CAPITAL PROJECTS – REGULATED HYDROELECTRIC

1.0 PURPOSE

This evidence provides descriptions and listings of capital projects, as well as Business Case Summaries, which support capital expenditures and in-service additions for the OPG's regulated hydroelectric facilities during the test period. These capital expenditures form part of the capital expenditures for the Niagara Plant Group and R.H. Saunders GS, and the newly regulated hydroelectric facilities presented in Ex. D1-1-1. This exhibit does not address the Niagara Tunnel Project ("NTP"), which is covered in Ex. D1-2-1.

2.0 OVERVIEW OF CAPITAL PROJECT DESCRIPTIONS AND LISTINGS

Consistent with the filing guidelines, OPG uses a tiered structure for reporting capital projects. In Section 3.0 below, information is presented for projects with budgeted expenditures during the 2014 and 2015 test period or in-service amounts between 2013 and 2015 as set out below:

- Tier 1 - Projects with a total cost of $20M or greater:
  - Project descriptions are provided in section 3.1.
  - Summary level information is further provided in Ex. D1-1-2 Table 1.
  - Business Case Summaries are provided as attachments to this schedule.

- Tier 2 - Projects with a total cost between $5M and $20M:
  - A description of this category of projects is provided in section 3.2.
  - Project descriptions and summary level information is provided in Ex. D1-1-2 Table 2.

- Tier 3 - Projects with a total cost of less than $5M:
  - A description of this category of projects is provided in section 3.3.
  - Aggregated project information is provided in Ex. D1-1-2 Table 3.

Section 4.0 below presents information on OPG's regulated hydroelectric facilities' capital expenditures that: (a) have gone into service in the historical years, or (b) are expected to go

into service either during the 2013 bridge year or during the 2014 and 2015 test period. In-service information is further summarized in Ex. D1-1-2 Tables 4 and 5. These in-service additions are included in the regulated hydroelectric rate base as presented in Ex. B2-3-1 Tables 1 and 2. Exhibit D1-1-2 Table 7 provides a summary of projects greater than $5M that were projected to go into service in 2011 and 2012 in EB-2010-0008.

Section 5.0 below presents information on OPG's regulated hydroelectric capital expenditures that were identified in OPG's EB-2010-0008 application but which were subsequently deferred to beyond the 2011 - 2012 test period or cancelled.

3.0 CAPITAL PROJECT DESCRIPTIONS AND LISTINGS

3.1 Tier 1 Capital Projects

Tier 1 projects are those with total costs of $20M or more. There are five Niagara Plant Group regulated hydroelectric Tier 1 projects, four Ottawa St. Lawrence Plant Group hydroelectric Tier 1 projects and one Central Hydro Plant Group Tier 1 project that have planned expenditures at this level during the bridge year or test period. These are described below. Summary information on these projects is provided in Ex. D1-1-2 Table 1.

3.1.1 Sir Adam Beck Pump GS – Reservoir Refurbishment (HDEV0028)

The Pump Generating Station ("PGS") Reservoir is comprised of a 7 km long rock-fill dyke, varying in height from 5 to 21 meters. The reservoir bottom is comprised predominantly of natural materials that provide a low-permeability blanket supplemented by an engineered natural clay blanket in certain areas. The bedrock underlying the reservoir is characterized by open, interconnected, vertical and horizontal joints. These bedrock characteristics could make the foundation and potentially the dyke itself susceptible to sinkhole formation which may lead to a dyke breach. Therefore, in addition to initiating the geotechnical investigation leading to the reservoir refurbishment as described below, OPG has enhanced its existing monitoring of the reservoir and dyke to ensure safe operations.

A preliminary Concept Phase analysis in 2010 recommended the installation of a new liner over for the entire PGS reservoir as the preferred option. As part of the Definition Phase, a detailed geotechnical testing and investigation program was performed to determine the

condition of the existing liner and reservoir subsurface, and to develop a detailed scope for the rehabilitation project. Based on the investigation and review by independent experts, it was determined the liner is not in need of a full replacement. Instead, replacement is only required in areas of liner deterioration or those prone to leakage. The estimated cost of $362M in the 2013 to 2015 business plan was based on a full liner replacement. The estimated cost for the partial liner replacement plan is $100M. However, the Definition Phase is continuing to determine the final project scope and cost. The Execution Phase of this project is now planned to begin in 2016. The refurbishment of the reservoir will allow the PGS facility to continue to provide value to the Ontario electricity system over the next 50 to 100 years. The Definition Phase Business Case Summary is provided in Attachment 1.

3.1.2 Sir Adam Beck I Generating Station - Unit G3 Upgrade (SAB10064)

The total cost of the Sir Adam Beck I Generating Station - Unit G3 Upgrade project is estimated to be $23.0M. The outage for the project commenced in 2012 with a planned in service date of March 2013. The unit returned to service in August 2013. The Unit G3 Upgrade project Business Case Summary is provided in Attachment 1 to this schedule.

This project is a complete unit rehabilitation. The design and work scope will draw on experience gained from the completed frequency conversion of Unit G7 and the upgrade of Unit G9. The scope includes: overhauled generator windings with new protections and controls, a new exciter, new switchgear, a new transformer, and a new liner in the area of the removed Johnson valve. It also includes a new more efficient turbine runner.

Unit G3 was last overhauled in 1985. Hydroelectric units of this type normally require major overhauls on a 25 to 30 year cycle to ensure continued operation. By 2012 it could no longer be counted on to provide reliable long-term operation as there were issues with major components of both the generator and the turbine.

Rebuilding of the turbine and generator winding is expected to provide 25 to 30 years of reliable operation before the next unit major overhaul is required. The installation of a new more efficient turbine runner and electrical equipment is expected to increase the capacity of the unit by approximately 9 MW. A new higher rated transformer will be required to handle

this additional output.

3.1.3 Sir Adam Beck I Generating Station - Unit G10 Upgrade (SAB10050)

The total cost of the Sir Adam Beck I Generating Station - Unit G10 Upgrade project is estimated to be $25.6M. This project will commence in 2014 and is projected to come into service by June 2015. The Unit G10 Upgrade project is currently in the Definition Phase. The Business Case Summary is provided in Attachment 1.

This project is a complete unit rehabilitation. The design and work scope will draw on experience gained from the frequency conversion of Unit G7, completed in 2009, the rehabilitation of Unit G9, completed in 2011 and the upgrade of Unit 3, completed in 2013. A complete condition assessment of the unit was concluded by OPG engineering staff as part of the project Definition Phase. The expected project scope includes: new generator windings with new protections and controls, a new exciter, new switchgear, and a new transformer. It also includes a new more efficient runner.

Recent inspections have revealed that Unit G10 is near the end of its useful life. It was converted to 60 Hz in 1956. The unit last underwent a mechanical overhaul, including a turbine runner replacement, in 1986. The existing electrical equipment (e.g., breakers, transformer) currently do not have the capability to accommodate the increase in turbine capacity expected from this upgrade project.

Rebuilding of the turbine and generator winding is expected to provide 25 to 30 years of reliable operation before the next unit major overhaul is required. The installation of a new more efficient turbine runner and electrical equipment is expected to increase the capacity of the unit by approximately 10 MW.

3.1.4 Sir Adam Beck I Generating Station - Unit G5 Major Overhaul & Upgrade (SAB10072)

The total cost of the Sir Adam Beck I Generating Station - Unit G5 Major Overhaul & Upgrade project is estimated to be $24.3M. This project will commence in 2015 and is projected to come into service by October 2016. As this project has not commenced the Definition Phase, a Business Case Summary has not been prepared for this project.

A complete condition assessment of the unit is planned for 2014 by OPG engineering staff. The expected project scope includes: a generator overhaul with new protections and controls, a new exciter and new switchgear. It may also include a new more efficient runner depending on the results of the assessment.

Unit G5 was converted to 60 Hz operation in 1985. By 2014 it will have been in operation for 29 years without a major overhaul. Performing a major overhaul on the unit and upgrading components is expected to provide 25 to 30 years of reliable operation before the next unit major overhaul is required.

3.1.5 Sir Adam Beck I Generating Station - Unit G4 Major Overhaul & Upgrade (SAB10086)

The total cost of the Sir Adam Beck I Generating Station - Unit G4 Major Overhaul & Upgrade project is estimated to be $24.3M. A complete condition assessment of the unit is planned for 2015 by OPG engineering staff. The expected scope includes: a generator overhaul with new protections and controls, a new exciter and new switchgear. It may also include a new more efficient turbine runner. The outage for this project is expected to start in 2016 with an in service in October 2017. Performing a major overhaul on the unit and upgrading components is expected to provide 25 to 30 years of reliable operation before the next major unit overhaul is required. As this project has not commenced the Definition Phase, a Business Case Summary has not been prepared for this project.

3.1.6 Des Joachims Generating Station - Replace Main Output Transformers (DESJ0031)

The total cost of the Des Joachims Generating Station - Replace Main Output Transformers project is estimated to be $26.3M. This project was started in 2006 and is projected to be completed by December 2013. The project is currently in Execution Phase. The Business Case Summary is provided in Attachment 1 to this schedule.

The project includes purchasing and installing twelve new main output transformers, one new station spare, and associated equipment at Des Joachims GS. The existing transformers are almost 60 years old, are nearing the ends of their service lives, and the probability of failures

is expected to increase dramatically over the next ten years. The four transformer banks are being replaced from 2010 to 2013 (1 bank per year).

3.1.7 Des Joachims Generating Station - Turbine Runner Replacement (DESJ0016)

The total cost of the Des Joachims Generating Station - Turbine Runner Replacement project is estimated to be $22.3M. This project started in 2004 and is projected to be completed by December 2015. The project is currently in its Execution Phase. The Business Case Summary is provided in Attachment 1 to this schedule.

The project includes replacement of eight turbine runners with upgraded runners. The existing runners are damaged and at end of life. Given their condition, there is a significant risk of turbine failure due to the cracking damage which has become more evident in the past few repair cycles. New turbine runners will eliminate the need for excessive weld repairs and related production losses while also increasing turbine runner efficiency and annual energy production.

The expected unit generator improvement performance resulting from the runner program is 2.3% efficiency gain, which results in an increase in station output by 52.6 GWh/yr. The first of eight runners was replaced in 2007, and the last runner is expected to be replaced in 2014.

3.1.8 Otto Holden Generating Station - Replace Sluicegates & Rehabilitate Sluicegates (OTTO0021)

The total cost of the Otto Holden Generating Station - Replace Sluicegates & Rehabilitate Sluicegates project is estimated to be $20.6M. This project was started in 2006 and is projected to be completed by December 2015. The project is currently in Execution Phase. The Business Case Summary is provided in Attachment 1 to this schedule.

The project includes replacement of six sluicegates and rehabilitation of the sluicegates system in order to comply with dam safety requirements and to address operational and reliability needs. Rehabilitation of the sluicegates system occurred in 2009, and replacement of the six gates started in 2010 (one gate per year). The sluicegates can be controlled either locally or remotely from the Chenaux Control Centre. They provide the primary means of discharging excess flow around Otto Holden GS, and are essential in meeting the OPG Dam Safety Program requirements. The existing sluicegates are nearing 60 years of operation and are at the end of their service lives.

This project is part of a program to replace sluicegates that are at the end of their service lives within the Ottawa-St. Lawrence Plant Group, including those at Des Joachims, Chenaux and Chats Falls generating stations.

3.1.9 Otto Holden Generating Station - Replace Headgates and Rehabilitate Gains (OTTO0039)

The total cost of the Otto Holden Generating Station - Replace Headgates and Rehabilitate Gains project is estimated to be $24.6M. This project has started in 2012 and is projected to come into service by December 2021. The project is currently in its partial Execution Phase..A Business Case Summary has been approved to complete one gate to determine scope for the remainder of this project. It is provided in Attachment 1 to this schedule.

Otto Holden GS has eight generating units; each is equipped with two headgates which are installed in the concrete structure of the headworks. The headgates are safety devices used to shut off water supply to the turbines in case of emergency and are the last resort available to stop the generators. They are also used to isolate units during unit repairs and maintenance. It is important that the headgates and gains (i.e. the slots that guide the headgates), including the integrity of the seals and the seal paths, be maintained in good working condition in order to ensure asset protection and worker safety requirements.

The headgates, related embedded components, and the hoist mechanisms are original and were installed in the early 1950's. Since they were installed, the headgates for all 8 units

were refurbished once in the 1990's. They are now at end of life. An investigation was completed in 2011 to determine the condition of the headgates and embedded components and to develop the scope for the upcoming project. The inspection revealed that there is significant leakage occurring from headgate seals and sills, and that there are several operational and maintenance issues related to the hoist assemblies. Because it was not possible to access the embedded components, the inspection could not determine their current condition.

As it was not possible to determine the condition of the embedded components during the assessment, a partial release has been approved to determine the complete scope of the repair work required for the embedded components and hoist assemblies and to complete the technical specification and release quality estimate for the remainder of the project. The headgate replacement and the repairs of the embedded components and hoists for the remaining seven units is programmed to be executed during the unit overhauls which are scheduled to begin in 2015. The new headgates will allow for continued safe operation of Otto Holden GS over their expected service life of 50 years.

3.1.10 Ranney Falls GS - Expansion Project (HDEV0024)

The Ranney Falls GS Expansion Project scope is to safely decommission the end-of-life 0.8 MW unit at Ranney Falls GS and construct a new 8 to 10 MW unit which will increase the total station capacity from 10 MW to between 17 to 19 MW. The new unit is expected to increase the station's annual energy production by 30 GWh to 80 GWh. In addition, as a condition of approval from Parks Canada (Trent-Severn Waterway), the project will include construction of a spillway that is designed to improve the management of water at the site by resolving an existing deficiency in spill capacity at their upstream control dam. The addition of a new spillway is needed for the safe bypassing of water flows during emergency situations. The Municipality of Trent Hills Council endorsed this project on September 12, 2012.

The project is currently estimated to cost $42.4M and will take about five years to complete. The Execution Phase of the project is expected to begin in 2013. The project is expected to

be completed in 2016. A Definition Phase investigation for the project is currently underway. The Business Case Summary is provided in Attachment 1.

3.2 Tier 2 Capital Projects

Tier 2 projects are those with total costs between $5M and $20M. There are a total of four Niagara Plant Group Tier 2 projects that have planned expenditures during the test period. The total cost of these four projects is estimated to be $37.1M. R.H Saunders has two Tier 2 projects with planned expenditures in the test period. The total estimated cost of these two projects is $22.2M.

For the newly regulated hydroelectric stations, the Ottawa St. Lawrence Plant Group has ten Tier 2 projects with planned expenditures in the test period. The total estimated cost of these ten projects is $86.8M. Central Hydro Plant Group has three Tier 2 projects with planned expenditures in the test period. The total estimated cost of these three projects is $19.2M. Northeast Plant Group also has three Tier 2 projects with planned expenditures in the test period. The total estimated cost of these three projects is $35.2M. Finally, Northwest Plant Group has one Tier 2 projects with planned expenditures in the test period. The total estimated cost of the one project is $7.1M. A description of these projects and further summary information is provided in Ex. D1-1-2 Table 2.

3.3 Tier 3 Capital Projects

Tier 3 projects are those with total costs less than $5M. There are a total of 28 Niagara Plant Group Tier 3 projects that have planned expenditures during the test period. The total cost of these Tier 3 projects is estimated to be $42.6M. The average cost of a Niagara Plant Group Tier 3 project is $1.5M. R.H Saunders has a total of four Tier 3 projects with planned expenditures in the test period. The total estimated cost of these projects is $7.1 M. The average cost of a R.H. Saunders Tier 3 project is $1.8M.

For the newly regulated stations, there are a total of 47 Ottawa St. Lawrence Plant Group Tier 3 projects that have planned expenditures during the test period. The total cost of these

Tier 3 projects is estimated to be $65.7M with an average cost of $1.4M. The Central Hydro Plant Group has 22 Tier 3 projects that have planned expenditures during the test period. The total cost of these Tier 3 projects is estimated to be $32.0M with an average cost of $1.5M. There are a total of 35 Northeast Plant Group Tier 3 projects that have planned expenditures during the test period. The total cost of these Tier 3 projects is estimated to be $40.2M with an average cost of $1.1M. Finally, there are a total of 26 Northwest Plant Group Tier 3 projects that have planned expenditures during the test period. The total cost of these Tier 3 projects is estimated to be $40.2M with an average cost of $1.5M. Further summary information on these projects is provided in Ex. D1-1-2 Table 3.

4.0 IN-SERVICE ADDITIONS

This section presents information on OPG's regulated hydroelectric capital expenditures that: (a) have gone into service in the historical years at the Niagara Plant Group or R.H. Saunders GS, or (b) are expected to go into service, either during the 2013 bridge year or during the 2014 - 2015 test period for all regulated hydroelectric stations. This information is presented using the tiered reporting structure detailed in section 2 above. In-service information is summarized in Ex. D1-1-2 Tables 4 and 5.

4.1 In-Service Additions in Historical Years (2010, 2011, and 2012)

For Niagara Plant Group and R.H. Saunders GS in 2010, 2011 and 2012, the actual capital in-service amounts were lower in 2010 ($40.9M), higher for 2011 ($20.6M) and lower for 2012 ($36.0M) than the additions forecast in EB-2010-0008. The variances are due to various factors including: delays, deferrals, cancellations, and projects being completed below budget. The projects contributing to in-service variances are detailed below.

In 2010, the Niagara Plant Group in-service variances were due to a one month delay in the in-service of the Sir Adam Beck I Unit G9 Upgrade project ($32.1M), the delayed in-service of the DeCew Falls I penstock replacement ($5.1), and delayed installation of the Sir Adam Beck PGS main output transformers ($3.6M). Sir Adam Beck I Unit G9 was commissioned

and began operations in December 2010, but the official in-service did not occur until January 2011. Installation of the DeCew Falls I penstocks were delayed due to contractor safety issues. Transformer installation at Sir Adam Beck PGS was delayed because of increased time required by the manufacturer to construct the transformers and rework required to correct damage that occurred during transportation of the transformers to the station.

R.H. Saunders 2010 in-service variances were due to the Saunders Visitor Centre being placed in service for $1.6M less than planned and the deferral of the Powerhouse Crane project from 2010 to 2014 resulting in $1.5M less than planned in-service. These two projects were slightly offset by the final in service addition of the Iroquois Crane Rehabilitation of $0.2M.

In 2011 the variance to in-service additions was primarily due to a one month delay (December 2010 to January 2011) in the in-service of Sir Adam Beck I G9 ($30.0M). In addition, the delayed in-service of the DeCew Falls I penstock replacement ($5.1M), and delayed installation of the Sir Adam Beck PGS main output transformers ($3.6M), from 2010 contributed to this variance. These increases were partially offset by the deferral of: breaker replacements at Sir Adam Beck PGS ($2.0M), station upgrade work at DeCew Falls I ($2.1M), trashrack cleaning machine at DeCew Falls 2 ($1.0M), and the cancellation of governor replacements at Sir Adam Beck PGS ($2.0M).

The 2011 in service variance for R.H. Saunders of $2.0M less than plan can be attributed to the Powerhouse Crane and other minor projects being deferred to 2012 through 2014. These deferrals were offset by an increase in the in service amount for the Protection and Controls Project by $1.1M to $18.1M due to the project being ahead of schedule.

In 2012, the Niagara Plant Group in-service variances were primarily due to the delayed in-service of the Sir Adam Beck I Unit G3 Upgrade project ($29.4M) and the deferral of DeCew Falls I Station Upgrade ($3.5M). These decreases were partly offset by the additional final in-service amount for Sir Adam Beck I Unit G7 Frequency Conversion project ($4.5M). As

described below, the Sir Adam Beck I Unit G3 project was delayed to accommodate the outage for warranty work on Sir Adam Beck I Unit G7.

In 2012, R.H. Saunders GS in service variance of ($1.2M) less than plan is due to the Protection and Controls Project being ahead of schedule and fully in serviced in 2011.

The following three projects, which had costs greater than $20M and were identified in OPG's previous payment amounts application (EB-2010-0008), were completed and went into service in 2010, 2011 or 2012.

4.1.1 Sir Adam Beck I Generating Station – Unit G9 Upgrade (SAB10047)

The project to upgrade Unit G9 was completed on schedule in December 2010 and placed in-service in January 2011. The final project cost was $2.1M less than the approved project estimate of $32.1M. The additional capacity and energy from this project will be 10 MW and 60.8 GWh/year, respectively.

4.1.2 R.H Saunders Generating Station - Generator Protection Replacement and Control Upgrades (SAUN0047)

The Generator Protection Replacement and Control Upgrades project was approved with an estimate of $21.7M. The project was completed in 2011 under budget and ahead of schedule at a total cost of $19.9M, including $0.7M of removal costs which were charged to Base OM&A costs. The final capital in-service amount for the project was $19.1M.

4.1.3 Sir Adam Beck I Generating Station - Unit G7 Frequency Conversion (SAB10032)

The final cost of the Sir Adam Beck I Generating Station - Unit G7 Frequency Conversion project is $32.0M, as compared to the original release of $35.2M. This project was a complete unit rehabilitation, including a frequency conversion from 25 Hz to 60 Hz operation. Prior to this project Unit G7 had been decommissioned and deregistered with the IESO. The additional capacity and energy from this project will be 62 MW and 100 GWh/year, respectively. The unit was declared in-service in June 2009 with a cost of $27.5M. However,

as described below, an additional $4.5M was required through February 2012 to complete necessary warranty work. The Unit G7 Frequency Conversion project Business Case Summary is provided in Attachment 1 to this schedule.

This project was originally approved by the OPG Board of Directors in 2007 for $35.2M with a planned in-service date of March 2009. When Unit G7 was commissioned and brought on-line, there were a number of significant operating issues. The unit was not officially accepted for commercial in-service until June 2009 to allow time for some of these issues to be addressed. Two of the major problems with the unit were the ineffectiveness of the turbine runner seal and issues with unacceptable vibration. Efforts were made to address both of these issues. However, these did not yield the required performance changes to ensure reliable service. Therefore, a previously planned outage to install a Johnson Valve sleeve in 2011 was used to remove the runner and correct misalignment issues with the unit, repair damage to wicket gates (caused by the misalignment) and make improvements to the runner seal. This major rework was completed under warranty by Weir American Hydro Corporation in 2012. However, approximately $4.5M of costs, including the disassembly and reassembly of the unit, were not covered by the warranty and was funded under the original project approval.

4.2 In-Service Additions in 2013 Bridge Year and 2014-2015 Test Period

Summary information for capital in-service additions is provided in Ex. D1-1-2 Tables 4 and 5. For the bridge and test years, additional detail by project is provided on Ex. D1-1-2 Tables 1, 2 and 3.

The largest in-service addition over these three years is the Niagara Tunnel project, which is described in Ex. D1-2-1. For the Niagara Tunnel Project, $1,474.2M will be placed in-service in 2013, and $2.0M in 2014. These amounts are in addition to the previous in-service amount of $19.2M for the accelerator wall at the International Niagara Control Works structure (also known as International Control Dam) that was completed in 2007.

Other than the Niagara Tunnel project, five Tier 1 projects have amounts that come into service in the bridge year, including: the Sir Adam Beck 1 GS G3 Unit Rehabilitation ($22.7M in 2013), Des Joachims GS Main Output Transformer Replacements ($4.3M in 2013), the Otto Holden GS Headgate Replacement and Gain Rehabilitation ($3.0M in 2013), the Des Joachims GS Turbine Runner Replacements ($2.8M in 2013), and the Otto Holden GS Sluicegate Replacement and Sluicegate System Rehabilitation ($2.5M in 2013).

During the test period, four Tier 1 projects have amounts that are expected to come into service during the test period, the Sir Adam Beck 1 Unit G10 Rehabilitation ($25.4M in 2015), the Des Joachims GS Turbine Runner Replacements ($2.8M in both 2014 and 2015), the Otto Holden GS Sluicegate Replacement and Sluicegate System Rehabilitation ($2.5M in both 2014 and 2015), and the Otto Holden GS Headgate Rehabilitation and Gain Replacement ($2.0M in 2015).

5.0 DEFERRED PROJECTS AND CANCELED PROJECTS

The following three Tier 1 projects identified in OPG's previous payment amounts application (EB-2010-0008) have been deferred or cancelled.

5.1 Sir Adam Beck I Generating Station – Unit 10 Upgrade (SAB10050)

This project was identified as a part of the Sir Adam Beck I Generating Station unit upgrade program with work planned between 2012 and 2014. However, during the Definition Phase of the project, a detailed condition assessment was conducted and completed in 2011. The unit was discovered to be in better condition than had been anticipated. Therefore, as described above, the unit upgrade was deferred and the project is not expected to commence until 2014.

5.2 Sir Adam Beck I Generating Station – Rehabilitate Canal Lining (SAB10056)

This project was originally identified during a condition assessment of the canal liner above the waterline. The upper portion of the canal lining was found to be deteriorated and in need

of eventual repair work. In September 2007, a comprehensive inspection of the canal below the water line was completed. During this inspection, it was revealed that the canal was in better condition than previously believed and, as part of 2009 business planning, the project was deferred from the 2011 in-service date that was indicated in EB-2007-0905. The project cost estimates have been updated to $126.5M. This project is now expected to start in 2017 with an in-service date in 2020. The scope reflects the repair work specified in the more comprehensive condition assessment. The project is currently programmed to be completed after the Niagara Tunnel project and Sir Adam Beck Pump GS Reservoir Rehabilitation projects in order to minimize production losses and the overlapping of major projects at the Sir Adam Beck complex.

5.3 Sir Adam Beck Pump Generating Station – Dyke Foundation Grouting (SABP0022)

This project was cancelled as its scope of work has been included in the Sir Adam Beck Pump Generating Station Reservoir Refurbishment and Expansion project (HDEV0028) described above.

LIST OF ATTACHMENTS

Attachment 1: Business Case Summaries

ATTACHMENT 1

Business Case Summaries

Provided below is a list of projects with total project cost of $20M or greater, and their associated Business Case Summaries. Paper copies of the Business Case Summaries are provided.

Tab	Business Case Summaries	Project No.
1	Sir Adam Beck Pump GS – Reservoir Refurbishment (Definition Phase)	HDEV0028
2	Sir Adam Beck I Generating Station – Unit G3 Rehabilitation	SAB10064
3	Sir Adam Beck I Generating Station – Unit G7 Frequency Conversion	SAB10032
4	Sir Adam Beck I Generating Station – Unit G9 Rehabilitation	SAB10047
5	Sir Adam Beck I Generating Station – Unit G10 Upgrade – New Runner and Generator Rewind (Developmental Release)	SAB10050
6	Des Joachims Generating Station - Replace Main Output Transformers	DESJ0031
7	Des Joachims Generating Station - Turbine Runner Replacement	DESJ0016
8	Otto Holden Generating Station - Replace Sluicegates & Rehabilitate Sluicegates	OTTO0021
9	Otto Holden Generating Station - Replace Headgates and Rehabilitate Gains	OTTO0039
10	Ranney Falls GS Expansion Project (Definition Phase)	HDEV0024