

## **Undertaking J1.3—ADDENDUM**

### **Reference**

In addition to the response to Undertaking J1.3, OPG indicated that it would review precedents related to recovery of nuclear liability costs (see transcript Vol. 1 page 168, line 18, excerpted below):

*MR. PENNY: Yes. I think perhaps what we would like to do is consider that, but certainly we will review available precedents. I think there is really two issues that you have touched on. One is how other utilities recover the cost of the nuclear liabilities, and the other is this separate question of this so-called "streaming" concept. We will look at both of those.*

### **Response**

#### **1) Regulatory precedents related to the recovery of nuclear liability costs**

OPG asked Fosters Associates, Inc. to review precedents related to the recovery of nuclear liability costs and to comment on their applicability to OPG. The results of this work are provided as Attachment 1.

It should be noted that Ms. McShane recommends use of the "Rate Base" approach. This is the option recommended by CIBC, the one reflected in the current payment amounts, and in OPG's application.

With respect to the "flow-through" approach that has been discussed in the hearing, Ms. McShane notes that this approach would subject OPG to increased forecast risk and volatile regulated earnings. She cautions that parties would need to consider the potential future impact of adopting such an approach. If for some reason OPG's nuclear fleet is not refurbished or OPG is not permitted to add new nuclear assets to its regulated rate base, future regulated nuclear payments will be determined on a shrinking rate base and an increasing nuclear liability (through accretion) and trust fund balance, which will result in increasing regulated earnings volatility. The result of the potential quantum increase in earnings volatility would be a significantly higher cost of capital than has been proposed in this proceeding.

#### **2) Regulatory precedents related to financial "streaming"**

The OEB and most other Canadian regulators use a deemed capital structure or pool of funds to finance a utility's approved rate base. The hypothetical capital structure recognizes the existing and planned (for utilities regulated on a prospective test year basis) long-term debt and preference share financing. Common equity is established at a deemed level of rate base, and a debt provision is used to balance the total financing in the capital structure to the rate base being financed.

An illustration of this concept is the method used by the OEB and other Canadian regulators with respect to capital leases. Capital leases are used to finance many assets. There is

financing directly related to the asset; therefore terms such as “streamed” or “traced” refer to this financing relationship. The asset appears in the rate base; however the financing directly related to that asset is not specifically identified in the utility weighted cost of capital. In effect, the weighted cost of capital used to finance all other capital assets is used as the proxy for the financing charges in the capital lease.

Some examples of this issue are provided below. On May 15, 2008, the OEB issued a decision in EB 2007-0680, establishing rates for Toronto Hydro. In that proceeding, the OEB reviewed capital leases associated with executive vehicles. The OEB found that: “There is no generally accepted method whether costs associated with leased vehicles for executive personnel should be capitalized or expensed or ratemaking purposes and the Board does not have a policy in this regard. The Board accepts the inclusion of these costs in rate base as reflected in the Company’s application.” The OEB did not include a separate capital lease component or cost rate in the capital structure of Toronto Hydro.

The OEB has also used this approach for more substantial capital leases. In its EBRO 474 Decision with respect to the capital lease costs of Centra Gas Ontario’s head office facilities, the OEB found that: “in regard to OCAP’s submission that capital leases should not be allowed in rate base, the Board is satisfied that generally accepted accounting principles support Centra’s position that such costs should be included in rate base. Accordingly, the Board will make no adjustment in this regard.” [Paragraphs 4.1.15]. OPG notes again that the cost of capital summarized in Appendix C of the OEB’s EBRO 474 Decision did not include capital leases as a financing source.

## **ATTACHMENT 1**

### **UNFUNDED NUCLEAR LIABILITIES PRECEDENTS**

There are only two utilities in Canada that have nuclear generation assets and related nuclear liabilities. Given the lack of precedents in Canada,<sup>1</sup> the focus is on regulatory practice in the U.S.

Prior to the adoption of FASB 143, Accounting for Asset Retirement Obligations, in the U.S. (which corresponds to CICA 3110 in Canada), the original cost of utilities' nuclear assets was simply the acquisition cost, with no adjustment or recognition in the undepreciated original cost for any decommissioning liability. The vast majority of U.S. utilities<sup>2</sup> with nuclear generation (33 of 38) recovered decommissioning costs<sup>3</sup> as part of their depreciation expense. The basis for determining the total cost to be depreciated was the original cost of the asset plus the estimated decommissioning costs. Decommissioning costs were treated as negative salvage, and the depreciation rate was set to permit recovery of the decommissioning costs.

As a result of this practice, at the end of the life of the asset, the asset balance would be negative, with the reserve for depreciation exceeding the original cost of the asset by the amount of the decommissioning obligation. In effect, the liability for decommissioning was included (but not explicitly identified) in the reserve for accumulated depreciation; the liability was not explicitly disclosed on the utilities' balance sheets. Amounts collected in depreciation expense for decommissioning costs were a source of funding for the segregated trusts required to be able to discharge the decommissioning obligation. The earnings on the segregated funds were typically credited to accumulated depreciation, which increased the amount of accumulated depreciation and decreased the decommissioning costs to be recovered from ratepayers. When an estimate of the

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<sup>1</sup> Neither of the other two Canadian utilities with nuclear assets, Hydro Québec and New Brunswick Power, have had those assets subject to rate base rate of return regulation. Therefore, neither case provides a precedent for OPG's circumstances

<sup>2</sup> James R. Boatsman, Inder K. Khurana, and Martha L. Loudder, *The Economic Implications of Proposed Changes in the Accounting for Nuclear Decommissioning Costs*, American Accounting Association, *Accounting Horizons*, Vol. 14, No. 2, June 2000, pp. 211-233.

<sup>3</sup> The liability for spent (or used) fuel lies with the government, to whom the utilities pay a per kWh charge for assuming the disposal obligation.

decommissioning costs was updated, the depreciation rate would be changed to allow for recovery of the revised amount; no retroactive adjustments were made to the depreciation reserve or to equity as a result of the updated cost estimates.

The remaining firms with nuclear assets used what is referred to as the non-current liability method. Under that method, the depreciation expense was based solely on the acquisition cost of the plant, with decommissioning expense recovered as a separate revenue requirement item. The accumulated decommissioning expense was recognized through a straight-line accrual of the liability.

The amount of expense recognized was the same for both the depreciation expense/negative salvage and non-current liability methodologies, but the composition of assets and liabilities was different. Under the first method, the rate base was reduced for accumulated decommissioning expense via the reserve for depreciation; under the second method, the rate base was reduced by netting the non-current liability against rate base. In both cases, the rate base was reduced by the cumulative decommissioning expense that had been recovered from customers, in the first approach through the reserve for depreciation and in the second approach through the reduction of the rate base by the cumulative liability.

The adoption of FASB 143 in 2003 required the utilities to estimate the fair value of their asset retirement obligations, record them as a liability and capitalize the associated ARCs as part of the original cost of the assets. For utilities with nuclear generation assets, the adoption of FASB 143 resulted in the recognition of legal ARO liabilities related to decommissioning. The audited financial statements of the utilities now reflect the full amount of the decommissioning AROs on the liability side, the ARCs and the decommissioning trust funds on the asset side.<sup>4</sup>

To my knowledge, the adoption of FASB 143 has not resulted in material changes in regulatory practice with respect to rate base and capital structure for U.S. utilities with ARCs and AROs. Utilities continued to use long-established regulatory practices for regulatory accounting purposes rather than switch to GAAP accounting. For U.S. utilities

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<sup>4</sup> Some of the utilities also have trust funds on the balance sheet for spent fuel. Spent fuel funds are funded through a per kWh of nuclear production charge.

that qualified for rate regulated accounting,<sup>5</sup> adjustments for differences between GAAP and regulatory accounting could be and were made in the GAAP financial statements to account for the differences. For these utilities, regulatory assets and liabilities were recorded to recognize the cumulative effects of differences in amounts recovered and recoverable under the old and new standards. If the cumulative expense that has been recovered in rates as dictated by regulatory practice is less than the cumulative expense recorded in the financial statements (including the interest component) under ARO accounting, a regulatory asset, which recognizes the assurance that the utility will be able to collect the difference in future rates, appears on the GAAP financial statements

## **APPLICABILITY OF US PRACTICE TO OPG**

### **INTRODUCTION**

It is necessary to set forth the regulatory objective in order to determine the appropriate treatment of nuclear liabilities in the context of the regulated rate base and/or capital structure. The objective in the decisions as to how nuclear liabilities should be treated for regulatory purposes is to ensure that OPG is provided an opportunity to recover, in its revenue requirement, the costs of financing the assets that are used and useful in the provision of public service.

The measurement of the amount of investor-supplied capital that is required to finance regulated assets typically starts by focusing on the assets that are devoted to public service, that is, the rate base. The starting point for the rate base is net depreciated property, plant and equipment in service plus an allowance for working capital. The next step is essentially to identify funds that have been made available by ratepayers that are financing utility assets. Examples of these funds include accumulated deferred taxes, contributions in aid of construction, and customer deposits. Ratepayer-supplied funds are in most cases deducted from the rate base.<sup>6</sup> When rate-payer supplied funds are

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<sup>5</sup> As in Canada, if certain criteria are met, U.S. utilities are exempt from certain GAAP reporting standards.

<sup>6</sup> In a few instances in Canada, customer-supplied funds in the form of accumulated deferred taxes, e.g., Consumers Gas, now Enbridge Gas (in the mid-1980's), FortisBC and Pacific Northern Gas, have been included in the capital structure. Customer contributions have on

deducted directly from the “gross” rate base, the resulting net rate base is typically viewed as a proxy for investor-supplied capital. Thus, the objectives are to ensure that OPG has a reasonable opportunity to recover the costs of the investor-supplied capital financing regulated assets, while simultaneously ensuring that ratepayers are not charged for funds that they have provided. As part of that task, appropriate rate base/regulated capital structure treatment for unfunded nuclear liabilities needs to be evaluated.

Regulation 53/05 requires the Ontario Energy Board to accept the asset values as per the most recently audited financial statements for purposes of establishing the rate base. The ARCs are included in the original cost of the assets and will continue to be included in rate base. Thus, the point of departure is different from that of the U.S. utilities.

In addition, U.S. utilities are generally regulated on the basis of an actual capital structure, rather than a deemed capital structure. In the case of OPG, the choice of deemed capital structure can (and does) take into account the inclusion of the ARCs in rate base and the risks associated with recovery of the liabilities that have been assumed by OPG. The relative size of the liabilities and the attendant recovery risks (compared to the productive capacity of the plants) assumed by OPG is materially larger than that of U.S. utilities with regulated nuclear plants.<sup>7</sup> The resulting approach to the deemed financing of the total assets needs to recognize the size of the liability that has been assumed. In addition, the contributions to the decommissioning and waste management funds required under ONFA precede the recovery of the related expense in the revenue requirement. Thus, investor funds are effectively required to pre-fund the funds, for which there is an opportunity cost. All of these factors lead to the conclusion that an alternative approach (to that of the U.S. utilities) is warranted for OPG.

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occasion been expressed both ways in the same regulatory decision e.g., Alberta utilities, including ATCO Gas and AltaGas Utilities. When customer-supplied funds are assigned a zero cost, the impact of including them in the capital structure rather than deducting them from rate base should be neutral.

<sup>7</sup> Two examples are: Arizona Public Service has a regulated rate base of over \$4 billion and total asset retirement obligations of \$270 million. AmerenUE has a regulated rate base in Missouri (where its nuclear plant is located) of approximately \$11 billion, of which \$3 billion is nuclear, and total asset retirement obligations of under \$500 million. At the end of 2007, OPG’s asset retirement obligations related to its nuclear plants were \$2.5 billion compared to a total nuclear rate base of \$3.5 billion. Further, OPG’s total nuclear liabilities exceed \$10 billion; the cost of decommissioning all nuclear plants in the U.S. (over 100 reactors) is approximately \$35 billion. OPG’s exposure alone is thus close to one-third of that of U.S. utilities with nuclear plants.

With ARCs included in OPG's rate base, the issue from a capital structure and recovery of an appropriate return perspective becomes one of the treatment of the unfunded liability. Three possible approaches are outlined in the table below.

	<b>Option 2 from CIBC</b>	<b>Rate Base Method</b>	<b>Method #3</b>
<b>Rate Base and Capital Structure</b>	Deduct unfunded liability from gross rate base	No adjustment to rate base. Use deemed debt in capital structure as plug to equate rate base and capital structure	No adjustment to rate base. Include unfunded liability in capital structure as a source of debt financing
<b>Recovery of ARC Principal</b>	Recover ARC principal in depreciation expense	Recover ARC principal in depreciation expense	Recover ARC principal in depreciation expense
<b>Recovery of Return</b>	Recover accretion in OM&A expense. Credit revenue requirement for segregated fund earnings. Apply weighted average cost of capital to rate base minus unfunded liability	Apply weighted average cost of capital to rate base where rate base is supported by a deemed capital structure of debt plus equity; exclude consideration of accretion and seg fund earnings	Apply weighted average cost of capital to rate base. WACC is based on a deemed capital structure of debt (including unfunded liability as one debt source) plus equity.

From an economic impact perspective, the Rate Base Method and Method #3 will provide the same income stream when a deemed capital structure is used and the discount rate on the unfunded liability is the same as the cost of debt that would be used in the Rate Base Method. Option 2 from the CIBC, which deducts the unfunded liability from rate base, effectively negates the requirement that the OEB accept OPG's asset values as per the most recently audited financial statements for purposes of establishing rate base

The treatment of unfunded nuclear liabilities should be premised on the following:

- (1) The proposed deemed capital structure, comprised of debt and equity, should reflect the stand-alone business risks of the regulated operations;
- (2) While the actual debt cost of OPG is used to establish the notional debt expense to be included in the revenue requirement, effectively, a deemed capital structure does not explicitly trace dollars of financing to the specific asset being financed.

However, since the unfunded nuclear used fuel management and decommissioning liability can be associated with an identifiable rate base asset of material size, it may be interpreted as one source of rate base financing. Thus, while the choice of methodology should ensure that OPG recovers the costs of financing its rate base assets, it should also ensure that there is no double recovery of financing costs.

In my opinion, the Rate Base Method is the preferred approach. Method #3 represents another valid approach to the treatment of the unfunded nuclear liability for regulatory purposes. Both methods entail deeming a common equity ratio compatible with the stand-alone business risks of the regulated operations. The deemed common equity ratio would be the same under both approaches. Both apply a weighted average cost of capital to the same measurement of rate base. While Method 3 may provide a closer matching of the financing costs recovered in the revenue requirement with those incurred, the Rate Base Method follows the traditional practice in Ontario of not “streaming” or “tracing” of financing costs. In effect, the Rate Base Method treats asset retirement costs as any other rate base asset that is financed by a combination of debt and equity.

Further, I am not aware of any utility that has been required to include an unfunded liability related to asset retirement obligations in capital structure, as would be the case if Method 3 were adopted. Two utilities in Ontario have included ARCs in rate base, but their deemed capital structures are comprised solely of debt and common equity.

Considering the advantages of both approaches, the Rate Base Method, which is the same methodology adopted for purposes of interim rates, is recommended. Under the Rate Base Method, the debt component of the deemed capital structure would reflect the allocation of actual and forecast OPG debt at the embedded cost, with the amount of any difference between capitalization and rate base reflecting OPG's cost of long-term debt for that period.