OTHER REVENUES – REGULATED HYDROELECTRIC

1.0 PURPOSE

The purpose of this evidence is to present the forecast of revenues from sources other than energy production ("other revenues") from OPG's regulated hydroelectric generating facilities and to explain the proposed treatment of these other revenues.

2.0 OVERVIEW

Other revenues earned by OPG's regulated hydroelectric facilities are revenues associated with ancillary services, which include black start capability, operating reserve ("OR"), reactive support/voltage control service, and automatic generation control ("AGC"). Provision of these ancillary services is integral to the operation of OPG's prescribed assets. In addition, other revenues include revenues from segregated mode of operation ("SMO") and water transactions ("WT").

A forecast of other revenues for the test period is included as an offset in the calculation of the revenue requirement for the regulated hydroelectric facilities. Differences between forecast and actual revenues associated with ancillary services are recorded in the Ancillary Service Net Revenue Variance Account - Hydroelectric Sub Account, as approved by the OEB in EB-2007-0905. See Ex. H1-T1-S1, section 4.1 for information on this account.

Forecast revenues from SMO and WT are also included as an offset in the calculation of the revenue requirement during the test period as per the OEB's Order in EB-2007-0905.

Revenues associated with congestion management settlement credits ("CMSC") payments are not forecast, and consistent with the OEB's Order in EB-2007-0905, are not considered part of "other revenues" for revenue requirement calculation because CMSC revenues are designed to compensate OPG for losses which are not otherwise incorporated into the revenue requirement. This methodology is continued during the test period.

Exhibit G1-T1-S1, Table 1 presents the other revenues associated with the regulated

hydroelectric assets for the period 2007 - 2012.

3.0 ANCILLARY SERVICES

There are three ancillary services purchased by the IESO under contract to maintain the reliability of the Ontario power network. The services of black start capability and AGC are purchased through competitive tendering processes. The service of reactive support/voltage control is contracted through a negotiated process. Suppliers of these three services receive compensation for costs associated with being available to provide the service, out-of-pocket costs, opportunity costs when providing the service, and any other compensation deemed by the IESO to be fair and reasonable. The cost of these services is passed on to consumers by the IESO through monthly uplift charges. In contrast, operating reserve is a market-based ancillary service that is jointly optimized with the energy market.

3.1 Black Start Capability

Black start capability, as defined in the Market Rules, refers to the capability of a generation facility to start without an outside electrical supply so as to be used to energize a defined portion of the IESO-controlled grid. Sir Adam Beck II and R.H. Saunders are currently under contract with the IESO for black start capability.

OPG forecasts revenues for black start capability for 2011 and 2012 based on the terms of the negotiated Procurement of Certified Black Start Facilities Agreement effective November 1, 2008 to May 1, 2010. OPG's forecast methodology is consistent with the approach used in EB-2007-0905.

3.2 Reactive Support/Voltage Control Service

Under the Market Rules, reactive support service refers to a service provided by a market participant so as to allow the IESO to maintain the reactive power levels required by the IESO-controlled grid. Similarly, voltage control service is a service provided by a market participant so as to allow the IESO to maintain voltage levels required by the IESO-controlled grid. Collectively, these are referred to in this Application as reactive support/voltage control service.

OPG and the IESO negotiated a Reactive Support/Voltage Control Service Agreement effective from January 1, 2008 until December 31, 2010. OPG's expectation for the test period is that a new contract will be in effect with terms and conditions similar to those in the existing contract. OPG's forecast methodology is consistent with the approach used in EB-2007-0905.

OPG's nuclear assets also provide reactive support/voltage control service and receive revenues from this activity. These revenues are presented in Ex. G2-T1-S1 Table 1.

3.3 Automatic Generation Control

As defined in the Market Rules, AGC refers to the process that automatically adjusts the output from a generation facility based on automated, electronic signals in order to provide frequency control and to maintain the balance between the demand from load and the supply from generation facilities.

A new contract for AGC was executed with the IESO and became effective May 1, 2009 with an expiration date of October 31, 2010. The current total AGC market is 100 MW. Forecast contract revenues were decreased in 2010 by 20 per cent due to market price variations and an expectation of increased competition in the AGC market. For the test period, OPG expects that an AGC contract with similar conditions and revenues will be executed with the IESO.

3.4 Operating Reserve

Operating reserve ("OR") refers to the capacity that can be called upon on short notice by the IESO to replace scheduled energy supply that is unavailable as a result of an unexpected outage or to augment scheduled energy as a result of unexpected demand or other contingencies. The IESO establishes separate prices for the energy market and the operating reserve markets.

Because OR is a market-based ancillary service, the amount of OR accepted depends on OPG's operating reserve offers and market conditions.

For 2011, the OR revenue forecasts are reduced by 25 per cent from 2010 based on the expectation that OR prices will clear lower and closer to the longer term trend (OR prices were significantly lower in 2002 - 2007 than they have been recently). Recent prices have been two to three times higher than earlier years, and those earlier years are considered by OPG to be more representative of revenues going forward. For 2012, OPG's revenue forecast is based on the 2011 estimate plus escalation.

Darlington also provides OR from stand-by generation units and receives revenues from this activity. These revenues are presented in Ex G2-T1-S1 Table 1.

4.0 SEGREGATED MODE OF OPERATION

Segregated mode of operation ("SMO") is defined in the Market Rules as an electrical configuration where a portion of the IESO-controlled grid is used to connect one or more registered generating facilities to a neighbouring control area using a radial intertie for the purposes of delivering electricity or physical services.

SMO transactions are accommodated by segregating up to eight units (or two banks of four units) of production from R.H. Saunders to Hydro-Québec's control area at the St. Lawrence Transformer Station. Prior to entering into a SMO configuration, OPG must seek approval from the IESO which can be refused or revoked at any time.

SMO is conducted by OPG when it identifies economic opportunities in neighbouring markets. These transactions are arranged in advance with counterparties and are typically conducted in off-peak periods. The economic drivers used in deciding whether or not to engage in an SMO transaction are the forecast market prices in Ontario and surrounding markets.

SMO net revenues are calculated by subtracting the incremental costs associated with these transactions from the SMO revenues received. These incremental costs consist of export fees, transmission charges in other control areas, costs associated with the non-regulated business and transmission losses between generator source and point of delivery. SMO

transactions are also exposed to market price forecasting risk. The net revenues from SMO transactions are acquired through OPG's non-regulated business which moves generation to higher priced markets. The non-regulated business incurs additional costs associated with these transactions including; arranging, conducting and settling these transactions; IT systems; control and governance functions; and market memberships.

OPG also incurs additional costs, which are applied as incurred in transacting SMO. By engaging in these transactions, OPG incurs a production loss during switching operations and may experience other commercial costs arising from an inability to complete the transaction due to the IESO preventing or recalling the units as per the Market Rules; equipment failure (i.e., a breaker or switch failure), which may prevent the units from being connected back to Ontario until the equipment is repaired; or a unit being forced out. If the units are unable to segregate for the reasons identified above, OPG may be financially responsible for not delivering on its commitment to a transaction in another market. Examples of other commercial costs which may be applied include counterparty credit and liquidated damages.

The OEB's Decision with Reasons in EB-2007-0905 specified that the average of the previous three historical years of actual net revenue values for SMO (i.e., 2005, 2006, and 2007) be applied as an offset against OPG's revenue requirement for the 2008 - 2009 period. In accordance with EB-2007-0905, the budget amount for 2008 is set at 75 per cent of the budget amount for 2009. The budget amount for 2010, the bridge year, is set identical to the budget amount for 2009. Any incremental revenues above these values are to be retained by OPG.

A new direct current transmission interconnection ("DC intertie") between Ontario and Québec came into commercial service on July 2, 2009 with an initial capability of 625 MW (Phase 1 of the project plan). The DC intertie was expanded to its full transfer capability of 1,250 MW as of November 21, 2009.

The impact of the DC intertie on SMO revenues to date has been significant. Actual SMO

revenues were $10.1M lower in 2009 relative to 2008. The expectation is that the reduction in SMO revenues experienced in the last six months of 2009 will be permanent – revenues will not return to pre-DC intertie levels. Therefore, the use of the three year historical average would overstate the value of revenues anticipated in the test period.

Given this significant change, OPG proposes to use actual SMO results during the latter part of 2009 to forecast the revenues over the test period. A forecast based on SMO exports for the period after the DC intertie was placed in-service is superior to a forecast based on the period prior to the operation of the DC intertie because it reflects the significant change in SMO volume attributable to the new interconnection. Actual SMO revenues between July 2009 and December 2009 were used to as forecast revenue for the test period.

For segregated mode net revenues, OPG has assumed a 1.5 per cent escalation factor for inflation for 2010, and 2.0 per cent for both 2011 and 2012 as per OPG's 2010 - 2014 Business Plan projections. Consistent with the OEB's previous direction, OPG will use the forecast SMO net revenues to offset the revenue requirement during the test period.

5.0 WATER TRANSACTIONS

Water transactions between the New York Power Authority ("NYPA") and OPG are associated with the regulated hydroelectric facilities. NYPA and OPG are designated in their respective jurisdictions as the entities responsible for developing and operating the hydroelectric facilities on the Niagara and St. Lawrence Rivers. Pursuant to agreements between the parties, NYPA and OPG coordinate certain operations to maximize energy production from the total water available for generation under the relevant international treaties. Water transactions are one means by which NYPA and OPG maximize energy production and make best use of an important renewable resource.

Water transactions provide an opportunity to maximize use of the available water by allowing either OPG or NYPA to use a portion of the other's share of the water available for power generation. In return, the entity that used the water provides the revenues resulting from the water transactions, minus an accommodation charge, to the other entity. Since the opening

of electricity markets in Ontario and New York, water transactions are settled financially. The majority of water transactions are for the purposes of salvaging the water that otherwise would be spilled over Niagara Falls or to facilitate ice control procedures.

When OPG engages in a water transaction that allows NYPA to extract the potential energy from Canada's share of available water, NYPA pays OPG an amount equal to the energy production priced at New York market prices less accommodation charges associated with the transaction. When NYPA engages in water transactions that allow OPG to extract the potential energy from the United States' share of available water, OPG pays NYPA an amount equal to the energy production priced at the Hourly Ontario Energy Price ("HOEP") less accommodation charges associated with the transaction.

The OEB's Decision with Reasons in EB-2007-0905 specified that the average of the previous three historical years (i.e., 2005, 2006, and 2007) of actual net water transactions revenues be applied as an offset against OPG's revenue requirement for the 2008 - 2009 period. Net water transactions revenues are calculated by removing accommodation charges and gross revenue charges ("GRC") attributable to these transactions from the gross revenues. In accordance with EB-2007-0905, the budget amount for 2008 is set at 75 per cent of the budget amount for 2009. The budget amount for 2010, the bridge year, is set identical to the budget amount for 2009. Any incremental revenues above these values are retained by OPG.

As expressed in EB 2007-0905, Exhibit G1-T1-S1, section 5.0, OPG continues to believe that both the value and volume of water transactions are highly volatile and therefore difficult to forecast. Forecasts based on averages of past years' results do not incorporate recent market trends, such as continued low spot prices. These trends, though difficult to characterize precisely, are highly likely to influence future revenues. As shown in Ex. G1-T1-S2 Table 1, low market prices in 2009 reduced water transactions revenues. These low market prices are expected to continue during the test period.

OPG proposes that test period water transactions net revenues be forecast based on the actual net revenues realized in 2009, since this period is considered to be more

representative of market prices during the test period than the three year average referenced in EB 2007-0905. Any incremental revenues above these values would be retained by OPG. For net revenues, OPG has assumed a 1.5 per cent escalation factor for inflation for 2010, and 2.0 per cent for the test period, per OPG's 2010 - 2014 Business Plan projections.

6.0 OTHER REVENUES – 2007 ACTUAL TO 2012 PLAN

Ex. G1-T1-S1 Table 1 presents the other revenues associated with the regulated hydroelectric assets.

Nuclear ancillary service revenues are presented in Exhibit G2-T1-S1 Table 1.