IN THE MATTER OF the *Public Utilities Act*, RSNL 1990, Chapter P-47 (the Act) as amended; and

IN THE MATTER OF an Application by Newfoundland and Labrador Hydro for an Order approving: (1) 2013 Capital Budget pursuant to Section 41(1) of the Act; (2) its 2013 capital purchases, and construction projects in excess of $50,000 pursuant to Section 41(3)(a) of the Act; (3) its leases in excess of $5,000 pursuant to Section 41(3)(b) of the Act; and (4) its estimated contributions in aid of construction for 2012 pursuant to Section 41(5) of the Act and for an Order pursuant to Section 78 of the Act fixing and determining its average rate base for 2011.

REQUESTS FOR INFORMATION OF THE ISLAND INDUSTRIAL CUSTOMERS

IC-NLH-1 Hydro at page 14 of the 2013 Capital Plan states that first power from the Labrador Island HVDC Link is anticipated to be available in late 2016, that following full commissioning of the HVDC Link it is intended to maintain the Holyrood asset as "generator ready" for three to four years to address the possibility of loss of supply from Labrador, and that after 2020 Holyrood will be available for synchronous condenser operation only.

(a) In the above-described circumstances, is full commissioning anticipated to be later than 2017?

(b) It is the understanding of the Island Industrial Customers that, currently as a generating asset, Holyrood's three thermal generating units are operated at a minimum base load of at least 40% of their maximum capacity rating at all times (excepting downtime for inspections, repairs, and the like). Explain, in detail, how this minimum operating procedure will change following full commissioning of the HVDC Link.

IC-NLH-2 At page 13 of the 2013 Capital Projects Overview, Hydro states that the estimated contingency has been set at 20% and that this is consistent with the AACE estimate classification system. Would a lesser contingency (i.e. 10%) be consistent with the AACE estimate classification system and if so, why would a lesser contingency not be considered appropriate in this Application?

IC-NLH-3 At page 13 of the 2013 Capital Projects Overview, Hydro proposes that Phase I engineering costs incurred in 2012 be included in the capital costs sought to be approved in this Application. Hydro notes that, in previous years, "high level engineering work" had been completed prior to the filing of the capital budget submission.

(a) Explain how "high level engineering work" differs from "Phase I engineering".

(b) Why did Hydro not consider "Phase 1 Engineering" as being essential prior to its being "advanced" in 2012 to improve the quality of its capital budget applications? What considerations did Hydro apply to determine that a change in methodology was appropriate in 2012 in preparation for its 2013 Capital Budget Application?

(c) In previous capital budget submissions, did Hydro seek to have the costs of "high level engineering work", completed prior to the filing of the capital budget submission, capitalized and approved as capital costs? If not, explain why these costs were not previously claimed as capital costs. Under IFRS IAS 16, can "high level engineering work" be capitalized?

(d) In the current Application, in relation to the Projects where Hydro proposes to include Phase I engineering costs as part of its capital costs to be approved for the 2013 Capital Budget, did Hydro incur any costs for "high level engineering work" that are not being claimed as part of the Phase I engineering costs (excluding any Phase I costs falling below the $1,000 threshold)?

(e) In the current Application, in relation to the Projects where Hydro proposes to include Phase I engineering costs as part of its capital costs to be approved for the 2013 Capital Budget, did Hydro incur any of those costs prior to 2012? If yes, provide the pre-2012 cost incurred for each Project, and the date or range of dates when these pre-2012 costs were incurred.

(f) At page 13 of the 2013 Capital Projects Overview, Hydro states that the "Costs associated with compiling and reporting the capital budget are not directly attributable to bringing an asset into operation and as such would be considered an operating expense." In relation to the Projects where Hydro proposes to include Phase I engineering costs as part of its capital costs to be approved for the 2013 Capital Budget, provide a breakdown of the costs of compiling and reporting the capital budget which were not included in the claimed capital costs, and which were considered an operating expense.

IC-NLH-4 With reference to Appendix A of the 2013 Capital Projects Overview - the 2013 Hydro Project Prioritization - why have "Front End Engineering Design" (FEED) costs been aggregated as a separate Project cost, instead of being allocated as part of the costs of the various Projects in respect of which these FEED costs were (or are to be) incurred? If such FEED costs relate to projects to be included in Hydro's 2014 Capital Budget Application, why would such costs not be included in that Application, as opposed to being included in the present Application?

IC-NLH-5 With reference to pages 14-15 of the 2013 Capital Projects Overview, Table 1 Front End Engineering Design 2012 Costs,

(a) Why do the 2012 FEED costs as tabulated total only $229,700, when FEED costs are shown in Appendix A of the 2013 Capital Projects Overview, the 2013 Hydro Project Prioritization, as being $472,100? Is any of the $229,700 (as tabulated) included in the $472,000 FEED costs shown in Appendix A?

(b) If some of the $472,100 represents FEED costs to be incurred in 2013 for the 2014 capital budget (as proposed at page 13 of the 2013 Capital Projects Overview), identify the future projects in respect of which 2013 FEED costs are proposed to be incurred, and the amount of 2013 FEED costs allocated to each.

IC-NLH-6 With reference to Appendix A of the 2013 Capital Projects Overview, at page A4, Hydro asserts that non-prioritized projects in the table are either multi-year projects or "necessary programs". Provide Hydro's criteria for how it determines that "Service Extensions and Upgrades", "Transportation", "Tools and Equipment" and "Front End Engineering Design" are "necessary programs" and for how it distinguishes between these unprioritized projects and those projects which are assigned a priority.

IC-NLH-7 With reference to Appendix A of the 2013 Capital Projects Overview, at pages A5 - A12, Hydro sets out what are, apparently, the weighting factor criteria used to determine the priority ranking of capital projects. Provide, in detail, the factor and factor weights, for each criteria 1 to 12 listed on page A5, as assigned to each Project listed on pages A2 - A4. Also include in that detail the factor and factor weights assigned to each Project in respect of the "Immediate HIGH Priority Projects" criteria described on page A6.

IC-NLH-8 With reference to Appendix A of the 2013 Capital Projects Overview, at pages A1 - A12, Hydro sets out what are, apparently, the "Probability" and "Confidence Level" criteria used to determine the priority ranking of capital projects. Provide a detailed explanation, for each prioritized Project, of how these criteria were applied to determine the assigned priority for each Project.

IC-NLH-9 With reference to all of the Capital Projects, what policies or guidelines does Hydro follow as to (a) when an "Interest and Escalation" cost component should be included in the Budget Estimate and (b) how it should be calculated? Have any of those policies or guidelines changed within the last five (5) years? If yes, also provide the previously followed policies or guidelines.

IC-NLH-10 With reference to all of the Capital Projects, what policies or guidelines does Hydro follow as to (a) when a "Contingency" cost component should be included in the Budget Estimate and (b) how it should be calculated? Have any of those policies or guidelines changed within the last five (5) years? If yes, also provide the previously followed policies or guidelines.

IC-NLH-11 Provide Hydro's individual justifications and specific calculations for the "Interest and Escalation" and "Contingency" budget components for each of the following Projects:

- **C-3, Replace Stator Windings Unit 1 – Bay d'Espoir**
- **C-6, Installation of Variable Frequency Drives on Forced Draft Fans –Holyrood (for 2013 and 2014, and including an explanation as to why there is no "Contingency" component for 2013)**
- **C-8, Upgrade Governor Controls on Units 1 and 2 – Holyrood**
- **C-12, Complete Condition Assessment Phase 2 (Year 2) – Holyrood**
- **C-45, Perform Wood Pole Line Management Program**
- **D-136, Replace Light-Duty Mobile Equipment**

IC-NLH-12 With reference to the Project **C-6, Installation of Variable Frequency Drives on Forced Draft Fans - Holyrood**, at pages 7-8 of the report filed in support of this Project (Volume I, Tab 2), Hydro provides the formula for determining the net present value of this Project, which includes as one of its factors the cost of a barrel of oil. The cost used in the formula is stated as being based on the Nalcor Energy Corporate Planning Forecast from January 2012 (the "Nalcor forecast cost").

(a) What is the Nalcor forecast cost of a barrel of oil, as applicable to the fuel required for the operation of the Holyrood in the years 2015 and 2016?

(b) Is the answer to (a) the forecast cost used in the net present value analysis, as summarized in Table 2, at page 8 of the report filed in support of this Project (Volume I, Tab 2), or was Nalcor forecast cost adjusted in any way before being inputed into the formula?

(c) Provide Hydro's detailed calculations for the net present value analysis, as summarized in Table 2.

(d) Is Hydro aware of any forecasts of the cost of a barrel of oil that are more recent than the Nalcor Energy Corporate Planning Forecast from January 2012? If yes, provide the range of costs of a barrel of oil, as applicable to the fuel required for the operation of the Holyrood in the years 2015 and 2016, indicated by those other forecasts.

(e) Provide the alternate calculations for the net present value analysis, as summarized in Table 2, if the range of costs of a barrel of oil identified in response to (d) were to be utilized instead of the Nalcor Energy Corporate Planning Forecast from January 2012.

(f) Apart from variability in the forecast cost of a barrel of oil, are there any other factors that could experience variability that would affect the net present value analysis for this Project, including any potential limitations/qualifications outlined by Seimans regarding anticipated energy consumption of both systems?

IC-NLH-13 With reference to the Project **C-6, Installation of Variable Frequency Drives on Forced Draft Fans - Holyrood**, will this Project have any utility after Holyrood is fully converted to synchronous condenser mode?

IC-NLH-14 With reference to the Project **C-8, Upgrade Governor Controls Units 1 and 2 – Holyrood**, at page 10 of the report filed in support of this Project (Volume I, Tab 3), Hydro states that no alternatives were evaluated. Hydro does identify as a potential alternative to this Project replacement with a controller manufactured by another company. Can Hydro say, without having evaluated the alternative of a controller manufactured by another company, that such an alternative would have been as costly or more costly than the Project proposed?

IC-NLH-15 With reference to the Project **C-8, Upgrade Governor Controls Units 1 and 2 – Holyrood**, could the controller be replaced for one of the Units, without replacing the controller for the other Unit? If the controller for only one of the Units were to be replaced, would parts from the replaced Mark V controller be available as emergency spare parts (in addition to those identified in Table 1, at page 5, Volume I, Tab 3) for the other Mark V controller?

IC-NLH-16 With reference to the Project **C-8, Upgrade Governor Controls Units 1 and 2 – Holyrood**, have any of the parts identified in Table 1, at page 5, Volume I, Tab 3, been replaced in the service life to date of either of the Mark V controllers? If yes, identify the part replaced and the year of replacement.

IC-NLH-17 With reference to the Project **C-8, Upgrade Governor Controls Units 1 and 2 – Holyrood**, at page 8, Volume I, Tab 3, Hydro states that there is no maintenance agreement in place with GE and that maintenance is done by internal plant resources. What support has GE provided for the Mark V controllers, since their installation, other than supply of replacement, repair or exchange of components? Could maintenance by internal plant resources not be continued into the future and, if no, why not?

IC-NLH-18 With reference to the Project **C-8, Upgrade Governor Controls Units 1 and 2 – Holyrood**, has Hydro made any inquiries to determine what repair or exchange of components (and other support) for the Mark V may be available from sources other than GE?

IC-NLH-19 With reference to the Project **C-8, Upgrade Governor Controls Units 1 and 2 – Holyrood**, will this Project have any utility after Holyrood is fully converted to synchronous condenser mode?

IC-NLH-20 With reference to the Project **C-12, Complete Condition Assessment Phase 2 (Year 2) - Holyrood**, will any component of this Assessment be applicable to Holyrood once it is fully converted to synchronous condenser mode?

IC-NLH-21 With reference to the Project **C-12, Complete Condition Assessment Phase 2 (Year 2) - Holyrood**, will Hydro be in a position to apply for approval of any project recommendation arising from the Phase 2 Assessment before 2015?

IC-NLH-22 With reference to the Project **C-16, Install Backup System for Raw Water Supply and Clarifier - Holyrood**, provide the Aon Reed Stenhouse report.

IC-NLH-23 With reference to the Project **C-16, Install Backup System for Raw Water Supply and Clarifier - Holyrood**, given that the risk events posited in support of this Project have been known since 2007, what measures as Hydro taken in the interim to protect or mitigate against these risk events?

IC-NLH-24 With reference to the Project **C-16, Install Backup System for Raw Water Supply and Clarifier - Holyrood**, at page 6, Volume II, Tab 7, Hydro states that "it is anticipated to take three or four weeks to locate the failed section of the raw water supply pipe and perform the required repairs."

(a) Has Hydro commissioned any written evaluation or report to support this assertion? If yes, provide the written evaluation or report.

(b) If a section of the raw water supply pipe were to fail, is Hydro asserting that it would take three to four weeks to establish a temporary raw water supply while repairs were completed? Has Hydro evaluated the means of establishing a temporary raw water supply in such a circumstance?

(c) Has Hydro evaluated whether there are technologies available that would facilitate and expedite Hydro's locating of the site of a pipe failure? Has Hydro evaluated the costs of implementing one of these technologies?

IC-NLH-25 With reference to the Project **C-16, Install Backup System for Raw Water Supply and Clarifier - Holyrood**, break out what portion of the Total Project Cost is attributable to the raw water supply component of the Project and what portion is attributable to the raw water clarification component of the Project.

IC-NLH-26 With reference to the Project **C-16, Install Backup System for Raw Water Supply and Clarifier - Holyrood**, is it anticipated that the needed amount of raw water for power production will be eliminated upon full commissioning of the Labrador Island HVDC Link (except in the case of an interruption of the HVDC Link supply)? At Holyrood's reduced requirement for raw water, post-HVDC Link, how long would water stored on site last for fire protection, cooling water and domestic water requirements, if the raw water supply pipe failed?

IC-NLH-27 With reference to the Project **C-16, Install Backup System for Raw Water Supply and Clarifier - Holyrood**, has Hydro evaluated means of increasing the amount of water stored on-site, as a means of mitigating against a possible failure of the raw water supply? If so, provide details of such evaluation including cost estimates for increasing the amount of water stored on site.

IC-NLH-28 With reference to the Project **C-20, Upgrade Vibration Monitoring System – Holyrood**, have any of the parts identified in Table 1, at page 5, Volume II, Tab 9, been replaced in the service life to date of the TSI system? If yes, identify the part replaced and the year of replacement.

IC-NLH-29 With reference to the Project **C-20, Upgrade Vibration Monitoring System – Holyrood**, has Hydro evaluated whether the parts identified in Table 1, at page 5, Volume II, Tab 9, can be obtained from sources other than Bentley Nevada?

IC-NLH-30 With reference to the Project **C-20, Upgrade Vibration Monitoring System – Holyrood**, at page 9, Volume II, Tab 9, Hydro asserts that reliability performance and outage statistics are "not relevant to the justification of this proposal". Explain why they are not relevant.

IC-NLH-31 With reference to the **Project C-20, Upgrade Vibration Monitoring System Holyrood**, at page 12, Volume II, Tab 9, Hydro asserts that a request was made to another Turbine Supervisory Instrumentation system supplier for an alternative but that a complete cost and detailed estimate was not available at the time of the report. What is the name of the other supplier and is a cost and detailed estimate available at this time? If so, please provide same.

IC-NLH-32 With reference to the Project **C-67, Replace Battery Banks and Chargers 2013**, Hydro cites a typical service life of 18-20 years for flooded-cell batteries and 7-10 years for VLRA batteries. What is the source for this information?

IC-NLH-33 With reference to the Project **C-67, Replace Battery Banks and Chargers 2013**, what has been Hydro's operational experience for flooded-cell batteries with in excess of 20 years of service life and for VLRA batteries with in excess of 10 years service life?

IC-NLH-34 With reference to the Project **C-67, Replace Battery Banks and Chargers 2013**, with reference to Table 1: 2013 Battery and Charger Replacements (Volume II, Tab 27), provide the following information with respect to each location:

(a) Whether the batteries to be replaced at that location are flooded-cell or VLRA;

(b) The proposed capital expenditure for each location;

(c) The number of batteries at each location which have been tested and found to have a capacity of 80% or less of its rated capacity, per IEEE Standard 450 and 1188.

IC-NLH-35 With reference to the Project **C-67, Replace Battery Banks and Chargers 2013**, and the proposal to add (per page 4, Volume II, Tab 27) a second battery bank and a dual charger for the Bay d'Espoir Hydro Plant,

(a) For how long has the Bay d'Espoir Hydro Plant operated with a single battery bank and charger?

(b) What has been the operational experience with the single battery bank and charger at the Bay d'Espoir Hydro Plant?

(c) What is the justification for a second battery bank and a dual charger at the Bay d'Espoir Hydro Plant?

IC-NLH-36 With reference to the Project **C-67, Replace Battery Banks and Chargers 2013**, what is the justification for using VLRA batteries, given their shorter average service life?

IC-NLH-37 With reference to the Project **C-69, Upgrade Business Intelligence Software – Hydro Place**, will the proposed software be used by Nalcor or for any other non-regulated purposes?

IC-NLH-38 With reference to the Project **C-69, Upgrade Business Intelligence Software – Hydro Place**, what are the $207,700 in "Cost Recoveries"? Provide Hydro's detailed calculations for the Cost Recoveries.

IC-NLH-39 With reference to the Project **D-2, Install Cold-Reheat Condensate Drains Unit 3 – Holyrood**, Hydro identifies at page D-6 that this project will require an increased budget because it will be completed in 2014, and that costs of performing this work have been increasing annually.

(a) Why can this Project not be completed in 2013?

(b) Identify, in detail, the cost components of this Project that have resulted in an increased budget, as compared to the Actual Expenditures for the Unit 1 and Unit 2 work (Table 2, page D-6), and as compared to completion of the Project in 2013.

(c) Table 2, page D-6 indicates substantial cost overruns for both the Unit 1 and Unit 2 work, when the Capital Budget figure is compared to the Actual Expenditures. What cost components of the Unit 1 and Unit 2 work resulted in these cost overruns? What measures does Hydro propose to take to avoid or minimize cost overruns in respect of the Unit 3 Project?

IC-NLH-40 With reference to the Project **D -56, Upgrade Public Safety Around Dams and Waterways**, provide copies of both the pre-2011 and the 2011 Canadian Dam Association guidelines, pertaining to public safety around dams and associated waterways, as referred to on page D-61.

IC-NLH-41 With reference to the Project **D-265, Remove Safety Hazards**, provide the specific justification for and detailed breakdown of the $144,317 expenditure for "Highway signs to meet Occupational Health and Safety Traffic Control while working on highway."

IC-NLH-42 With reference to the Project **E-113, Legal Survey of Primary Distribution Line Right of Way**, with respect to the 835 km of distribution line surveyed from 2004 to 2011, have any Crown Land easements been yet granted to Hydro?

IC-NLH-43 With reference to the Project **E-113, Legal Survey of Primary Distribution Line Right of Way**, Hydro, according to the Table 3 Budget History has already expended over $300,000 on this project since 2007, and expects to additionally expend almost $2.0 million over the 2012-2021 period to complete the project. Has Hydro approached the Provincial Government to determine whether there is a more cost-efficient and time-efficient way by which Hydro may be granted the necessary easement rights over Crown land?

IC-NLH-44 With reference to the Project **E-140, Upgrade Enterprise Storage Capacity– Hydro Place**, will any of the proposed additional disk storage be used by Nalcor or for any other non-regulated purposes?

IC-NLH-45 With reference to the Project **E-140, Upgrade Enterprise Storage Capacity– Hydro Place**, what are the $70,200 in "Cost Recoveries"? Provide Hydro's detailed calculations for the Cost Recoveries.

IC-NLH-46 With reference to the Project **E-143, Replace Computer Room Air Conditioner – Hydro Place**, are any of the computer servers housed in the computer room used by Nalcor or for other non-regulated purposes?

IC-NLH-47 With reference to the Project **E-143, Replace Computer Room Air Conditioner – Hydro Place**, what are the $46,800 in "Cost Recoveries"? Provide Hydro's detailed calculations for the Cost Recoveries.

IC-NLH-48 With reference to the Project **E-149, Perform Minor Application Enhancements – Hydro Place**, will any of the applications be used by Nalcor or for other non-regulated purposes?

IC-NLH-49 With reference to the Project **E-149, Perform Minor Application Enhancements – Hydro Place**, what are the $45,700 in "Cost Recoveries"? Provide Hydro's detailed calculations for the Cost Recoveries.

IC-NLH-50 With reference to the Project **E-151, Replace Helpdesk Service Manager Application – Hydro Place**, will this application be used by Nalcor or for other non-regulated purposes?

IC-NLH-51 With reference to the Project **E-151, Replace Helpdesk Service Manager Application – Hydro Place**, what are the $34,700 in "Cost Recoveries"? Provide Hydro's detailed calculations for the Cost Recoveries.

IC-NLH-52 With reference to the Schedule of Capital Expenditures 2008-2017, Total Capital Expenditures are projected to increase, from $66,145,000 budget in 2013 to $111,682,000 budget in 2014, and will continue to increase to $153,322,000 budget in 2017. The largest component of these increases is in Transmission and Rural Operations. Is the primary driver for these increases in Transmission and Rural Operations expenditures the cost of adding to and upgrading the Island Transmission system to facilitate and accommodate the transmission of Muskrat Falls power?

IC-NLH-53 With reference to the Schedule of Capital Expenditures 2008-2017, expenditures for Generation will increase, from $23,134,000 budget in 2013 to $40,149,000 budget in 2014, and stay at close to this 2014 level for both the 2015 and 2016 budget. What projected proportion of 2014-2016 Generation expenditure will be on the Holyrood generation assets and what proportion on non-Holyrood generation assets?

DATED at St. John's, in the Province of Newfoundland and Labrador, this _____ day of August, 2012.

POOLE ALTHOUSE

Per: _____
Dean A. Porter

STEWART McKELVEY

Per: _____
Paul L. Coxworthy

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