though the Fund will in a surplus position. Given that the original intent of ONFA was not to make further contributions to a fund that is fully funded, the proposed contribution schedule below shows no future contributions after 2013.

Annual Payment (\$) - Station						
Year	PA	PB	BA	BB	DA	Total
Liability	1,373,250,665	1,380,710,921	958,512,389	915,997,470	820,046,284	5,448,517,728
Projected Fund Balance	791,584,025	908,058,179	1,465,507,875	1,018,287,389	1,111,600,745	5,295,038,214
2012	88,815,804	72,170,261	(28,953,971)	(13,089,345)	(16,762,977)	102,179,772
2013	50,767,223	41,252,610	(16,550,125)	(7,481,886)	(9,581,738)	58,406,084



Report

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2012 ONFA Reference Plan Update Decommissioning Summary Cost Estimate Report

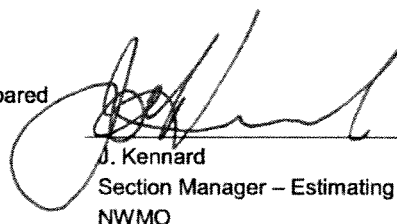
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**2012 ONFA Reference Plan Update
Station Decommissioning Summary Cost
Estimate Report**

W-REP-00960-00010-R01


2011-11-22

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Revision Summary

Revision Number	Date	Comments
R00	July 2011	Initial issue.
R01	November 2011	Final issue to incorporate Decommissioning Oversight costs from updated business plan, which results in cost reduction of \$1M

1.0 PURPOSE

The purpose of this report is to provide a summary of the OPG generating station decommissioning cost estimates submitted to the OFA as part of the 2012 Ontario Nuclear Funds Agreement (ONFA) Reference Plan Update.

The reconciliation from the currently approved decommissioning cost estimates in the 2007 ONFA submission to the 2012 ONFA Reference Plan Update Decommissioning Cost Estimates is provided in the 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report **[R-1]**.

2.0 BACKGROUND

Prior to 1997, Ontario Hydro / OPG Nuclear Generating Station decommissioning cost estimates were prepared internally at a conceptual level based on limited international experience. In 1985, cost estimates were developed and these estimates were escalated annually up to 1996 when a benchmark study on decommissioning was prepared, which indicated that the estimates were low compared to international benchmarks. This finding prompted a full update of decommissioning cost estimates starting in 1997.

In 1997 and early 1998, TLG Services, a US based consultant with extensive nuclear decommissioning expertise, completed estimates for Bruce A and Bruce B station decommissioning assuming a 40 year reactor operating life **[R-3]**. These estimates were approximately 70% higher than the 1985 estimates previously prepared by Ontario Hydro.

At the time of the 1999 ONFA preparation, estimates for Pickering and Darlington had not yet been established. Based on the Bruce estimates, the 1985 decommissioning cost estimates for Pickering and Darlington were prorated in anticipation of similar increases as the Bruce estimates.

In late 1999, TLG Services Inc. completed decommissioning cost estimates for the Pickering A&B Nuclear Generating Stations; and in 2000 for the Darlington Nuclear Generating Station. These updated estimates were consistent in methodology with those prepared previously by TLG for the Bruce stations **[R4-R5]**.

In 2001, TLG Services Inc. prepared an estimate update **[R-6]** for all stations dollars that incorporated updated economic data and several changes in assumptions including waste disposal rates, labour rates, energy costs, taxes and the adjustment of financial risk associated with these items.

In 2005 / 2006, OPG decommissioning cost estimates and associated comparison reports were updated by TLG Services as part of the 2007 ONFA Reference Plan Update. The cost estimates were updated to reflect current OPG planning assumptions, program assumptions, changes in industry practice, and station specific

changes since the previous decommissioning cost estimates were issued. These cost estimates became the basis of the 2007 reference plan. **[R7-R16]**.

In 2010 / 2011, the OPG station and waste management facility decommissioning cost estimates were updated by TLG Services for use in the 2012 ONFA Reference Plan Update. These cost estimates reflect current OPG planning assumptions, program assumptions, changes in industry practice, and current station conditions.

This report addresses OPG generating station decommissioning costs. OPG waste management facility decommissioning costs are summarized in separate summary reports for used fuel and low and intermediate level waste.

The 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report **[R-1]**, provides full reconciliation from the 1999 ONFA submission to the 2012 ONFA decommissioning cost estimates.

3.0 2012 ONFA DECOMMISSIONING COST ESTIMATES

In 2010/11 new decommissioning cost estimates were prepared for all OPG owned generating stations.

The basis of the cost estimates are detailed by station in the station cost estimate reports prepared by TLG **[R17- R26]**.

3.1 Station End of Life Planning Assumptions

Station life planning assumptions for the 2012 ONFA Reference Plan Update are shown in the following table **[R-2]**. These dates are used for the decommissioning cost estimates.

Station	2012 ONFA Reference Plan Update
Bruce A	2042 / 2042 / 2054 / 2054
Bruce B	2018 / 2019 / 2019 / 2021
Pickering A	2019 / 2005 / 2005 / 2019
Pickering B	2017 / 2017 / 2019 / 2019
Darlington	2050 / 2048 / 2051 / 2053

4.0 SUMMARY OF DECOMMISSIONING COSTS

In 2011 TLG completed the decommissioning cost estimate studies for all stations and waste management facilities, including comparison reports to previous cost estimates.

The 2011 decommissioning cost estimates were prepared using OPG Operating Life station end of life assumed dates [R17 – R26]. The 2011 cost estimates include updates to both economic and technical assumptions. The economic update reflects current conditions and costs in 2010 dollars. (I.e. disposal, labor, insurance, regulatory agency fees, property taxes, energy costs). The technical update reflects current industry practice and experience in the United States. For the purpose of the 2012 ONFA Reference Plan Update submission, these dates were used to calculate present value costs as shown in the “2012 ONFA Reference Plan Update Program Summary Cost Estimate Report” [R-1].

The comparison reports detail the changes from the 2007 ONFA station decommissioning cost estimates to the 2012 ONFA station decommissioning cost estimates.

The Bruce A and B stations are currently operated under lease by Bruce Power. Under the current lease agreement, Bruce Power is required to turn over both stations to OPG approximately 1 year after the last unit shuts down. As a result of this the decommissioning costs under 2012 ONFA have been reduced to reflect the costs incurred by Bruce Power during the initial preparation for safe storage until the stations are turned over to OPG. The principal cost items during the initial preparation for safe storage period are the de-fueling and dewatering costs for the units. The cost reduction is reflected in the subsequent sections of this report.

The following table summarizes the decommissioning cost adjustment for Bruce A and Bruce B.

Station	Full Decommissioning Cost 2010 M\$	Decommissioning Cost
		Post Turnover 2010 M\$
Bruce A	1,785	1,709
Bruce B	1,853	1,462

For Financial Guarantee scenario purposes, TLG decommissioning cost estimates and resulting cash flows were historically based on nominal 40 year life for all stations assuming rehabilitation would occur at some stations. The decommissioning cash flows were adjusted to align with different ONFA planning dates for the purpose of the ONFA updates.

In 2011 planning dates for both the 2012 ONFA Update and the 2013 Financial Guarantee Update are the same.

For ONFA 2012, the financial planning end of life for unrefurbished Bruce B units is in the 2018 to 2021 time frame; the end of life of fully refurbished Bruce A units will be extended to a 2042 to 2054 time frame. At this time Bruce Power has made no formal commitment to refurbish and life extend any of the Bruce B units. For the purpose of this ONFA update it is assumed the current lease agreement between Bruce Power and OPG will be amended to provide for operational service of the Bruce A units beyond the current maximum end of lease date in 2043; renewals and extensions of the lease term being at the sole discretion of Bruce Power giving notice to OPG. In addition, the Bruce A and B units would be returned by Bruce Power to OPG at the end of the lease term as a full package (i.e. 1 year after the last unit is shut down, or when Bruce Power serves notice to OPG that the lease is to terminate earlier than the end of term date). For clarity on this point, the lease does not currently provide for Bruce Power to return part of the leased facilities (i.e. a shutdown station) to OPG while retaining the other parts (i.e. an operational station); the leased facilities can only be returned to OPG as a full and complete package.

From a financial perspective, the annual safe storage cost (estimated at approximately \$2M per unit per year) for out of service Bruce B units prior to these being returned to OPG are eliminated, as this cost will instead be incurred by Bruce Power until the leased facilities are all returned to OPG at the end of lease term. This process results in a net reduction of the costs incurred by OPG. For financial planning purposes, and assuming Bruce Power operates the refurbished Bruce A station to 2054, the nominal 30 years safe storage period for the Bruce B units will have already been achieved by 2055.

The following table provides the estimated OPG cost to decommission the generating stations for the period from 2011 onward (in constant 2010M\$) and for the 2012 ONFA reference plan update period from 2012 forward (in 2012 constant M\$).

Generating Station	TLG 2010 / 2011 Estimates 2010 constant M\$ (2011 forward)	2012 ONFA Reference Plan Update 2012 constant M\$ (2012 forward)
Pickering A	1,520	1,592
Pickering B	1,580	1,664
Bruce A	1,709	1,800
Bruce B	1,462	1,541
Darlington	2,084	2,193
Total	8,355	8,790

For ONFA 2012, oversight costs specific to the OPG decommissioning program were removed from the TLG Services cost estimates and are shown as a separate line item. These costs include oversight by the OPG Nuclear Decommissioning Organization (NDO), OPG Corporate Finance, the Ontario Finance Authority (OFA) and the NWMO. Details regarding the oversight costs are found in “Nuclear Waste Management and Decommissioning – Oversight Cost Estimate “ [R-27].

For ONFA 2012, a heavy water allowance at Pickering has been also included to address caretaking costs for the storage of D2O post shutdown. Details regarding the heavy water costs are found in “Long Term Strategy for D2O Storage Upon Station Shutdown” [R-28].

The additional decommissioning costs specific to heavy water handling at Pickering A and B, and Decommissioning Oversight for all OPG stations are shown in the following table.

Activity	2012 ONFA Reference Plan Update 2012 constant M\$ (2012 forward)
Station Decommissioning	8,790
Heavy Water Management at Pickering A and B*	40
Decommissioning Oversight**	116
Total Decommissioning Cost	8,946

*Cost allocated equally to Pickering A and B units.

** Cost allocated equally to all OPG nuclear station units.

The following Sections provide a brief summary by station of the 2012 ONFA Reference Plan Update decommissioning cost estimates.

4.1 Pickering A

The projected 2012 ONFA cost, in 2012 constant k\$, to decommission the Pickering A station is estimated to be \$1,592.

The following table provides 2011 Study costs in (a) 2010 constant k\$ (2011 forward) and (b) in 2012 constant k\$ (2012 forward) used for ONFA. The costs are broken down by decommissioning stage.

WBS Stage & Element		2011 Study (2010 constant k\$)	2011 Study (2012 constant k\$)
1	Preparations for Safe Storage	90	
2	Safe Storage	308	
3	Preparations for dismantling	129	
4	Dismantling	778	
5	Site Restoration	157	
	Sub-Total*	1,462	
	Risk Contingency (4%)	59	1,592
	Total	1,520	

*includes average 19% allowance in the base cost estimate.

4.2 Pickering B

The projected 2012 ONFA cost, in 2012 constant k\$, to decommission the Pickering B station is estimated to be \$1,664.

The following table provides 2011 Study costs in (a) 2010 constant k\$ (2011 forward) and (b) in 2012 constant k\$ (2012 forward) used for ONFA. The costs are broken down by decommissioning stage.

WBS Stage & Element		2011 Study (2010 constant k\$)	2011 Study (2012 constant k\$)
1	Preparations for Safe Storage	180	
2	Safe Storage	268	
3	Preparations for dismantling	130	
4	Dismantling	749	
5	Site Restoration	192	
	Sub-Total*	1,519	
	Risk Contingency (4%)	61	1,664
	Total	1,580	

* includes average 19% allowance in the base cost estimate.

4.3 Bruce A

The projected 2012 ONFA cost, in 2012 constant k\$, to decommission the Bruce A station is estimated to be \$1,800.

The following table provides:

1. 2011 Study full decommissioning costs from 2011 forward in 2010 constant k\$.
2. 2011 Study OPG post turn-over costs from 2011 forward in 2010 constant k\$.
3. 2011 Study OPG post turn-over costs from 2012 forward in 2012 constant k\$.

WBS Stage & Element		Full Cost 2011 Study (2010 constant k\$)	OPG Cost** 2011 Study (2010 constant k\$)	OPG Cost ** 2011 Study (2012 constant k\$)
1	Preparations for Safe Storage	180		
2	Safe Storage	317		
3	Preparations for dismantling	146		
4	Dismantling	860		
5	Site Restoration	212		
	Sub-Total*	1,716		
	Risk Contingency (4%)	69		
	Total	1,785	1,709	1,800

* Includes average 19% allowance in the base cost estimate.

** Costs post turn-over from Bruce Power.

4.4 Bruce B

The projected 2012 ONFA cost, in 2012 constant k\$, to decommission the Bruce B station is estimated to be \$1,541.

The following table provides:

4. 2011 Study full decommissioning costs from 2011 forward in 2010 constant k\$.
5. 2011 Study OPG post turn-over costs from 2011 forward in 2010 constant k\$.
6. 2011 Study OPG post turn-over costs from 2012 forward in 2012 constant k\$.

WBS Stage & Element		Full Cost 2011 Study (2010 constant k\$)	OPG Cost** 2011 Study (2010 constant k\$)	OPG Cost ** 2011 Study (2012 constant k\$)
1	Preparations for Safe Storage	172		
2	Safe Storage	375		
3	Preparations for dismantling	147		
4	Dismantling	866		
5	Site Restoration	221		
	Sub-Total*	1,782		
	Risk Contingency (4%)	71		
	Total	1,853	1,462	1,541

* Includes average 19% allowance in the base cost estimate.

** Costs post turn-over from Bruce Power.

4.5 Darlington

The projected 2012 ONFA cost, in 2012 constant k\$, to decommission the Darlington station is estimated to be \$2,193.

The following table provides 2011 Study costs in (a) 2010 constant k\$ (2011 forward) and (b) in 2012 constant k\$ (2012 forward) used for ONFA. The costs are broken down by decommissioning stage.

WBS Stage & Element		2011 Study (2010 constant k\$)	2011 Study (2012 constant k\$)
1	Preparations for Safe Storage	213	
2	Safe Storage	379	
3	Preparations for dismantling	149	
4	Dismantling	973	
5	Site Restoration	289	
	Sub-Total*	2,004	
	Risk Contingency (4%)	80	2,193
	Total	2,084	

*includes average 19% allowance in the above cost estimate.

5.0 REFERENCES

1. 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report, W-REP-00400-00004, 2011
2. Nuclear Waste Forecasts for 2012 Ontario Nuclear Funds Agreement Update. W-REP-03460-00020-R001, 2011
3. Decommissioning Cost Study for Bruce Nuclear Generating Stations A&B, 005-1268-002, April 1998
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8. Decommissioning Cost Study for the Pickering A Nuclear Generating Station, 005-1528-004, Rev 1, November, 2006
9. Decommissioning Cost Study for the Pickering B Nuclear Generating Station, 005-1528-005, Rev. 2, November, 2006
10. Decommissioning Cost Study for the Bruce A Nuclear Generating Station, 005-1528-002, Rev. 2, November, 2006
11. Decommissioning Cost Study for the Bruce B Nuclear Generating Station, 005-1528-003, Rev. 2, November, 2006
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13. Pickering B Decommissioning Cost Study Comparison Analysis 1999 to 2005, 005-1528-011, November, 2006
14. Bruce A Decommissioning Cost Study Comparison Analysis 1998 to 2005, 005-1528-008, November , 2006
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21. Decommissioning Cost Study for the Bruce B Nuclear Generating Station, N34-1629-003, Rev. 0, July 2011
22. Pickering A Decommissioning Cost Study Comparison Analysis 2005 to 2010, N34-1629-009, Rev. 0, July 2011
23. Pickering B Decommissioning Cost Study Comparison Analysis 2005 to 2010, N34-1629-010, Rev. 0, July 2011
24. Bruce A Decommissioning Cost Study Comparison Analysis 2005 to 2010, N34-1629-007, Rev. 0, July 2011
25. Bruce B NGS Decommissioning Cost Study Comparison Analysis 2005 to 2010, N34-1629-008, Rev. 0, July 2011
26. Darlington NGS Decommissioning Cost Study Comparison Analysis 2005 to 2010, N34-1629-011, Rev. 0, July 2011
27. 2012 ONFA Reference Plan Update Operational Oversight Cost Estimate Report, 00216-REP-03900-00005
28. Long Term Strategy for D2O Storage Upon Station Shutdown, N-REP-0388-10004



Report

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2012 ONFA Reference Plan Update L&ILW Operations Summary Cost Estimate Report

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2012 ONFA Reference Plan Update L&ILW Operations Summary Cost Estimate Report

05386-REP-00400-00003

November 2011

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Revision Summary

Revision Number	Date	Comments
R00	June 23, 2011	Initial Issue
R01	November 15, 2011	Final Submission

Summary of Changes from initial ONFA Submission

Provided below is a summary of changes that were made to the 2012 ONFA L&ILW Operations Cost Estimate submission in June 2011. The revised ONFA L&ILW Operations cost estimate currently amounts to \$1,230,929 (2012 K\$), which is a net increase of approximately \$32M over the initial ONFA submission of \$1,198,986 (2012 K\$). The activities listed below substantiate the \$32M cost increase.

1. Roadrunner package replacement used in the transportation of ILW is not expected to occur given the current condition of existing packages. Replacement costs of \$11.6M (\$5.8M in 2013 and \$5.8M in 2018) were removed from the Operations Estimate
2. Revised LLW Transportation cost estimates for LLW Shipment resulted in a reduction from \$14.6M to \$2.6M. Overall adjustment of \$12M
3. Adjustments to align (2011-2015) BP with revised (2012-2014) BP resulted in a cost increase of \$13M
4. The Bruce Site Warehouse Operation is presently overseen by IMS and provides a service to NWMD Operations. Nuclear Supply Chain has agreed to operate the Bruce Warehouse resulting in a cost increase of approx. \$13.14M
5. Business Plan re-alignment resulted in approx. \$11M in project costs that were expected to occur in 2011 to be shifted to later years (2012-2014)
6. Previous ONFA submission did not factor in total cost to construct LLSB#15 due to timing uncertainty. Operations estimate assumes building will be erected in 2015 resulting in a cost increase of approx. \$5M
7. Addition of Nuclear Support Group Costs of approximately \$8M

1.0 PURPOSE

The purpose of this report is to provide an overview of the 2012 ONFA Reference Plan Update for the Low and Intermediate Level Waste (L&ILW) Operations Lifecycle Cost Estimate (herein referred to as 2012 L&ILW Operations Cost Estimate) submitted to the OFA as part of the 2012 ONFA Nuclear Funds Agreement (ONFA) Reference Plan Update.

The reconciliation between the currently approved 2007 L&ILW Operations Estimate and the 2012 L&ILW Operations Cost Estimate is provided in the 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report [R-1].

2.0 BACKGROUND

An L&ILW Operations Cost Estimate was prepared by OPG in 2000 based on internal operating experience and OPG planning assumptions including a nominal 25- year reactor operating life scenario. The estimate identified future costs from 2001 forward for transport, process and store L&ILW at the Western Waste Management Facility (WWMF) until long term storage repositories were available. Costs to decommission the WWMF were included. It was assumed that low level waste (LLW) and short-lived intermediate level waste (ILW) would ultimately be co-located at an L&ILW repository starting in 2015. Long lived ILW was assumed to be co-located with used fuel at separate repository expected to be in operation by 2034.

The 2007 L&ILW Operations Cost Estimate was derived using the same methodology, with changes regarding plant operating life and the DGR in-service date. The 2007 estimate was based on a 25 year nominal operating life for Pickering B, Bruce B, and Darlington, with two units at Pickering A operating until 2021 and Bruce A units operating until 2017/2034/2034 and 2036. It was also assumed that a Deep Geologic Repository (DGR) would be established at the WWMF by 2017.

These assumptions have since changed for the 2012 L&ILW Operations Cost Estimate as the DGR is expected to be in-service by 2018. All ILW will be stored in the L&ILW DGR and used fuel will be stored in a separate repository expected to be in service by 2035. Plant operation dates have since changed with the extension of both the Darlington and Bruce facilities. The expected operational dates are provided in Section 3.1 of this document.

3.0 2012 ONFA REFERENCE PLAN UPDATE LOW AND INTERMEDIATE LEVEL WASTE OPERATIONS COST ESTIMATE

In 2011 a new L&ILW Operations Baseline Cost Estimate was prepared. The basis of this cost estimate is detailed in the Low and Intermediate Level Waste Operations Cost Estimate Report [R-2].

3.1 Planning Assumptions

Station and waste management facility planning assumptions for the 2012 L&ILW Operations Cost Estimate are provided in the following table.

Station / Facility	2012 ONFA Reference Plan Update
Bruce A Shutdown (U1/U2/U3/U4)	2042/2042/2054/2054
Bruce B Shutdown (U1/U2/U3/U4)	2018/2019/2019/2021
Pickering A Shutdown (U1/U2/U3/U4)	2019/2005/2005/2019
Pickering B Shutdown (U1/U2/U3/U4)	2017/2017/2019/2019
Darlington Shutdown (U1/U2/U3/U4)	2050/2048/2051/2053
Western Waste Management Facility ceases receiving waste from off site	2054
L&ILW and common facilities at WWMF are decommissioned	Starts in 2053 Finishes in 2057
WWMF DGR Long Term Repository in-service	2018

3.2 Waste Volume Assumption

Volume assumptions for the 2012 L&ILW Operations Cost Estimate are provided in the following table.

Operational Low Level Waste (m ³)		
Waste Volumes	Projected Volume 2007 ONFA	Projected Volume 2012 ONFA
Received	220,045	284,169
Stored	83,047	116,540
Operational Intermediate Level Waste (m ³)		
	Projected Volume 2007 ONFA	Projected Volume 2012 ONFA
Received/ Stored	12,686	13,228

3.3 Cost Estimate Review

An analysis of the 2012 L&ILW Operations Cost Estimate identifies expenditures and cost increases as a result of new activities and assumptions that were not included in the 2007 ONFA submission. The following items provide a summary of the assumptions for the 2012 L&ILW Operations Cost Estimate. Refer to the Low and Intermediate Level Waste Operations Estimate Report [R-2] for further detail.

- The station operating life assumptions have changed since the 2007 ONFA update with both Bruce and Darlington Stations extending operations. In February 2010, OPG announced its decision to commence the detailed planning phase for the refurbishment of the Darlington nuclear generating station. The February announcement also included OPG's decision to continue the safe and reliable operation of the Pickering B station and the life of the Pickering A units would be limited to the end of life of Pickering B. The operations extension also led to an increase in labour requirements and activities related to process and storage of waste.
- Fabrication and procurement of Darlington Storage Over-packs (DSOs) and Re-tube Waste Containers (RWCs) required for the refurbishment of four (4) DN units which is planned to start by Oct 2016. Also included is the cost for the Bruce A Refurbishment Building that is expected in 2021.
- DSMs from the Pickering site were initially assumed to occur during station decommissioning and were therefore included in the scope of another cost estimate. The disposal of the 36 Dry Storage Modules (DSM) from the Pickering Re-tube Component Storage Facility has now been included as part of the 2012 ONFA Operations Cost Estimate. The method adopted is to open the DSM, remove the waste, process and transfer the waste to an alternate container for transport to the WWMF for long term storage.
- L&ILW Operations Support and Divisional Overhead align with NWMD business planning practices and are required beyond the 2015 planning cycle to the end of operations in 2054. In the 2007 ONFA estimate, divisional overhead costs and WWMF operating costs were estimated to be 15% and 150% of the direct costs related to transportation, processing and storage and care-taking respectively. Decreases in support costs are incorporated at key dates when retrieval and processing activities decrease in nature.
- WWMF decommissioning costs estimates for the LLW and ILW programs have been updated.

4.0 SUMMARY OF L&ILW OPERATION COSTS

The following section provides a brief summary of the 2012 L&ILW Operations Cost Estimate by work element. Costs provided in the tables are 2012 onwards and occur over the complete lifecycle. More detail can be found in the Program Summary Cost Estimate Report [R-1] and the Low and Intermediate Level Waste Operations Cost Estimate Report [R-2].

4.1 Low Level Waste Operations Costs

WBS Element/ Activity	2010 constant k\$ (2012 forward)	2012 constant k\$ (2012 forward)
LLW – Transportation	7,840	8,252
LLW - Process & Storage	119,638	125,925
LLW - Caretaking	16,082	16,927
LLW - Facility Expansions & Projects	58,826	61,917
LLW - Decommissioning	14,126	14,868
LLW- Support and Overheads	462,268	486,561
Total	678,782	714,454

*Total may not add up due to rounding

4.2 Intermediate Level Waste Operations Costs

WBS Element/ Activity	2010 constant k\$ (2012 forward)	2012 constant k\$ (2012 forward)
ILW - Transportation	90,273	94,681
ILW - Receive & Storage	23,834	24,998
ILW - Caretaking	21,749	22,811
ILW - Facility Expansions & Projects	141,364	148,267
ILW - Decommissioning	44,233	46,393
ILW- Support and Overheads	170,976	179,325
Total	492,429	516,475

4.3 Low and Intermediate Level Waste Cost Estimate Summary

The total cost estimate for both L&ILW programs is summarized in the following table for the period of 2012 onward (in 2010k\$ and 2012k\$).

Waste Type	2010 constant k\$ (2012 forward)	2012 constant k\$ (2012 forward)
Low Level Waste	678,782	714,454
Intermediate Level Waste	492,429	516,475
Total	1,171,211	1,230,929

5.0 REFERENCES

1. 2012 ONFA Reference Plan Update Summary Cost Estimate Report, W-REP-00400-00004. Published 2011
2. Low and Intermediate Level Waste Operations Cost Estimate Basis Report, 00216-REP-03900-00004. Published by OPG 2011



Report

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2012 ONFA REFERENCE PLAN UPDATE LONG TERM L&ILW MANAGEMENT SUMMARY COST ESTIMATE REPORT

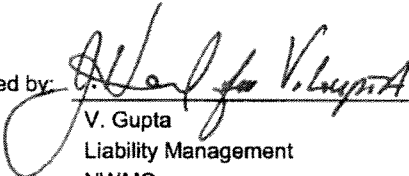
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2012 ONFA Reference Plan Update Long Term L&ILW Management Summary Cost Estimate Report

00216-REP-00400-00004

November 2011


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22/11/2011


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23rd Nov, 2011

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Revision Summary

Revision Number	Date	Comments
R00	July 14, 2011	Initial Issue
R01	November 16, 2011	Final Submission

Summary of Changes from initial ONFA Submission

Provided below is a summary of changes that were made to the 2012 ONFA Long Term Low & Intermediate Level Waste Management Program Cost Estimate. The revised cost estimate currently amounts to \$2,075,847 (2012 K\$), which is a net increase of approximately \$44M over the initial ONFA submission of \$2,031,803 (2012 K\$). The activities listed below substantiate the \$44 M cost increase.

1. Adjustment to include construction insurance cost resulted in a cost increase of \$23 M in capital expenditure stage
2. Incorporation of additional insurance costs in DGR operations period caused a cost increase of \$21M
3. Adjustment to align with Business Plan numbers generated a cost reduction of 3.2M
4. Inclusion of office unit B25 lease cost in Bruce Power site produced a cost increase of 3.4M

1.0 PURPOSE

The purpose of this report is to provide an overview of the 2012 ONFA Reference Plan Update for the Low and Intermediate Level Waste (L&ILW) Deep Geologic Repository (DGR) Lifecycle Cost Estimate (*herein referred to as 2012 ONFA Cost Estimate*) submitted to the Ontario Financing Authority (OFA) as part of the 2012 ONFA Nuclear Funds Agreement (ONFA) Reference Plan Update. The DGR estimate is comprised of six components which include:

- 1) DGR Retrieval
- 2) DGR Operational Readiness and Operations
- 3) Capital Expenditures
- 4) Decommissioning
- 5) Community Payments
- 6) Oversight

The reconciliation from the currently approved 2007 ONFA L&ILW DGR Lifecycle Cost Estimate to the 2012 ONFA Cost Estimate is provided in the 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report [R-1].

2.0 BACKGROUND

In 1998, Golder Associates completed an estimate for low level waste disposal (LLWD) based on a 40-year reactor operating life. The estimate was scaled from a reference volume of 115,000 m³ for a 40 year reactor operating life to 81,000 m³ for a 25- year reactor operating life, which was established as the approved 2007 ONFA LLWD estimate.

The current 2012 ONFA Cost Estimate is still volume based; however the underlying assumptions have changed. The 2012 ONFA Cost Estimate is based on the OPG Low and Intermediate Level Waste Inventory for the Deep Geologic Repository [R-2]. Inventory estimates include all current and potential future waste, including reactor re-tube and steam generator refurbishment waste. Waste forecasts are based on refurbishment of all reactor units (*except Pickering A, Pickering B and Bruce B*) with operation for a further nominal 30 calendar years after refurbishment and includes the effect of current nuclear unit layouts, re-start dates and end-of-life dates.

The projected total emplaced waste volume will be approximately 200,000 m³ of operational L&ILW and refurbishment waste.

For the 2007 ONFA estimate, it was assumed that low level waste (LLW) and short-lived intermediate level waste (ILW) would ultimately be co-located in a L&ILW repository starting in 2015. This assumption has since changed and the starting operation date of the repository is expected to be in 2018 with storage of all L&ILW.

3.0 2012 ONFA REFERENCE PLAN UPDATE DGR COST ESTIMATE

In 2011, a L&ILW DGR Baseline Cost Estimate was prepared which addresses the 2012 ONFA Reference Plan Update operating scenario. The basis of the cost estimate is outlined in the various documents [R-3] – [R-5] that comprise the total 2012 ONFA Cost Estimate.

3.1 Planning Assumptions

DGR activity dates for the 2012 ONFA L&ILW DGR Cost Estimate are shown in the following table:

DGR Activity	2012 ONFA Reference Plan Update
DGR Capital Expenditures	2011-2018
DGR Retrieval	2011-2031
DGR Operational Readiness and Operations	2011-2058
DGR Decommissioning	2055-2062
DGR Community Payments	2012-2034
DGR Oversight	2012-2093

3.2 Cost Estimate Review

An analysis of the 2012 ONFA Cost Estimate identifies expenditures and cost increases as a result of new activities and assumptions that were not included in the 2007 ONFA submission. Each activity is summarized below highlighting assumptions that support the 2012 ONFA Cost Estimate.

3.2.1 DGR Capital Expenditures

The 2007 ONFA baseline project cost for the design and construction phase of the OPG DGR, established in 2006 was estimated at \$544M (2006C\$) ([R-6], Appendix 3).

The 2012 ONFA Cost Estimate update, is based on an initial repository volume of 200,000 m³ of packaged waste. The 200,000 m³ is consistent with OPG's current projection for all existing L&ILW at the Western Waste Management Facility (WWMF)

and waste expected from on-going plant operations. The revised cost estimate of \$925M (2010C\$, 2010 forward), reflects a higher repository volume of 200,000 m³ [R-6].

After review, OPG decided that a P50 cost estimate be used for the 2012 submission as this confidence level has been routinely used in ONFA estimates where only preliminary design or scope information is available. A P50 estimate results in a capital expenditure cost of \$809M (2012C\$, 2012 forward). For final submission, the number has been further revised to \$832M (2012C\$, 2012 forward) to incorporate latest business plan and construction insurance costs.

3.2.2 DGR Retrieval

The DGR Retrieval estimate was compiled using industry best practices and knowledge gained from performing similar work activities in past operations. The general waste retrieval methodology is that each waste type will be retrieved from its respective waste storage structure, assessed, and over-packed or processed as required, ensuring all waste arrives at a Staging Building in packages which meet the DGR Waste Acceptance Criteria (WAC). The estimate includes waste retrieval activities and processes up to the point at which each waste type is in a DGR-ready package at the Staging Building, awaiting pick-up by the DGR Operations staff. Transfer and emplacement in the DGR is addressed under the DGR Operations cost estimate.

The cost estimate has increased from the 2007 ONFA Cost Estimate of \$82M (2012 C\$, 2012 forward) due to a revised assessment of retrieving each waste type, an increase in the number of over-packs required along with specialized equipment and additional labour that was not factored in previously. The DGR Retrieval portion of the 2012 ONFA Cost Estimate is approximately \$250M (2012C\$, 2012 forward).

3.2.3 DGR Operational Readiness and Operations

This estimate includes Operational Readiness activities as well as Operations activities from the point of waste package pick-up at the Staging Building in the WWMF, to emplacement in designated rooms below ground in the DGR.

The 2007 ONFA Cost Estimate of \$198M (2012C\$, 2012 onward) assumed a DGR operating life of 22 years and a staffing level of 15. The DGR Operations portion of the 2012 ONFA Cost Estimate has increased to \$551M (2012C\$, 2012 onward) largely due to the DGR operating period being extended to 35 years with a staffing level of 36, property tax re-estimates and insurance rate increases.

3.2.4 DGR Decommissioning

This estimate includes direct/indirect costs associated with decommissioning and closure of the DGR facility, including extended monitoring, geosciences support, licensing and DGR related activities (i.e. hoisting, sealing and excavation).

The 2007 ONFA Cost Estimate of \$76M (2012C\$, 2012 onward) was based on a high level preliminary design including a capped only design for shaft sealing. The DGR Decommissioning portion of the 2012 ONFA Cost Estimate has increased to \$337M (2012C\$, 2012 onward) due to detailed planning and the number of direct/indirect costs listed above.

3.2.5 DGR Community Payment

DGR Community Payments of \$31M(2012C\$, 2012 onward) for the 2012 ONFA Cost Estimate have remained relatively consistent with only a slight variance in costs from the previous 2007 ONFA Cost Estimate of \$32M (2012C\$, 2012 onward).

3.2.6 DGR Oversight

DGR Oversight costs for the 2012 ONFA Cost Estimate are approximately \$74M (2012C\$, 2012 onward).

4.0 SUMMARY OF L&ILW COSTS

The following section provides a brief summary of the 2012 ONFA Cost Estimate by work element. Costs provided in the tables are 2012 forward and occur over the complete lifecycle.

4.1 L&ILW DGR Cost Estimate Total

The total cost estimate for the DGR program is summarized in the following table for the period of 2012 onward (in 2012C\$) – total may not add up due to rounding.

DGR Activity	2012M\$
DGR Capital Expenditures	832
DGR Retrieval	250
DGR Operations	551
DGR Decommissioning	337
DGR Community Payments	31
DGR Oversight	74
Total	2,076

5.0 REFERENCES

1. 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report, W-REP-00400-00004
2. Reference Low and Intermediate Level Waste Inventory for the Deep Geologic Repository, OPG-00216- REP-03902-00003-R01. Published 2008
3. L&ILW Deep Geologic Repository Cost Estimate Report, 00216-REP-03900-00003-R00
4. L&ILW Deep Geologic Repository Operations Cost Estimate Report, 00216-REP-03900-00004-R00
5. OPG's Deep Geologic Repository Decommissioning Cost Estimate, NWMO DGR-TR-2011-41
6. OPG's DGR for Low and Intermediate Level Waste - Capital Cost Update, Hatch H-333000- WP500-92-124-0002 Rev.01



Report

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2012 ONFA REFERENCE PLAN UPDATE USED FUEL STORAGE SUMMARY COST ESTIMATE REPORT

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**2012 ONFA Reference Plan Update Used Fuel
Storage Summary Cost Estimate Report**

06819-REP-00400-00003-R01

2011-11-28

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Report

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Revision Summary

Revision Number	Date	Comments
R00	June 2011	Initial issue.
R01	November 2011	Final Submission

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2012 ONFA REFERENCE PLAN UPDATE USED FUEL STORAGE SUMMARY COST ESTIMATE REPORT

Summary of Changes from initial ONFA Submission

Provided below is a summary of changes that were made to the 2012 ONFA Used Fuel Storage Program Cost Estimate. The revised ONFA Used Fuel Storage cost estimate currently amounts to \$2,676,569 (2012 K\$), which is a net increase of approximately \$47M over the initial ONFA submission of \$2,629,269 (2012 K\$). The activities listed below substantiate the \$47 M cost increase.

1. Adjustment to align with the final Business Plan projections resulted in a cost increase of \$54M. The components of the \$54M increase are:
 - Changed cash flows from projects to reflect new timing and finalized scope of projects in the current portfolio (\$32M)
 - Non NWMD provision charges of some \$2M per year for services that support the Used Fuel Storage program from other organizations in OPG.
 - Approximately \$5M per year for NWMD operating costs that reflect multiple changes:
 - Economic factor alignment for escalation, burdens, etc.
 - Incremental, one time minor modifications or small projects
 - Increase in technical and overhead indirects compared to the previous estimate.

As the majority of the change relates to one-time project changes in cash flows and the remaining \$7M per annum operational costs are a combination of model differences, one time changes and an assumed level of overheads that will be further scrutinized over the ensuing years within OPG, extrapolations to the overall lifecycle cost estimate were not made at this time. OPG will continue to monitor these differences in addition to all cost estimate changes on a regular basis to assess their significance to the overall liability calculations. As further mitigation, the lifecycle estimates in this update assumed a full rebaselining of common and technical support overheads and with NWMD management historically being successful in managing the execution of its work programs to achieve cost savings, the level of support costs throughout the full lifecycle are assumed to be adequate as stated.

2. Refinement on model calculation logic to remove Wet Bay Security costs in the year of shutdown, i.e. the annual security costs should occur after station shutdown year. This caused a cost reduction of about \$6M
3. Update on DWMF decommissioning cost based on TLG input, which resulted in cost reduction of approximate \$1M

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2012 ONFA REFERENCE PLAN UPDATE USED FUEL STORAGE SUMMARY COST ESTIMATE REPORT

1.0 PURPOSE

The purpose of this report is to provide an overview of the 2011 used fuel interim storage lifecycle cost estimate submitted to the OFA as part of the 2012 Ontario Nuclear Funds Agreement (ONFA) submission.

The reconciliation from the currently approved (2007) ONFA used fuel storage cost estimate to the 2012 ONFA reference plan update used fuel interim storage cost estimate is provided in the ONFA Reference Plan Update Summary Cost Estimate Report [R-1]. The basis of the 2012 ONFA used fuel interim storage cost estimate is detailed in the 2012 ONFA Reference Plan Update Used Fuel Operations Cost Estimate Report [R-2].

2.0 BACKGROUND

Baseline estimates are updated on a regular basis in support of the Ontario Nuclear Funds Agreement (ONFA) submissions to the Province of Ontario. A lifecycle estimate for Used Fuel Storage (UFS) Operations was established in 1999 based on an assumed average station life of 40 years [R-3]. A 25-year reactor operating life scenario was derived from the 40-year reactor operating life estimate and assumed 2.23M bundles would be generated over the station financial planning life. The 25-year reactor operating life cost estimate was established as the approved 2007 ONFA reference plan update Used Fuel Storage cost estimate [R-4]. For the 2007 ONFA reference plan update, adjustments were made to the 1999 cost estimate to reflect current economic information based on costs in the UFS program.

In preparation of this, the 2012 ONFA reference plan update cost estimate, the Used Fuel Storage cost estimate was assembled from first principles, re-evaluating all cost inputs and assumptions. A first principles estimate was last carried out in the preparation of the initial 1999 cost estimate. At that time, only Pickering was processing DSCs, higher security regulations due to 9/11 were not yet in place, and the Nuclear Waste Management Division (NWMD) was a service provider to Nuclear Operations. Since that time, Western and Darlington have started processing DSCs, enhanced security regulations are in place, and NWMD is now an operating unit under Nuclear Operations.

3.0 2012 ONFA REFERENCE PLAN UPDATE USED FUEL INTERIM STORAGE COST ESTIMATE

In 2010/2011, an updated used fuel interim storage lifecycle cost estimate was prepared from first principles, based on operating life assumptions and logistics identified in the Nuclear Waste Forecasts for 2012 ONFA Reference Plan Update report [R-5].

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3.1 Planning Assumptions

Station operating life and used fuel facility planning assumptions for the 2012 ONFA reference plan updates used fuel interim storage cost estimate are shown in the following table as extracted from [R-5].

Station/Facility	2012 ONFA Reference Plan Update Assumption
Pickering A Shutdown (U1 / U2 / U3 / U4)	2019 / 2005 / 2005 / 2019
Pickering B Shutdown (U5 / U6 / U7 / U8)	2017 / 2017 / 2019 / 2019
Bruce A Shutdown (U1 / U2 / U3 / U4)	2042 / 2042 / 2054 / 2054
Bruce B Shutdown (U5 / U6 / U7 / U8)	2018 / 2019 / 2019 / 2021
Darlington Shutdown (U1 / U2 / U3 / U4)	2050 / 2048 / 2051 / 2053
Western Used Fuel Dry Storage Facility ceases receiving waste (processing DSCs) from Bruce Stations	2034
Pickering Used Fuel Dry Storage Facility ceases receiving waste (processing DSCs) from Pickering Stations	2030
Darlington Used Fuel Dry Storage Facility ceases receiving waste (processing DSCs) from Darlington Station	2034
Used Fuel DGR in-service	2035
Dry Storage Facilities are emptied and decommissioned (PWMF/WUFDS/DWMF)	2054 / 2074 / 2072

All dates shown above were used in determining the used fuel logistics used in preparing the cost estimate. Pickering Waste Management Facility (PWMF) and Western Used Fuel Dry Storage Facility (WUFDSF) continue to receive fuel from Pickering A and B and Bruce B, respectively, past its shutdown date due to the updated strategy of emptying the used fuel wet bays at an accelerated rate. This strategy has been implemented as a result of the cost and risks of maintaining the wet bays, including the cost of security, after station life. From a technical and economical perspective, transferring used fuel to dry storage was a preferred approach and aligned with expected international changes based on the earthquake and tsunami events in Japan and the focus on the fuel stored in water pools on site. Dry Storage Container processing ceases in 2034 for Bruce A and Darlington based on the assumption that the APM DGR will be in-service in 2035, with retrieval and shipment of fuel occurring at a rate appropriate for maintaining space in the wet bays for continued operations of the stations.

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3.2 Used Fuel Bundle Assumptions

Used fuel bundle assumptions for the 2012 ONFA reference plan update used fuel interim storage estimate are shown in the following table.

Used Fuel Bundles Arising from Operations			
	Volume to Dec 2011	Projected volume Jan 2012 onward	Total
Dry Storage	579,988	2,008,287	2,588,275
Total	2,029,661	1,987,588	4,017,249

3.3 Cost Estimate Overview

The following provides a summary of the planning assumptions and updates from the currently approved 2007 ONFA cost estimate to the updated 2012 ONFA cost estimate. Refer to the Used Fuel Interim Storage and Retrieval Operations Cost Estimate Report for further detail [R-2].

- The cost estimate assumes that 4.02M bundles will be generated over the station operating lives.
- Darlington units plan to be refurbished and operate for an additional 30 years, with the latest shutdown date in 2053
- Pickering B Units 5-8 will operate longer and will shut down between 2017-2019
- Pickering A Units 1 and 4 will operated for a slightly shorter time period, shutting down in alignment with Pickering B at 2019
- Bruce A U1/U2 now operate until 2042 and U3/U4 now operate until 2054
- A used fuel processing and storage facility has been constructed at the Darlington Waste Management Facility (DWMF) and became operational in 2008
- All fuel from stations shutdown before the APM long-term management facility is placed in service (Pickering A, Pickering B and Bruce B) is placed in dry storage
- A long-term deep geological repository for used fuel is assumed to be in-service in 2035
- Adjustments were made to costs specific to the following:
 - o Security
 - o Facility Construction

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- Dry Storage Container procurement and processing
- Dry Storage Facility Operations
- Decommissioning
- Wet Bay Islanding and Operations
- Common Indirect Costs
- Adjustments were made to update the estimate to reflect current economic information based on recent costs in the used fuel interim storage program, as well as staffing details for each waste facility, Security details supplied by OPG Security, and Wet Bay costs supplied by Pickering Operations.

4.0 SUMMARY OF USED FUEL INTERIM STORAGE COSTS

The total costs by used fuel dry storage facility for the used fuel interim storage lifecycle cost estimate are summarized in the following table for the 2012 ONFA reference plan update period from 2012 onward in 2010 constant dollars and in 2012 constant dollars. Costs are presented per waste facility. Although certain costs such as security and wet bay operations costs are incurred per station, the costs have been summed and represented per facility.

Used Fuel Dry Storage Facility	2010 Study Cost 2010 Constant k\$ (2012 forward)	2012 ONFA Reference Plan update 2012 Constant k\$ (2012 forward)
Pickering	760,179	803,009
Western	1,095,038	1,156,735
Darlington	678,591	716,824
Total	2,533,808	2,676,569

4.1 Work Breakdown Structure (WBS) Summary of Used Fuel Interim Storage Costs

The following sections provide a brief summary by waste management facility and WBS of the 2012 ONFA reference plan update used fuel interim storage cost estimate. Costs from 2012 onward are detailed by WBS based on cost estimate detail. More detail can be found in the 2012 ONFA Reference Plan Update Used Fuel Operations Cost Estimate Report [R-2].

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4.2 Pickering Waste Management Facility (PWMF)

WBS	2010 Study Cost 2010 Constant k\$ (2012 forward)	2012 ONFA Reference Plan Update 2012 Constant k\$ (2012 forward)
Facilities (Expansions and sustaining capital)	138,117	145,899
DSCs	201,980	213,360
DSF Operations	150,143	158,602
Decommissioning	55,063	58,165
Wet Bay Operations	74,118	78,294
Dry Storage Support	13,691	14,462
Security	83,361	88,058
Common Costs	43,707	46,170
Total	760,179	803,009

4.3 Western Used Fuel Dry Storage Facility (WUFDSF)

WBS	2010 Study Cost 2010 Constant k\$ (2012 forward)	2012 ONFA Reference Plan Update 2012 Constant k\$ (2012 forward)
Facilities (Expansions and sustaining capital)	154,917	163,646
DSCs	380,402	401,835
DSF Operations	182,543	192,828
Decommissioning	81,658	86,258
Wet Bay Operations	96,076	101,489
Dry Storage Support	16,800	17,746
Security	134,280	141,846
Common Costs	48,362	51,087
Total	1,095,038	1,156,735

4.4 Darlington Waste Management Facility (DWMF)

WBS	2010 Study Cost 2012 Constant k\$ (2010 forward)	2012 ONFA Reference Plan Update 2012 Constant k\$ (2012 forward)
Facilities (Expansions and sustaining capital)	123,819	130,795
DSCs	166,176	175,538
DSF Operations	139,240	147,086
Decommissioning	41,452	43,787
Wet Bay Operations	48,038	50,745
Dry Storage Support	16,800	17,746
Security	99,359	104,957
Common Costs	43,707	46,170
Total	678,591	716,824

Report

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5.0 REFERENCES

- [R-1] 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report, Report No. W-REP-00400-00004, Nov 2011.
- [R-2] Used Fuel Interim Storage and Retrieval Operations Cost Estimate Report, Report No. 06819-REP-00400-00004 R00, June 2011.
- [R-3] Used Fuel Dry Storage Life Cycle Cost Estimate and Benchmarking Report, Report No. 06819-REP-00400-0079 R00, May 1999.
- [R-4] Used Fuel Storage Cost Estimate Report for ONFA 2007, Report No. 06819-REP-00400-00002 R01, October 2006.
- [R-5] Nuclear Waste Forecasts For 2012 Ontario Nuclear Funds Agreement Update. Report No. W-REP-03460-00020-R001, June 2011.



Report

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2012 ONFA Reference Plan Update Long Term Used Fuel Management Summary Cost Estimate Report

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**2012 ONFA Reference Plan Update
Long Term Used Fuel Management
Summary Cost Estimate Report**

W-REP-00400-00005-R01

2011-11-22

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Nov 22, 2011
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Revision Summary

Revision Number	Date	Comments
R00	July, 2011	Initial issue.
R01	November, 2011	Final issue. <ul style="list-style-type: none"> • Reflected the revised APM cost estimate issued in November 2011. • Incorporated the change as a result of refinement of cost scaling methodology from 3.6 million to 4.02 million bundles. • The two changes resulted in an approximately \$ 137 M (in 2012 constant \$) increase to the used fuel long-term management liability. • Adjustment to align with the business plan for oversight costs resulted in a cost increase of \$ 1 M (in 2012 constant \$)

1.0 PURPOSE

The purpose of this report is to provide a summary of the long term used fuel management cost estimate submitted to the Ontario Financing Authority (OFA) as part of the 2012 Ontario Nuclear Funds Agreement (ONFA) Reference Plan Update.

The reconciliation from the currently approved long term used fuel management cost estimate in the 2007 ONFA submission to the 2012 ONFA Reference Plan Update cost estimate is provided in the 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report **[R-1]**.

2.0 BACKGROUND

The long term used fuel management program includes all activities related to the siting and construction of a centralized long term repository, retrieval of used nuclear fuel from interim storage facilities at reactor sites, transportation and emplacement of used fuel into the repository, operations, monitoring and ultimately the decommissioning of the repository.

Under the Nuclear Fuel Waste Act, the Nuclear Waste Management Organization (NWMO) has the responsibility to implement Adaptive Phased Management (APM), Canada's plan for the long term management of its used nuclear fuel. The APM approach includes centralized containment and isolation of used nuclear fuel in a deep geological repository (DGR) constructed within a suitable host rock formation such as crystalline rock or sedimentary rock. APM also includes a used fuel transportation system.

3.0 APM COST ESTIMATE UPDATE BY NWMO

From 2009 to 2011, NWMO and SNC-Lavalin updated the previous design and cost estimate for the APM deep geological repository (APM DGR) in crystalline rock prepared by CTECH and for the APM used fuel transportation system prepared by Cogema Logistics. The cost estimate activities for the APM update were allocated as follows:

1. NWMO was responsible for estimating APM costs for siting, design development, safety assessments, licensing, approvals, program management and related support to APM facility construction, operation decommissioning and closure.
2. SNC-Lavalin was responsible for estimating APM costs for final design, construction, operation, extended monitoring, decommissioning and closure of the APM facility and for the used fuel transportation system.

Two used nuclear fuel inventory scenarios are considered in the APM cost analysis for long term management. The Base Case assumes 3.6 million used CANDU fuel bundles and the Alternate Case assumes 7.2 million used CANDU fuel bundles.

The resulting APM cost estimate excluding interim used fuel storage and retrieval, is \$17.9B in 2010 constant dollars under the Base Case scenario. Under the Alternate Case, the cost estimate would be \$29.3B in 2010 constant dollars.

The APM cost estimate includes allowances and contingencies which, on an aggregated basis, are 29% of the total estimate.

Three separate detailed cost estimate reports have been submitted that were used in the formation of the APM cost estimate for ONFA purposes:

1. NWMO Input to Cost Estimate **[R2]**
2. Deep Geological Repository Lifecycle Cost and Schedule **[R3]**
3. Lifecycle Cost Estimate for Used Fuel Transportation System **[R4]**

NWMO formally transmitted the APM cost estimate in final form to OPG in November. This ONFA Reference Plan Update submission reflects the final estimate from NWMO. The updated estimate will be included in the 2011 NWMO Annual Report to be submitted to the Minister of Natural Resources Canada.

4.0 DERIVATION OF 2012 ONFA REFERENCE PLAN UPDATE LONG TERM USED FUEL MANAGEMENT

The derivation of the 2012 ONFA Reference Plan Update Long Term Used Fuel Management cost estimate required the scaling of the APM cost estimate to ONFA bundle projections and the integration of a number of other cost estimates.

4.1 2012 ONFA Planning Assumptions

Station and APM planning assumptions for the 2012 ONFA reference plan update long term used fuel management cost estimate are shown in the following table:

Event	2012 ONFA Reference Plan Update
Bruce A Shutdown (U1 / U2 / U3 / U4)	2042 / 2042 / 2054 / 2054
Bruce B Shutdown (U5 / U6 / U7 / U8)	2018 / 2019 / 2019 / 2021
Pickering A Shutdown (U1 / U2 / U3 / U4)	2019 / 2005 / 2005 / 2019
Pickering B Shutdown (U5 / U6 / U7 / U8)	2017 / 2017 / 2019 / 2019
Darlington Shutdown (U1 / U2 / U3 / U4)	2050 / 2048 / 2051 / 2053
DGR In-Service	2035
DGR Operation (nominal 36 years)	2035 - 2071
Annual Nominal Capacity (Bundles/year)	120,000

Based on the above planning assumptions, OPG's used fuel volumes and logistics projected for the 2012 ONFA scenario are documented in OPG's Nuclear Waste Forecasts for 2012 Ontario Nuclear Funds Agreement Update Report [R5]. Used fuel bundle projection for the 2012 ONFA reference plan update is shown in the following table.

Used Fuel Bundles Arising from Operations			
	Volume to Dec 2011	Projected volume Jan 2012 onward	Total
Total	2,029,661	1,987,588	4,017,429

4.2 Adjustments to NWMO APM Cost Estimate for 2012 ONFA Purposes

For the purpose of developing an estimate for OPG's 2012 ONFA reference used fuel volume of 4.0 million bundles, the NWMO APM cost estimates for 3.6 million and 7.2 million bundles were used to determine the incremental cost of volume increase. The Base Case APM cost estimate at 3.6 million bundles was scaled up to 4.0 million bundles by the incremental costs on a straight-line basis.

In addition to the scaling to a 4.0 million bundle lifecycle bundle volumes, the APM cost estimate was adjusted as follows:

- Removal of non-OPG specific transportation costs
- Adjustment of fixed costs to reflect OPG's cost sharing percentage (90.78%) according to the Membership Agreement and the NFWA Funding Formula

The following summarizes the impacts in 2010 constant dollars of the different adjustments for 2012 ONFA purposes:

	2010 Constant Dollars for 2010 Onwards Liability(\$M)
NWMO APM Cost Estimate for 3.6 million bundles	17,933
Adjustments:	
Removal of non-OPG transportation costs	(121)
Adjustment of fixed cost to reflect cost sharing percentages	(402)
Scaling up to 4.0 million bundles	1,450
2012 ONFA Reference Plan Update APM Cost Estimate	18,860

5.0 OTHER LONG TERM USED FUEL MANAGEMENT COST ESTIMATES

In addition to the APM cost estimates, the derivation of the 2012 ONFA long term used fuel management cost estimate required the integration of a number of other cost estimates:

- Retrieval of used fuel from wet and dry storage at OPG reactor sites
- OPG's APM program oversight costs

5.1 Retrieval of Used Fuel at Reactor sites

OPG used fuel is stored in both dry storage containers (DSCs) at OPG dry storage facilities and in OPG wet bays at reactor sites. The road mode of transportation assumed for the 2012 ONFA reference plan update requires that used fuel be retrieved from DSCs and wet bays and reloaded into a certified transportation cask for shipment to the APM-DGR.

The retrieval of used fuel from interim storage begins when the APM DGR facility is in-service. Used fuel will be retrieved from wet bays first and then from dry storage to ensure operating stations can discharge their fuel as early as possible after required cooling period. The used fuel will be transferred to an Irradiated Fuel Transportation Cask (IFTC) through the use of a hot cell at each OPG reactor site, as detailed in the APM Used Fuel Transportation cost estimate **[R4]**.

The 2012 ONFA reference plan update cost estimate for used fuel retrieval includes all program related costs including facility sustaining capital and operations, system support and common divisional costs. Details of the retrieval process and costs are documented in the Used Fuel Interim Storage and Retrieval Operations Cost Estimate Report **[R6]**.

The following table shows the work breakdown structure and total estimated cost for retrieval of used fuel for 4.0 M used fuel bundles to be \$1,213 M in 2010 constant \$ and \$1,285 in 2012 M constant \$.

Retrieval WBS	2012 ONFA Reference Plan Update 2010 M\$	2012 ONFA Reference Plan Update 2012 M\$
Facility Sustaining Capital	100	
DSF Operations	372	
Retrieval from Wet Bays	188	
Retrieval from DSCs	354	
Dry Storage Support	69	
Common Costs	203	
Total	1,213	1,285

5.2 APM Program Oversight Cost Estimate

APM oversight cost is estimated to be \$22 M in 2010 constant dollars over the course of the program. Details of the APM oversight cost estimate are documented in the Nuclear Waste Management and Decommissioning – Oversight Cost Estimate Report. **[R7]**

6.0 COST SUMMARY

The 2012 ONFA reference plan update long term used fuel management lifecycle cost estimate summarizes the long term management costs for an OPG bundle total of 4.0 million used fuel bundles. The cost estimate includes estimated costs for:

- Used fuel retrieval from wet and dry storage at OPG reactor sites
- APM lifecycle costs (including transportation of used fuel from OPG reactor sites to the APM DGR)
- Program oversight

6.1 2012 ONFA Long Term Used Fuel Management Lifecycle Costs

The overall lifecycle cost for the long term management of 4.0 million fuel bundles is summarized in the following table in 2010 constant M\$ and in 2012 constant M\$.

Fuel Bundles (millions)	Estimated Cost (2012 Onwards Liability)				
	Retrieval 2010 M\$	APM 2010 M\$	Program Oversight 2010M\$	Total 2010 M\$	Total 2012 M\$
4.0	1,213	18,790	22	20,025	21,001

7.0 REFERENCES

1. 2012 ONFA Reference Plan Update Program Summary Cost Estimate Report, W-REP-00400-00004, 2011
2. APM Conceptual Design and Cost Estimate for a Deep Geological Repository in Crystalline Rock Summary Report, NWMO Report, APM-REP-00440-0011, Oct.2011
3. APM Conceptual Design and Cost Estimate Update – Deep Geological Repository in Crystalline Rock – NWMO Input to Cost Estimate, NWMO Report, APM-REP-00440-0009, Oct. 2011
4. APM Conceptual Design and Cost Estimate Update – Deep Geological Repository Lifecycle Cost and Schedule Report – Crystalline Rock Environment – Copper Container, SNC-Lavalin Report, APM-REP-00440-0003, Aug. 2011
5. APM Conceptual Design and Cost Estimate Update – Lifecycle Cost Estimate for Used Fuel Transportation System – Base and Alternate Case, SNC-Lavalin Report, APM-REP-00440-0006, Aug. 2011
6. Nuclear Waste Forecasts for 2012 Ontario Nuclear Funds Agreement Update. Report No. W-REP- 03460-00020-R001, June 2011
7. 2012 ONFA Reference Plan Update Used Fuel Operations Cost Estimate Report, 06819-REP-00400-00004-R00, June 2011
8. Nuclear Waste Management and Decommissioning – Oversight Cost Estimate, 00216-REP-03900-00005, Nov. 2011



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NUCLEAR WASTE MANAGEMENT AND DECOMMISSIONING – OVERSIGHT COST ESTIMATE


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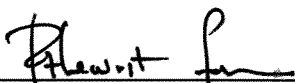
Order Number: N/A
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Prepared by:


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Nov 21 / 11
Date

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APPROVALS

NWMO DGR Oversight



Davinder Valeri
Director, Strategic Planning

Nov 22/11

Date

NWMO APM Oversight



John Lotoski
Director, Nuclear Decommissioning

Nov 23rd, 2011

Date

Nuclear Decommissioning Org

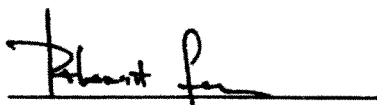


John Lotoski
Director, Nuclear Decommissioning

Nov 23rd, 2011

Date

Nuclear Finance
ONFA Section 2.4

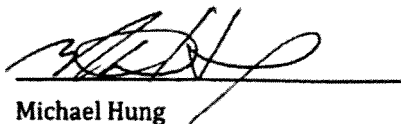


John Mauti
Director, Nuclear Reporting

Nov. 22, 2011

Date

Lifecycle Liability Management



Michael Hung
Director, Lifecycle Liability Management

NOV 22, 2011

Date

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Revision Summary

Revision Number	Date	Comments
R000	2011-03-24	<ul style="list-style-type: none">Initial Issue.Update after challenge meeting held on April 12, 2011.Revised to align to business plan.
R001	2011-05-02	
R002	2011-11-21	

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1. BACKGROUND

The Ontario Nuclear Funds Agreement (ONFA) between the Province of Ontario and Ontario Power Generation requires a 5 year review of liabilities associated with nuclear waste management and station decommissioning. This review is used as the basis to update OPG financial statements and identifies funds to be contributed to segregated funds to fund future programs. The 2012 Reference Plan Update will be in place for the years 2012 to 2016. The revised reference plan is to be submitted to the Province for review and approval. Approval of this update is targeted for year-end 2011. The revised reference plan also forms the basis for the submission to the Canadian Nuclear Safety Commission for the five-year review of OPG's financial guarantee requirement.

2. EXECUTIVE SUMMARY

This cost estimate report covers the following Oversight/Support Programs:

- OPG oversight of the Nuclear Waste Management Organization (NWMO) L&ILW Deep Geologic Repository (DGR) Program
- OPG oversight of the NWMO Adaptive Phased Management (APM) Program
- OPG Nuclear Decommissioning Organization (NDO)
- NWMO Lifecycle Liability Management.
- OPG Nuclear Finance.
- Kincardine Host Community
- ONFA Section 2.4 Certain Provincial and OEFC Expenses

The cost estimate of these programs, with the exception of the Kincardine Host Communities and ONFA Section 2.4, is based on their respective 2011 to 2015 business plan extrapolated into future years. The cost estimate related to the Kincardine Host Communities payment is based on Schedule A of the Kincardine L&ILW DGR Agreement while ONFA Section 2.4 is based on a good faith cost estimate from the Province extrapolated into the future.

3. PROGRAMS

3.1. OPG NWMO L&ILW DGR Oversight Program

- Ensure effective OPG Oversight such that:
 - The NWMO are meeting their obligations under the L&ILW DGR Services Agreement and the EPCM Agreement for Design and Construction.
 - The requirements of OPG are being addressed.
 - The requirements of ONFA are being met.
 - Value for money is demonstrated.
- Ensure OPG obligations in the DGR Services Agreement are met:
 - Provide operational review of all DGR design documents.
 - Provide the NWMO with all required authorizations in a timely manner to allow the NWMO to seek a license from the CNSC.
 - Provide to the NWMO access and use of OPG facilities for the NWMO to perform their work.

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- Execute the EPCM Agreement for Phase 2 of Detail Design.

The cost estimate assumed that this Oversight Team will be required until the completion of the L&ILW DGR construction in 2018. The total cost estimate in 2010 Constant Dollar is \$34.2M. See Appendix A for full details.

Variance Explanations vs. 2007 Approved ONFA Reference Plan

This Oversight program is new and was not part of the 2007 Approved ONFA Reference Plan.

3.2 OPG NWMO APM Oversight Program

- To ensure OPG value for money has been optimized.

The cost estimate assumed that this Oversight Team will be required until the completion of the APM DGR construction in 2035. The total cost estimate in 2010 constant dollar is \$4.9M. See Appendix B for full details.

Variance Explanations vs. 2007 Approved ONFA Reference Plan

This Oversight program is new and was not part of the 2007 Approved ONFA Reference Plan.

3.3 OPG Nuclear Decommissioning Organization

- Planning, preparation, and execution of decommissioning requirements.
- Decommissioning documents required for Regulatory approvals.
- Development and validation of decommissioning engineering cost estimates.

The cost estimate assumed that this Organization will be required at least until the dismantlement and site restoration of the last Unit by 2093. The total cost estimate in 2010 constant dollar is \$58.3M. See Appendix C for full details.

Variance Explanations vs. 2007 Approved ONFA Reference Plan

There was no cost estimate for this Organization in the 2007 Approved ONFA Reference Plan.

3.4 NWMO Lifecycle Liability Management

The major work programs support to be provided to OPG are:

- Update to ONFA reference plan
- Update to CNSC Financial Guarantee 5-year Reference Plan and Hearing support
- Provide OPG with assistance in meeting its regulatory and financial planning and reporting requirements

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- Annual report of lifecycle liability plan, cost estimates and fund contribution (NWM&D Report) and supporting reports.

The cost estimate assumed that this Program will be required until the completion of the respective programs the LLM group supports. In the case of the L&ILW DGR program, the LLM support cost ends in 2062 at the completion of the decommissioning of the L&ILW DGR. For the APM program, LLM support is assumed to be completed when the last used fuel from OPG nuclear plants are transported to the APM DGR in 2073. For decommissioning, LLM support ends in 2093 when the last Darlington unit is dismantled. The total cost estimate in 2010 constant dollar is \$98.7M. See Appendix D for full details.

Variance Explanations vs. 2007 Approved ONFA Reference Plan

- FTE level remained unchanged between ONFA Reference Plan.
- Non-labour costs remained essentially unchanged.

3.5 OPG Nuclear Finance

Nuclear Finance provides direct accounting and financial support and oversight to the various Programs/Projects that manage nuclear waste and decommissioning portfolio. The cost estimate assumed that Nuclear Finance support will be required until 2020. The total cost estimate in 2010 constant dollar is \$3.1M. See Appendix E for full details.

Variance Explanations vs. 2007 Approved ONFA Reference Plan

This Oversight program is new and was not part of the 2007 Approved ONFA Reference Plan.

3.6 Kincardine Host Community

OPG and The Corporation of the Municipality of Kincardine (Kincardine) signed an agreement on October 13, 2004 to allow OPG to develop an L&ILW DGR in Kincardine. The agreement includes annual payment to Kincardine and the adjacent municipalities until 2035. The total cost estimate in 2010 constant dollar is \$29.5M. See Appendix F for full details.

Variance Explanations vs. 2007 Approved ONFA Reference Plan

The cost of Kincardine Host Community payment remained unchanged between the 2007 ONFA Reference Plan and the current update.

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3.7 ONFA Section 2.4 Certain Provincial and OEFC Expenses

In accordance to section 2.4 of the ONFA, each of OPG and the OPG Nuclear Subsidiaries agree to pay all reasonable expenses of each of the Province and OEFC in a timely manner following written requests therefor from the Province or OEFC, as the case may be. The total cost estimate in 2010 constant dollar is \$2.7M. See Appendix G for full details.

Variance Explanations vs. 2007 Approved ONFA Reference Plan

This Oversight program is new and was not part of the 2007 Approved ONFA Reference Plan.

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APPENDIX A OPG NWMO L&ILW DGR OVERSIGHT PROGRAM 2010 \$

Year	Labour	Material	Other	Total
2012	1,950,430	-	6,825,980	8,776,410
2013	1,770,507	-	5,777,738	7,548,245
2014	1,721,786	-	6,601,261	8,323,047
2015	1,759,326	-	1,520,131	3,279,457
2016	1,557,415	-	520,245	2,077,660
2017	1,557,415	-	520,706	2,078,121
2018	1,557,415	-	521,168	2,078,583
Total	11,874,292	-	22,287,230	34,161,522

- Notes:
- 1) Assume that the DGR Oversight Team will no longer be required in 2019 with the completion of the L&ILW DGR construction in 2018 and operation starts in 2019. Please note that the 2018 in-service date of the L&ILW DGR is currently under review due to delay in the appointment of the Joint Review Panel.
 - 2) Labour is composed of Project Management, Engineering, Safety Assessment, and Administrative staff. Other is consisted of other potential communities payment and business travel and expenses.
 - 3) No contingency has been added.

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**APPENDIX B
OPG NWMO APM OVERSIGHT PROGRAM
2010 \$**

Year	Labour	Material	Other	Total
2012	205,791	-	-	205,791
2013	204,893	-	-	204,893
2014	203,655	-	-	203,655
2015	202,209	-	-	202,209
2016	202,209	-	-	202,209
2017	202,209	-	-	202,209
2018	202,209	-	-	202,209
2019	202,209	-	-	202,209
2020	202,209	-	-	202,209
2021	202,209	-	-	202,209
2022	202,209	-	-	202,209
2023	202,209	-	-	202,209
2024	202,209	-	-	202,209
2025	202,209	-	-	202,209
2026	202,209	-	-	202,209
2027	202,209	-	-	202,209
2028	202,209	-	-	202,209
2029	202,209	-	-	202,209
2030	202,209	-	-	202,209
2031	202,209	-	-	202,209
2032	202,209	-	-	202,209
2033	202,209	-	-	202,209
2034	202,209	-	-	202,209
2035	202,209	-	-	202,209
Total	4,860,733	-	-	4,860,733

- Notes:*
- 1) Assume that the APM Oversight Team will no longer be required in 2036 with the completion of the Used Fuel DGR construction in 2035 and operation starts in 2036.
 - 2) Labour is composed of Engineering staff.
 - 3) No contingency has been added.

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NUCLEAR WASTE MANAGEMENT AND DECOMMISSIONING – OVERSIGHT COST ESTIMATE

APPENDIX C
OPG NUCLEAR DECOMMISSIONING ORGANIZATION
2010 \$

Year	Labour	Material	Other	Total
2012	543,875	-	497,855	1,041,730
2013	541,503	-	254,621	796,124
2014	538,231	-	250,796	789,027
2015	480,969	-	325,000	805,969
2016	561,131	-	125,000	686,131
2017	641,292	-	125,000	766,292
2018	641,292	-	125,000	766,292
2019	561,131	-	125,000	686,131
2020	480,969	-	125,000	605,969
2021	561,131	-	125,000	686,131
2022	641,292	-	125,000	766,292
2023	641,292	-	125,000	766,292
2024	561,131	-	125,000	686,131
2025	480,969	-	125,000	605,969
2026	561,131	-	125,000	686,131
2027	641,292	-	125,000	766,292
2028	641,292	-	125,000	766,292
2029	561,131	-	125,000	686,131
2030	480,969	-	125,000	605,969
2031	561,131	-	125,000	686,131
2032	641,292	-	125,000	766,292
2033	641,292	-	125,000	766,292
2034	561,131	-	125,000	686,131
2035	480,969	-	125,000	605,969
2036	561,131	-	125,000	686,131
2037	641,292	-	125,000	766,292
2038	641,292	-	125,000	766,292
2039	561,131	-	125,000	686,131
2040	480,969	-	125,000	605,969
2041	561,131	-	125,000	686,131
2042	641,292	-	125,000	766,292
2043	641,292	-	125,000	766,292
2044	561,131	-	125,000	686,131
2045	480,969	-	125,000	605,969
2046	561,131	-	125,000	686,131

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NUCLEAR WASTE MANAGEMENT AND DECOMMISSIONING – OVERSIGHT COST ESTIMATE

APPENDIX C
OPG NUCLEAR DECOMMISSIONING ORGANIZATION
2010 \$

Year	Labour	Material	Other	Total
2047	641,292	-	125,000	766,292
2048	641,292	-	125,000	766,292
2049	561,131	-	125,000	686,131
2050	480,969	-	125,000	605,969
2051	561,131	-	125,000	686,131
2052	641,292	-	125,000	766,292
2053	641,292	-	125,000	766,292
2054	561,131	-	125,000	686,131
2055	480,969	-	125,000	605,969
2056	561,131	-	125,000	686,131
2057	641,292	-	125,000	766,292
2058	641,292	-	125,000	766,292
2059	561,131	-	125,000	686,131
2060	480,969	-	125,000	605,969
2061	561,131	-	125,000	686,131
2062	641,292	-	125,000	766,292
2063	641,292	-	125,000	766,292
2064	561,131	-	125,000	686,131
2065	480,969	-	125,000	605,969
2066	561,131	-	125,000	686,131
2067	641,292	-	125,000	766,292
2068	641,292	-	125,000	766,292
2069	561,131	-	125,000	686,131
2070	480,969	-	125,000	605,969
2071	561,131	-	125,000	686,131
2072	641,292	-	125,000	766,292
2073	641,292	-	125,000	766,292
2074	561,131	-	125,000	686,131
2075	480,969	-	125,000	605,969
2076	561,131	-	125,000	686,131
2077	641,292	-	125,000	766,292
2078	641,292	-	125,000	766,292
2079	561,131	-	125,000	686,131
2080	480,969	-	125,000	605,969
2081	561,131	-	125,000	686,131

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**APPENDIX C
OPG NUCLEAR DECOMMISSIONING ORGANIZATION
2010 \$**

Year	Labour	Material	Other	Total
2082	641,292	-	125,000	766,292
2083	641,292	-	125,000	766,292
2084	561,131	-	125,000	686,131
2085	480,969	-	125,000	605,969
2086	561,131	-	125,000	686,131
2087	641,292	-	125,000	766,292
2088	641,292	-	125,000	766,292
2089	561,131	-	125,000	686,131
2090	480,969	-	125,000	605,969
2091	561,131	-	125,000	686,131
2092	641,292	-	125,000	766,292
2093	641,292	-	125,000	766,292
Total	47,235,523	-	11,078,273	58,313,796

- Notes:*
- 1) The assumed last unit in operation will be 2053 (Darlington) plus nominal 30 years for safe storage/safe state and 10 years for dismantling. Therefore, this Organization will assume to exist until 2093.*
 - 2) Labour is composed of Engineering and Administrative staff. Other is consisted of purchase services for external expertise and business travel and expenses.*
 - 3) No contingency has been added.*

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APPENDIX D NWMO Lifecycle Liability Management 2010\$

Year	Labour	Material	Other	Total
2012	918,072	-	882,637	1,800,709
2013	910,533	-	644,275	1,554,808
2014	898,945	-	634,275	1,533,220
2015	892,735	-	663,561	1,556,296
2016	886,643	-	1,246,418	2,133,061
2017	1,213,535	-	409,613	1,623,149
2018	1,213,535	-	409,613	1,623,149
2019	1,213,535	-	409,613	1,623,149
2020	1,213,535	-	409,613	1,623,149
2021	1,213,535	-	819,226	2,032,762
2022	1,213,535	-	409,613	1,623,149
2023	1,213,535	-	409,613	1,623,149
2024	1,213,535	-	409,613	1,623,149
2025	1,213,535	-	409,613	1,623,149
2026	1,213,535	-	819,226	2,032,762
2027	1,213,535	-	409,613	1,623,149
2028	1,213,535	-	409,613	1,623,149
2029	1,213,535	-	409,613	1,623,149
2030	1,213,535	-	409,613	1,623,149
2031	1,213,535	-	819,226	2,032,762
2032	1,213,535	-	409,613	1,623,149
2033	1,213,535	-	409,613	1,623,149
2034	1,213,535	-	409,613	1,623,149
2035	1,213,535	-	409,613	1,623,149
2036	1,213,535	-	819,226	2,032,762
2037	1,213,535	-	409,613	1,623,149
2038	1,213,535	-	409,613	1,623,149
2039	1,213,535	-	409,613	1,623,149
2040	1,213,535	-	409,613	1,623,149
2041	1,213,535	-	819,226	2,032,762
2042	1,213,535	-	409,613	1,623,149
2043	1,213,535	-	409,613	1,623,149
2044	1,213,535	-	409,613	1,623,149
2045	1,213,535	-	409,613	1,623,149
2046	1,213,535	-	819,226	2,032,762

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APPENDIX D
NWMO Lifecycle Liability Management
2010\$

Year	Labour	Material	Other	Total
2047	1,213,535	-	409,613	1,623,149
2048	1,213,535	-	409,613	1,623,149
2049	1,213,535	-	409,613	1,623,149
2050	1,213,535	-	409,613	1,623,149
2051	1,213,535	-	819,226	2,032,762
2052	1,213,535	-	409,613	1,623,149
2053	1,213,535	-	409,613	1,623,149
2054	957,052	-	409,613	1,366,665
2055	700,568	-	319,710	1,020,278
2056	700,568	-	549,517	1,250,084
2057	700,568	-	319,710	1,020,278
2058	700,568	-	319,710	1,020,278
2059	700,568	-	319,710	1,020,278
2060	700,568	-	319,710	1,020,278
2061	700,568	-	549,517	1,250,084
2062	700,568	-	319,710	1,020,278
2063	444,084	-	229,807	673,891
2064	444,084	-	229,807	673,891
2065	444,084	-	229,807	673,891
2066	444,084	-	409,613	853,697
2067	444,084	-	229,807	673,891
2068	444,084	-	229,807	673,891
2069	444,084	-	229,807	673,891
2070	444,084	-	229,807	673,891
2071	444,084	-	409,613	853,697
2072	444,084	-	229,807	673,891
2073	444,084	-	229,807	673,891
2074	256,484	-	179,807	436,290
2075	256,484	-	179,807	436,290
2076	256,484	-	359,613	616,097
2077	256,484	-	179,807	436,290
2078	256,484	-	179,807	436,290
2079	256,484	-	179,807	436,290
2080	256,484	-	179,807	436,290
2081	256,484	-	359,613	616,097

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NUCLEAR WASTE MANAGEMENT AND DECOMMISSIONING – OVERSIGHT COST ESTIMATE

APPENDIX D NWMO Lifecycle Liability Management 2010\$

Year	Labour	Material	Other	Total
2082	256,484	-	179,807	436,290
2083	256,484	-	179,807	436,290
2084	256,484	-	179,807	436,290
2085	256,484	-	179,807	436,290
2086	256,484	-	359,613	616,097
2087	256,484	-	179,807	436,290
2088	256,484	-	179,807	436,290
2089	256,484	-	179,807	436,290
2090	256,484	-	179,807	436,290
2091	256,484	-	359,613	616,097
2092	256,484	-	179,807	436,290
2093	256,484	-	179,807	436,290
Total	65,983,936	-	32,723,896	98,707,832

Notes:

1) Labour is composed of Cost Analysts - Modeling of Cost Estimates and Financial Analysts - Modeling of Liabilities / Funding / Accounting. Other is consisted of purchase services for external expertise and business travel and expenses.

2) No contingency has been added.

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APPENDIX E NUCLEAR FINANCE 2010 \$

Year	Labour	Material	Other	Total
2012	342,322	-	3,000	345,322
2013	335,863	-	3,000	338,863
2014	335,863	-	3,000	338,863
2015	335,863	-	3,000	338,863
2016	335,863	-	3,000	338,863
2017	335,863	-	3,000	338,863
2018	335,863	-	3,000	338,863
2019	335,863	-	3,000	338,863
2020	335,863	-	3,000	338,863
Total	3,029,224	-	27,000	3,056,224

Notes: 1) Labour is composed of professional Accounting staff. Other is consisted of business travel and expenses.
2) No contingency has been added.

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APPENDIX F Kincardine Host Community Payments 2010 \$

Year	Labour	Material	Other	Total
2012			1,178,000	1,178,000
2013			3,534,000	3,534,000
2014			1,178,000	1,178,000
2015			1,178,000	1,178,000
2016			1,178,000	1,178,000
2017			1,178,000	1,178,000
2018			1,178,000	1,178,000
2019			1,178,000	1,178,000
2020			1,178,000	1,178,000
2021			1,178,000	1,178,000
2022			1,178,000	1,178,000
2023			1,178,000	1,178,000
2024			1,178,000	1,178,000
2025			1,178,000	1,178,000
2026			1,178,000	1,178,000
2027			1,178,000	1,178,000
2028			1,178,000	1,178,000
2029			1,178,000	1,178,000
2030			1,178,000	1,178,000
2031			1,178,000	1,178,000
2032			1,178,000	1,178,000
2033			1,178,000	1,178,000
2034			1,178,000	1,178,000
Total			29,450,000	29,450,000

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APPENDIX G ONFA 2.4 Certain Provincial and OEFC Expenses 2010 \$

Year	Labour	Material	Other	Total
2012	-	-	25,000	25,000
2013	-	-	25,000	25,000
2014	-	-	25,000	25,000
2015	-	-	45,000	45,000
2016	-	-	45,000	45,000
2017	-	-	25,000	25,000
2018	-	-	25,000	25,000
2019	-	-	25,000	25,000
2020	-	-	45,000	45,000
2021	-	-	45,000	45,000
2022	-	-	25,000	25,000
2023	-	-	25,000	25,000
2024	-	-	25,000	25,000
2025	-	-	45,000	45,000
2026	-	-	45,000	45,000
2027	-	-	25,000	25,000
2028	-	-	25,000	25,000
2029	-	-	25,000	25,000
2030	-	-	45,000	45,000
2031	-	-	45,000	45,000
2032	-	-	25,000	25,000
2033	-	-	25,000	25,000
2034	-	-	25,000	25,000
2035	-	-	45,000	45,000
2036	-	-	45,000	45,000
2037	-	-	25,000	25,000
2038	-	-	25,000	25,000
2039	-	-	25,000	25,000
2040	-	-	45,000	45,000
2041	-	-	45,000	45,000
2042	-	-	25,000	25,000
2043	-	-	25,000	25,000
2044	-	-	25,000	25,000
2045	-	-	45,000	45,000
2046	-	-	45,000	45,000

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APPENDIX G ONFA 2.4 Certain Provincial and OEFC Expenses 2010 \$

Year	Labour	Material	Other	Total
2047	-	-	25,000	25,000
2048	-	-	25,000	25,000
2049	-	-	25,000	25,000
2050	-	-	45,000	45,000
2051	-	-	45,000	45,000
2052	-	-	25,000	25,000
2053	-	-	25,000	25,000
2054	-	-	25,000	25,000
2055	-	-	45,000	45,000
2056	-	-	45,000	45,000
2057	-	-	25,000	25,000
2058	-	-	25,000	25,000
2059	-	-	25,000	25,000
2060	-	-	45,000	45,000
2061	-	-	45,000	45,000
2062	-	-	25,000	25,000
2063	-	-	25,000	25,000
2064	-	-	25,000	25,000
2065	-	-	45,000	45,000
2066	-	-	45,000	45,000
2067	-	-	25,000	25,000
2068	-	-	25,000	25,000
2069	-	-	25,000	25,000
2070	-	-	45,000	45,000
2071	-	-	45,000	45,000
2072	-	-	25,000	25,000
2073	-	-	25,000	25,000
2074	-	-	25,000	25,000
2075	-	-	45,000	45,000
2076	-	-	45,000	45,000
2077	-	-	25,000	25,000
2078	-	-	25,000	25,000
2079	-	-	25,000	25,000
2080	-	-	45,000	45,000
2081	-	-	45,000	45,000

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NUCLEAR WASTE MANAGEMENT AND DECOMMISSIONING – OVERSIGHT COST ESTIMATE

APPENDIX G ONFA 2.4 Certain Provincial and OEFC Expenses 2010 \$

Year	Labour	Material	Other	Total
2082	-	-	25,000	25,000
2083	-	-	25,000	25,000
2084	-	-	25,000	25,000
2085	-	-	45,000	45,000
2086	-	-	45,000	45,000
2087	-	-	25,000	25,000
2088	-	-	25,000	25,000
2089	-	-	25,000	25,000
2090	-	-	45,000	45,000
2091	-	-	45,000	45,000
2092	-	-	25,000	25,000
2093	-	-	25,000	25,000
Total	-	-	2,690,000	2,690,000

- Notes:
- 1) Assume these oversight cost will last as long as the last Unit being dismantled.
 - 2) Based on Good Faith Estimate from the OFA.
 - 3) Assumed the cost (\$20K) associated with the ONFA RP review only occurs in the final two years of the 5 year cycle.
 - 4) No contingency has been added.

USED FUEL SEGREGATED FUND
AUDITED FINANCIAL STATEMENTS
DECEMBER 31, 2015



INDEPENDENT AUDITORS' REPORT

**To the Audit and Risk Committee of Ontario Power Generation Inc.
and to the Audit and Risk Management Committee of Ontario Financing Authority**

We have audited the accompanying financial statements of the **Used Fuel Segregated Fund** (the "Fund"), which comprise the statements of net assets as at December 31, 2015, and the statements of operations and comprehensive income, changes in net assets, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with United States generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained in our audit is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the net assets of the Fund as at December 31, 2015, and the results of its operations, changes in its net assets and its cash flows for the year then ended in accordance with United States generally accepted accounting principles.

Toronto, Canada
March 2, 2016

Original copy (protected) signed by EY



USED FUEL SEGREGATED FUND

STATEMENTS OF NET ASSETS

As at December 31 (millions of dollars)	2015	2014
Assets		
Investments (Note 4)		
Cash and cash equivalents	203	168
Short-term investments (Note 7)	8	122
Fixed income investments (Note 7)	3,394	3,229
Marketable equity securities (Note 7)	4,891	4,627
Pooled funds (Note 7)	906	883
Alternative investments (Note 7)	883	546
	10,285	9,575
Other		
Receivable for investment transactions	18	66
Investment income receivable (Note 11)	26	26
	44	92
	10,329	9,667
Liabilities		
Accounts payable and accrued liabilities (Note 5)	14	23
Payable for investment transactions	19	95
Derivative contracts (Note 7)	15	5
Payable to Province of Ontario for rate of return adjustment (Notes 7 and 10)	1,703	1,429
	1,751	1,552
Net assets	8,578	8,115

Commitments (Note 12)

See accompanying notes to the financial statements

USED FUEL SEGREGATED FUND

STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME

Years Ended December 31 <i>(millions of dollars)</i>	2015	2014
Investment income <i>(Note 6)</i>		
Interest	122	118
Dividends	142	135
Income from alternative investments	47	25
Security lending income	2	1
	313	279
Expenses		
Investment management and administration fees <i>(Note 9)</i>	27	26
Net investment income	286	253
Other income and comprehensive income		
Net realized gains <i>(Note 6)</i>	292	581
Net unrealized gains <i>(Note 6)</i>	64	120
Province of Ontario rate of return adjustment <i>(Note 10)</i>	(274)	(439)
Net income and comprehensive income	368	515

See accompanying notes to the financial statements

USED FUEL SEGREGATED FUND

STATEMENTS OF CHANGES IN NET ASSETS

Years Ended December 31		
<i>(millions of dollars)</i>	2015	2014
Net assets, beginning of year	8,115	7,516
Net income and comprehensive income	368	515
Contributions <i>(Note 3)</i>	143	139
Eligible nuclear costs <i>(Note 8)</i>	(48)	(55)
Net assets, end of year	8,578	8,115

See accompanying notes to the financial statements

USED FUEL SEGREGATED FUND

STATEMENTS OF CASH FLOWS

Years Ended December 31		
<i>(millions of dollars)</i>	2015	2014
Operating activities		
Interest received	123	114
Dividends received	140	135
Income received from alternative investments	41	21
Security lending income	2	1
Administration fees paid	(25)	(20)
Net realized gains on investments	292	581
Proceeds from prior year investments sold	66	37
Payments for prior year investments purchased	(95)	(35)
Purchase of investments	(590)	(901)
Foreign exchange contracts settlement from prior year	(5)	(4)
Disbursements for eligible nuclear costs	(57)	(49)
Cash flow used in operating activities	(108)	(120)
Financing activities		
Contributions	143	139
Cash flow provided by financing activities	143	139
Net change in cash and cash equivalents	35	19
Cash and cash equivalents, January 1	168	149
Cash and cash equivalents, December 31	203	168

See accompanying notes to the financial statements

NOTES TO THE FINANCIAL STATEMENTS

1. DESCRIPTION OF USED FUEL SEGREGATED FUND

The Ontario Nuclear Funds Agreement ("ONFA"), as amended, is an agreement between the Province of Ontario (the "Province"), Ontario Power Generation Inc. ("OPG"), and various subsidiaries of OPG that became effective in July 2003. ONFA outlines the roles and responsibilities of the Province and OPG concerning the establishment of the following investment funds in segregated custodial and trust accounts:

- The "Used Fuel Segregated Fund" (the "Fund") to cover long-term nuclear used fuel waste management; and
- The "Decommissioning Segregated Fund" to cover the nuclear fixed asset removal and long-term low and intermediate level nuclear waste management and storage.

On July 24, 2003, ONFA became effective upon the appointment of external investment managers to manage the assets of these funds. CIBC Mellon Global Securities Services Company is an independent custodian of the Fund's assets under the custody agreement dated October 5, 2010.

OPG is the owner of the Fund. The Province, pursuant to ONFA, has a security interest in the assets of the Fund.

OPG and the Ontario Financing Authority ("OFA"), an agency of the Province, jointly make decisions on the Fund's asset mix and investment manager selection and retention. There is a risk that OPG and the OFA may have differing priorities respecting these matters that could impact asset mix and investment decisions.

The Fund includes the net assets of The Ontario NFWA Trust (the "Trust"). The Trust was established by OPG in November 2002 in accordance with the *Nuclear Fuel Waste Act* (Canada) ("NFWA"). Also in accordance with the NFWA, owners of nuclear fuel waste established, by incorporation, the Nuclear Waste Management Organization ("NWMO"), whose purpose is to propose to the Government of Canada approaches for the management of nuclear fuel waste and to implement the approach that is selected by the Federal Government. In June 2007, the Government of Canada selected Adaptive Phased Management, the approach recommended by the NWMO. OPG and the Province are beneficiaries of the Trust. The Province, pursuant to ONFA, has a security interest in OPG's beneficial interest in the Trust. As at December 31, 2015, the net assets in the Trust were \$3,409 (2014 – \$3,114). The remaining assets in the Fund are held in segregated custodian accounts.

The Fund is funded in accordance with ONFA using the reference plans and associated cost estimates that have been prepared by OPG and approved by the Province and may be adjusted from time to time in accordance with ONFA. In 2012, the Province approved a reference plan ("2012 Reference Plan") under ONFA. Based on the 2012 Reference Plan, OPG is required to contribute annual amounts to the Used Fuel Fund, ranging from \$150 to \$288 over the years 2016 to 2019. The next ONFA Reference Plan is expected to be completed in 2016 and will cover the 2017-2021 period.

OPG's contributions to the Trust, as required by the NFWA, are applied towards its ONFA payment obligations. Under the NFWA, OPG is required to make a contribution to the Trust each year, within 30 days of the submission of the NWMO's Annual Report to the federal Minister of Natural Resources. The contribution amount each year is based on the funding formula approved by the federal Minister of Natural Resources. Refer to Note 3 for details on contributions made to the Trust.

Under ONFA, the Province guarantees OPG's cumulative return in the Fund at 3.25 percent, after expenses, plus the rate of change in the Ontario Consumer Price Index ("CPI"), compounded annually, for funding related to the first 2.23

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million used fuel bundles ("Committed Return"). The difference between the Committed Return on the Fund and the actual market return based on the fair value of the Fund's assets, which includes realized and unrealized returns, is recorded as due to or due from the Province. As prescribed under ONFA, earnings on OPG's contributions for fuel bundles in excess of the 2.23 million bundle threshold ("incremental fuel bundles") are not subject to the Province's guaranteed rate of return, and earn the return of the Fund based on the net realized investment income and changes in the market value of the assets.

The target rate of return for the Fund is a total annual real return of 3.25 percent, which equals the rate of change in the Ontario CPI plus 3.25 percent compounded annually, after expenses.

The Fund's net assets of \$8,578 as at December 31, 2015 are comprised of \$7,183 (2014 – \$6,852) for the cumulative funding contributions, including the compounded Committed Return, related to the first 2.23 million used fuel bundles, and \$1,395 (2014 – \$1,263) attributed to OPG's liability associated with the incremental fuel bundles.

In addition, the Province is entitled, at any time prior to the termination of the Fund, to any surplus in the Fund subject to a threshold over-funded ratio of 110 percent. Upon termination of the Fund, the Province is entitled to any surplus above the 100 percent funded threshold.

As part of OPG's licensing requirements for financial guarantees under the *Nuclear Safety and Control Act* (Canada) in respect of OPG's nuclear station decommissioning and nuclear waste management obligations, the Province, OPG and the Canadian Nuclear Safety Commission ("CNSC") have entered into an agreement that gives the CNSC access, under certain conditions, to the assets of the Fund, excluding the Trust.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The Fund represents the assets maintained by OPG in segregated custodial accounts pursuant to ONFA and does not have a separate legal status. The Fund's financial statements have been prepared by management in accordance with United States generally accepted accounting principles ("US GAAP"), which is consistent with Section 9.4 of ONFA.

The Fund meets the definition of an investment company under the Revised Accounting Standards Codification Topic 946, "Investment Companies", which requires all investments to be recorded at fair value. The preparation of financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities. Actual results could differ from these estimates.

Given that OPG is the owner of the Fund and the Province owns all of the shares of OPG, related parties include OPG and the Province.

Cash and Cash Equivalents

Cash and cash equivalents include cash on deposit and money market securities with a maturity of less than 90 days on the date of purchase. All other money market securities with a maturity on the date of purchase that is greater than 90 days, but less than one year, are recorded as short-term investments. These securities are valued at the lower of cost and market. Interest earned on cash and cash equivalents and short-term investments is recognized as interest income.

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Valuation of Investments

Financial assets and liabilities, including the corresponding payable to the Province, are measured at fair value with gains and losses recognized in income. Financial assets purchased and sold where the contract requires the asset to be delivered within an established time frame are recognized on a trade-date basis. All derivatives are recorded at fair value in the statements of net assets. Transaction costs for financial instruments are expensed as incurred.

Fair value is defined as the amount at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's-length transaction. Where a quoted bid price in an active market is available, the fair value is based on the quoted bid price at the end of the reporting period. In the absence of a quoted price in an active market, the Fund determines fair value using valuation techniques that make maximum use of observable market inputs.

Investments are presented in the financial statements at fair value with the differences between fair value and average cost recorded as unrealized gains or losses in the Fund's statements of operations and comprehensive income.

The carrying value of cash and cash equivalent and short-term investments approximates their fair value due to their immediate or short-term maturity.

The market values of foreign investments are translated into Canadian dollars at the exchange rates prevailing at the close of each business day. Purchases and sales of foreign securities and income and expenses are translated into Canadian dollars at the exchange rates prevailing on the transaction dates. The gains and losses arising from foreign exchange transactions are recorded in the statements of operations and comprehensive income.

Securities traded on a national securities exchange are valued at the bid price on the last business day of the year. Listed securities for which no trades are recorded on the last business day of the year are valued at the last reported traded price on the last business day on which the security was traded. Pooled funds are valued based on the unit value of the pooled fund as reported by the investment manager and are presented as a separate category on the statements of net assets. Management fees for the pooled funds are expensed as incurred. Securities transactions are recorded on the trade date. Dividends are accrued as of the ex-dividend date. Stock dividends are recorded in income based on the market value of the security. The realized gains or losses on the sale of securities are calculated with reference to the average cost of the securities and included in net realized gains or losses in the statements of operations and comprehensive income. The Fund follows the accrual method of recording investment income.

Alternative investments consist of infrastructure, real estate, and agriculture investments that are valued based on estimated fair values using acceptable industry valuation methods. Management fees for the alternative investments are expensed as incurred.

For other investments that do not have an established fair value, the fair value is estimated based on comparable securities of issuers with similar credit ratings or net realizable value using available information.

Forward Foreign Exchange Contracts

The Fund may enter into forward foreign exchange contracts for risk management purposes where such activity is consistent with its investment objectives.

The changes in the year-end value of forward foreign exchange contracts receivable have been included in the investments on the statements of net assets with the net unrealized gain or loss included in the statements of operations and comprehensive income. The gain or loss arising from the difference between the value of the original

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forward foreign exchange contract and the contract at close or delivery is realized and recorded in net realized gains or losses in the statements of operations and comprehensive income.

Taxation

Any investment income earned by the Fund (excluding the Trust) is also tax exempt under the *Income Tax Act* (Canada) since the Fund is owned by a tax-exempt entity, namely OPG, and income earned by the Fund is attributed for tax purposes to OPG.

Under the *Electricity Act, 1998*, OPG is required to make payments in lieu of corporate income taxes to the OEFC. These payments are calculated in accordance with the *Income Tax Act (Canada)* and the *Taxation Act, 2007 (Ontario)*, as modified by the *Electricity Act, 1998* and related regulations. This results in OPG effectively paying taxes similar to what would be imposed under the federal and Ontario tax acts.

Investment income earned in the Fund is exempt from payment in lieu of corporate income taxes based on O. Reg. 207/99 made under the *Electricity Act, 1998*, as amended by O. Reg. 673/05. Accordingly, the Fund has made no provision for income taxes in these financial statements.

Recent Accounting Pronouncements

In May 2015, the Financial Accounting Standards Board issued Accounting Standards Update No. 2015-07, Fair Value Measurement Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or its Equivalent) (ASU 2015-07), which amends Topic 820, Fair Value Measurement. Under this new guidance, investments measured at net asset value, as a practical expedient for fair value, are excluded from the fair value hierarchy. Removing investments measured using the practical expedient from the fair value hierarchy is intended to eliminate the diversity in practice that currently exists with respect to the categorization of these investments. The amendments will be effective for the Fund's 2016 fiscal year. As the amendments pertain to disclosures, it is not expected that the updated standard will result in adjustments to balances reported in the Fund's financial statements.

3. CONTRIBUTIONS

The Fund is funded by OPG in accordance with ONFA using the reference plans and associated cost estimates, which have been approved by the Province and may be adjusted from time to time in accordance with ONFA. In 2015, OPG contributed \$143 (2014 – \$139) to the Fund. The annual contribution to the Trust was \$188 (2014 – \$161), which was transferred from the non-Trust portion of the Fund. The table below summarizes OPG's inception-to-date contributions to the Fund:

Contributions to Used Fuel Fund	Annual	Cumulative
2015	143	5,662
2014	139	5,519
Inception to 2013	n/a	5,380

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4. INVESTMENTS

The fair values and historical costs of the investments as at December 31, 2015 and 2014 are summarized as follows:

	2015		2014	
	Fair Value	Historical Cost	Fair Value	Historical Cost
Cash and cash equivalents	203	201	168	168
Short-term investments	8	8	122	122
Fixed income investments				
Domestic	3,339	3,180	3,178	2,972
United States	45	45	47	46
Other	10	9	4	4
	3,394	3,234	3,229	3,022
Equities				
Domestic	1,834	1,549	1,908	1,415
United States	1,561	1,134	1,454	1,103
Japan	334	227	242	203
United Kingdom	280	203	214	174
France	121	99	124	111
Other ¹	754	547	674	534
	4,884	3,759	4,616	3,540
Preferred	7	7	11	10
Marketable equity securities	4,891	3,766	4,627	3,550
Pooled funds				
Equities	402	339	396	345
Fixed income investments	501	509	476	475
Short-term investments	3	3	11	11
	906	851	883	831
Alternative investments				
Global infrastructure	530	403	267	213
Canadian real estate	330	310	279	265
Agriculture	23	24	-	-
	883	737	546	478
Total investments	10,285	8,797	9,575	8,171

¹ Includes equities from over 40 geographical locations

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A breakdown of domestic fixed income, domestic equities and US equities by industry as at December 31, 2015 and 2014 is as follows:

	2015	2014
Domestic fixed income		
Government	2,365	2,202
Financial	538	532
Utilities	103	98
Telecommunications	67	59
Real estate	57	66
Other	209	221
	3,339	3,178
Domestic equities		
Financial	432	444
Energy	314	350
Materials	162	194
Insurance	151	146
Media and telecommunications	128	143
Transportation	118	134
Technology	89	77
Auto	86	85
Other	354	335
	1,834	1,908
US equities		
Technology	290	265
Financial	164	157
Media and telecommunications	143	125
Energy	139	128
Healthcare	114	83
Pharmaceuticals	112	102
Retail	78	101
Insurance	64	64
Commercial services	56	55
Other	401	374
	1,561	1,454

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The proportion of each category of investments as a percentage of net assets as at December 31, 2015 and 2014 is as follows:

	2015		2014	
	Fair Value	% of Net Assets	Fair Value	% of Net Assets
Cash and cash equivalents	203	2%	168	2%
Short-term investments	8	-	122	1%
Fixed income investments	3,394	40%	3,229	40%
Marketable equity securities	4,891	57%	4,627	57%
Pooled funds	906	11%	883	11%
Alternative investments	883	10%	546	7%
Total investments	10,285	120%	9,575	118%
Net assets	8,578		8,115	

Issuers representing aggregated investments of greater than 5% of net assets as at December 31, 2015 and 2014 are as follows:

	2015		2014	
	Principal Amount	Fair Value	Principal Amount	Fair Value
Province of Ontario	806	959	814	961
Government of Canada	509	583	516	597
Fixed income funds ¹	n/a	501	n/a	476
		2,043		2,034

¹ The fixed income funds represent a total of 49,712,728 units (2014 – 46,452,031) in four separate funds of the same issuer.

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5. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

Accounts payable and accrued liabilities consist of the following as at December 31, 2015 and 2014:

	2015	2014
Eligible nuclear costs	10	18
Investment management and other fees	4	5
	14	23

6. INVESTMENT INCOME, NET REALIZED GAINS, AND NET UNREALIZED GAINS

Investment income, net realized gains, and net unrealized (losses) gains for the years ended December 31, 2015 and 2014 consist of the following:

	2015	2014
Investment income		
Interest on cash, short-term investments, and bonds and debentures	122	118
Dividends	142	135
Income from alternative investments	47	25
Security lending income	2	1
	313	279
Net realized gains		
Realized gains	221	545
Realized foreign exchange gains	71	36
	292	581
Net unrealized (losses) gains		
Unrealized (losses) gains ¹	(375)	38
Unrealized foreign exchange gains	439	82
	64	120

¹ Unrealized (losses) gains for alternative investments are based on the fair values of the assets held, net of operating results of the underlying investments.

7. FINANCIAL INSTRUMENTS

The primary objective of the Fund is to meet the payment obligations associated with OPG's disposal costs associated with long-term nuclear used fuel waste management. In order to meet this objective, the Fund invests in a diversified portfolio of investments comprising primarily equity and fixed income securities.

A Statement of Investment Policies and Procedures ("SIPP") for the Fund sets out the investment framework of the Fund, including the investment assumptions, permitted investments and various investment constraints. The SIPP

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also establishes the long-term target asset mix of the Fund, which considers the Fund's funded status and investment objectives in relation to its projected long-term liability profile and cash flows, historical experience of investment vehicles, the appropriate level of diversification to optimize risk and return, and the risk preferences of OPG and the Province. The Management of OPG and the Province monitor investment compliance with the SIPP on a quarterly basis.

The SIPP is reviewed and approved annually by the Deputy Minister of Finance, on behalf of the Province.

Risks Associated with Financial Instruments

Credit Risk

Credit risk is the risk that the counterparty to a financial instrument may fail to meet its obligation under the terms of a financial instrument, thereby resulting in a financial loss for the other party to the transaction. The Fund is primarily exposed to credit risk through its fixed income allocation, which is invested in federal, provincial and corporate debt. Credit risk is governed by the SIPP, which requires fixed income investments to comply with various investment constraints that ensure prudent diversification and minimum credit rating quality. To manage credit risk, compliance with the SIPP is monitored quarterly by an external third-party vendor and reported to the management of OPG and the OFA on a quarterly basis.

The table below summarizes the Fund's exposure to debt instruments with the following credit ratings as at December 31, 2015 and 2014:

Rating	2015	2014
AAA	26.0%	25.9%
AA	9.1%	38.4%
A	53.3%	24.5%
BBB	10.9%	10.5%
Less than BBB or not rated	0.7%	0.7%
	100.0%	100.0%

Credit ratings are obtained from Standard & Poor's, Moody's and/or the Dominion Bond Rating Services. In the case where more than one rating is obtained for a security, the lowest rating has been used.

Liquidity Risk

Liquidity risk is the risk that the Fund is unable to meet its financial obligations due at any point in time. The Fund's approach to managing liquidity risk is to ensure that the Fund has sufficient liquidity to meet its financial obligations when due without incurring unacceptable losses. The Fund manages liquidity risk at the overall fund level by considering the expected liquidity of each asset class during the development of the Fund's asset mix and diversifying investments across different asset class types.

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Market Risk

Market risk is defined as the risk that an investment's value decreases due to changes in underlying market factors including, but not limited to, concentration risk, currency risk, interest rate risk, and equity price risk.

Market risk is managed by the Fund through its diversified asset mix, which, in accordance with the SIPP, is expected to be reviewed at least every five years. The review generally coincides with the preparation and approval of reference plans under the ONFA that provide detailed cost estimates for high-level used fuel disposal. The target asset mix of the Fund, including tolerance ranges around the target allocation to various asset classes, is governed by the SIPP. Compliance with the target asset mix range is monitored internally on a monthly basis and by an external third-party vendor on a quarterly basis and reported quarterly to the Management of OPG and the OFA.

Concentration Risk

Concentration risk is the risk of investment loss due to lack of diversification in the portfolio. The Fund's exposure to concentration risk is governed by the SIPP. For equities, no holding shall represent more than 10 percent of the total market value of each investment manager's equity portfolio. For fixed income investments, no more than 10 percent of each investment manager's portfolio may be invested in the bonds of a single issuer and its related companies, except for Canadian federal and provincial bonds and bonds of their agencies. Investment compliance with the SIPP is monitored quarterly by an external third-party vendor and reported to the management of OPG and the OFA.

Currency Risk

Currency risk is the risk that the value of a financial instrument decreases due to changes in foreign exchange rates. The Fund is exposed to foreign currency risk primarily through its foreign equity investment, which is governed through the target asset mix of the Fund as approved annually in the SIPP. Investment compliance with the target asset mix is monitored monthly internally and quarterly by an external third-party vendor, and reported quarterly to the management of OPG and the OFA.

The table below summarizes the major foreign currencies (in Canadian dollars) to which the Fund was exposed to as at December 31, 2015 and 2014, adjusting for any currency hedges if applicable. The table also illustrates the impact of a one percent change in the value of the Canadian dollar relative to each foreign currency shown on the net assets of the Fund, with all other variables held constant.

Currency	Market Value of Investments	Foreign Exchange Contracts Payable	Net Currency Exposure		Impact of a One Percent Change	
	2015	2015	2015	2014	2015	2014
US Dollar	2,542	(324)	2,218	2,010	22	20
Euro	530	(150)	380	364	4	4
Japanese Yen	340	-	340	247	3	2
British Pound	321	-	321	236	3	2
Swiss Franc	117	-	117	85	1	1

Actual results may differ materially from this sensitivity analysis.

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Interest Rate Risk

Interest rate risk, which includes credit spread risk, is the risk of investment loss due to changes in interest rates and changes in the market price of credit. The Fund is exposed to interest rate risk through its target asset mix, which includes an allocation to fixed income securities. Cash and cash equivalents and short-term investments with maturity dates of less than one year from the financial statement date have minimal exposure to interest rate fluctuations. The Fund's exposure to interest rate risk is governed by the SIPP, which ensures that the Fund's fixed income exposure is prudently diversified. Investment compliance with the SIPP is monitored quarterly by an external third-party vendor and reported quarterly to the management of OPG and the OFA.

The table below provides a summary of the Fund's fixed income exposures by maturity as at December 31, 2015 and 2014:

	2015	2014
Fixed income investments		
1 to 5 years	822	852
5 to 10 years	624	701
Over 10 years	1,948	1,676
	3,394	3,229
Average yield	2.46%	2.51%

Effective duration is a measure of the sensitivity of the price of a fixed income instrument to a change in interest rates. Using the Fund's effective duration of 9.7 years as at December 31, 2015 (2014 – 9.0 years), a parallel shift in the yield curve of +/- 0.5 percent would result in a \$165 (2014 – \$146) impact on the net assets of the Fund, with all other variables held constant. Actual results may differ materially from this sensitivity analysis.

Equity Price Risk

Equity price risk is the risk of loss due to a decline in equity prices. The Fund is exposed to equity price risk through its target asset mix, which includes an allocation to equity securities. The Fund's exposure to equity risk is governed by the SIPP, which ensures that the Fund's equity exposure is prudently diversified. Investment compliance with the SIPP is monitored quarterly by an external third-party vendor and reported quarterly to the Management of OPG and the OFA.

The table below approximates the potential dollar impact on the Fund's net income and comprehensive income associated with a one percent change in each of the specified equity indices as at December 31. This analysis is based on the market values of the Fund's equity holdings at the end of the specified periods, as well as on the assumption that when one equity index changes by one percent, all other variables are held constant.

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		2015	2014
Asset Class	Equity Index		
Domestic equity	S&P/TSX	18	19
US equity	S&P500	16	15
Other equity	MSCI EAFE	15	13

Actual results may differ materially from this sensitivity analysis.

Derivatives

The Fund may enter into derivative contracts, such as forward foreign exchange contracts, for risk management purposes where such activity is consistent with its investment objectives. Forward contracts expose the Fund to counterparty credit risk should the Fund's counterparty to any such transaction default on its contractual obligations. Since the fair value of the forward foreign exchange contracts outstanding as at December 31, 2015 represents less than one percent of the Fund's net assets, the counterparty credit risk exposures on such transactions have a minimal impact on the Fund.

The following table summarizes forward foreign exchange contracts that were outstanding as at December 31, 2015 and 2014:

	2015	2014
Forward foreign exchange contracts		
Payable	(15)	(5)

The Fund may also enter into derivative contracts, such as futures contracts, to replicate direct investments in underlying securities. As at December 31, 2015, the Fund held equity futures contracts with a market value of \$0.1 (2014 – \$0.1). In accordance with the Fund's SIPP, 100 percent of these investments are secured by cash and short-term investments.

Securities Lending

The Fund is also exposed to counterparty credit risk associated with its security lending activities. The risk is mitigated by the use of non-cash collateral, and through a borrower default protection that is jointly and severally provided to OPG by the Fund's custodian and its related entities. The Fund requires the borrower to pledge and to deliver collateral as security for each loan at no less than 105 percent of the market value of the securities loaned for Canadian securities, 102 percent of the market value of the securities loaned for US securities and the percentage that reflects best practices in other local markets in which other foreign currency securities are loaned.

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The following table provides a summary of the Fund's securities on loan and collateral held as at December 31, 2015 and 2014:

	2015	2014
Securities on loan		
Marketable equity securities	681	614
Fixed income investments	72	130
	753	744
Collateral held	794	784
Collateral percentage	105.4%	105.4%

Additional Information on Fair Value

Financial assets are measured at fair value in accordance with the fair value hierarchy. This hierarchy groups financial assets and financial liabilities into three levels based on the significance of inputs used in measuring the fair value of the financial assets and liabilities. The fair value hierarchy has the following levels:

- Level 1: Valuation of inputs is based on unadjusted quoted market prices observed in active markets for identical assets or liabilities.
- Level 2: Valuation is based on inputs other than quoted prices under Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3: Valuation is based on inputs for the asset or liability that are not based on observable market data.

The level within which the asset or liability is classified is determined based on the lowest level input that is significant to the fair value measurement.

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The following tables provide summaries of the financial assets and financial liabilities measured at fair value in the statements of net assets grouped into the fair value hierarchy as at December 31, 2015 and 2014:

2015	Level 1	Level 2	Level 3	Total
Assets				
Short-term investments	-	8	-	8
Fixed income investments	-	3,394	-	3,394
Marketable equity securities	4,891	-	-	4,891
Pooled funds	-	906	-	906
Alternative investments	-	-	883	883
Liabilities				
Payable to Province of Ontario for rate of return adjustment ¹	-	(1,703)	-	(1,703)
Derivative contracts	-	(15)	-	(15)
	4,891	2,590	883	8,364

2014	Level 1	Level 2	Level 3	Total
Assets				
Short-term investments	-	122	-	122
Fixed income investments	-	3,229	-	3,229
Marketable equity securities	4,627	-	-	4,627
Pooled funds	-	883	-	883
Alternative investments	-	-	546	546
Liabilities				
Payable to Province of Ontario for rate of return adjustment ¹	-	(1,429)	-	(1,429)
Derivative contracts	-	(5)	-	(5)
	4,627	2,800	546	7,973

¹ Represents the cumulative excess in actual market return over the Committed Return based on the fair value of the Fund's assets related to the first 2.23 million used fuel bundles.

There were no transfers between Levels 1 and 2 during the reporting period.

The categories of financial instruments with fair values classified in Level 3 consist of global infrastructure funds, Canadian real estate, and agriculture investments. The inputs into the valuation of Level 3 assets are the net asset values of the funds and partnerships that hold these investments.

Certain real estate investments were purchased from or sold to entities related to investment managers of the Fund. These entities were related to the investment manager due to common control. The real estate investments were measured at the exchange amount of the consideration paid as established by third party real estate appraisers. The recorded amount of consideration paid for these investments in 2015 was \$22 (2014 – \$28) and consideration received was nil (2014 – \$5).

USED FUEL SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

Changes in the fair value of financial instruments classified in Level 3

The following table summarizes the changes in the fair value of financial instruments classified in Level 3 for the years ended December 31, 2015 and 2014. The Fund classifies financial instruments in this level when the valuation technique is based on at least one significant input that is not observable in the markets or due to a lack of liquidity in certain markets. The valuation technique may also be based, in part, on observable market inputs. The gains and losses presented below may therefore include changes in fair value based on observable and unobservable inputs.

	Fixed Income Investments	Alternative Investments
Fair value as at January 1, 2014	1	325
Unrealized gains	-	30
Purchases, sales, settlements and other ¹	(1)	191
Fair value as at December 31, 2014	-	546
Unrealized gains	-	73
Purchases, sales, settlements and other ¹	-	264
Fair value as at December 31, 2015	-	883

¹ Includes transfers into Level 3

The Fund performs sensitivity analyses for fair value measurements classified in Level 3. The table below approximates the potential dollar impact on the Fund's net asset value, associated with a 5 percent change in the fair value measurements of the Level 3 financial instruments. The input for this analysis is the net asset value of the funds and partnerships at the end of the specified periods.

	2015	2014
Alternative investments	44	27

8. ELIGIBLE NUCLEAR COSTS

ONFA sets out a process that must be followed prior to any amounts being disbursed from the Fund and gives the Province the right to review and approve all disbursements for eligible costs associated with long-term used fuel waste management. The NFWA imposes additional restrictions on disbursements from the Trust. As at December 31, 2015, no disbursements have been made from the Trust since its inception.

USED FUEL SEGREGATED FUND
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Below is a list of eligible costs from inception to December 31, 2015:

	Annual	Inception-to-date
2015	48	340
2014	55	292
Inception to 2013	n/a	237

9. INVESTMENT MANAGEMENT AND ADMINISTRATION FEES

Administration fees for the years ended December 31, 2015 and 2014 were as follows:

	2015	2014
Investment management fees	24	24
Custodian fees	1	1
Other administration fees (audit, consulting, legal)	2	1
	27	26

For the year ended December 31, 2015, the ratio of expenses over net assets was 0.3 percent (2014 – 0.3 percent).

10. PROVINCE OF ONTARIO RATE OF RETURN ADJUSTMENT

In 2015, the actual rate of return of the Fund was 6.7 percent (2014 – 11.2 percent), which was higher than the Committed Return of 4.1 percent (2014 – 6.1 percent), equal to an annual rate of return of 3.25 percent (2014 – 3.25 percent) plus an annual inflation component of 0.8 percent (2014 – 2.8 percent). This resulted in the Province of Ontario rate of return adjustment payable of \$274 for the year ended December 31, 2015 (2014 – payable of \$439). As at December 31, 2015, the Fund has a payable to the Province of \$1,703 (2014 – \$1,429) for the rate of return adjustment.

11. INVESTMENT INCOME RECEIVABLE

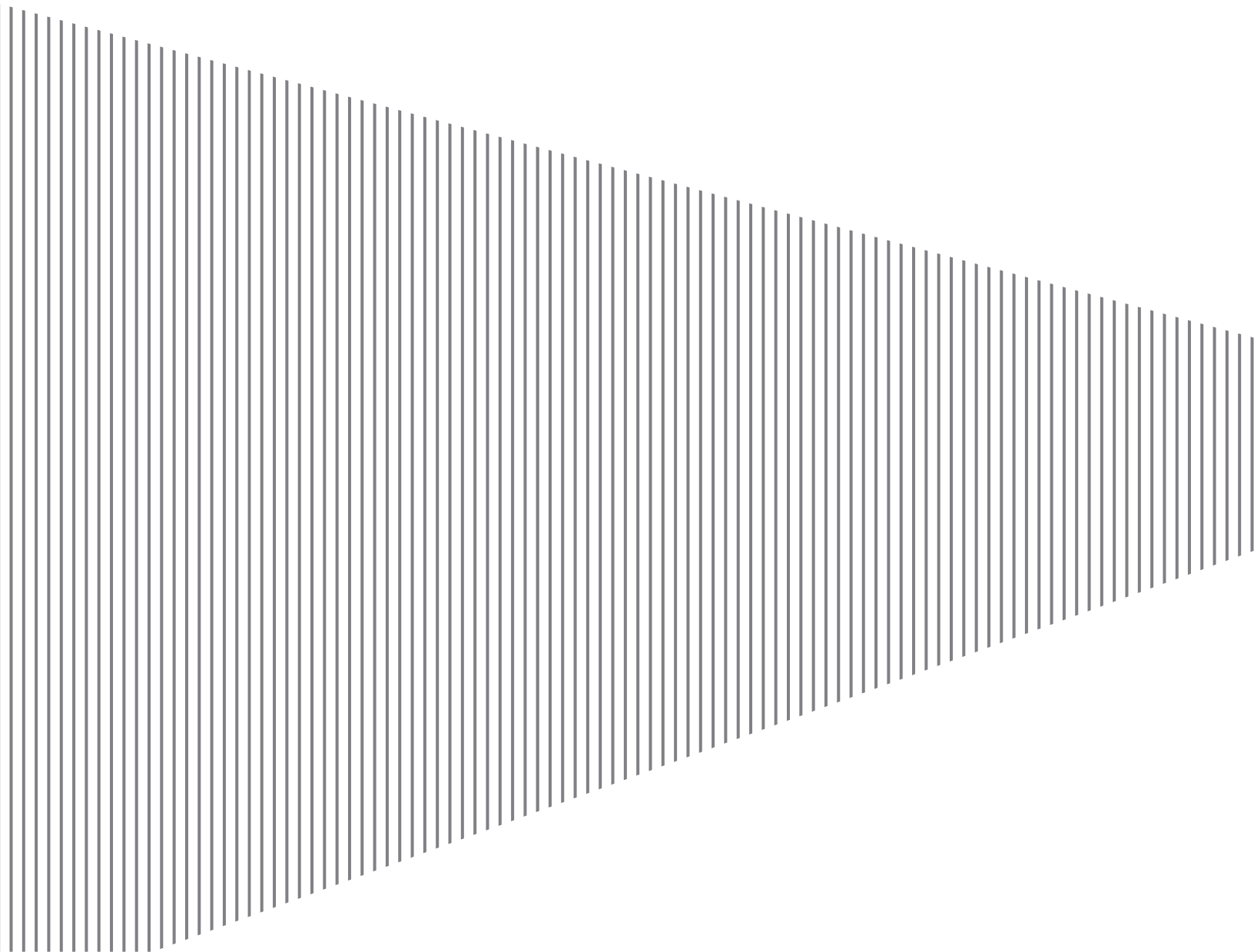
Investment income receivable comprises of interest receivable, net of foreign exchange gains or losses, dividends receivable, net of foreign exchange gains or losses, security lending income, and other investment income receivable. The following table summarizes investment income receivables that were outstanding as at December 31, 2015 and 2014:

	2015	2014
Interest receivable	18	19
Dividends receivable and other income receivable	8	7
	26	26

USED FUEL SEGREGATED FUND
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12. COMMITMENTS

The Fund has committed to entering into alternative investments and other transactions, which may be funded over the next several years in accordance with the agreed upon terms and conditions. As at December 31, 2015, these commitments totalled \$422 (2014 – \$283).



DECOMMISSIONING SEGREGATED FUND
AUDITED FINANCIAL STATEMENTS
DECEMBER 31, 2015



INDEPENDENT

AUDITORS' REPORT

**To the Audit and Risk Committee of Ontario Power Generation Inc.
and to the Audit and Risk Management Committee of the Ontario Financing Authority**

We have audited the accompanying financial statements of the **Decommissioning Segregated Fund** (the "Fund"), which comprise the statements of net assets as at December 31, 2015, and the statements of operations and comprehensive income, changes in net assets, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with United States generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained in our audit is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the net assets of the Fund as at December 31, 2015, and the results of its operations, changes in its net assets and its cash flows for the year then ended in accordance with United States generally accepted accounting principles.

Toronto, Canada
March 2, 2016

Original copy (protected) signed by EY



DECOMMISSIONING SEGREGATED FUND

STATEMENTS OF NET ASSETS

As at December 31		
<i>(millions of dollars)</i>		
	2015	2014
Assets		
Investments (Note 3)		
Cash and cash equivalents	122	99
Short-term investments (Note 6)	10	75
Fixed income investments (Note 6)	2,825	2,740
Marketable equity securities (Note 6)	3,730	3,548
Pooled funds (Note 6)	405	410
Alternative investments (Note 6)	737	457
	7,829	7,329
Other		
Receivable for investment transactions	3	9
Investment income receivable (Note 9)	22	21
	25	30
	7,854	7,359
Liabilities		
Accounts payable and accrued liabilities (Note 4)	9	11
Payable for investment transactions	4	7
Derivative contracts (Note 6)	13	3
	26	21
Net assets	7,828	7,338

Commitments (Note 10)

See accompanying notes to the financial statements

STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME

Years Ended December 31 <i>(millions of dollars)</i>	2015	2014
Investment income <i>(Note 5)</i>		
Interest	102	101
Dividends	110	105
Income from alternative investments	40	20
Security lending income	1	1
	253	227
Expenses		
Investment management and administration fees <i>(Note 8)</i>	22	21
Net investment income	231	206
Other income and comprehensive income		
Net realized gains <i>(Note 5)</i>	215	437
Net unrealized gains <i>(Note 5)</i>	61	138
Net income and comprehensive income	507	781

See accompanying notes to the financial statements

STATEMENTS OF CHANGES IN NET ASSETS

Years Ended December 31		
<i>(millions of dollars)</i>	2015	2014
Net assets, beginning of year	7,338	6,579
Net income and comprehensive income	507	781
Eligible nuclear costs <i>(Note 7)</i>	(17)	(22)
Net assets, end of year	7,828	7,338

See accompanying notes to the financial statements

DECOMMISSIONING SEGREGATED FUND

STATEMENTS OF CASH FLOWS

Years Ended December 31		
<i>(millions of dollars)</i>	2015	2014
Operating activities		
Interest received	102	99
Dividends received	109	105
Income received from alternative investments	35	17
Security lending income	1	1
Administration fees paid	(26)	(17)
Net realized gains on investments	215	437
Proceeds from prior year investments sold	9	9
Payments for prior year investments purchased	(7)	(3)
Purchase of investments	(393)	(571)
Foreign exchange contracts settlement from prior year	(3)	1
Disbursements for eligible nuclear costs	(19)	(27)
Cash flow provided by operating activities	23	51
Cash and cash equivalents, January 1	99	48
Cash and cash equivalents, December 31	122	99

See accompanying notes to the financial statements

NOTES TO THE FINANCIAL STATEMENTS

1. DESCRIPTION OF DECOMMISSIONING SEGREGATED FUND

The Ontario Nuclear Funds Agreement ("ONFA"), as amended, is an agreement between the Province of Ontario (the "Province"), Ontario Power Generation Inc. ("OPG"), and various subsidiaries of OPG, that became effective in July 2003. ONFA outlines the roles and responsibilities of the Province and OPG concerning the establishment of the following investment funds in segregated custodial accounts:

- The "Decommissioning Segregated Fund" (the "Fund") to cover the nuclear fixed asset removal and long-term low and intermediate level nuclear waste management and storage; and
- The "Used Fuel Segregated Fund" to cover long-term nuclear used fuel waste management.

On July 24, 2003, ONFA became effective upon the appointment of external investment managers to manage the assets of these funds. CIBC Mellon Global Securities Services Company is an independent custodian of the Fund's assets under the custody agreement dated October 5, 2010.

OPG is the owner of the Fund. Each of the Province and the Ontario Electricity Financial Corporation ("OEFC"), pursuant to ONFA, has a security interest in the assets of the Fund.

OPG and the Ontario Financing Authority ("OFA"), an agency of the Province, jointly make decisions on the Fund's asset mix and investment manager selection and retention. There is a risk that OPG and the OFA may have differing priorities respecting these matters that could impact asset mix and investment decisions.

The target rate of return for the Fund based on the discount rate established by ONFA is as set out in the currently approved reference plan. In December 2012, the Province approved the ONFA reference plan ("2012 Reference Plan") to replace the 2007 reference plan. Based on the 2012 Reference Plan, the target rate of return for the Fund remains at 5.15 percent per annum (annual return of 3.25 percent plus an annual inflation component of 1.90 percent). For the year ended December 31, 2015, the actual rate of return of the Fund, was 6.9 percent (2014 – 11.9 percent).

If the actual rate of return of the Fund deviates from the target rate of return, or if there is a change in the value of the liabilities following the approval of a new ONFA reference plan, the Fund may become over or under funded. OPG bears the risk and liability for cost estimate increases and fund earnings. There are currently no contributions made to the Fund since the Fund was fully funded at the time of the 2012 Reference Plan. The next ONFA Reference Plan is expected to be completed in 2016 and will cover the 2017-2021 period.

Under ONFA, if there is a surplus in the Fund such that the liabilities are at least 120 percent funded, OPG may direct up to 50 percent of the surplus over 120 percent to be treated as a contribution to the Used Fuel Segregated Fund and the OEFC is entitled to a distribution of an equal amount. Upon termination of ONFA, the Province has a right to any excess funds, which is the extent to which the fair value of the Fund exceeds the estimated completion costs under the current approved reference plan.

As part of OPG's licensing requirements for financial guarantees under the *Nuclear Safety and Control Act* (Canada) in respect of OPG's nuclear generating station decommissioning and nuclear waste management obligations, the Province, OPG and the Canadian Nuclear Safety Commission ("CNSC") have entered into an agreement that gives the CNSC access to the assets of the Fund under certain conditions.

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The Fund represents the assets maintained by OPG in segregated custodial accounts pursuant to ONFA and does not have a separate legal status. The Fund's financial statements have been prepared by management in accordance with United States generally accepted accounting principles ("US GAAP"), which is consistent with Section 9.4 of ONFA.

The Fund meets the definition of an investment company under the Revised Accounting Standards Codification Topic 946, "Investment Companies", which requires all investments to be recorded at fair value. The preparation of financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities. Actual results could differ from these estimates.

Given that OPG is the owner of the Fund and the Province owns all of the shares of OPG, related parties include OPG, the Province, and the OEFC.

Cash and Cash Equivalents

Cash and cash equivalents include cash on deposit and money market securities with a maturity of less than 90 days on the date of purchase. All other money market securities with a maturity on the date of purchase that is greater than 90 days, but less than one year, are recorded as short-term investments. These securities are valued at the lower of cost and market. Interest earned on cash and cash equivalents and short-term investments is recognized as interest income.

Valuation of Investments

Financial assets and liabilities are measured at fair value with gains and losses recognized in income. Financial assets purchased and sold, where the contract requires the asset to be delivered within an established time frame, are recognized on a trade-date basis. All derivatives are recorded at fair value in the statements of net assets. Transaction costs for financial instruments are expensed as incurred.

Fair value is defined as the amount at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's-length transaction. Where a quoted bid price in an active market is available, the fair value is based on the quoted bid price at the end of the reporting period. In the absence of a quoted price in an active market, the Fund determines fair value using valuation techniques that make maximum use of observable market inputs.

Investments are presented in the financial statements at fair value with the differences between fair value and average cost recorded as unrealized gains or losses in the Fund's statements of operations and comprehensive income.

The carrying value of cash and cash equivalents and short-term investments approximates their fair value due to their immediate or short-term maturity.

The market values of foreign investments are translated into Canadian dollars at the exchange rates prevailing at the close of each business day. Purchases and sales of foreign securities and income and expenses are translated into Canadian dollars at the exchange rates prevailing on the transaction dates. The gains and losses arising from foreign exchange transactions are recorded in the statements of operations and comprehensive income.

Securities traded on a national securities exchange are valued at the bid price on the last business day of the year. Listed securities for which no trades are recorded on the last business day of the year are valued at the last reported

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
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traded price on the last business day on which the security was traded. Pooled funds are valued based on the unit value of the pooled fund as reported by the investment manager and are presented as a separate category on the statements of net assets. Management fees for the pooled funds are expensed as incurred. Securities transactions are recorded on the trade date. Dividends are accrued as of the ex-dividend date. Stock dividends are recorded in income based on the market value of the security. The realized gains or losses on the sale of securities are calculated with reference to the average cost of the securities and included in net realized gains or losses in the statements of operations and comprehensive income. The Fund follows the accrual method of recording investment income.

Alternative investments consist of infrastructure, real estate, and agriculture investments that are valued based on estimated fair values using acceptable industry valuation methods. Management fees for the alternative investments are expensed as incurred.

For other investments that do not have an established fair value, the fair value is estimated based on comparable securities of issuers with similar credit ratings or net realizable value using available information.

Forward Foreign Exchange Contracts

The Fund may enter into forward foreign exchange contracts for risk management purposes where such activity is consistent with its investment objectives.

The changes in the year-end value of forward foreign exchange contracts receivable have been included on the statements of net assets, with the net unrealized gain or loss included in the statements of operations and comprehensive income. The gain or loss arising from the difference between the value of the original forward foreign exchange contract and the contract at close or delivery is realized and recorded in net realized gains or losses in the statements of operations and comprehensive income.

Taxation

Any investment income earned by the Fund is exempt from tax under the *Income Tax Act* (Canada) since the Fund is owned by a tax-exempt entity, namely OPG, and income earned by the Fund is attributed for tax purposes to OPG.

Under the *Electricity Act, 1998*, OPG is required to make payments in lieu of corporate income taxes to the OEFC. These payments are calculated in accordance with the *Income Tax Act (Canada)* and the *Taxation Act, 2007 (Ontario)*, as modified by the *Electricity Act, 1998* and related regulations. This results in OPG effectively paying taxes similar to what would be imposed under the federal and Ontario tax acts.

Investment income earned in the Fund is exempt from payment in lieu of corporate income taxes based on O. Reg. 207/99 made under the *Electricity Act, 1998*, as amended by O. Reg. 673/05. Accordingly, the Fund has made no provision for income taxes in these financial statements.

Recent Accounting Pronouncements

In May 2015, the Financial Accounting Standards Board issued Accounting Standards Update No. 2015-07, Fair Value Measurement Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or its Equivalent) (ASU 2015-07), which amends Topic 820, Fair Value Measurement. Under this new guidance, investments measured at net asset value, as a practical expedient for fair value, are excluded from the fair value hierarchy. Removing investments measured using the practical expedient from the fair value hierarchy is intended to eliminate the diversity in practice that currently exists with respect to the categorization of these investments. The amendments will be effective for the Fund's 2016 fiscal year. As the amendments pertain to disclosures, it is not expected that the updated standard will result in adjustments to balances reported in the Fund's financial statements.

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

3. INVESTMENTS

The fair values and historical costs of the investments as at December 31, 2015 and 2014 are summarized as follows:

	2015		2014	
	Fair Value	Historical Cost	Fair Value	Historical Cost
Cash and cash equivalents	122	122	99	99
Short-term investments	10	10	75	73
Fixed income investments				
Domestic	2,809	2,596	2,728	2,482
United States	1	1	1	1
Other	15	13	11	9
	2,825	2,610	2,740	2,492
Equities				
Domestic	1,395	1,192	1,454	1,104
United States	1,183	854	1,124	847
Japan	255	173	184	154
United Kingdom	215	153	163	128
France	93	75	96	85
Other ¹	584	416	519	402
	3,725	2,863	3,540	2,720
Preferred	5	6	8	8
Marketable equity securities	3,730	2,869	3,548	2,728
Pooled funds				
Equities	296	258	294	262
Fixed income investments	107	107	109	105
Short-term investments	2	2	7	7
	405	367	410	374
Alternative investments				
Global infrastructure	449	339	229	187
Canadian real estate	270	253	228	217
Agriculture	18	20	-	-
	737	612	457	404
Total investments	7,829	6,590	7,329	6,170

¹ Includes equities from over 40 geographical locations

DECOMMISSIONING SEGREGATED FUND
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A breakdown of the domestic fixed income, domestic equities and US equities by industry as at December 31, 2015 and 2014 is as follows:

	2015	2014
Domestic fixed income		
Government	1,904	1,863
Financial	524	495
Utilities	96	97
Telecommunications	55	50
Real estate	55	52
Other	175	171
	2,809	2,728
Domestic equities		
Financial	326	338
Energy	239	268
Materials	123	148
Insurance	109	105
Transportation	97	110
Media and telecommunications	88	99
Technology	72	63
Auto	67	66
Other	274	257
	1,395	1,454
US equities		
Technology	219	207
Financial	126	120
Energy	107	100
Healthcare	106	64
Media and telecommunications	104	84
Pharmaceuticals	67	83
Retail	58	79
Insurance	48	50
Commercial services	42	42
Other	306	295
	1,183	1,124

DECOMMISSIONING SEGREGATED FUND
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The proportion of each category of investments as a percentage of net assets as at December 31, 2015 and 2014 is as follows:

	2015		2014	
	Fair Value	% of Net Assets	Fair Value	% of Net Assets
Cash and cash equivalents	122	2%	99	1%
Short-term investments	10	-	75	1%
Fixed income investments	2,825	36%	2,740	37%
Marketable equity securities	3,730	48%	3,548	49%
Pooled funds	405	5%	410	6%
Alternative investments	737	9%	457	6%
Total investments	7,829	100%	7,329	100%
Net assets	7,828		7,338	

Issuers representing aggregated investments of greater than 5% of net assets as at December 31, 2015 and 2014 are as follows:

	2015		2014	
	Principal Amount	Fair Value	Principal Amount	Fair Value
Province of Ontario	520	638	532	658
Government of Canada	390	476	465	557
		1,114		1,215

4. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

Accounts payable and accrued liabilities consist of the following as at December 31, 2015 and 2014:

	2015	2014
Eligible nuclear costs	5	7
Investment management and related fees	4	4
	9	11

DECOMMISSIONING SEGREGATED FUND
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5. INVESTMENT INCOME, NET REALIZED GAINS AND NET UNREALIZED GAINS

Investment income, net realized gains, and net unrealized (losses) gains for the years ended December 31, 2015 and 2014 consist of the following:

	2015	2014
Investment income		
Interest on cash, short-term investments, and bonds and debentures	102	101
Dividends	110	105
Income from alternative investments	40	20
Security lending income	1	1
	253	227
Net realized gains		
Realized gains	159	401
Realized foreign exchange gains	56	36
	215	437
Net unrealized (losses) gains		
Unrealized (losses) gains ¹	(274)	75
Unrealized foreign exchange gains	335	63
	61	138

¹ Unrealized (losses) gains for alternative investments are based on the fair values of the assets held, net of operating results of the underlying investments.

6. FINANCIAL INSTRUMENTS

The primary objective of the Fund is to meet the payment obligations associated with OPG's nuclear generating station decommissioning and low and intermediate level waste disposal activities. In order to meet this objective, the Fund invests in a diversified portfolio of investments comprising primarily equity and fixed income securities.

A Statement of Investment Policies and Procedures ("SIPP") for the Fund sets out the investment framework of the Fund, including the investment assumptions, permitted investments and various investment constraints. The SIPP also establishes the long-term target asset mix of the Fund, which considers the Fund's funded status and investment objectives in relation to its projected long-term liability profile and cash flows, historical experience of investment vehicles, the appropriate level of diversification to optimize risk and return, and the risk preferences of OPG and the Province. The Management of OPG and the Province monitor investment compliance with the SIPP on a quarterly basis.

The SIPP is reviewed and approved annually by the Audit and Risk Committee of OPG's Board of Directors and by the Deputy Minister of Finance, on behalf of the Province.

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Risks Associated with Financial Instruments

Credit Risk

Credit risk is the risk that the counterparty to a financial instrument might fail to meet its obligation under the terms of a financial instrument, thereby resulting in a financial loss for the other party to the transaction. The Fund is primarily exposed to credit risk through its fixed income allocation, which is invested in federal, provincial and corporate debt. Credit risk is governed by the SIPP, which requires fixed income investments to comply with various investment constraints that ensure prudent diversification and minimum credit rating quality. To manage credit risk, compliance with the SIPP is monitored quarterly by an external third-party vendor and reported to the management of OPG and the OFA on a quarterly basis.

The table below summarizes the Fund's exposure to debt instruments with the following credit ratings as at December 31, 2015 and 2014:

Rating	2015	2014
AAA	27.7%	28.3%
AA	10.0%	34.6%
A	51.6%	26.4%
BBB	10.6%	10.7%
Less than BBB or not rated	0.1%	-
	100.0%	100.0%

Credit ratings are obtained from Standard & Poor's, Moody's and/or the Dominion Bond Rating Services. In the case where more than one rating is obtained for a security, the lowest rating has been used.

Liquidity Risk

Liquidity risk is the risk that the Fund is unable to meet its financial obligations as they become due. The Fund's approach to managing liquidity risk is to ensure that the Fund has sufficient liquidity to meet its financial obligations when due without incurring unacceptable losses. The Fund manages liquidity risk at the overall fund level by considering the expected liquidity of each asset class during the development of the Fund's asset mix and diversifying investments across different asset class types.

Market Risk

Market risk is defined as the risk that an investment's value decreases due to changes in underlying market factors including, but not limited to, concentration risk, currency risk, interest rate risk, and equity price risk.

Market risk is managed by the Fund through its diversified asset mix, which, in accordance with the SIPP, is expected to be reviewed at least every five years. The review generally coincides with the preparation and approval of reference plans under the ONFA that provide detailed cost estimates for nuclear generating station decommissioning and low and intermediate level waste disposal. The target asset mix of the Fund, including tolerance ranges around the target allocation to various asset classes, is governed by the SIPP. Compliance with the target asset mix range is monitored internally on a monthly basis and by an external third-party vendor on a quarterly basis and reported quarterly to the Management of OPG and the OFA.

DECOMMISSIONING SEGREGATED FUND

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Concentration Risk

Concentration risk is the risk of investment loss due to lack of diversification in the portfolio. The Fund's exposure to concentration risk is governed by the SIPP. For equities, no holding shall represent more than 10 percent of the total market value of each investment manager's equity portfolio. For fixed income investments, no more than 10 percent of each investment manager's portfolio may be invested in the bonds of a single issuer and its related companies, except for Canadian federal and provincial bonds and bonds of their agencies. Investment compliance with the SIPP is monitored quarterly by an external third-party vendor and reported to the management of OPG and the OFA.

Currency Risk

Currency risk is the risk that the value of a financial instrument decreases due to changes in foreign exchange rates. The Fund is exposed to foreign currency risk primarily through its foreign equity investment, which is governed through the target asset mix as approved annually in the SIPP. Investment compliance with the target asset mix of the Fund is monitored monthly internally and quarterly by an external third-party vendor, and reported quarterly to the management of OPG and the OFA.

The table below summarizes the major foreign currencies (in Canadian dollars) to which the Fund was exposed to as at December 31, 2015 and 2014, adjusting for currency hedges, if applicable. The table also illustrates the impact of a one percent change in the value of the Canadian dollar relative to each foreign currency shown on the net assets of the Fund, with all other variables held constant.

Currency	Market Value of Investments 2015	Foreign Exchange Contracts Payable 2015	Net Currency Exposure		Impact of a One Percent Change	
			2015	2014	2015	2014
US Dollar	1,946	(259)	1,687	1,545	17	15
Euro	422	(131)	291	281	3	3
Japanese Yen	260	-	260	188	3	2
British Pound	248	-	248	181	2	2
Swiss Franc	90	-	90	65	1	1

Actual results may differ materially from this sensitivity analysis.

Interest Rate Risk

Interest rate risk, which includes credit spread risk, is the risk of investment loss due to changes in interest rates and changes in the market price of credit. The Fund is exposed to interest rate risk through its target asset mix, which includes an allocation to fixed income securities. Cash and cash equivalents and short-term investments with maturity dates of less than one year from the financial statement date have minimal exposure to interest rate fluctuations. The Fund's exposure to interest rate risk is governed by the SIPP, which ensures that the Fund's fixed income exposure is prudently diversified. Investment compliance with the SIPP is monitored quarterly by an external third-party vendor and reported quarterly to the management of OPG and the OFA.

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The table below provides a summary of the Fund's fixed income exposures by maturity as at December 31, 2015 and 2014:

	2015	2014
Fixed income investments		
1 to 5 years	635	629
5 to 10 years	378	384
Over 10 years	1,812	1,727
	2,825	2,740
Average yield	2.54%	2.64%

Effective duration is a measure of the sensitivity of the price of a fixed income instrument to a change in interest rates. Using the Fund's effective duration of 10.8 years as at December 31, 2015 (2014 – 10.5 years), a parallel shift in the yield curve of +/- 0.5 percent would result in a \$153 impact (2014 – \$144) on the net assets of the Fund, with all other variables held constant. Actual results may differ materially from this sensitivity analysis.

Equity Price Risk

Equity price risk is the risk of loss due to a decline in equity prices. The Fund is exposed to equity price risk through its target asset mix, which includes an allocation to equity securities. The Fund's exposure to equity risk is governed by the SIPP, which ensures that the Fund's equity exposure is prudently diversified. Investment compliance with the SIPP is monitored quarterly by an external third-party vendor and reported quarterly to the Management of OPG and the OFA.

The table below approximates the potential dollar impact on the net assets of the Fund associated with a one percent change in each of the specified equity indices as at December 31. This analysis is based on the market values of the Fund's equity holdings at the end of the specified periods, as well as on the assumption that when one equity index changes by one percent, all other variables are held constant.

		2015	2014
Asset Class	Equity Index		
Domestic equity	S&P/TSX	14	15
US equity	S&P500	12	11
Other equity	MSCI EAFE	11	10

Actual results may differ materially from this sensitivity analysis.

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

Derivatives

The Fund may enter into derivative contracts, such as forward foreign exchange contracts, for risk management purposes where such activity is consistent with its investment objectives. Forward contracts expose the Fund to counterparty credit risk should the Fund's counterparty to any such transaction default on its contractual obligations. Since the fair value of the forward foreign exchange contracts outstanding as at December 31, 2015 represents less than one percent of the Fund's net assets, the counterparty credit risk exposures on such transactions have a minimal impact on the Fund.

The following table summarizes forward foreign exchange contracts that were outstanding as at December 31, 2015 and 2014:

	2015	2014
Forward foreign exchange contracts		
Payable	(13)	(3)

The Fund may also enter into derivative contracts, such as futures contracts, to replicate direct investments in underlying securities. As at December 31, 2015, the Fund held equity futures contracts with a market value of \$0.1 (2014 – \$0.1). In accordance with the Fund's SIPP, 100 percent of these investments are secured by cash and short-term investments.

Securities Lending

The Fund is also exposed to counterparty credit risk associated with its security lending activities. The risk is mitigated by the use of non-cash collateral, and through a borrower default protection that is jointly and severally provided to OPG by the Fund's custodian and its related entities. The Fund requires the borrower to pledge and to deliver collateral as security for each loan at no less than 105 percent of the market value of the securities loaned for Canadian securities, 102 percent of the market value of the securities loaned for US securities and the percentage that reflects best practices in other local markets in which other foreign currency securities are loaned.

The following table provides a summary of the Fund's securities on loan and collateral held as at December 31, 2015 and 2014:

	2015	2014
Securities on loan		
Marketable equity securities	497	302
Fixed income investments	280	390
	777	692
Collateral held	818	731
Collateral percentage	105.3%	105.6%

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

Additional Information on Fair Value

Financial assets are measured at fair value in accordance with the fair value hierarchy. This hierarchy groups financial assets and financial liabilities into three levels based on the significance of inputs used in measuring the fair value of the financial assets and liabilities. The fair value hierarchy has the following levels:

- Level 1: Valuation of inputs is based on unadjusted quoted market prices observed in active markets for identical assets or liabilities.
- Level 2: Valuation is based on inputs other than quoted prices under Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3: Valuation is based on inputs for the asset or liability that are not based on observable market data.

The level within which the financial asset or financial liability is classified is determined based on the lowest level input that is significant to the fair value measurement.

The following tables provide summaries of the assets and liabilities measured at fair value in the statements of net assets grouped into the fair value hierarchy as at December 31, 2015 and 2014:

2015	Level 1	Level 2	Level 3	Total
Assets				
Short-term investments	-	10	-	10
Fixed income investments	-	2,825	-	2,825
Marketable equity securities	3,730	-	-	3,730
Pooled funds	-	405	-	405
Alternative investments	-	-	737	737
Liabilities				
Derivative contracts	-	(13)	-	(13)
	3,730	3,227	737	7,694

2014	Level 1	Level 2	Level 3	Total
Assets				
Short-term investments	-	75	-	75
Fixed income investments	-	2,740	-	2,740
Marketable equity securities	3,548	-	-	3,548
Pooled funds	-	410	-	410
Alternative investments	-	-	457	457
Liabilities				
Derivative contracts	-	(3)	-	(3)
	3,548	3,222	457	7,227

There were no transfers between Levels 1 and 2 during the reporting period.

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

The categories of financial instruments with fair values classified in Level 3 consist of global infrastructure funds, Canadian real estate, and agriculture investments. The inputs into the valuation of Level 3 assets are the net asset values of the funds and partnerships that hold these investments.

Certain real estate investments were purchased from or sold to entities related to investment managers of the Fund. These entities were related to the investment manager due to common control. The real estate investments were measured at the exchange amount of the consideration paid as established by third party real estate appraisers. The recorded amount of consideration paid for these investments in 2015 was \$18 (2014 – \$23) and proceeds received in 2015 was nil (2014 – \$5).

Changes in the fair value of financial instruments classified in Level 3

The following table summarizes the changes in the fair value of financial instruments classified in Level 3 for the years ended December 31, 2015 and 2014. The Fund classifies financial instruments in this level when the valuation technique is based on at least one significant input that is not observable in the markets or due to a lack of liquidity in certain markets. The valuation technique may also be based, in part, on observable market inputs. The gains and losses presented below may therefore include changes in fair value based on observable and unobservable inputs.

	Alternative Investments	
	2015	2014
Fair value as at January 1	457	273
Unrealized gains	65	22
Purchases, sales, settlements and other ¹	215	162
Fair value as at December 31	737	457

¹ Includes transfers into Level 3

The Fund performs sensitivity analyses for fair value measurements classified in Level 3, substituting the unobservable inputs with one or more reasonably possible alternative assumptions.

The table below approximates the potential dollar impact on the Fund's net asset value, associated with a 5 percent change in the fair value measurements of the Level 3 financial instruments. The input for this analysis is the net asset value of the funds and partnerships at the end of the specified periods.

	2015	2014
Alternative investments	37	23

Actual results may differ materially from this sensitivity analysis.

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

7. ELIGIBLE NUCLEAR COSTS

ONFA sets out a process that must be followed prior to any amounts being disbursed from the Fund and gives the Province the right to review and approve all disbursements for eligible costs associated with nuclear fixed asset removal and long-term low and intermediate level nuclear waste management and storage.

Below is a list of eligible costs from inception to December 31, 2015:

	Annual	Inception-to-date
2015	17	495
2014	22	478
Inception to 2013	n/a	456

8. INVESTMENT MANAGEMENT AND ADMINISTRATION FEES

Investment management and administration fees for the years ended December 31, 2015 and 2014 were as follows:

	2015	2014
Investment management fees	19	19
Custodian fees	-	1
Other administration fees (audit, consulting, legal)	3	1
	22	21

For the year ended December 31, 2015, the ratio of expenses over net assets was 0.3 percent (2014 – 0.3 percent).

9. INVESTMENT INCOME RECEIVABLE

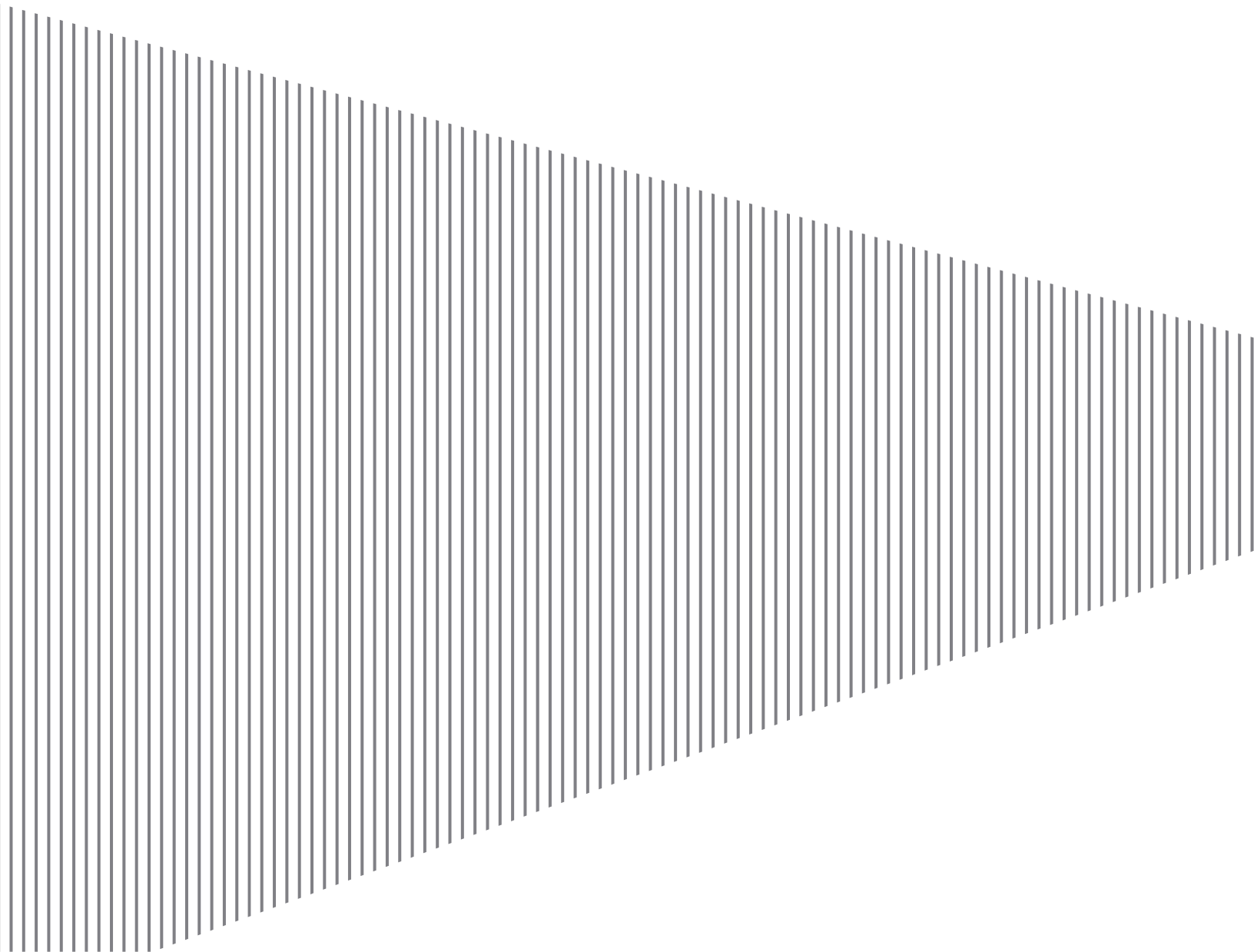
Investment income receivable comprises of interest receivable, net of foreign exchange gains or losses, dividends receivable, net of foreign exchange gains or losses and foreign taxes payable, and security lending income. The following table summarizes investment income receivables that were outstanding as at December 31, 2015 and 2014:

	2015	2014
Interest receivable	16	16
Dividends receivable and other receivables	6	5
	22	21

DECOMMISSIONING SEGREGATED FUND
For the years ended December 31, 2015 and 2014
(Expressed in millions of \$)

10. COMMITMENTS

The Fund has committed to entering into alternative investments and other transactions, which may be funded over the next several years in accordance with the agreed upon terms and conditions. As at December 31, 2015, these commitments totalled \$349 (2014 – \$235).



VECC Interrogatory #41

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

Reference: C2/T1/S1

At the above reference OPG discusses the procedures for recovering its nuclear liabilities:

- a) Have there been any changes to the Nuclear Fuels Waste Act since EB-2007-0905?
- b) Please indicate the inspection process involved with low and intermediate level radioactive waste and any concerns raised by the Canadian nuclear safety commission since EB-2007-0905.
- c) Please confirm the statement in EB-2007-0905, E H1, Tab 1 Schedule 1, page 3 that:
"OPG has an exceptional safety record in the transportation of radioactive materials. There has not been any release of radioactive material to the environment from OPG's nuclear waste transportation operations."
and indicate whether OPG still has an exceptional record?
- d) In EB-2007-0905 OPG referred to its US based consultant TLG Consultants as "experienced" in US utilities and having prepared estimates for 19 of the 23 US nuclear plants that have been permanently shut down. Is OPG currently working with similar US experts in this area and is there anything special about the decommissioning risks attached to its CANDU reactors that warrant special treatment compared to 2007?
- e) Please indicate any material changes in the nuclear funds waste management agreement between OPG and the Province of Ontario since 2007.

Response

- a) No.
- b) There have been no concerns raised by the CNSC with respect to inspection since EB-2007-0905. Waste generators must meet specific requirements with respect to the characteristics and packaging requirements for low and intermediate level waste. This is

1 governed by a Waste Acceptance Criteria document that outlines specific compliance
2 requirements that the waste generator must meet in order for the waste to be acceptable
3 for transportation and stored at OPG's Western Waste Management Facility ("WWMF").
4 A number of procedural requirements must then be met before the waste is transported
5 to the WWMF, and several compliance verification steps must take place in preparing the
6 waste for transportation. All transportation activities are overseen by a Transportation
7 Officer who ensures compliance with regulations and the Waste Acceptance Criteria
8 packaging requirements. When the waste is received at the WWMF, the waste containers
9 are visually inspected to ensure that they meet the Waste Acceptance Criteria and other
10 verification is performed to ensure compliance (for example, confirmation of dose rate,
11 tritium etc).
12

13 c) Confirmed. OPG's safety record for transportation of radioactive materials continues to
14 be exceptional as there has not been any release of radioactive material to the
15 environment from OPG's nuclear waste transportation operations.
16

17 d) OPG has worked, and continues to work, with international subject matter experts in the
18 field of decommissioning, including TLG Services Inc, for decommissioning planning and
19 cost estimates updating.
20

21 OPG's responsibility and the risks associated with decommissioning of its nuclear
22 facilities remained unchanged since 2007. With each update OPG continuously improves
23 its decommissioning cost estimates by incorporating the most recent industry experience
24 in decommissioning. Although there are differences in reactor designs between US and
25 Canada, the vast majority of the decommissioning activities are similar. The CANDU
26 specific decommissioning aspects have been accounted for in the cost estimates.
27

28 e) The Ontario Nuclear Funds Agreement represents the "nuclear funds management
29 agreement" between OPG and the Province of Ontario. There have been no changes to
30 this agreement since 2007.

VECC Interrogatory #42

Issue Number: 8.1

Issue: Is the revenue requirement methodology for recovering nuclear liabilities in relation to nuclear waste management and decommissioning costs appropriate? If not, what alternative methodology should be considered?

Interrogatory

Reference:

Reference: C2/T1/S1/pg.6

- a) When is the 2017 ONFA Reference Plan expected to be approved?
- b) Why did OPG not use the draft 2017 plan for the purpose of this application and book any variance from this plan into the Nuclear Liability Deferral Account? If it had done so would there be a material difference?
- c) The revenue requirement impact using the 2012 Plan is noted as \$450.3 in 2017 and \$454.3 in 2018. What would be the revenue impact for these years had the 2017 Draft Plan been used as the basis of the forecast?

Response

- a) The proposed 2017-2021 ONFA Reference Plan is being finalized for submission to the Province for review and approval. Specifically, approval of the Reference Plan is required from the Ontario Minister of Finance. As approval is not in OPG's control, OPG does not know when it will take place.
- b) and c) Refer to Ex. L-8.2-1 Staff-208.

Board Staff Interrogatory #207

Issue Number: 8.2

Issue: Is the revenue requirement impact of the nuclear liabilities appropriately determined?

Interrogatory

Reference:

Ref: Exh C2-1-1, page 5

OPG has indicated that the December 31, 2015 tranche was calculated using an accounting discount rate of 3.21 per cent, which is also then used to calculate the annual accretion expense for the tranche.

- a) Please indicate how this rate was derived, making reference to the source of the rate or the source of each component of the total rate.
- b) Was there an acceptable range of rates that was contemplated prior to the final rate selection?
 - i. If so, please provide the low and high end of this range, and please indicate why management determined that the rate selected was most appropriate.
 - ii. Based on the range provided above, could the calculation of the test period return on ARC (prescribed facilities) or accretion expense (for both the Bruce and prescribed facilities) be materially impacted had either of the other rates under consideration been used? Provide estimates as to how much.
- c) Was there any change to the methodology or assumptions used by management compared to what was used in determining the discount rates for the previous five tranches? Please provide explanation for any change.

Response

- a) As required by US GAAP, upward revisions in the amount of undiscounted estimated cash flows underlying the asset retirement obligation (ARO), such as the adjustment OPG recognized on December 31, 2015, are discounted using the credited-adjusted risk-free rate determined as of the date the revision is recognized. The discount rate used by OPG to determine the December 31, 2015 ARO adjustment was the Province of Ontario long-term bond yield rate, consistent with past ARO adjustments (for example, see EB-2012-0002 Ex. L-1-7 SEC-12, p. 2, lines 25-30). Specifically, 3.21% was the yield of the Ontario long-term bond maturing on December 2, 2046 at close of business day on December 31, 2015 as shown on Bloomberg.
- b) No.
- c) No

Board Staff Interrogatory #208

Issue Number: 8.2

Issue: Is the revenue requirement impact of the nuclear liabilities appropriately determined?

Interrogatory

Reference:

Ref: Exh C2-1-1, page 15 of 15

OPG indicates that the proposed period revenue requirement reflects the approved 2012 ONFA Reference Plan. The corresponding revenue requirement impact of the approved 2017 Reference Plan will be recorded in the Nuclear Liability Deferral Account for the prescribed facilities and the Bruce Lease Net Revenue Variance Account for the Bruce facilities.

- a) Using the latest draft of the 2017-2021 ONFA Reference Plan, please provide a table that summarizes the estimated revenue requirement impact on the prescribed facilities as well as on the Bruce Net Revenues.
- b) Has the reference plan update been finalized for the Province's approval? Based on the process for previous reference plans, has provincial review significantly affected the reference plan?
- c) Please identify any limitations to using the draft 2017-2021 reference plan to underpin the payment amounts in the current proceeding.

Response

- a) OPG declines to provide the requested table because the draft 2017-2021 ONFA Reference Plan cannot form the basis for the setting OPG's payment amounts and thus is not relevant. Setting payment amounts based on the draft reference plan would be contrary to O. Reg. 53/05. Moreover, as a draft, the plan remains subject to revision upon review by the Province before it is approved. Specifically, O. Reg. 53/05 s. 6(2)8 requires that the "Board shall ensure that Ontario Power Generation Inc. recover the revenue requirement impact of its nuclear decommissioning liability arising from the current approved reference plan."¹ [emphasis added] "Approved reference plan" means a reference plan, as defined in the Ontario Nuclear Funds Agreement, that has been approved by Her Majesty the Queen in right of Ontario in accordance with that agreement." (s.01(1)) [emphasis added]

¹ For purposes of the regulation, "nuclear decommissioning liability" means "OPG's liability for decommissioning its nuclear generation facilities and management of its nuclear waste and used fuel." (s. 0.1(1))

1
2 As noted at Ex. C2-1-1, p. 15, the revenue requirement impact arising from the 2017-
3 2021 ONFA Reference Plan, once approved, would be recorded in the Nuclear Liability
4 Deferral Account in accordance with s. 5(2)1 of O. Reg. 53/05. Should the 2017-2021
5 ONFA Reference Plan be approved by the Province in the course of the proceeding, and
6 result in material changes, OPG would follow the OEB's Rules of Practice and Procedure
7 and bring the matter forward as part of this proceeding, including the impact on revenue
8 requirement.
9

10 b) The proposed 2017-2021 ONFA Reference Plan is being finalized for submission to the
11 Province for review and approval. While the Province's review of final submissions of
12 previous reference plans in 2006 and 2011 did not result in significant changes, each
13 reference plan update is distinct and the Province has the right to request changes to the
14 plan based on its review. Thus there is no assurance that the Province's review of the
15 final submission of the current proposed reference plan similarly will not result in
16 significant changes.
17

18 c) Refer to part a)

CCC Interrogatory #37

Issue Number: 8.2

Issue: Is the revenue requirement impact of the nuclear liabilities appropriately determined?

Interrogatory

Reference:

Reference: Ex. C2/T1/S1 p. 15

The evidence asserts that the updated 2017 ONFA Reference Plan will reflect the changes in the nuclear station EOL dates made effective December 31, 2015 for accounting purposes. The evidence further asserts that the test period (2017 to 2021) revenue requirements reflect the 2012 ONFA Reference Plan, and that the impact of the 2017 ONFA Reference Plan will be recorded in the Nuclear Liability Deferral Account for the prescribed facilities and the Bruce Lease Net Revenue Variance Account for the Bruce facilities.

- a) Please summarize any material differences, if any, between the 2012 ONFA Reference Plan and the upcoming 2017 ONFA Reference Plan in terms of the basic assumptions they are/will be based on in terms of the operating lives of the various facilities (Darlington, Pickering, and Bruce).
- b) To what extent has OPG implemented changes in its accounting for nuclear liabilities from 2013 to 2016 related to changes in assumptions concerning the various relevant facilities (Darlington, Pickering, and Bruce) that are not reflected in the 2012 ONFA Reference Plan but will be reflected in the 2017 Reference Plan? If any such changes have been reflected in OPG's accounting please explain whether and how those changes were tracked for future collection from or disposition to ratepayers.

Response

- a) The assumed nuclear station end-of-life dates reflected in the approved 2012 ONFA Reference Plan are provided in Chart 1 below. Information on the upcoming 2017 ONFA Reference Plan, which has not been approved by the Province of Ontario, is not provided for reasons set out in Ex. L-8.2-1 Staff-208.

1

Chart 1

Unit	End-of-Life Date
Pickering A – Unit 1	2019
Pickering A – Unit 4	2019
Pickering B – Unit 5	2017
Pickering B – Unit 6	2017
Pickering B – Unit 7	2019
Pickering B – Unit 8	2019
Bruce A – Unit 1	2042
Bruce A – Unit 2	2042
Bruce A – Unit 3	2054
Bruce A – Unit 4	2054
Bruce B – Unit 5	2018
Bruce B – Unit 6	2019
Bruce B – Unit 7	2019
Bruce B – Unit 8	2021
Darlington – Unit 1	2050
Darlington – Unit 2	2048
Darlington – Unit 3	2051
Darlington – Unit 4	2053

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- b) Effective December 31, 2015, OPG implemented changes to the assumed end-of-life dates for accounting purposes for each of the Bruce, Pickering and Darlington nuclear stations. These changes, described at Ex. F4-1-1 section 3.2, were not reflected in the approved 2012 ONFA Reference Plan. The revenue requirement impact of these changes for the Bruce facilities is being recorded in the Bruce Lease Net Revenues Variance Account and, for the prescribed facilities, in the Impact from Changes in Station End-of-Life Dates (December 31, 2015) Deferral Account established in EB-2015-0374. Further details are found at Ex. C2-1-1 section 5.0.

Information on the upcoming 2017 ONFA Reference Plan is not provided for reasons set out in Ex. L-8.2-1 Staff-208.

CCC Interrogatory #38

Issue Number: 8.2

Issue: Is the revenue requirement impact of the nuclear liabilities appropriately determined?

Interrogatory

Reference:

Reference: Ex. C2/T1/S1 pp. 6, 7, 10

The evidence sets out how the revenue requirement impact for the nuclear liabilities related to the Bruce Facilities are calculated, including how the revenue requirement impact is reduced by the segregated fund earnings attributable to the Bruce Facilities.

- a) Please confirm that the rights of the Province to excess funds in both the Decommissioning Fund and the Used Fuel Fund have no impact on the Bruce related revenue requirement for nuclear liabilities over the test period, as those rights only manifest after the nuclear liabilities have been exhausted and the ONFA has been terminated. If not confirmed please explain how the rights of the Province can impact the calculation of the Bruce related revenue requirement for nuclear liabilities prior to the termination of the ONFA.
- b) Please confirm that the ability of OPG to direct up to 50% of the excess above 120% in the Decommissioning Fund to the Used Fuel fund has no impact on the calculation of the Bruce related revenue requirement for nuclear liabilities, since the Bruce related nuclear liabilities are based on the total earnings from the segregated funds. If not confirmed please explain how the direction by OPG of excess funds from the Decommissioning Fund to the Used Fuel Fund can impact the revenue requirement impact of the Bruce related nuclear liabilities.
- c) Please confirm that the rights of the Province to excess funds and the ability of OPG to redirect funds as described in a) and b) can have no effect on the calculation of the nuclear liabilities as they relate to the prescribed facilities under the methodology proposed by OPG and previously approved by the OEB. If not confirmed, please explain how either or both can affect the calculation of the nuclear liabilities as they relate to the prescribed facilities.

Response

- a) and b) Not confirmed.

In line with the OEB's direction in the EB-2007-0905 Decision with Reasons (pp. 109-111), and as applied in all subsequent proceedings, the revenue requirement of the nuclear liabilities for the Bruce facilities is calculated in accordance with generally

1 accepted accounting principles for non-regulated businesses (GAAP). This means that
2 the revenue requirement impact is reduced by the Bruce facilities' portion of segregated
3 fund earnings recognized by OPG in accordance with GAAP. As discussed at Ex. C2-1-1,
4 p. 7, lines 1 to 19 and footnote 2, the amount of Decommissioning Fund earnings
5 recognized by OPG in accordance with US GAAP is limited such that the balance of the
6 fund is equal to the current ONFA decommissioning liability, when the fund is between
7 100% and 120% funded. When the Decommissioning Fund is over 120% funded, OPG
8 recognizes 50% of the excess amount above the 120% threshold as fund earnings, up to
9 the amount by which the Used Fuel Fund is underfunded. The amount of Used Fuel Fund
10 earnings is similarly limited such that the balance of the fund is equal to the current
11 ONFA used fuel liability, when the fund is greater than 100% funded. These limitations on
12 the amount of earnings recognized on the segregated funds result from the ONFA
13 provisions referenced in the question, i.e. "the rights of the Province to excess funds in
14 both the Decommissioning Fund and the Used Fuel Fund" and "the ability of OPG to
15 direct up to 50% of the excess above 120% in the Decommissioning Fund to the Used
16 Fuel fund".

17
18 The OEB previously found in the EB-2013-0321 Decision with Reasons that "[t]he Board
19 will not direct OPG to use the excess earnings in the Decommissioning and Used Fuel
20 funds to decrease the revenue requirement by \$28.5M as proposed by AMPCO as the
21 funds are "Due to Province" as stipulated in the Ontario Nuclear Funds Agreement
22 reference plan," noting that "[t]he Board has no authority over the segregated funds or the
23 reference plan for nuclear liabilities established by the Ontario Nuclear Funds
24 Agreement." (p. 110)

25
26 c) Not confirmed.

27
28 As described at Ex. C2-1-1, section 3.2.4, the approved methodology for calculating the
29 revenue requirement impact of the nuclear liabilities for the prescribed assets includes a
30 return on rate base. Specifically, the portion of rate base equal to the lesser of the
31 following items earns the weighted average accretion rate rather than the weighted
32 average cost of capital:

- 33
34 (i) the average unfunded nuclear liability (UNL) related to the Pickering and
35 Darlington facilities, and
36 (ii) the average unamortized asset retirement costs included in the fixed asset
37 balances for these facilities.

38
39 The UNL is defined as the difference between the nuclear liability value (i.e. asset
40 retirement obligation) and the balance of the segregated funds. The limitations on the
41 amount of segregated fund earnings discussed in (a) and (b) above impact the value of
42 the UNL through the value of the segregated funds. A higher segregated fund value
43 decreases the UNL (and vice versa). A lower UNL could increase the portion of rate base
44 that earns the weighted average cost of capital versus the weighted average accretion
45 rate, which would increase the overall revenue requirement for the prescribed facilities.

GEC Interrogatory #59

Issue Number: 8.2

Issue: Is the revenue requirement impact of the nuclear liabilities appropriately determined?

Interrogatory

Reference:

Exhibit F2-1-1 Attachment 1 page 4 Table 1

How would the revenue requirement for Decommissioning & Nuclear Waste Management change if Pickering shuts down in 2018, 2020 or 2022/2024.

Response

The pre-filed evidence, including the revenue requirement impact of liabilities for nuclear decommissioning and nuclear waste management ("nuclear liabilities"), reflects OPG's current accounting end of life (EOL) assumption for the Pickering units of December 31, 2020 (Ex. F4-1-1 and Ex. L-6.9-1 Staff-177). Therefore, the nuclear liabilities' revenue requirement impact assuming an end of 2020 Pickering shut down date are found in the pre-filed evidence at Ex. C2-1-1 Table 1.

OPG declines to provide the requested information for a 2018 EOL assumption on the basis of relevance. As noted in Ex. F2-2-3, OPG's plan, as endorsed by the Province, is to operate Pickering to 2022/2024. Based on this plan and the fact that OPG has already received CNSC authorization to operate to the previously planned shutdown dates in 2020 (see Ex. F2-2-3, page 3), there is no factual basis for a 2018 shutdown date. Therefore, the requested information is not relevant to deciding any issue on the approved Issues List in this application.

As noted in Ex. F4-1-1 and Ex. L-6.9-1 Staff-177, OPG will reassess the accounting EOL dates of Pickering units when further technical work confirms, with the necessary high confidence, the units' ability to operate beyond 2020, recognizing that CNSC approval is required. As in the past, the change in the EOL date is expected to result in an adjustment to the nuclear liabilities. OPG would then seek the OEB's approval of an accounting order related to a change to the Pickering EOL dates under the same requirements that underpinned OPG's EB-2015-0374 application. Through this process, the revenue requirement impact of the nuclear liabilities would be trued up to reflect the extension of the Pickering EOL dates to 2022/2024.

Currently, there are too many unknowns to attempt to calculate the potential future revenue requirement impacts of extending the Pickering EOL dates to 2022/2024 in a meaningful manner. One of the main factors is the new ONFA reference plan, which is expected to be in

1 place at the end of 2016 (see Ex. L-8.2-1 Staff-208). The actual revenue requirement impact
2 of the Pickering extension would need to be based on this new plan, not the existing 2012
3 ONFA Reference Plan reflected in the pre-filed evidence. Changes in cost estimates and
4 assumptions between reference plans can have a significant impact on the revenue
5 requirement calculations. Other unknowns include the specific timing of achieving the
6 necessary high confidence to extend the Pickering EOL dates for accounting purposes, and
7 the discount rate that would be used to determine the accounting impacts of the extension.