nalcor energy
LOWER CHURCHILL PROJECT

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Doc. No. 09-10/3520

November 10, 2009

Board of Commissioners of Public Utilities
120 Torbay Road
P.O. Box 21040
St. John's, NL
A1A 5B2

Attention: Cheryl Blundon, Director – Corporate Services and Board Secretary

Dear Ms. Blundon:

Re: Application for Establishment of a Water Management Agreement

Nalcor Energy [Nalcor] and Churchill Falls (Labrador) Corporation [CF(L)Co] have both been granted water rights on the Churchill River, and are therefore subject to provisions of the *Electrical Power Control Act, 1994* and the *Water Management Regulations*. Both parties have undertaken to negotiate a water management agreement, but we have been advised by CF(L)Co that a tentative agreement reached between the parties was not approved by CF(L)Co's Board of Directors.

Consequently, in accordance with section 5.5(1) of the *Act*, Nalcor hereby applies to the Board to establish the terms of a Water Management Agreement between Nalcor and CF(L)Co with respect to the Churchill River. Please find enclosed the Application together with proposed water management agreement and supporting documents, in two volumes.

Sincerely,

Geoffrey P. Young
Senior Legal Counsel

cc. Andrew MacNeill, Vice President and General Manager, CF(L)Co.

IN THE MATTER OF the *Electrical Power Control Act, 1994*, SNL 1994, Chapter E-5.1, as amended (the EPCA); and

IN THE MATTER OF an application by Nalcor Energy to establish the terms of a water management agreement between Nalcor Energy and Churchill Falls (Labrador) Corporation Limited for the Churchill River, Labrador.

TO: The Board of Commissioners of Public Utilities (the Board)

THE APPLICATION OF Nalcor Energy **SAYS THAT:**

A. Background:

Introduction

1. Nalcor Energy is a statutory corporation existing pursuant to the Energy Corporation Act, S.N.L 2007, Chapter E-11.01.

2. Churchill Falls (Labrador) Corporation Limited (CF(L)Co) is a corporation incorporated under the laws of Canada.

3. Section 5.4(1) of the EPCA requires that two or more persons who have been granted rights by the Province to the same body of water as a source for the production of power and who utilize, or propose to utilize, or to develop and utilize the body of water as a source for the production of power shall enter into an agreement for the purpose of achieving, with respect to the body of water, the policy objective set out in subparagraph 3(b)(i) of the EPCA.

4. The Water Management Regulations (the Regulations) made pursuant to the EPCA provide further direction with respect to the content of a water management agreement. Each of Nalcor Energy and CF(L)Co is a "supplier" within the meaning of the Regulations, as hereinafter explained.

5. Section 5.7 of the EPCA provides that a water management agreement shall not adversely affect a provision of a contract for the supply of power entered into by a person bound by the water management agreement and a third party that was entered into before the water management agreement, or a renewal of that contract.

Existing and Proposed Facilities on the Churchill River

6. CF(L)Co has water rights with respect to the upper portion of the Churchill River in Labrador in the Province of Newfoundland and Labrador pursuant to the *Churchill Falls (Labrador) Corporation (Lease) Act, 1961*.

7. CF(L)Co owns and operates the existing 5,428 MW Churchill Falls hydroelectric generating facility located at Churchill Falls on the Churchill River, Labrador.

8. CF(L)Co has entered into various contracts relating to the supply of power and energy from the Churchill Falls facility.

9. Nalcor Energy has water rights with respect to the lower portion of the Churchill River pursuant to the Nalcor Water Lease dated March 17, 2009, as amended on October 2, 2009.

10. Nalcor Energy proposes to construct and operate two hydroelectric generating facilities on the lower portion of the Churchill River, consisting of a 2,250 MW generating facility at Gull Island and a 824 MW hydroelectric generating facility at Muskrat Falls.

11. Construction of the lower Churchill generating facilities will take place over the next several years, with first power projected to be after September 1, 2016.

Negotiation Process

12. Between April and September, 2009, Nalcor Energy and CF(L)Co teams negotiated the terms of a proposed water management agreement for the Churchill River.

13. The CF(L)Co Shareholders' Agreement prescribes CF(L)Co's approval process for the proposed water management agreement, as Nalcor Energy is a related party to CF(L)Co. The Shareholders' Agreement requires that the CF(L)Co Board of Directors approve the agreement.

14. On October 23, 2009, the CF(L)Co Board of Directors did not approve the proposed water management agreement and did not provide further direction to its negotiating team.

15. The parties have negotiated but have failed to enter into a water management agreement within a reasonable time as required by the EPCA and Regulations and Nalcor is therefore applying to the Board to establish the terms of a water management agreement.

B. Nalcor Energy Proposals:

16. Nalcor Energy applies to the Board to establish the terms of a water management agreement between Nalcor Energy and CF(L)Co pursuant to the provisions of the EPCA and the Regulations.

17. Nalcor Energy proposes that the terms of the water management agreement shall be substantially as set forth in Schedule "A" to this Application.

C. Order Requested:

18. Nalcor Energy requests that the Board make an Order:

a) establishing the terms of a water management agreement pursuant to section 5.5 of the EPCA;

b) such other or alternate orders or directions which may upon the hearing of this Application appear just and reasonable in the circumstances.

D: Communications:

19. Communication with respect to this Application should be forwarded to the attention of Ian F. Kelly, Q.C. and Geoffrey P. Young, counsel to Nalcor Energy.

DATED at St. John's, Newfoundland and Labrador, this 10th day of November, 2009.

NALCOR ENERGY

for Ian F. Kelly, Q.C. and Geoffrey Young

Nalcor Energy
P.O. Box 12400
St. John's, NL
A1B 4K7

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IN THE MATTER OF the *Electrical Power Control Act, 1994*, SNL 1994, Chapter E-5.1, as amended (the EPCA); and

IN THE MATTER OF an application by Nalcor Energy to establish the terms of a water management agreement between Nalcor Energy and Churchill Falls (Labrador) Corporation Limited for the Churchill River, Labrador.

AFFIDAVIT

I, Gilbert Bennett, Professional Engineer, of the City of Mount Pearl, in the Province of Newfoundland and Labrador, make oath and say as follows:

1. That I am Vice-President, Lower Churchill Project of Nalcor Energy and as such I have knowledge of the matters and things to which I have herein deposed, and make this affidavit in support of the Application.

2. That to the best of my knowledge, information and belief, all matters, facts and things set out in this Application are true.

SWORN at St. John's, in the Province of Newfoundland and Labrador, this 10th day of November, 2009 before me:

Barrister, Newfoundland and Labrador

Gilbert Bennett

Schedule A

Proposed Water Management Agreement

WATER MANAGEMENT AGREEMENT made as of the _____ day of _____, 2009,

BETWEEN: **CHURCHILL FALLS (LABRADOR) CORPORATION LIMITED**, a corporation incorporated under the laws of Canada ("**CF(L)Co**"),

- and -

NALCOR ENERGY, a corporation incorporated under the laws of the Province of Newfoundland and Labrador ("**Nalcor**"),

WHEREAS CF(L)Co holds water rights to the upper Churchill River, and has constructed and operates water storage, generation and transmission facilities on and in respect of the upper Churchill River;

WHEREAS Nalcor holds water rights to the lower Churchill River, and intends to construct and to operate water storage, generation and transmission facilities on and in respect of the lower Churchill River;

WHEREAS pursuant to the Act:

(i) it is declared to be the policy of the Province that, amongst other things, all sources and facilities for the production, transmission and distribution of Power and Energy in the Province should be managed and operated in a manner that would result in the most efficient production, transmission and distribution of Power and Energy and, where necessary, all Power, Energy, sources and facilities of the Province are to be assessed and allocated and re-allocated in the manner that is necessary to give effect to such policy; and

(ii) two or more persons who have been granted rights by the Province to the same body of water as a source for the production of Power and Energy and who utilize, or propose to utilize, or to develop and utilize the body of water as a source for the production of Power and Energy shall enter into an agreement for the purpose of achieving, with respect to the body of water, such policy;

WHEREAS, in compliance with their obligations pursuant to the Act and the Regulations, the parties hereto enter into this Water Management Agreement;

NOW THEREFORE THIS AGREEMENT WITNESSES that for and in consideration of the respective covenants, undertakings, promises and agreements of the parties set forth in this Agreement, the parties hereto hereby covenant and agree as follows:

Article 1
DEFINITIONS AND INTERPRETATION

1.1 Defined Terms

For the purpose of this Agreement, the following terms shall have the respective meanings set forth in this Section 1.1 and grammatical variations of such terms shall have corresponding meanings:

"**Act**" means the *Electrical Power Control Act, 1994* (Newfoundland and Labrador);

"**Affected Party**" has the meaning set forth in this Section 1.1 in the definition of "**Force Majeure Event**";

"**Affiliate**" has the meaning set forth in the *Corporations Act* (Newfoundland and Labrador);

"**Agreement**", "**hereto**", "**hereof**", "**herein**", "**hereby**", "**hereunder**" and similar expressions mean or refer to this Agreement, including its Annex "A", as the same may be amended or supplemented from time to time in writing between the parties hereto;

"**Article**", "**Section**" and "**Subsection**" mean or refer to the specified article, section or subsection of this Agreement;

"**Board**" means the Board of Commissioners of Public Utilities referred to in the Act;

"**Business Day**" means during regular business hours any day, other than a Saturday or a Sunday or a statutory or civic holiday in the City of St. John's, in the Province;

"**Capability**" means the maximum load carrying ability of generating equipment or other electrical apparatus under specified conditions for a given time interval;

"**CF(L)Co Banked Energy**" means the net Energy in storage, owed at any given time by Nalcor to CF(L)Co, calculated as the cumulative difference between the amount of Energy that Nalcor would have generated to fulfil its own Delivery Requirements, and the amount of Energy that Nalcor generated in accordance with the Production Schedule, as measured in MWh, as determined in accordance with this Agreement;

"**Churchill River**" means the Churchill River located in Labrador, in the Province;

"**Damages**" means any cost, damage (including incidental and consequential damage), loss, claim, expense, interest, fine, penalty, liability, obligation or other responsibility, including costs, fees and expenses of legal counsel (including costs on a solicitor-client basis) and other advisors and experts, whether or not involving a third party;

"**Deficiency**" means a failure to satisfy a Production Schedule;

"**Delivery Requirements**" means the quantity of Power required each hour by a Supplier at specified delivery points;

"**Dispute**" has the meaning set forth in Section 13.1;

"**Energy**" means electrical energy measured in kilowatt-hours or multiples thereof;

"**Energy Benefits**" means the Energy accruing to a Supplier for a period as a result of this Agreement in excess of the Energy that would have accrued to such Supplier for such period in the absence of this Agreement, as determined in accordance with Annex "A";

"**Energy Conversion Rate**" means the relationship between the Energy production of a hydraulic generating facility and the volume of water consumed to produce that Energy, expressed in units of gigawatt – hours per hectometres cubed (million cubic metres) of water, as determined in accordance with Annex "A";

"**Force Majeure Event**" means an event, condition or circumstance or combination of events, conditions or circumstances beyond the reasonable control and arising without the fault or negligence of the party making a claim pursuant to section 14.4 of this Agreement (the "**Affected Party**") including, without limitation:

(i) fire, explosion, lightning, earthquake, storm, hurricane, flood, ice, landslide or other natural calamity or act of God,

(ii) terrorism, war (whether or not declared), civil commotion, riot, act of the public enemy,

(iii) strike, lockout or other labour disturbance,

(iv) action of any government, legislature, court or other governmental authority, compliance with applicable law, regulation or order of a governmental authority,

(v) blockade, embargo, closing of borders, and

(vi) failure or breakdown of equipment or facilities, except as a result of a failure by a Supplier to follow Good Utility Practice;

and which, despite all reasonable efforts of the Affected Party to prevent it or mitigate its effects, adversely affects the performance by such Party of its obligations under this Agreement;

"**Good Utility Practice**" means those practices, methods or acts, including but not limited to the practices, methods or acts engaged in or approved by a significant portion of the electric utility industry in Canada, that at a particular time, in the exercise of reasonable judgment, and in light of the facts known at the time a decision is made, would be expected to accomplish the desired result in a manner which is consistent with laws and regulations and with due consideration for safety ,reliability, environmental protection, and economic and efficient operations;

"**HQ Power Contract**" has the meaning set forth in Subsection 3.2(a);

"**Independent Coordinator**" means a person or persons appointed under this Agreement to impartially determine the Suppliers' Power and Energy production levels;

"**Independent Coordinator Code of Conduct**" means the code of conduct to be adopted by the Water Management Committee, consisting of rules and principles to ensure the impartiality and proficiency of the Independent Coordinator;

"**Minister**" means the minister appointed under the *Executive Council Act* to administer the Act;

"**Nalcor Banked Energy**" means the net Energy in storage, owed at any given time by CF(L)Co to Nalcor, calculated as the cumulative difference between the amount of Energy that CF(L)Co would have generated to fulfil its own Delivery Requirements, and the amount of Energy that CF(L)Co generated in accordance with the Production Schedule, as measured in MWh, as determined in accordance with this Agreement;

"**Operational Date**" means the later of the date of renewal of the HQ Power Contract pursuant to Schedule III of the HQ Power Contract and the commercial in-service date of the first Nalcor generating unit on the lower Churchill River;

"**Power**" means the rate at which Energy is transferred at any point measured in kilowatts or multiples thereof;

"**Prior Power Contracts**" has the meaning set forth in Section 3.1;

"**Production Facilities**" means all components of a hydro-electric generating facility including any transmission facilities associated with them;

"**Production Schedule**" means the quantity of Power and Energy production, as determined by the Independent Coordinator, required from each Supplier pursuant to and in accordance with this Agreement, the Act and the Regulations;

"**Province**" means the Province of Newfoundland and Labrador;

"**Regulations**" mean the *Water Management Regulations* made pursuant to the Act;

"**Subsidiary**" has the meaning set forth in the *Corporations Act* (Newfoundland and Labrador);

"**Supplier**" means CF(L)Co or Nalcor, as owners of rights to produce Power and Energy from hydro-electric facilities on the Churchill River and "**Suppliers**" means both of them;

"**Transmission Provider**" means any entity that owns, operates or controls facilities used for the transmission of Power and Energy between or amongst Production Facilities on the Churchill River;

"**Water Management Committee**" means the committee established pursuant to Subsection 5.1(a).

1.2 Sections and Headings

The division of this Agreement into articles, sections and subsections and the insertion of headings are for convenience of reference only and shall not affect the interpretation of this Agreement.

1.3 Number, Gender and Persons

In this Agreement, words importing the singular number only shall include the plural and vice versa, words importing gender shall include all genders and words importing persons shall include individuals, corporations, partnerships, associations, trusts, unincorporated organizations, governmental bodies and other legal or business entities of any kind whatsoever.

1.4 Entire Agreement

This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements, understandings, negotiations and discussions, whether written or oral. There are no conditions, covenants, agreements, representations, warranties or other provisions, express or implied, collateral or otherwise, relating to the subject matter hereof except as provided herein.

1.5 Applicable Law

This Agreement shall be construed, interpreted and enforced in accordance with, and the respective rights and obligations of the parties shall be governed by, the laws of the Province and the federal laws of Canada applicable therein, and each party hereby irrevocably and unconditionally submits to the exclusive jurisdiction of the courts of the Province and all courts competent to hear appeals therefrom.

1.6 Successors and Assigns

This Agreement shall enure to the benefit of and shall be binding on and enforceable by the parties hereto and their respective successors and permitted assigns.

1.7 Severability

If any provision of this Agreement is determined by a court of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such determination shall not impair or affect the validity, legality or enforceability of the remaining provisions hereof, and each provision hereof is hereby declared to be separate, severable and distinct.

1.8 Amendment and Waivers

No amendment or waiver of any provision of this Agreement shall be binding on any party hereto unless agreed to in writing by such party, subject to, in the case of an amendment, any required approval from the Board. No waiver of any provision of this

Agreement shall constitute a waiver of any other provision, nor shall any waiver constitute a continuing waiver unless otherwise provided.

Article 2
OBJECTIVE OF THE AGREEMENT

2.1 Objective of the Agreement

The objective of this Agreement shall be the coordination of the Power generation and Energy production in the aggregate for all Production Facilities on the Churchill River to satisfy the Delivery Requirements for all Suppliers, in a manner that provides for the maximization of the long term Energy-generating potential of the Churchill River, while ensuring that the provisions of any Prior Power Contracts are not adversely affected.

Article 3
PRIOR POWER CONTRACTS

3.1 No Adverse Effect

The parties acknowledge that pursuant to Section 5.7 of the Act, nothing in this Agreement shall adversely affect a provision of a contract for the supply of Power and Energy entered into by a Supplier and a third party prior to this Agreement, or a renewal of that contract (collectively "**Prior Power Contracts**"), and that all provisions of this Agreement and ancillary documents and agreements shall be interpreted accordingly.

3.2 Acknowledgement of Prior Power Contracts

The Suppliers acknowledge that the following are the sole contracts for the supply of Power and Energy entered into by a Supplier and a third party prior to this Agreement:

(a) the power contract entered into between Hydro-Quebec and CF(L)Co dated May 12, 1969 as well as Schedule III of such power contract which relates to its renewal (the "**HQ Power Contract**");

(b) the Churchill Falls Guaranteed Winter Availability Contract between Hydro-Quebec and CF(L)Co dated November 1, 1998, as amended on March 29, 2000;

(c) the sublease entered into between Twin Falls Power Corporation Limited and CF(L)Co dated November 15, 1961, as amended on April 15, 1963, November 30, 1967 and July 1, 1974 and renewed pursuant to an agreement dated June 9, 1989, and the operating lease between the same parties dated November 30, 1967, as amended on July 1, 1974 and November 10, 1981; and

(d) the power contract entered into between Newfoundland and Labrador Hydro-Electric Corporation and CF(L)Co dated March 9, 1998, as amended on April 1, 2009.

Article 4
SUPPLIERS' OBLIGATIONS

4.1 Appointment of the Water Management Committee

The Suppliers shall constitute and appoint the Water Management Committee in accordance with Article 5 .

4.2 Compliance with Production Schedules

CF(L)Co and Nalcor shall adhere to the Production Schedules set by the Independent Coordinator, provided that in no event shall the Suppliers be required to operate in a manner which is inconsistent with Good Utility Practice, including, without limitation, in any manner which (i) may endanger human life or safety, (ii) may damage or cause excessive wear and tear to their equipment or facilities, (iii) may endanger or compromise the security and integrity of their reservoir structures, or (iv) would require that water levels of any reservoir of a Supplier be carried higher than those established by engineering criteria for freeboard or lower than those recommended for operations.

Each Supplier shall be responsible for the integrity of its Production Facilities.

4.3 Administration of the Independent Coordinator

(a) The Suppliers shall jointly and sufficiently fund the administration of the Independent Coordinator in proportion to the Energy Benefits obtained by each Supplier from the administration of this Agreement.

(b) The costs of administration of the Independent Coordinator shall include, without limitation, remuneration, physical office space, human resources, computing and communication material, software and facilities and liability insurance pursuant to Section 6.4.

(c) Each Supplier shall provide the Independent Coordinator with:

(i) Delivery Requirements of its contracts for the supply of Power and Energy;

(ii) the Power and Energy generation Capability of such Supplier's Production Facilities;

(iii) equipment maintenance requirements of such Supplier;

(iv) a forecast of short and long term delivery requirements of such Supplier;

(v) copies of a licence, lease or other instrument granting water rights of such Supplier;

(vi) plans and requirements respecting such Supplier's construction or commissioning activities;

(vii) transmission availabilities of such Supplier;

(viii) the forecast of inflows of such Supplier; and

(ix) historical data for modelling, detailed model data, discharge curves, water transport times and pre-spill protocols; and

(x) such additional information as the Water Management Committee may determine;

and shall regularly update any changes to them, all prepared in a manner consistent with Good Utility Practice.

4.4 Information Sharing

Information and data shall be shared between the Suppliers and by the Suppliers with the Independent Coordinator as necessary for the Independent Coordinator to perform its functions under this Agreement, including records, data and models, and the Independent Coordinator shall have physical and computer access to those facilities as required to obtain and verify such information and data.

4.5 Access to Records

The Water Management Committee shall have access at all reasonable times to the pertinent and relevant records of the Suppliers required to substantiate any fact or matter pertaining to this Agreement.

4.6 Record Keeping

Each Supplier shall maintain, for a period of not less than seven years, records required of it to undertake its responsibilities under this Agreement and the Regulations, which records shall be available, upon request, to the Board or the Minister.

4.7 Scheduling

(a) In no event shall the Power requests made to the Independent Coordinator by a Supplier for a period exceed the maximum generating Capability of the Production Facilities of that Supplier for the period requested.

(b) At such times as the Water Management Committee shall determine, each Supplier shall provide the Independent Coordinator with:

(i) its Delivery Requirements for the week following, and

(ii) an estimate of its Delivery Requirements for the three weeks thereafter.

(c) The Delivery Requirements provided pursuant to Subsection 4.7(b)(i) shall constitute each Supplier's request for Power for that week to the extent and at the times indicated by the Delivery Requirements, but each Supplier shall have the right to make further changes to its Delivery Requirements.

(d) It is expressly acknowledged that CF(L)Co shall have the right to modify its Delivery Requirements to fulfill its obligations under any Prior Power Contract.

Article 5
WATER MANAGEMENT COMMITTEE

5.1 Appointment and Replacements

(a) The Suppliers shall establish, after the date of the approval of this Agreement by the Board pursuant to Subsection 5.4(3)(a) of the Act, and maintain the Water Management Committee consisting of four members, two appointed by CF(L)Co and two appointed by Nalcor.

(b) Each Supplier shall designate in writing at least one alternate member to the Water Management Committee for the members of the Water Management Committee appointed by such Supplier.

(c) Should a member be unable to attend a meeting of the Water Management Committee, such member shall be represented at the meeting by an alternate member or, in the absence of the latter, by a person designated in writing by the member or by the person to whom such member reports administratively.

(d) Prompt notice in writing shall be given by a Supplier to the other Supplier of appointments, removals and replacements of members of the Water Management Committee appointed by the Supplier giving notice.

5.2 Powers and Duties

(a) Subject to this Agreement, the Water Management Committee shall be authorized to deal with all substantive matters, other than those expressly assigned to the Independent Coordinator, as necessary to administer this Agreement and any ancillary documents and agreements, including the validation of the tools and information sources to be used for the implementation and operation of this Agreement.

(b) The Water Management Committee shall appoint the Independent Coordinator and may, from time to time, establish operating procedures or guidelines for the Independent Coordinator, may give directions to the Independent Coordinator and may amend, modify or supplement Annex "A" to this Agreement, in accordance with and subject to Subsection 7.1(h).

(c) The Water Management Committee may provide for mechanisms and procedures to facilitate the administration of this Agreement and any ancillary documents and agreements during times of emergency, including, without limitation, to preserve system stability and the integrity of Production Facilities.

5.3 Meetings

The Water Management Committee shall meet as often as required to fulfill its duties, but no less than every six (6) months, at such times and places as it shall determine from

time to time. Such meetings may be held in person or by telephone or such other means of communication as the Water Management Committee may decide. A quorum for the Water Management Committee shall be four (4) members.

5.4 Decisions

All decisions of the Water Management Committee shall be unanimous. Any impasse shall be resolved in accordance with the Dispute resolution mechanism provided under Article 13 .

5.5 Limitation on Powers

The Water Management Committee shall not act in a manner inconsistent with any provision of this Agreement, the Act or the Regulations.

Article 6
INDEPENDENT COORDINATOR

6.1 Appointment

(a) The Independent Coordinator shall consist of one or more persons. All appointments, removals or replacements of a person as Independent Coordinator shall be effected by the Water Management Committee.

(b) Any Supplier may call for the replacement of any person or persons appointed as Independent Coordinator if such person or persons breach in any manner the Independent Coordinator Code of Conduct. The replacement procedure shall be undertaken in accordance with the regular appointment procedures provided in Subsection 6.1(a). For greater certainty, no person appointed as Independent Coordinator shall be removed pursuant to this Subsection 6.1(b) before that person's replacement is appointed.

(c) Disputes and disagreements relating to the appointment, removal or replacement of the Independent Coordinator shall be subject to the Dispute resolution mechanisms provided under Article 13 .

6.2 Duties

(a) The Independent Coordinator shall, based on the information provided by the Suppliers, and in the exercise of reasonable judgment, establish short and long term Production Schedules for all Production Facilities on the Churchill River, through the coordination of production scheduling of the Suppliers based upon the use of the aggregate generating Capability, storage and transmission facilities of any Supplier on the Churchill River, in accordance with the objectives set out at Section 3(1) of the Regulations and with this Agreement. The duties of the Independent Coordinator in this regard shall include, without limitation, the following:

(i) ensuring that forecasts for Delivery Requirements, inflows, potential spills, generating Capability and storage volumes of each Supplier are received;

(ii) accounting for and recording all Nalcor Banked Energy and CF(L)Co Banked Energy, in accordance with the mechanisms provided in Annex "A" hereto;

(iii) co-operating with any Transmission Provider;

(iv) maintaining, for a period of not less than seven years, records required of the Independent Coordinator to undertake its responsibilities under this Agreement and the Regulations and such records shall be available, upon request, to the Board or the Minister;

(v) providing the Suppliers and the Water Management Committee with reports on its activities at regular intervals to be established in consultation with the Suppliers and the Water Management Committee;

(vi) providing to the Minister and, on request, the Board, an annual report summarizing its activities in a form acceptable to the Minister; and

(vii) performing such other duties or functions in furtherance of the objective of this Agreement as the Water Management Committee may from time to time assign.

(b) The Independent Coordinator shall determine the total Power to be produced at any time from the Suppliers' Production Facilities as the aggregate of the Delivery Requirements submitted by each of the Suppliers, as modified in accordance with Subsections 4.7(c) and 4.7(d).

(c) The Independent Coordinator shall determine and prepare the Production Schedules which shall specify the amount of Power to be produced by each Supplier's Production Facilities in accordance with the provisions of this Agreement.

(d) The Independent Coordinator shall not act in a manner inconsistent with any provision of this Agreement, the Act, the Regulations, or any procedures, directions or guidelines established by the Water Management Committee.

6.3 Limitation on Powers

(a) The parties acknowledge and agree that the following shall exceed the powers and duties of the Independent Coordinator:

(i) Scheduling CF(L)Co production for Nalcor, to the extent that such production conflicts with CF(L)Co's obligations under Prior Power Contracts; and

(ii) Scheduling CF(L)Co production for Nalcor in excess of the then current Nalcor Banked Energy, except in circumstances and to the extent necessary to avoid or limit water spillage from CF(L)Co reservoirs, in which case the Energy produced by CF(L)Co for Nalcor shall be calculated and accounted for in accordance with Subsection 7.1(c)(ii).

(b) Notwithstanding any other provision of this Agreement, the Independent Coordinator shall not schedule production by CF(L)Co for Nalcor that would result in Nalcor Banked Energy being a negative value.

6.4 Liability Insurance

Liability insurance or other similar and adequate insurance coverage shall be secured for the Independent Coordinator's fault, negligence, error, omission, breach of duty, acting in excess of powers, or other default, in the course of execution of its functions, including, without limitation, a breach of the Independent Coordinator Code of Conduct. The cost of such insurance shall be shared by the Suppliers in accordance with Section 11.1.

Article 7
ENERGY STORAGE AND ENERGY LOSSES ASSIGNMENT

7.1 Energy Storage and Energy Losses Assignment

(a) Each Supplier shall continue to have the same rights to store water in its reservoirs as it did prior to this Agreement, while at the same time recognizing the requirement to allow Energy banking by the other Supplier pursuant to the terms of this Agreement.

(b) In no event shall the generating Capability, storage capacity, or transmission Capability available to a Supplier from all Production Facilities on the Churchill River be less than the amounts of then available generating Capability, storage capacity, or transmission Capability of the Production Facilities owned by that Supplier on the Churchill River.

(c) The Independent Coordinator shall appropriately assign Nalcor Banked Energy and CF(L)Co Banked Energy to each Supplier in accordance with the following provisions and Annex "A":

(i) In the event that the Production Schedule established by the Independent Coordinator results in a production increase at the Nalcor Production Facilities and a production decrease at the CF(L)Co Production Facilities relative to the production required for each Supplier to meet its own Delivery Requirements:

- If the production increase at the Nalcor Production Facilities is less than the CF(L)Co Banked Energy, then the CF(L)Co Banked Energy shall be decreased by the amount of the production increase at the

Nalcor Production Facilities to the extent of any CF(L)Co Banked Energy, in accordance with Annex "A"; or

- If the production increase at the Nalcor Production Facilities is greater than the CF(L)Co Banked Energy, then the Nalcor Banked Energy shall be increased by the amount of the production decrease at the CF(L)Co Production Facilities, in accordance with Annex "A".

(ii) Subject to Section 6.3, in the event that the Production Schedule established by the Independent Coordinator results in a production increase at the CF(L)Co Production Facilities and a production decrease at the Nalcor Production Facilities relative to the production required for each Supplier to meet its own Delivery Requirements:

- If the production increase at the CF(L)Co Production Facilities is less than the Nalcor Banked Energy, then the Nalcor Banked Energy shall be decreased by the amount of the production increase at the CF(L)Co Production Facilities to the extent of any Nalcor Banked Energy, in accordance with Annex "A"; or

- If the production increase at the CF(L)Co Production Facilities is greater than the Nalcor Banked Energy, then the CF(L)Co Banked Energy shall be increased by the amount of the production decrease at the Nalcor Production Facilities, in accordance with Annex "A".

(iii) In the event that the Production Schedule established by the Independent Coordinator matches the Suppliers' Delivery Requirements, no adjustments to CF(L)Co Banked Energy or to Nalcor Banked Energy are required.

(d) For greater certainty, the Independent Coordinator shall make only one of the calculations provided in Subsections 7.1(c)(i) to 7.1(c)(iii), as applicable, in any given hour or other interval contemplated in Annex "A".

(e) The amount of Nalcor Banked Energy and CF(L)Co Banked Energy shall be determined based upon Energy Conversion Rates for the respective Production Facilities calculated in accordance with Annex "A" based upon the best data source available as tested in accordance with Good Utility Practice.

(f) The Independent Coordinator shall assign lost Energy fairly to each Supplier in the event of water spillage by deducting any applicable spillage amount from Nalcor Banked Energy or CF(L)Co Banked Energy in accordance with the following provisions and Annex "A":

(i) In the event of a spill from the CF(L)Co reservoirs and forebays that results from excess water in storage or flood control pre-spills, the water associated with Nalcor Banked Energy shall be the first water spilled, and the associated Energy loss shall be borne solely by Nalcor and shall be

assigned and recorded as a reduction in Nalcor Banked Energy, to the extent of any Nalcor Banked Energy;

(ii) Water spilled from CF(L)Co reservoirs and forebays that results from operational error, the failure of equipment, the effects of a customer's change in demand, the failure to follow Good Utility Practice or the failure of any containment or control structures shall not be assigned and recorded as a reduction to Nalcor Banked Energy, except to the extent that the cause of the spillage is attributable to Nalcor or its customers, to the extent of any Nalcor Banked Energy;

(iii) In the event of a spill from the Nalcor reservoirs and forebays that results from excess water in storage or flood control pre-spills, the water associated with CF(L)Co Banked Energy shall be the first water spilled, and the associated Energy loss shall be borne solely by CF(L)Co and shall be assigned and recorded as a reduction in CF(L)Co Banked Energy, to the extent of any CF(L)Co Banked Energy; and

(iv) Water spilled from the Nalcor reservoirs and forebays that results from operational error, the failure of equipment, the effects of a customer's change in demand, the failure to follow Good Utility Practice or the failure of any containment or control structures shall not be assigned and recorded as a reduction to CF(L)Co Banked Energy, except to the extent that the cause of the spillage is attributable to CF(L)Co or its customers, to the extent of any CF(L)Co Banked Energy.

(g) At regular intervals to be established by the Water Management Committee, but not less frequently than annually, adjustments shall be made to each Supplier's available Energy for subsequent intervals for Energy losses incurred in the previous period by each Supplier as a result of changes to its Energy Capability caused by the application of this Agreement, in accordance with Annex "A".

(h) Annex "A" may be amended, modified, or supplemented from time to time by the Water Management Committee, provided that no such amendment, modification or supplement shall:

(i) adversely affect any provision of a Prior Power Contract; or

(ii) conflict with any provision of this Agreement, the Act or the Regulations.

Article 8
METERING AND MEASUREMENT

8.1 Metering and Measurement

(a) The Suppliers shall establish and maintain adequate and reliable metering and measuring facilities necessary to monitor the Suppliers' compliance with their Power and Energy storage, generation and transmission obligations pursuant to this Agreement. Such metering and measuring facilities, including, without

limitation, the choice of technical devices and their final set-up and installation, shall be acceptable to all Suppliers.

(b) The parties agree that CF(L)Co shall bear no responsibility for any additional metering and measuring facilities or upgrades or modifications to existing metering and measuring facilities that the parties determine are required pursuant to or resulting from this Agreement, including the cost of establishing, maintaining, repairing or replacing same, provided that any metering and measuring facilities located on CF(L)Co's facility shall become the property of CF(L)Co on and from the date of installation, and shall thereafter be maintained, repaired and replaced by CF(L)Co, subject to cost recovery therefor by CF(L)Co from Nalcor.

(c) Each of CF(L)Co and Nalcor shall provide to the other all measurements, data and information from the metering and measuring facilities under its control as required for the implementation or operation of this Agreement.

(d) All metering and measuring facilities required for the implementation or operation of this Agreement shall be tested and calibrated at regular intervals established by the Water Management Committee as may be required in accordance with agreed standards. Each Supplier shall give sufficient prior notice to the other of any test which it intends to conduct and the other Supplier may have representatives present for such testing.

(e) Any metering or measuring facility required for the implementation or operation of this Agreement which breaks down, fails to meet the standards as agreed to or set out by the Water Management Committee or otherwise malfunctions, shall be promptly adjusted, repaired or replaced by a similar facility meeting the agreed standards and having the required accuracy, the cost of which shall be the responsibility of Nalcor pursuant to Section 11.2.

(f) Should any metering or measuring facility required for the implementation or operation of this Agreement break down or fail to have the required accuracy, the Suppliers shall determine, through the Water Management Committee, the amount of Power and Energy supplied during the period of failure or inaccuracy, the associated Nalcor Banked Energy and CF(L)Co Banked Energy, and the duration of such period of failure or inaccuracy. In making such determinations, the parties shall rely on the data and information which the Suppliers consider most conducive to achieving as accurate a determination as circumstances permit.

Article 9
MAINTENANCE

9.1 Maintenance Scheduling

Subject to the requirements of Prior Power Contracts and the provisions of this Agreement, CF(L)Co and Nalcor shall cooperate with each other and the Independent

Coordinator in scheduling equipment outages and derating for the maintenance of Production Facilities.

Article 10
DEFICIENCIES

10.1 Allocation of Deficiencies

When a Deficiency occurs, or is projected to occur:

(a) subject to the limitations contained in Section 4.2, Subsection 4.7(a) and Section 6.3, appropriate adjustments shall be made to the Power and Energy production levels and Production Schedules of all Production Facilities on the Churchill River to the extent practicable to remedy the Deficiency or anticipated Deficiency; and

(b) where a Deficiency occurs despite Subsection 10.1(a), and as a result of that Deficiency, a Supplier incurs Damages under a provision of a Prior Power Contract, such Damages shall be paid by the Supplier that caused the Deficiency, notwithstanding Section 14.4. If the cause of the Deficiency is common to both parties, or cannot be attributed to either, the Deficiency shall be allocated to Nalcor and CF(L)Co in proportion to their respective shortages in generation Capability to fulfill their respective Delivery Requirements.

Article 11
COSTS AND EXPENSES

11.1 Joint Costs and Expenses

The Suppliers shall jointly pay in proportion to the Energy Benefits obtained by each Supplier from the administration of this Agreement, all costs and expenses of or associated with each of the following:

(a) the establishment, organization and operation of the Water Management Committee, pursuant to Article 5 ;

(b) the appointment, organization and administration of the Independent Coordinator, pursuant to Subsections 4.3(a) and 4.3(b) and Article 6 ;

(c) incremental administrative costs, including, without limitation, costs related to information gathering, record keeping, reporting, efficiency modeling and establishment of new conversion curves; and

(d) subject to Sections 11.2 and 11.3, any other costs or expenses incurred in connection with the implementation, operation and administration of this Agreement.

11.2 Costs and Expenses for the Account of Nalcor

Nalcor shall pay all costs and expenses of or associated with the purchase, installation, maintenance, repair and replacement of any additional equipment and facilities, and upgrades or modifications to any existing equipment and facilities, required for the implementation and operation of, or resulting from, this Agreement and which, but for this Agreement, would not have been required by CF(L)Co, provided that any equipment and facilities located on CF(L)Co's Production Facilities shall become the property of CF(L)Co on and from the date of installation, and shall thereafter be maintained, repaired and replaced by CF(L)Co, subject to cost recovery therefor by CF(L)Co from Nalcor. In addition, any CF(L)Co equipment or facilities damaged during work associated with the foregoing shall be repaired or replaced at the expense of Nalcor, unless such damage was caused by CF(L)Co or a contractor of CF(L)Co.

11.3 Interconnection Costs

(a) CF(L)Co shall not be responsible for the costs and expenses of or associated with the purchase, installation, upgrading, maintenance, repair and replacement of transmission facilities, connections and ancillary equipment required to connect CF(L)Co's Production Facilities to Nalcor's Production Facilities.

(b) Notwithstanding Subsection 11.3(a), all transmission facilities, connections and ancillary equipment directly connected to CF(L)Co's Production Facilities shall be subject to CF(L)Co's approval, which approval shall not be unreasonably withheld, and any such facilities, connections and equipment located on CF(L)Co's Production Facilities shall become the property of CF(L)Co on and from the date of installation.

11.4 Transmission Losses

Nalcor shall bear all increases in and benefit from all decreases to transmission losses resulting from or relating to, directly or indirectly, transmissions undertaken pursuant to or in accordance with the terms of this Agreement and Annex "A".

11.5 Reimbursement Assurances

Should CF(L)Co have to incur costs or expenses which are the responsibility of Nalcor pursuant to this Agreement, CF(L)Co shall have the option, if it is not fully satisfied, acting reasonably, that Nalcor has the capacity to reimburse such costs promptly to CF(L)Co, to require payment of such costs in advance by Nalcor, or such other form of security as CF(L)Co deems reasonably acceptable. In all cases where Nalcor is required, pursuant to this Agreement, to reimburse CF(L)Co for expenditures it has made and for which payment in advance was not made by Nalcor to CF(L)Co, payments associated with such reimbursement shall be due and payable by Nalcor to CF(L)Co within thirty (30) days following receipt of an invoice supported by documentation which is reasonably required to verify the amounts billed therein. Any amount remaining unpaid after the expiration of the thirty (30) day period shall bear interest at a rate per annum of two percent (2%) above the prime rate accorded for loans to commercial borrowers by the Bank of Nova Scotia. The prime rate to be used in the determination of the interest rate shall be the prime rate on the date such amounts first become overdue. Amounts

disputed by Nalcor shall be communicated to CF(L)Co in writing prior to the due date. Disputed amounts may be withheld by Nalcor until such time as the dispute is resolved and shall not bear interest unless the disputed amount or a portion thereof is subsequently resolved in favour of CF(L)Co, in which case interest shall apply from the date the amounts became overdue. All undisputed amounts of an invoice, and that portion of a disputed amount which is not in dispute, shall be due and payable by Nalcor to CF(L)Co within thirty (30) days following receipt of the invoice in accordance with the terms of this section 11.5.

Article 12
EFFECTIVE DATE AND TERM

12.1 Effective Date

This Agreement shall come into effect on the date of the approval of this Agreement by the Board pursuant to Subsection 5.4(3)(a) of the Act, save that Sections 4.2, 4.7 and 6.2 to 6.4, and Articles 7, 9 and 10 shall become operational on the Operational Date. Nalcor shall give CF(L)Co at least 90 days written notice of the Operational Date.

12.2 Term of Agreement

This Agreement shall continue in force until the earliest of (i) the permanent cessation of all operations at either of the CF(L)Co Production Facilities or the Nalcor Production Facilities, and (ii) any earlier date agreed to by the Suppliers, subject to the execution of a new water management agreement agreed to by the Suppliers and approved by the Board pursuant to Subsection 5.4(3)(a) of the Act.

Article 13
DISPUTE RESOLUTION

13.1 Water Management Committee

In the event that a dispute or difference ("**Dispute**") arises between the parties out of or in connection with this Agreement, the parties shall first refer the Dispute to the Water Management Committee for resolution.

13.2 Mediation

Should the Water Management Committee fail to resolve the Dispute within 14 days of referral pursuant to Section 13.1, the parties may submit the Dispute to a mediator appointed by agreement of the parties and possessing the necessary technical knowledge to assist the parties in resolving the Dispute. Either party may give written notice to the other describing the nature of the Dispute, requiring the Dispute to be submitted to a mediator and proposing the name of a suitable person to be appointed.

13.3 Application to Board

Notwithstanding Sections 13.1 and 13.2, the Dispute may be submitted to the Board by either party for resolution pursuant to Section 8 of the Regulations.

Article 14
MISCELLANEOUS PROVISIONS

14.1 Equitable Relief

In the event of a violation, contravention, breach or threatened breach of this Agreement by either party, the other party shall be entitled to both temporary and permanent injunctive relief and specific performance. The right of a party to injunctive relief and specific performance shall be in addition to any and all other remedies available to it and shall not be construed to prevent it from pursuing, either consecutively or concurrently, any and all other legal or equitable remedies available to it.

14.2 Relationship of Parties

Nothing in this Agreement is intended to create a partnership, joint venture or other joint legal entity making any party liable for the acts or omissions of any other party. Nothing in this Agreement is intended to create a principal / agency relationship between the parties and, except as expressly provided herein, no party shall have any authority, in any way, to bind any other party. Notwithstanding the terms hereof, each party is acting in its separate independent capacity and has the full right to enforce its rights against the other under this Agreement.

14.3 Assignment and Transfer

No voluntary transfer of this Agreement or of the rights of a Supplier shall be made except:

(a) to an unrelated third party of such Supplier which acquires all, or substantially all, of the assets devoted to production, transmission, distribution and sale of Power and Energy of such Supplier, with the prior written consent of the other Supplier, which consent shall not be unreasonably withheld; or

(b) to a Subsidiary or Affiliate of such Supplier in the event of a transfer to said Subsidiary of Affiliate of all, or substantially all, of the assets devoted to production, transmission, distribution and sale of Power and Energy on the Churchill River of such Supplier, upon prior written notice by the assignor to the other Supplier.

Any successor to or assignee of the rights of any party hereto, whether by voluntary transfer, judicial sale or otherwise, shall be subject to all the terms and conditions of this Agreement to the same extent as though such successor or assignee were the original party hereunder.

14.4 Force Majeure

An Affected Party shall be excused from the performance of its obligations hereunder or liability for Damages to the other party, if and to the extent it shall be delayed in or prevented from performing or carrying out any of the provisions of this Agreement, except the obligation to pay any amount when due, by reason of a Force Majeure Event, provided that an Affected Party claiming a Force Majeure Event shall notify the other

party of such Force Majeure Event, and shall use reasonable efforts, at its own cost, to mitigate the effects of the relevant Force Majeure Event and to remove the condition that prevents the Affected Party's performance, and shall perform its obligations as soon as possible and to as full an extent as possible.

14.5 Confidentiality of Information

Each party covenants and agrees that, except as otherwise expressly authorized in writing by the other party or as required by law, neither party nor its representatives, agents or employees will disclose to third parties, directly or indirectly, any confidential information or confidential data relating to the other party or its business.

14.6 Notices

(a) Any notice or other communication required or permitted to be given hereunder shall be in writing and shall be delivered in person, transmitted by facsimile or similar means of recorded electronic communication or sent by registered mail, charges prepaid, addressed as follows:

(i) if to CF(L)Co:

Churchill Falls (Labrador) Corporation
500 Columbus Drive
P.O. Box 12500
St. John's, NL A1B 3T5

Attention: Vice President and General Manager
Facsimile: (709) 737-1782

(ii) if to Nalcor:

Nalcor Energy
500 Columbus Drive
P.O. Box 12800
St. John's, NL A1B 0C9

Attention: Vice President, Lower Churchill Project
Facsimile: (709) 737-1782

(b) Any such notice or other communication shall be deemed to have been given and received on the day on which it was delivered or transmitted (or, if such day is not a Business Day, on the next following Business Day) or, if mailed, on the fifth Business Day following the date of mailing; provided, however, that if at the time of mailing or within five Business Days thereafter there is or occurs a labour dispute or other event that might reasonably be expected to disrupt the delivery of documents by mail, any notice or other communication hereunder shall be delivered or transmitted by means of recorded electronic communication as aforesaid.

(c) Any party may at any time change its address for service from time to time by giving notice to the other party in accordance with this Section 14.6.

14.7 Counterparts

This Agreement may be executed in counterparts, each of which shall constitute an original and all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF this Agreement has been executed by the parties as of the day and year first before written.

CHURCHILL FALLS (LABRADOR) CORPORATION LIMITED

Witness: _____ Per: _____
Name: Name:
Title: Title:

Witness: _____ Per: _____
Name: Name:
Title: Title:

NALCOR ENERGY

Witness: _____ Per: _____
Name: Name:
Title: Title:

Witness: _____ Per: _____
Name: Name:
Title: Title:

Annex "A"

1. Introduction

Subject to the restrictions and limitations contained in the Agreement, this Annex "A" provides the necessary calculations to appropriately assign Energy storage amounts and Energy losses to each Supplier for the application of Article 7 of the Agreement.

2. Definitions

2.1 "**CF(L)Co Cumulative Water Volume**" means the net volume of water in the Nalcor reservoirs associated with CF(L)Co Banked Energy after additions to and subtractions of CF(L)Co Hourly Water Volume and any adjustments for spillage, denominated in millions of cubic metres (hectometres cubed);

2.2 "**CF(L)Co Hourly Water Volume**" means the amount of water calculated in accordance with Section 6.4 of this Annex "A", denominated in millions of cubic metres (hectometres cubed);

2.3 **"Nalcor Cumulative Water Volume**" means the net volume of water in the CF(L)Co reservoirs associated with Nalcor Banked Energy after additions to and subtractions of Nalcor Hourly Water Volume and adjustments for spillage, denominated in millions of cubic metres (hectometres cubed); and

2.4 "**Nalcor Hourly Water Volume**" means the amount of water calculated in accordance with Section 6.3 of this Annex "A", denominated in millions of cubic metres (hectometres cubed).

3. Production Scheduling

3.1 Production by Nalcor for CF(L)Co shall be the amount of Energy produced at the Nalcor generator bus required to provide the requested Energy at the required CF(L)Co delivery point(s);

3.2 Production by CF(L)Co for Nalcor shall be the amount of Energy produced at the CF(L)Co generator bus required to provide the requested Energy at the required Nalcor delivery point(s).

4. Energy Conversion Rates

Energy Conversion Rates for each Production Facility shall be determined at plant load set points for each combination of unit dispatch up to the Production Facility's Capability for the full range of net heads possible during operation.

5. Water Spillage

5.1 The volume of water spilled from a reservoir shall be calculated based on the gate openings, the discharge rating tables for the gate, and the duration of the

period when the gate was open, and the Nalcor Cumulative Water Volume or the CF(L)Co Cumulative Water Volume shall be reduced accordingly.

5.2 The lost Energy associated with the volume of water spilled from a reservoir for the purpose of assignment to the Suppliers and adjustments to the Nalcor Banked Energy and to the CF(L)Co Banked Energy shall be the volume of water spilled at a Supplier's Production Facility multiplied by the appropriate Energy Conversion Rate applicable to such Production Facility.

6. Calculation of Energy Banking and Adjustment of Energy Losses

6.1 The calculation of the change in the Nalcor Banked Energy, the Nalcor Hourly Water Volume, the Nalcor Cumulative Water Volume, the CF(L)Co Banked Energy, the CF(L)Co Hourly Water Volume, the CF(L)Co Cumulative Water Volume and any necessary adjustments for spillage shall be made hourly by the Independent Coordinator.

At the end of each hour, the Independent Coordinator shall account for any changes in the Energy Conversion Rates or transmission losses that occurred in that hour and adjust Nalcor Banked Energy and CF(L)Co Banked Energy accordingly.

6.2 The calculation of Nalcor Banked Energy, the Nalcor Hourly Water Volume, the CF(L)Co Banked Energy and the CF(L)Co Hourly Water Volume shall recognize the net head and unit loading that would have existed to fulfill each Supplier's Delivery Requirements and those which actually existed to fulfill the Production Schedule when choosing the appropriate Energy Conversion Rates. These calculations shall also recognize the increases and decreases in electrical losses resulting from each Supplier fulfilling the Production Schedule instead of its own Delivery Requirements.

6.3 The Nalcor Hourly Water Volume shall be calculated as follows:

(a) Nalcor Hourly Water Volume = $Vol_{d(CF)}$ - $Vol_{p(CF)}$, where :

(i) $Vol_{d(CF)}$ = volume that would have been used at the CF(L)Co Production Facilities if CF(L)Co had fulfilled its own Delivery Requirements, denominated in millions of cubic metres (hectometres cubed);

(ii) $Vol_{p(CF)}$ = volume used at the CF(L)Co Production Facilities to satisfy the Independent Coordinator's Production Schedule, denominated in millions of cubic metres (hectometres cubed);

(b) where, using an hourly interval, $Vol_{d(CF),}$ and $Vol_{p(CF)}$ are calculated to be :

(i) $Vol_{d(CF)}$ = $(MW_{d(CF)}$ x 1 hour) x (1/ $ECR_{d(CF)}$) x (1 GWh / 1,000 MWh)

(ii) $Vol_{p(CF)}$ = $(MW_{p(CF)}$ x 1 hour) x (1/ $ECR_{p(CF)}$) x (1 GWh / 1,000 MWh)

(c) and where :

(i) $MW_{d(CF)}$ = production setting at the CF(L)Co Production Facilities as measured at the same point used for determining the Energy Conversion Rate in Section 4 of this Annex "A", required to satisfy CF(L)Co's Delivery Requirements after accounting for electrical losses between the CF(L)Co generator bus and the specified delivery point, denominated in MW;

(ii) $MW_{p(CF)}$ = production setting at the CF(L)Co Production Facilities as measured at the same point used for determining the Energy Conversion Rate in Section 4 of this Annex "A", required to satisfy the Production Schedule set by the Independent Coordinator for CF(L)Co, denominated in MW;

(d) therefore,

(i) $ECR_{d(CF)}$ = the Energy Conversion Rate determined pursuant to Section 4 of this Annex "A" that would have existed at CF(L)Co Production Facilities if CF(L)Co had fulfilled its own Delivery Requirements, taking into account the electrical output, net head, unit loading, and other relevant factors that would have existed if CF(L)Co had fulfilled its own Delivery Requirements, denominated in GWh per million cubic metres (hectometres cubed) of water.

(ii) $ECR_{p(CF)}$ = the Energy Conversion Rate determined pursuant to Section 4 of this Annex "A" that actually existed at the CF(L)Co Production Facilities where Energy banking is taking place for the Production Schedule, taking into account the electrical output, net head, unit loading and other relevant factors during the time interval of the banking calculation, denominated in GWh per million cubic metres (hectometres cubed) of water.

6.4 The CF(L)Co Hourly Water Volume shall be calculated as follows:

(a) CF(L)Co Hourly Water Volume = $Vol_{d(LC)} - Vol_{p(LC)}$, where :

(i) $Vol_{d(LC)}$ = volume that would have been used at the Nalcor Production Facilities if Nalcor had fulfilled its own Delivery Requirements, denominated in millions of cubic metres (hectometres cubed);

(ii) $Vol_{p(LC)}$ = volume used at the Nalcor Production Facilities to satisfy the Independent Coordinator's Production Schedule, denominated in millions of cubic metres (hectometres cubed);

(b) where, using an hourly interval, $Vol_{d(LC)}$, and $Vol_{p(LC)}$ are calculated to be :

(i) $Vol_{d(LC)} = (MW_{d(LC)} \times 1 \text{ hour}) \times (1/ ECR_{d(LC)}) \times (1 \text{ GWh} / 1{,}000 \text{ MWh})$

(ii) $Vol_{p(LC)}$ = $(MW_{p(LC)} \times 1 \text{ hour}) \times (1/ ECR_{p(LC)}) \times (1 \text{ GWh} / 1{,}000 \text{ MWh})$

(c) and where :

(i) $MW_{d(LC)}$ = production setting at the Nalcor Production Facilities as measured at the same point used for determining the Energy Conversion Rate in Section 4 of this Annex "A", required to satisfy Nalcor's Delivery Requirements after accounting for electrical losses between the Nalcor generator bus and the specified delivery point, denominated in MW;

(ii) $MW_{p(LC)}$ = production setting at the Nalcor Production Facilities as measured at the same point used for determining the Energy Conversion Rate in Section 4 of this Annex "A", required to satisfy the Production Schedule set by the Independent Coordinator for Nalcor, denominated in MW;

(d) therefore,

(i) $ECR_{d(LC)}$ = the Energy Conversion Rate determined pursuant to Section 4 of this Annex "A" that would have existed at the Nalcor Production Facilities if Nalcor had fulfilled its own Delivery Requirements, taking into account the electrical output, net head, unit loading, and other relevant factors that would have existed if Nalcor had fulfilled its own Delivery Requirements, denominated in GWh per million cubic metres (hectometres cubed) of water.

(ii) $ECR_{p(LC)}$ = the Energy Conversion Rate determined pursuant to Section 4 of this Annex "A" that actually existed at the Nalcor Production Facilities where Energy banking is taking place for the Production Schedule, taking into account the electrical output, net head, unit loading, and other relevant factors during the time interval of the banking calculation, denominated in GWh per million cubic metres (hectometres cubed) of water.

7. Energy Benefits

7.1 Energy Benefits for each Supplier shall be determined by the Water Management Committee, in accordance with the Agreement, for each period established by the Water Management Committee, which period shall not exceed one year.

7.2 CF(L)Co may, at its option, either fund the administration of the Independent Coordinator in an amount proportional to its Energy Benefits, or it may deliver to Nalcor an amount of Energy equal to CF(L)Co's Energy Benefit for the period in question.

Water Management Agreement Application

Pre-filed Evidence

Table of Contents

1. OVERVIEW

In June 2007, the Legislature of the Province of Newfoundland and Labrador enacted amendments to the *Electrical Power Control Act, 1994*, S.N.L. 1994, c. E 5.1, (the EPCA). The amended EPCA[1] provides that where two or more persons have been granted rights to the same body of water for the production of power, these persons shall enter into an agreement for the purpose of achieving the most efficient production, transmission and distribution of power[2]. The EPCA also requires that the provisions of such an agreement not adversely affect a provision of a contract for the supply of power entered into by a party to such an agreement and a third party, or a renewal of that contract (hereinafter referred to as a prior power contract).

On January 16, 2009, regulations under the EPCA entitled *Water Management Regulations* N.L.R. 4/09 (the Regulations) were proclaimed. The Regulations require a water management agreement to ensure coordination of power generation and energy production in the aggregate for all production facilities on a body of water so as to satisfy the delivery schedules for all suppliers in a manner that provides for the maximization of the long-term energy generating potential of a body of water[3].

Nalcor Energy (Nalcor) and Churchill Falls (Labrador) Corporation (CF(L)Co) both hold rights for the production of power with respect to the Churchill River. The EPCA requires that both parties enter into a water management agreement. Consequently, Nalcor and CF(L)Co representatives participated in negotiations for six months, reaching agreement in September 2009. Because the proposed agreement was between related parties of CF(L)Co, it required approval of the CF(L)Co Board of Directors. It was submitted to the CF(L)Co Board of Directors on October 23, 2009 for approval, but approval was not granted.

[1] Subsection 5.4 of the EPCA
[2] Subparagraph 3(b)(i) of the EPCA
[3] Section 3 (1) of the Water Management Regulations

As a result, Nalcor has applied, pursuant to the EPCA[4], for the Board of Commissioners of Public Utilities (the Board) to establish the terms of a water management agreement between CF(L)Co and Nalcor.

This evidence reviews the following matters:

- Existing and Proposed Facilities and Contracts;
- Purpose of the Water Management Agreement;
- Negotiation Process; and
- Proposed Water Management Agreement.

[4] Subsection 5.5(1) of the EPCA.

2. EXISTING AND PROPOSED FACILITIES AND CONTRACTS

The Churchill River is the largest river in Labrador and has its headwaters located at the western Labrador/Québec boundary. It drains a basin of approximately 92,500 square kilometres and is approximately 850 kilometres long from its headwaters to Lake Melville. See Figure 1 below.

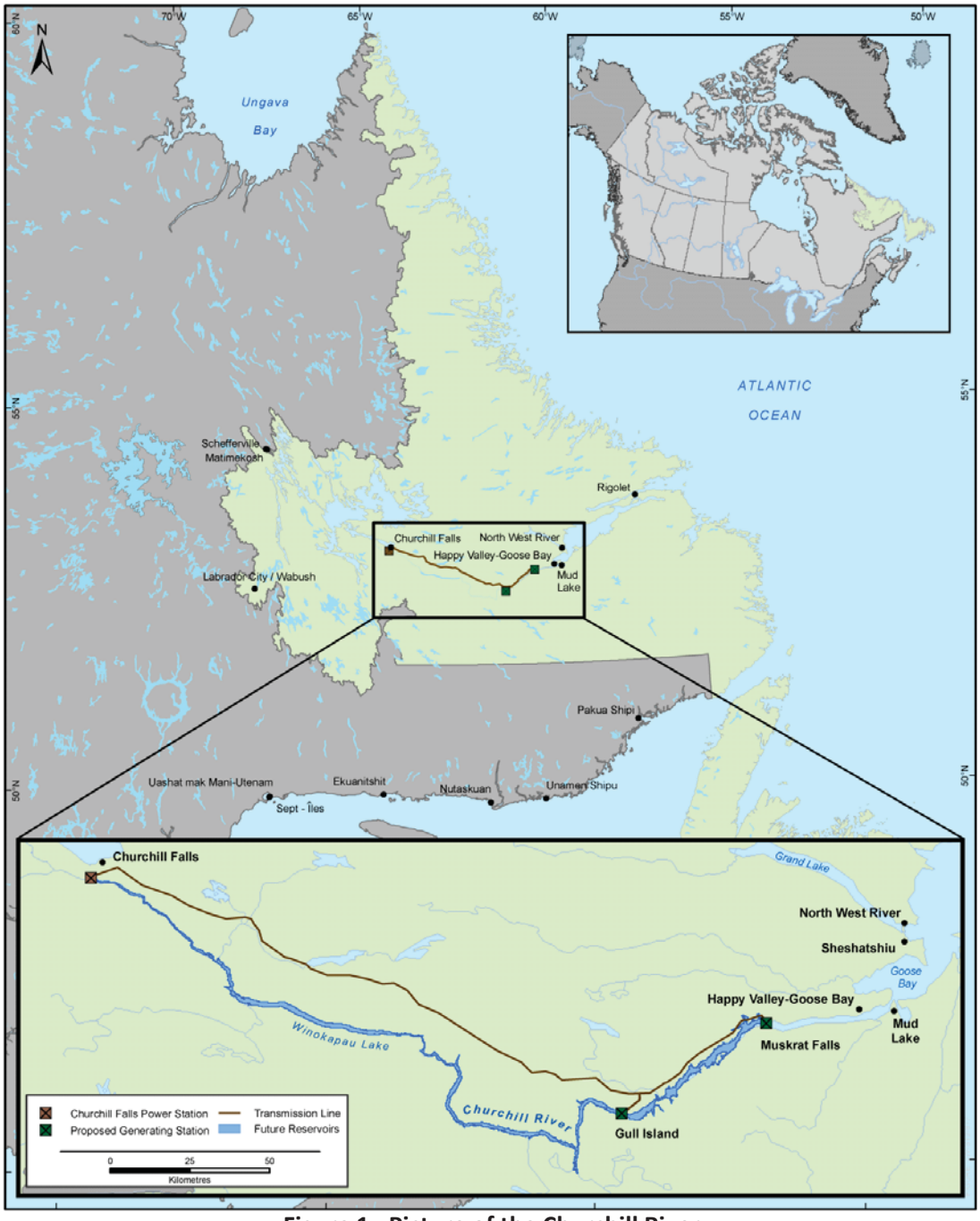


Figure 1: Picture of the Churchill River

The hydrology of the Churchill River basin (see Appendix A) reflects the regional climate; runoff is strongly seasonal with high flows in the spring (typically peaking in May or June), with low flows in the late winter. Approximately half of the annual inflow results from snow melt.

CF(L)Co has been operating the Churchill Falls hydroelectric generating facility on the Churchill River since 1971. CF(L)Co has power contracts with Hydro Québec (HQ), Newfoundland and Labrador Hydro (Hydro) and Twin Falls Power Corporation (Twinco). Hydro holds 65.8% of the common shares of CF(L)Co, with the remainder held by HQ.

Nalcor is proposing to develop two generating facilities on the lower portion of the Churchill River, at Gull Island and Muskrat Falls.

2.1. Existing Facilities

CF(L)Co holds the development and generation rights to the upper portion of the Churchill River pursuant to the Churchill Falls (Labrador) Corporation Limited (Lease) Act, 1961 (Exhibit 1). Under the lease, CF(L)Co has water power rights for that portion of the river above 425 feet elevation above sea level.

The drainage area for the upper Churchill River incorporates most of western and central Labrador. The Ossokmanuan reservoir, originally developed as part of the Twin Falls power development, and the Smallwood reservoir provide approximately 30 billion m^3 of live, or usable, storage space. In addition to the Churchill River basin, the diversion of the Naskaupi and Kanairiktok Rivers creates a total drainage area of approximately 70,000 km^2. A series of dams, dykes, canals, spillways, and control structures is used to manage the flow of water from the reservoirs to the Churchill Falls generating station.

The course of the Churchill River has been diverted from its natural course over Churchill Falls into an underground powerhouse located downstream from the falls. Power is

generated as water passes from the intake located on the Labrador plateau, through the powerhouse, and out into the Churchill River valley. The head developed at the facility is approximately 313 metres. The generating station at Churchill Falls has 11 generating units, with a total capacity of 5,428 MW, and an average annual energy output of approximately 34 TWh.

Three 735 kV transmission lines deliver power to HQ at the Labrador/Québec border. As well, there are two 230 kV lines delivering power to western Labrador, and a 138 kV transmission line extending to the Lake Melville area.

A more detailed description of the Churchill Falls facilities is contained in Exhibit 2.

2.2. Existing Contracts

CF(L)Co has entered into four contracts with its major customers for the supply of power, energy and ancillary services:

- The HQ Power Contract;
- The Sublease between Twinco and CF(L)Co;
- The Hydro recall power contract; and
- The Churchill Falls Guaranteed Winter Availability Contract.

The salient points of these contracts are discussed below.

2.2.1 HQ Power Contract

CF(L)Co sells approximately 85% of the energy produced at Churchill Falls to HQ pursuant to an agreement dated May 12, 1969 (the HQ Power Contract) (Exhibit 3). The HQ Power Contract has an initial term that runs to August 31, 2016. Thereafter, the HQ Power Contract is renewed for a further term of 25 years from September 1, 2016 to August 31, 2041 in accordance with Schedule III to the contract. The contract provides for 4,083 MW of firm capacity in winter and 3,864 MW in summer, after accounting for power and energy recalled for sale to Hydro. Energy entitlements are derived from a periodic assessment of

historic sales, spillage and reservoir elevation readings. The value derived from this assessment, called the Annual Energy Base (AEB) will be fixed for the renewal period of the contract. Schedule III to the HQ Power Contract alters the manner in which the AEB will be supplied to HQ by CF(L)Co. Upon renewal, HQ will become entitled to receive Continuous Energy, defined in Schedule III, Article 1.1 (II) as follows:

> "***Continuous Energy***" means, in respect of any month, the number of kilowatt-hours obtainable, calculated to the nearest 1/100 of a billion kilowatt-hours, when the Annual Energy Base is multiplied by the number which corresponds to the number of days in the month concerned and the result is then divided by the number which corresponds to the number of days in the year concerned.

Annual Energy Base is also defined in Schedule III, Article 1.1 (II) as follows:

> "***Annual Energy Base***" means the number of kilowatt-hours per year represented by the Annual Energy Base in effect at the time of expiry of the Power Contract which is hereby renewed.

As a result, HQ will be entitled to essentially equal amounts of energy during each month after renewal. However, HQ will remain entitled to schedule the hourly deliveries of its monthly entitlement of Continuous Energy at any time during the month.

In addition to HQ's entitlements, the original HQ Power Contract recognizes CF(L)Co's obligation to provide power and energy to Twinco and entitlement to withhold recall power.

2.2.2 Twinco Sublease

CF(L)Co has an obligation to provide power and energy to Twinco pursuant to the Sublease (Exhibit 4) entered into between Twinco and the Hamilton Falls Power Corporation (now

CF(L)Co) dated November 15, 1961[5]. It provides for the supply of 225 MW and 1.97 TWh of power and energy[6]. The obligation expires on December 31, 2014.

2.2.3 Hydro recall power contract

The recall power contract (Exhibit 6) of March 9, 1998[7] obligates CF(L)Co to provide Hydro with 2.36 TWh of energy at the Labrador Québec border. The contract expires on August 31, 2041.

2.2.4 Churchill Falls Guaranteed Winter Availability Contract (GWAC)

The GWAC (Exhibit 7) is a contract between HQ and CF(L)Co which provides for additional availability, using reasonable efforts, of the Churchill Falls plant after deducting HQ Power Contract firm capacity, station services and townsite loads, recall and Twinco power. It expires on August 31, 2041. Nalcor notes that the GWAC is not, strictly speaking, a contract for the supply of power. Since a generating unit is not dispatched under the GWAC, no power is supplied through this contract. Nalcor does note, however, that if CF(L)Co maintains its unit availability under the GWAC, then its units will be available for delivery under the HQ Power Contract, and has therefore agreed to include the GWAC as a relevant contract in the water management agreement. In a different context, Nalcor may not consider the GWAC as a contract for the supply of power.

2.3. Proposed Facilities

Nalcor holds the development and generation rights to the lower Churchill River pursuant to the Nalcor Water Lease. The lower Churchill River comprises that part of the river below the 425 foot elevation; CF(L)Co holds development rights in the river above the 425 foot elevation. This lease was originally executed on March 17, 2009 (Exhibit 8.1), and was

[5] As amended on April 15, 1963, November 30, 1967, and July 1, 1974, and renewed pursuant to an agreement dated June 9, 1989, and the operating lease (Exhibit 5) between the same parties dated November 30, 1967, as amended on July 1, 1974 and November 10, 1981.
[6] Hamilton Falls – Twinco November 1961 Sublease, attached as Exhibit 4.1, page 17.
[7] As amended on February 21, 2001, March 31, 2004 and April 1, 2009.

subsequently revised and replaced on October 2, 2009 (Exhibit 8.2). Nalcor proposes to develop generating facilities on the river at Gull Island and Muskrat Falls.

In addition to the approximately 70,000 km^2 associated with the upper Churchill, the tributaries that will flow into the Gull Island and Muskrat Falls reservoirs drain an area of approximately 23,000 km^2. The Gull Island reservoir will be contained within the Churchill River valley, and will extend from the Gull Island powerhouse back to the tailrace at Churchill Falls. The reservoir will be approximately 225 km long and will have approximately 580 million m^3 of live storage. The Muskrat Falls reservoir will extend from the Muskrat Falls powerhouse back to the Gull Island tailrace. It will have approximately 50 million m^3 of live storage.

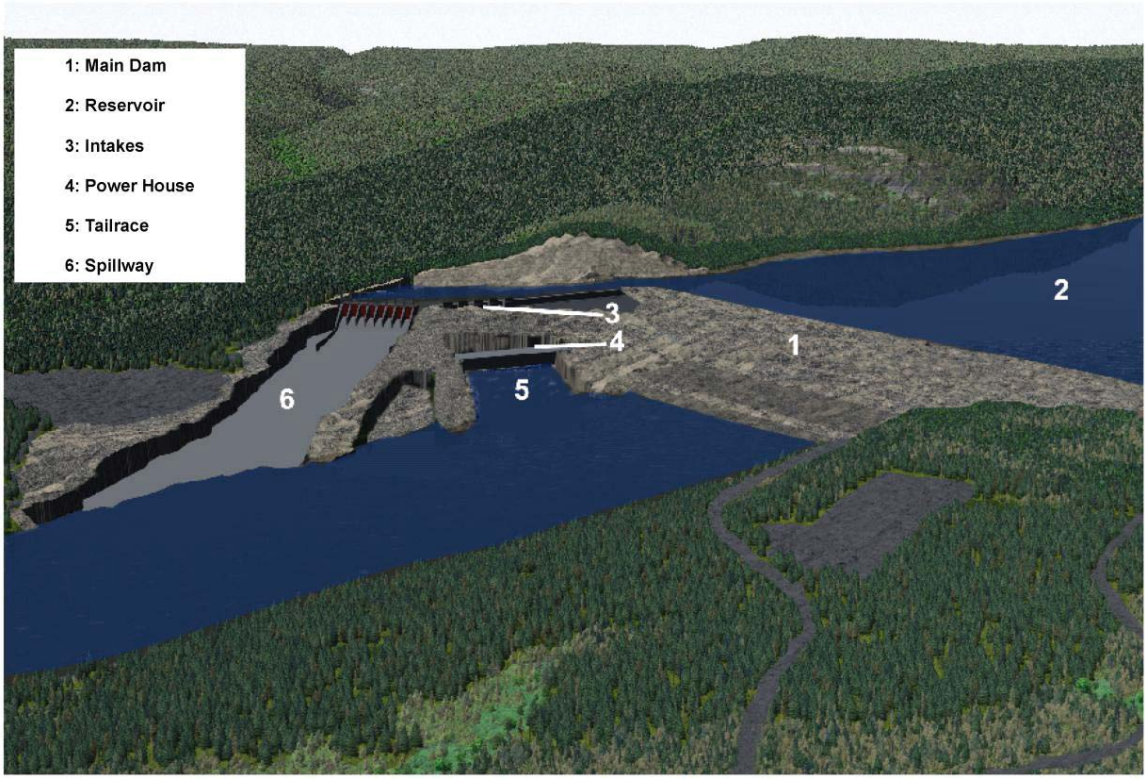


Figure 2 – Proposed Gull Island Facility

Figure 3 – Proposed Muskrat Falls Facility

At Gull Island, head for power generation will be developed by constructing a 99 m high dam, and power will be produced as water passes from elevation 125 metres (close to the tailrace level at Churchill Falls) down to elevation 39 metres. The plant is planned to house five turbines, each rated at 450 MW, for a total capacity of 2,250 MW. Upon implementation of water management, the plant will produce an average of approximately 12 TWh annually.

At Muskrat Falls, head for power generation will be developed by constructing a 39 m high dam. Power will be produced as water passes from an elevation of 39 metres down to an elevation of three metres. The plant is planned to house four units, each rated at 206 MW, for a total installed capacity of 824 MW. Again, with water management in place, the plant will produce an average of approximately 5 TWh annually.

The Gull Island and Muskrat Falls generating facilities, combined with the proposed interconnecting transmission lines between Churchill Falls and Gull Island, as well as between Gull Island and Muskrat Falls, are collectively known as the Lower Churchill

Project. Proposed transmission facilities include a 735 kV line between Gull Island and Churchill Falls and a double-circuit 230 kV line between Gull Island and Muskrat Falls.

The Lower Churchill Project is expected to be released from environmental assessment in 2010. As a result, first power is projected to be after September 1, 2016.

A more detailed description of the Lower Churchill Project is contained in Appendix B.

3. PURPOSE OF THE WATER MANAGEMENT AGREEMENT

The purpose of a water management agreement is to coordinate power and energy production from facilities on a body of water to maximize energy production over time. The amounts of power and energy produced from a generating facility are functions of the quantity of water available at the generating station at any given time. If natural flows arrived at the generating station in exactly the right amount and when required for production, there would be no need for water management. However, natural flows are not synchronized to production requirements. Therefore, reservoir storage is required to regulate the flow. For a downstream operator, control of flows from upstream facilities may also be required in order to regulate flow to the downstream generating station.

Coordinating power and energy production maximizes the amount and value of power and energy that can be produced from the Churchill River. Coordination of production at the generating stations regulates the flow of water between the stations to best utilize the river system's storage capability and the facilities' generating capacity. Flow regulation increases the control and predictability of energy production at a generating station and optimizes the use of the available water within the constraints of existing contractual supply obligations.

Nalcor and CF(L)Co are both suppliers[8] within the meaning of the Water Management Regulations. Coordinating generation to regulate flow will mean that each of the suppliers will, from time to time, adjust its own production and have that adjustment compensated through complementary production at another facility. For example, CF(L)Co's delivery requirements to its customers could be met by production from both the Churchill Falls and lower Churchill facilities. This would permit water flows from Churchill Falls to the lower Churchill plants to be adjusted, thereby managing the volumes of water to the lower Churchill facilities at a given time. This brings greater energy production on the Churchill

[8] Subsection 2(h) of the Water Management Regulations.

River by reducing the inefficient use of water at the lower Churchill facilities. As an example, during periods of high natural inflows to the lower Churchill, decreased production at Churchill Falls would reduce spillage at the lower Churchill facilities. The reduced production at Churchill Falls would be matched by increased production at the lower Churchill facilities to meet CF(L)Co's delivery requirements. This would be balanced at a later time when Churchill Falls would produce equivalent energy to meet Nalcor's delivery requirements. In effect, energy has been "banked" and later withdrawn.

A water management agreement is required to provide the mechanisms of coordinated production. The operation of the agreement will ensure the efficient use of water on the river system by ensuring that water is available to meet all producers' requirements, while maximizing the energy produced from the water resource.

Uncoordinated production among the Churchill River facilities could result in either excessive or insufficient water at the lower Churchill facilities. Excessive water will result in spill. Insufficient water to meet delivery schedules will result in excessive drawdown. Either case represents inefficient use of the available water. Flow regulation is therefore an important factor in fulfilling the efficiency policy contained in subparagraph 3(b)(i) of the EPCA.

3.1. Efficient Power Production through the WMA

The control of the rate at which water is delivered to a hydraulic generating facility increases the plant's ability to produce power on demand. The ability to regulate the flow of water is a result of having adequate storage. The degree of flow regulation determines a plant's firm power and energy capability.

Because of their ability to store a tremendous quantity of water, the upper Churchill reservoirs will provide the primary flow regulation required on the Churchill River. As previously mentioned, those reservoirs have a live storage capacity of approximately 30

billion m^3 of water. This is enough to allow the spring runoff to be stored in the reservoirs and held over as required for production. Because of the topography of the lower Churchill River, the capacities of the reservoirs at Gull Island and Muskrat Falls will be much smaller. The Gull Island reservoir will have approximately 580 million m^3 of live storage, while Muskrat Falls will have live capacity of only 50 million m^3. Put another way, the upper Churchill reservoirs have a capacity of approximately fifty times the capacity of the Gull Island and Muskrat Falls reservoirs combined.

Water management through coordination of flows and storage mitigates the effects of irregular delivery requirements and production at Churchill Falls. For example, in any month, CF(L)Co deliveries could be requested in a manner that calls for Continuous Energy to be produced at an increased rate for part of the month with the remainder of the Continuous Energy to be produced at a reduced rate later in the month.

Irregular production at Churchill Falls will have different effects on the lower Churchill facilities depending upon the uncontrolled natural inflows at various times of the year. In many months, the lower Churchill facilities would have insufficient water for production requirements during periods of reduced production at Churchill Falls. However, during the spring runoff, there would be excess water, resulting in spillage, during periods of increased production at Churchill Falls. These problems would be compounded if full CF(L)Co delivery of Continuous Energy was scheduled early in one month followed by full production late in the following month.

These effects can be illustrated with two examples showing maximum production early in the month and minimum production later in the month. The first example reflects March conditions, while the second example reflects the spring freshet in May. In each case, Churchill Falls production would be as follows:

Table 1: Irregular CF(L)Co Production Profile

Continuous Energy – First 20 days of month	4,765 MW
Recall and Twinco	495 MW
Total – First 20 days of month	**5,260 MW**
Continuous Energy – Last 11 days of month	900 MW
Recall and Twinco	495 MW
Total – Last 11 days of month	**1,395 MW**

The resulting releases into the lower Churchill reservoirs would be as follows for the above production values:

Table 2: Irregular CF(L)Co Production Water Release

Daily Churchill Falls Water Release – First 20 days of month	160 million m^3
Daily Churchill Falls Water Release – Last 11 days of month	42 million m^3

During the March timeframe, uncontrolled inflows into the Gull Island reservoir will be minimal and under average and dry year conditions are as follows:

Table 3: Gull Island Uncontrolled Inflows March

Daily Uncontrolled Natural Inflows – Average Year	6 million m^3
Daily Uncontrolled Natural Inflows – Dry Year	0.7 million m^3

Under average conditions, the resulting production at Gull Island would be 1,519 MW for the first 20 days and 443 MW during the last 11 days of March. During a dry period, this scenario would require production levels of 1,471 MW during the first 20 days of March, and 395 MW during the last 11 days. Consequently, without a water management agreement, Nalcor would be limited to approximately 400 MW of continuous delivery in a long-term power purchase agreement for Gull Island. Such an arbitrary constraint on lower Churchill delivery schedules is unnecessary and is incompatible with the concept of the efficient use of the resource.

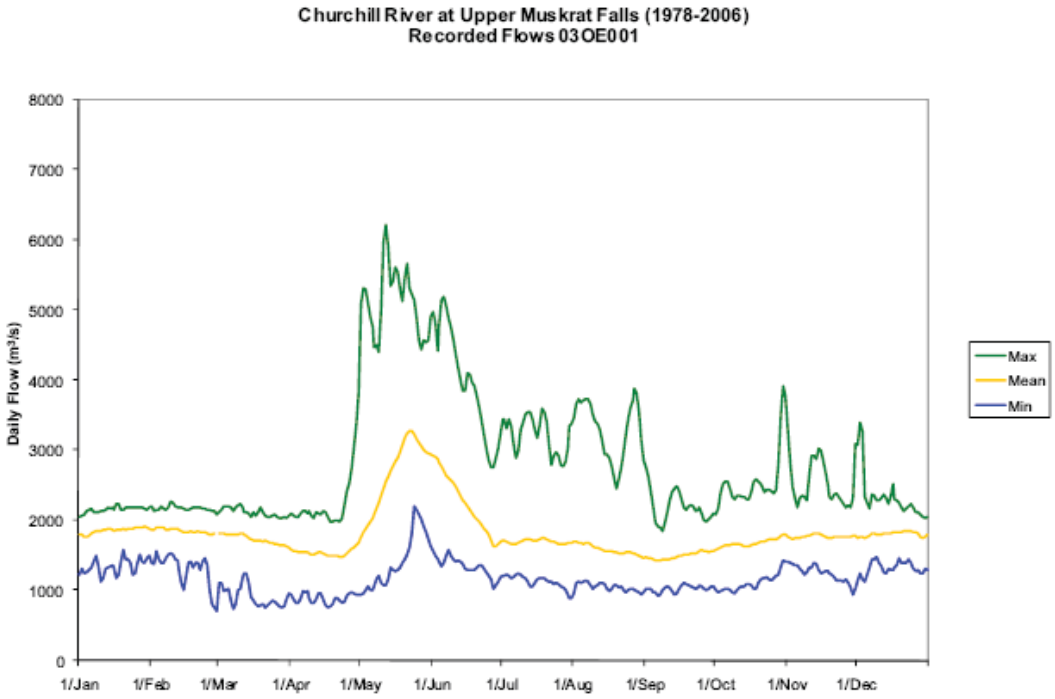
During the May timeframe, uncontrolled inflows into the Gull Island reservoir from snow melt and precipitation under average and wet year conditions are as follows:

Table 4: Gull Island Uncontrolled Inflows May

Daily Uncontrolled Natural Inflows - Average Year	94 million m^3
Daily Uncontrolled Natural Inflows - Wet Year	154 million m^3

Under average conditions, the resulting production at Gull Island would be 2,330 MW for the first 20 days and 1,253 MW during the last 11 days of May. During a wet period, this scenario would require production levels of 2,879 MW during the first 20 days of May, and 1,803 MW during the last 11 days. Since the optimized capacity of Gull Island is 2,250 MW, the surplus inflows would be spilled.

The preceding analysis uses historic monthly averages and daily flow averages instead of peak daily flows. The use of average values understates the extent of the spillage that will result during periods of peak flow. The chart below illustrates the recorded minimum, mean and maximum flows, month over month and within each month, and how monthly average values offer a conservative view.



Source: Environment Canada 2007, Internet site.

Figure 4: Muskrat Falls (Monitoring Station 03OE001) Hydrograph

In the absence of a water management agreement, Nalcor would not even have advance knowledge of expected flows from the Churchill Falls facility to enable it to take steps to mitigate spillage through advance drawdown of the lower Churchill reservoirs.

These outcomes are not consistent with maximizing the long-term energy generating potential of the Churchill River, as contemplated in Subsection 3(1) of the Regulations.

In the absence of a water management agreement, Nalcor would be required to utilize the water as it became available. Given the limited storage capacity in the Gull Island reservoir (approximately three to four days of maximum flow from the upper Churchill facilities), Nalcor would have to turbine the water and produce energy at the time that it was available; it would be required to "chase the flows" from the upper Churchill. Spills would be likely during the period of the spring runoff, resulting in wasted energy.

A water management agreement addresses these issues by enabling Nalcor to produce energy for CF(L)Co during those periods when CF(L)Co has increased deliveries and during the spring runoff. Water held back and stored for Nalcor can then be utilized for Nalcor at a later period when CF(L)Co deliveries are reduced. This minimizes spillage and enables Nalcor to optimize its long-term energy producing capability, in accordance with the provisions of the EPCA. It fulfills the objectives of the Regulations to coordinate the power generation and energy production in the aggregate for all production facilities on the Churchill River to satisfy the delivery requirements of both CF(L)Co and Nalcor, in a manner that provides for the maximization of the long-term energy generating potential of the Churchill River.

4. NEGOTIATION PROCESS

The EPCA contemplates that where two or more persons have been granted rights on the same body of water, they will enter into negotiations to establish a water management agreement. By letter dated March 19, 2009 from Gilbert Bennett, Vice President – Lower Churchill Project, Nalcor to Andrew MacNeill, Vice President and General Manager – CF(L)Co, Nalcor invited CF(L)Co to enter into negotiations towards achieving a water management agreement. This letter is appended as Appendix C.

Both parties assembled negotiating teams comprised of internal staff, complemented by technical and legal advisors. Negotiations proceeded over the course of the spring and summer of 2009. By mid-September, the negotiating teams had developed a proposed agreement. There were no outstanding issues. The agreement that was reached by the negotiating teams is attached as Schedule A to this Application.

Agreements between related parties of CF(L)Co are subject to the terms of a Shareholders' Agreement (Exhibit 9). Nalcor is the parent company of Hydro. Hydro, as one of the shareholders of CF(L)Co, is an affiliate of CF(L)Co. Approval of a contract between related parties of CF(L)Co requires that a special majority decision of the CF(L)Co Board of Directors. At least one director appointed by Hydro and at least one director appointed by Hydro Québec must vote in favour of the decision.

The proposed Water Management Agreement was considered by the CF(L)Co Board of Directors on October 23, 2009, and the approval was not granted. This was confirmed by way of an email from Andrew MacNeill to Gilbert Bennett dated October 27, 2009. This email is appended as Appendix D.

The CF(L)Co Board of Directors declined to provide direction as to changes that might be required to the proposed agreement in order to make it acceptable. Further, CF(L)Co has confirmed that they are not in a position to resume negotiations. Consequently, Nalcor

concluded that an application to the Board would be required. Nalcor has therefore applied to the Board to establish the proposed agreement as the terms of a water management agreement.

5. THE PROPOSED WATER MANAGEMENT AGREEMENT

The proposed Water Management Agreement (WMA) referred to above consists of two parts, the main body of the agreement and Annex A. The body of the agreement sets out the key provisions related to the establishment and operation of the water management process. The Annex contains the mechanisms for determining and allocating energy production between the parties as a result of a coordinated approach to operations.

The WMA is fully compliant with the provisions of the EPCA and Regulations. As shown in the Table of Concordance attached as Schedule A to this evidence, the relevant sections in the WMA are cross-referenced with the corresponding provisions of the Regulations.

Spills, banking and conversion factors are all addressed in the WMA, as well as other miscellaneous issues such as deficiencies, metering and measurement, disputes, costs and expenses, assignment and transfer, and date and term.

5.1. Effect of the WMA on the Parties

Section 5.7 of the EPCA requires that existing power contracts not be adversely affected by the provisions of a water management agreement. The WMA recognizes the existing contractual obligations of CF(L)Co, and provides that the operation of the hydroelectric facilities on the Churchill River under the terms of the WMA will have no effect on CF(L)Co's ability to meet its delivery requirements.

The WMA will, having regard to both parties' power generation capacity and delivery requirements, result in production schedules for the delivery of power in the aggregate to meet the contractual obligations of each of Nalcor and CF(L)Co. The requirements of both Nalcor's and CF(L)Co's customers will be met from the combined generation of both facilities. The outcome is simply the coordination of production to optimize the use of the water to produce energy.

Further, the WMA will not impose any obligation upon CF(L)Co to produce energy for Nalcor which exceeds the amount of energy Nalcor previously banked, nor to produce at a rate for Nalcor in excess of Nalcor's facilities' capabilities.

The proposed WMA accomplishes the above objectives. Some of the specific provisions are discussed below.

5.2. Water Management Committee (Article 5)

During the course of negotiations, the CF(L)Co and Nalcor representatives considered that it would be appropriate to establish a Water Management Committee as a mechanism for the implementation and administration of the WMA. The Water Management Committee would consist of four members from each party. Each party would also designate at least one alternate member. The function of the Water Management Committee would be to deal with all substantive matters involved in the implementation and operation of the WMA. A key responsibility of the Water Management Committee would be the selection and appointment of the Independent Coordinator, who would be responsible for setting the production schedules of each party and determining and allocating energy benefits.

5.3. The Independent Coordinator (Article 6)

The Independent Coordinator would establish short- and long-term production schedules for all production facilities on the Churchill River. Notwithstanding that the Independent Coordinator may be an employee of either party, the Independent Coordinator would conduct its duties in an impartial manner in accordance with the WMA. Each party to the WMA would have the right to request the removal of the Independent Coordinator under certain conditions. The proposed WMA also provides for a mechanism to resolve any disputes or disagreements which relate to the appointment, removal or replacement of the Independent Coordinator.

The proposed agreement contemplates that the Independent Coordinator could be either entirely independent or could be one or more persons from the parties' organizations. The obvious benefit in selecting the Independent Coordinator from one or both of the parties' organizations is to draw upon the existing high level of specialized knowledge and expertise. Any concerns which may arise with respect to the impartiality of the Independent Coordinator can be addressed through the development of a Code of Conduct for the Independent Coordinator.

The powers of the Independent Coordinator are restricted to avoid the potential for any adverse effect on CF(L)Co's prior power contracts by reason of the operation of the WMA. The Independent Coordinator would not be able to schedule production for Nalcor where such production would conflict with CF(L)Co's obligations under prior power contracts. Further, the Independent Coordinator would not be able to schedule production for Nalcor by CF(L)Co where Nalcor has no banked energy in CF(L)Co's reservoirs, except in circumstances where necessary to avoid spillage from CF(L)Co's reservoirs.

5.4. Scheduling, Production and Delivery – The Mechanics (Article 7 and Annex A)

As previously discussed, the WMA contemplates that in the pursuit of optimum management of the Churchill River, a production schedule would be created by the Independent Coordinator which may result in either supplier producing for the other. This method of serving customer load differs from existing operations and reflects the rationale for the proposed agreement.

5.4.1 Existing Operations

Under the present situation with only one hydroelectric plant in operation on the Churchill River, scheduling is achieved by having customers submit their hourly demand requirements to CF(L)Co. These hourly demand requirements, or demand schedules, identify the quantity of power required each hour by a customer at specified delivery

points, which are then converted to generator production settings. HQ and Hydro identify their power and energy requirements at the Québec-Labrador border, which is the delivery point for contract purposes. Added to the delivered quantities are the transmission system losses within Labrador between the plant and the border, the delivery requirements of the Twinco block, and the Churchill Falls town and station service load.

In serving customer loads, consideration is given to water management concepts such as the efficient use of water, the requirement to maintain a minimum flow rate in the river, and spill avoidance.

5.4.2 Proposed Operations

The current arrangement would change with the construction of additional facilities on the river. With the addition of the lower Churchill generating facilities, it will be necessary to manage the requirements of the entire river as opposed to the requirements of the upper Churchill facility only.

To properly manage the river system, the Independent Coordinator must consider the storage levels in each reservoir, the desired storage level, efficient plant operation, and uncontrolled inflows into the reservoirs. The Coordinator would be expected to:

- allocate the total energy delivery requirement between the upper and lower Churchill facilities;
- calculate the water volume added to or removed from the banked quantity; and
- calculate spills.

Keeping Track of Water Consumption (Annex A)

Inherent to the concept of water regulation is the concept of generation adjustment between facilities to control the inflows and outflows to reservoirs so as to control reservoir supply levels. As production is shifted between plants and one plant produces for the other, it becomes necessary to maintain a record of the energy transactions and a record of

the water volumes used to generate the energy. Therefore, keeping track of energy use and the corresponding estimated water volume used at each facility is essential. The relationship between energy produced and water volume consumed is known as the energy conversion rate, which is explained below.

The amount of power and energy that can be produced by a generating facility is primarily a function of three factors:

(i) the amount of head;

(ii) water volume; and

(iii) the type, number and capacity of the generating units.

Generally speaking as the head and flow increase, so does the power generating capability.

The amount of head - or elevation differential - between the intake and the tailrace is essentially a function of the land topography and the design of dams and other hydraulic control structures. The greater the available head, the greater the pressure at the turbine and the greater the energy and power capability for a given volume of water.

The volume of water available is indicative of the quantity of energy that can be produced for conversion. The rate at which this volume is consumed determines the quantity of power that can be produced, which in turn is a function of the number, capacity and type of generating units in a facility; the greater the capability of a facility, the faster the rate at which water is consumed.

The relationship between the volume of water consumed in a period to produce a quantity of energy over that same period is known as the energy conversion rate, and can be expressed dimensionally as GWh of electrical energy production per million cubic metres of water consumed, (GWh/MCM). This relationship is generally not constant over the full

range of output for a generator or facility. In general, the relationship between energy output and water consumption takes the general simplified shape below.

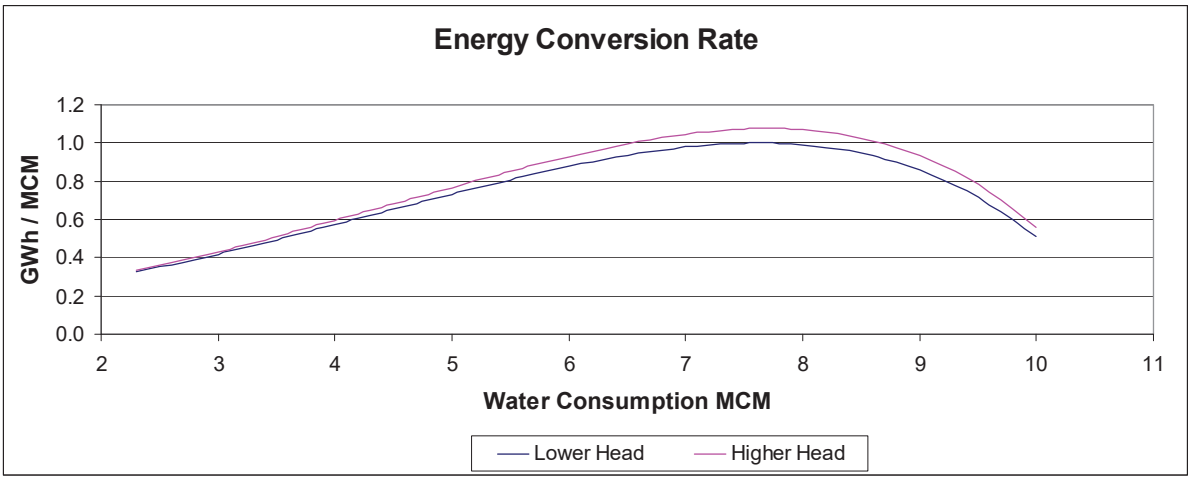


Figure 5: Energy Conversion

The chart shows that for a particular head elevation, say the lower head trace on the above chart, the quantity of energy attainable changes as more or less water is applied to the turbine and the generator's electrical output changes. From the chart above, for an hourly consumption volume of 5.5 MCM, the turbine-generator will convert the water to electrical energy at a rate of 0.8 GWh/MCM to produce 4.4 GWh of energy. Similarly, staying with the lower trace, for an increased operational setting that consumes 7.5 MCM of water in an hour, the turbine-generator will convert the water to electrical energy at a rate of about 1.0 GWh/MCM of water consumed to produce 7.5 GWh. The conversion rate per unit of energy produced is not constant over the range of machine output.

The relationship between energy production and head can be seen on the above chart as well. For the same 7.5 MCM of water consumption as was used in the low head case that produced 7.5 GWh of energy, the higher head trace shows that the energy conversion factor improves to 1.07 GWh/MCM, and for the same consumption produces about 8.0 GWh.

The above relationship for a single generator generally holds true for a generating plant which has numerous units, some of which may share penstock and tail races.

Recognizing energy conversion rates in a water management agreement is necessary when accounting for the water volume equivalent of the amount of energy to be placed into or removed from storage. This is because the rates at which water is consumed to produce energy during periods of accumulation or depreciation of the banked amounts are not constant.

Mathematically, the water volume added to or removed from storage is related to the amount of electrical energy saved or consumed, based on the energy conversion rate at the time. The phrase 'at the time' is used because the energy-water volume relationship may be different at the time water is withdrawn from a facility than it was at the time the water volume was saved. Therefore a party may have banked energy at a lower conversion rate than when it is ultimately withdrawn, resulting in the consumption of the same water volume, however receipt of a lower amount of energy, or alternatively the same amount of energy for different water volumes. Similarly, if the conversion rate was higher at the time the water volume is banked than when withdrawn, the amount of energy produced for the party with the banked energy will be higher notwithstanding that the water volume consumed will remain the same.

Because of the variances within the conversion factor which may occur, and given the different conversion rates for each facility[9], the proposed accounting function reflects changes in the conversion rate on an hourly basis. These steps have been proposed in order to avoid any adverse effect on CF(L)Co's prior power contracts.

[9] More water will be required in Nalcor's facility to produce the same energy that will be produced in CF(L)Co's facilities because of the lower head at the Nalcor plant.

5.5. Banking (Article 7 and Annex A)

Since the timing of volumes consumed by each producer under shared dispatch is different from that which they would have been under independent operations, it is essential that these amounts be tracked. As one party produces for the other, a mechanism is required to track the energy produced and therefore the water stored – or banked – by each party for the other. The WMA will require the Independent Coordinator to identify the appropriate quantity of electrical energy and its water volume equivalent that should be added to or deducted from a facility's banked allotment.

Energy produced by Nalcor in its facilities to meet CF(L)Co's delivery requirements is proposed to be credited to Nalcor in the CF(L)Co reservoir system. When the production schedule calls for CF(L)Co to produce power to meet Nalcor's delivery requirements, the accumulated volume banked by Nalcor in CF(L)Co's reservoirs will be reduced. The converse is also true at lower Churchill.

The amount of water added to or withdrawn from a banked amount will be calculated by first simulating the volume of water that the facility at which the banking is taking place would consume if it were operating independently, and to then determine the volume of water that will be consumed under shared dispatch. Additions and reductions to storage will always be compared to the volume of water that would have been consumed at the banking facility without coordinated production. Through this mechanism, CF(L)Co will have the same amount of water to produce energy as it otherwise would have had.

Conceptually, at the facility whose production is reduced, the water that would otherwise have been used is saved and banked by the other party. The calculation for the banked water will recognize the head and electrical output of the generating facility that would have been needed to serve the load under those conditions. This will ensure that the appropriate energy conversion rate is used to identify the related water volume. A second conversion rate will be used to calculate the estimated amount of water usage under

shared dispatch. The difference in water usage is credited to or deducted from the banked water balance. In this way, the appropriate net head and unit loading required to obtain the conversion factors necessary to determine water consumption are identified and applied. The facilities' customers will not be adversely affected by the shared dispatch and banking.

5.6. Spills *(Article 7 and Annex A)*

Despite optimum water management of the Churchill River, water spillage may occur at either Nalcor's reservoirs or CF(L)Co's reservoirs. The proposed agreement provides that in the event of a spill not caused by the fault of either party, the banked water will always be the first water spilled. The corresponding energy loss will be borne by the party whose water was banked. As a result, there will be no reduction in the storage capacity available to CF(L)Co by virtue of Nalcor's storage in the CF(L)Co reservoir under the proposed WMA.

Where a spill occurs as a result of operational error or failure of equipment or failure to follow good utility practice, the lost energy will be borne by that facility unless the cause is attributed to the other party or its customers.

In either case, spills are directly netted from any banked quantity.

5.7. Metering and Measurement (Article 8)

The proposed WMA recognizes that metering and measurement facilities are required to monitor compliance with power and energy storage, generation and transmission obligations. Nalcor will be the primary beneficiary of the proposed WMA; Nalcor would therefore be responsible for the construction and installation of any additional required metering facilities or the improvement and modification of CF(L)Co's existing metering facilities as a result of the implementation of the WMA. The associated costs will be borne by Nalcor even with respect to CF(L)Co's facilities.

The Water Management Committee would ensure that the metering and measuring facilities are tested and calibrated on a regular basis to ensure accuracy and compliance with agreed industry standards.

5.8. Deficiencies (Article 10)

A deficiency is defined as the failure to satisfy a production schedule. When a deficiency occurs or is projected to occur in the course of implementation of the WMA, adjustments would be made to the production schedule for all facilities on the Churchill River to remedy the deficiency or anticipated deficiency. If a deficiency occurs despite the adjustments, and one party incurs damages under a prior power contract, the agreement provides that the party causing the deficiency would be responsible for the damages arising. Where the losses are caused by both or neither party, the deficiency would be allocated between the parties proportionately to their respective shortages.

5.9. Costs and Expenses (Article 11)

In complying with legislative requirements, it is contemplated that the majority of the benefits derived from the coordinated management of the waters of the Churchill River would accrue to Nalcor. The WMA provides that the costs associated with the implementation and operation of the agreement would be borne proportionately by the parties according to the benefits derived. Consequently, Nalcor is expected to bear proportionately larger costs associated with the agreement than will CF(L)Co.

5.10. Date and Term (Article 12)

The WMA will come into effect on the date that the Agreement is approved by the Board except for certain sections, which will come into effect once the Nalcor production facility is operational. The WMA will remain in effect until there is a permanent cessation of the operations at either of the parties' production facilities or at an earlier date upon approval by the Board of a new water management agreement.

5.11. Disputes (Article 13)

In the event that a dispute arises between the parties in connection with the WMA, the dispute is to be first referred to the Water Management Committee for resolution. In the event that the Water Management Committee cannot resolve the dispute by unanimous agreement, the WMA provides for referral of the dispute to a third party mediator selected by the parties and who possesses the necessary technical expertise to assist the parties in resolving the dispute. In any event, the parties may submit a dispute to the Board.

5.12. Assignment and Transfer (Article 14)

It is contemplated that Nalcor will, in all likelihood, transfer its interest in the water rights on the lower Churchill River and the production facility to a subsidiary corporation. The transfer of Nalcor's interest will also include transfer of its rights and obligations pursuant to the WMA. The WMA permits such a transfer in that it is expressly stated that such a transfer may be made without the consent of the other party. In the event of a transfer to an unrelated third party, which results in the transfer of substantially all of the assets devoted to production, transmission, distribution and sale of power and energy of such supplier, then the consent of the other party would be required.

5.13. Conclusion

The Water Management Agreement fulfills the objectives of the legislation to maximize the long-term energy potential of the Churchill River while meeting the needs of the parties. Through the mechanisms for water storage and accounting for energy contained in the WMA, both parties' hydroelectric facilities will enjoy the maximum benefits of the Churchill River while at the same time ensuring that the prior power contracts will not be affected.

SCHEDULE A

- **Legislative Requirements – Table of Concordance**

SECTION OF WATER MANAGEMENT REGULATIONS	ARTICLE IN PROPOSED WMA
3. (1) The objective of a water management agreement shall be the coordination of the power generation and energy production in the aggregate for all production facilities on a body of water to satisfy the delivery schedules for all suppliers on the body of water, in a manner that provides for the maximization of the long-term energy-generating potential of a body of water, while ensuring that the provisions of a contract for the supply of power governed by section 5.7 of the Act are not adversely affected.	2 and 3
3.(2)	
(2)To obtain the objectives in subsection (1) a water management agreement shall: (a) require that suppliers jointly and sufficiently fund the administration of the independent coordinator in proportion to the energy benefits obtained by each supplier from the administration of the water management agreement or according to that other methodology as may be agreed upon by suppliers and approved by the Board, or in the absence of supplier agreement, imposed by the Board, as the case may be;	4.3(a)
(b) require that suppliers provide the independent coordinator with: (i) demand requirements of contracts for the supply of power, (ii) the power and energy generation capacity of each of the supplier's production facilities, (iii) equipment maintenance requirements, (iv) short- and long-term supplier forecast requirements, (v) copies of a licence, lease or other instrument granting water rights, (vi) plans and requirements respecting suppliers' construction or commissioning activities, (vii) transmission availabilities, and	4.3(c)(i) – (ix)

	(viii) the forecast of inflows, and regularly update any changes to them, all prepared in a manner consistent with good utility practices;	
(c)	require the independent coordinator, based on the information received in paragraph (b) and in the exercise of reasonable judgment, to establish short- and long-term production schedules for all production facilities on a body of water, through the coordination of production scheduling of the suppliers on the body of water based upon the use of the aggregate generating capacity, storage and transmission facilities of any supplier on the respective body of water, in accordance with the objectives of these regulations and with the water management agreement;	6.2(a)
(d)	require that suppliers adhere to the production schedules set by the independent coordinator in paragraph (c);	4.2
(e)	provide that in no event shall: (i) the power requests made to the Independent Coordinator by a supplier exceed the maximum power generating capability of the production facilities of that supplier for the period requested, and (ii) the generating capacity, storage capacity, or transmission capability available to a supplier from all facilities on the body of water be less than the amounts of then available generating capacity, storage capacity, or transmission capability of the production facilities owned by that supplier on the body of water;	4.7(a) 7.1(b)
(f)	require that information and data be shared between suppliers and by suppliers with the independent coordinator as is necessary for the independent coordinator to perform its functions under the agreement, including records, data, models, as well as physical and computer access to those facilities as are required to obtain and verify that information;	4.4
(g)	require suppliers and the independent coordinator to maintain, for a period of not less than 7 years, records required of them to undertake their responsibilities under the agreement and these regulations which shall be available, upon request, to the board or minister;	4.6 6.2(a)(iv)

(h) require an Independent Coordinator to: (i) provide suppliers with reports on its activities at regular intervals to be established in consultation with the suppliers, (ii) provide to the minister, and, on request, the board, with an annual report summarizing its activities in a form acceptable to the minister;	6.2(a)(v) 6.2(a)(vi)
(i) require that when a deficiency occurs, or is projected to occur: (i) appropriate adjustments shall be made to the power and energy production levels and schedules of all production facilities on that body of water to the extent practicable to remedy the deficiency or anticipated deficiency, and (ii) where a deficiency occurs despite subparagraph (i), and as a result of that deficiency, a supplier incurs damages under a provision of a contract for the supply of power entered into by a person bound by the water management agreement and a third party where that contract was entered into before the water management agreement, those costs shall be paid by the supplier who caused the deficiency;	10.1(a) 10.1(b)
(j) include mechanisms to appropriately assign energy storage amounts to each supplier for water stored in the body of water's reservoirs and, if water spillage occurs, to assign the lost energy fairly to each supplier;	7.1(f) Annex "A"
(k) require that the amount of energy in storage shall be determined based upon average water to energy conversion rates for the respective production facilities calculated based upon the best data source available as tested in accordance with good utility practice;	7.1(e) Annex "A"
(l) include an appropriate method that ensures that, at regular intervals not less frequently than annually, adjustments are made to a supplier's available energy for subsequent intervals for energy losses incurred in the previous period by each supplier as a result of changes to its energy capability caused by the application of the water management agreement;	7.1(g) Annex "A"

(m)	be governed by the laws of the province; and	1.5
(n)	include those other provisions that the Board determines are necessary or useful in achieving the objectives of the Act.	

Appendix A

Churchill River Drainage Basin and Hydrological Sequence

Churchill River Drainage Basin and Hydrological Sequence

Upper Churchill Drainage Basin

The upper Churchill basin drains a total area of approximately 70,000 km^2 from the upper reaches of the Ossokmanuan reservoir basin to the Churchill Falls hydroelectric station. The upper system consists of two large storage reservoirs (Ossokmanuan and Smallwood), two forebays (east and west) and a number of dykes, dams, control structures and spillways. Approximately 50% of the inflows to these reservoirs results from snow melt.

The upper Churchill basin begins at the Labrador/Québec border. There are two large lakes, Lac Joseph and Atikonak Lake, providing natural regulation above Ossokmanuan reservoir. Lac Joseph flows uncontrolled into Atikonak Lake which, in turn, flows uncontrolled into the Ossokmanuan reservoir. The reservoir receives from a drainage area of approximately 22,000 $km^{2.}$ Full supply level (FSL) for the Ossokmanuan reservoir is 479.15[1] m above sea level (masl). It has a storage volume and surface area at FSL of 2,835 MCM and 974 km^2 respectively. Outflow from the reservoir is normally through the Gabbro control structure and has an average annual daily flow of approximately 496 m^3/s; however, outflow can also occur at the Ossokmanuan control structure when extra spill capacity is needed. Flow through the Ossokmanuan control structure passes through the site of the decommissioned Twin Falls facility, by-passes the Churchill Falls facility and into the Churchill River. Flow through the Gabbro control structure is released into the Smallwood reservoir.

The Smallwood reservoir receives inflow from the Ossokmanuan reservoir and local inflow over the approximately 45,000 km^2 Smallwood drainage area, the local uncontrolled inflows over the drainage area average 871 m^3/s. Full supply level for the Smallwood reservoir is 472.74 masl. The storage and surface area at FSL is 29,000 MCM and 6,000 km^2 respectively. Outflow from the reservoir, 1,366 m^3/s on average, is normally through the Lobstick control structure. Outflows that would have occurred from the Sail and Orma

[1] Elevations listed for the upper Churchill facility are as per the Hydro Québec Power Contract.

Lakes area of the Smallwood reservoir, via the Naskaupi and Kanairiktok Rivers, have been diverted and are contained within the Smallwood reservoir. Flow through the Lobstick control structure is released into the west forebay of the Churchill Falls facility.

The west forebay operates at a FSL of 452.93 m, has a storage volume and surface area of approximately 300 MCM and 100 km^2 respectively at FSL and receives an inflow of 1,367 m^3/s from the Smallwood reservoir through the Lobstick control structure as well as local inflow over the 1,100 km^2 west forebay drainage area. Local uncontrolled inflows over the drainage area average approximately 16.5 m^3/s. Outflow from the reservoir is through the Whitefish control structure and the Jacopie spillway. The Jacopie spillway is only utilized when extra spill capacity is needed and on average spills approximately 24.3 m^3/s; the Whitefish control structure is used to feed flow from the west forebay to the east forebay.

The east forebay operates at a FSL of 448.51 m, has a storage volume and surface area of approximately 600 MCM and 140 km^2 respectively and receives an inflow of 1,359 m^3/s from the west forebay through the Whitefish control structure as well as a local inflow of 9.2 m^3/s over the 600 km^2 east forebay drainage area. The 1,367 m^3/s outflow from the east forebay is used to produce power in the Churchill Falls hydroelectric station and is then released into the Churchill River. In the event that all the water to be released cannot be used for power production, the excess will flow through the east forebay spillway and into the Churchill River; however, the spillway is used rarely. The average flow from the upper Churchill basin to the lower Churchill basin is 1,392 m^3/s, which is the combined Churchill Falls power flow and the flow from the Jacopie spillway.

The upper Churchill Station is an 11 unit, 5,428 MW facility that generates approximately 34 TWh per year of energy by using the average annual daily flow of 1368 m^3/s at a design head of approximately 313 m.

Lower Churchill Drainage Basin

Once water is released into the Churchill River from the Churchill Falls hydroelectric station, the east forebay spillway, the Jacopie spillway and from the Unknown River, or from the Ossokmanuan control structure, it will enter the lower Churchill drainage basin. The basin has an area of approximately 23,000 km^2 and includes the proposed Gull Island and Muskrat Falls reservoirs, as well as all the tributaries that feed both reservoirs.

The Gull Island reservoir will operate at a FSL of 125 masl, has a storage volume and surface area of 580 MCM and 213 km^2 respectively and will receive the majority of its inflow from the upper Churchill basin. The rest of the inflow will be received from the approximately 20,000 km^2 portion of the lower Churchill drainage basin upstream of Gull Island, via a number of small streams and a few major tributaries such as the Metchin, Elizabeth, Minipi and Fig Rivers. Average uncontrolled inflow to this reservoir will be approximately 385 m^3/s. The outflow from Gull Island reservoir will be used to produce power at the Gull Island hydroelectric facility. The power flow for Gull Island is estimated to be 1,740 m^3/s and an excess flow of 38 m^3/s will be passed through the Gull Island spillway. Outflow from both the Gull Island plant and the spillway will be 1,778 m^3/s on average and will feed into the Muskrat Falls reservoir.

The Gull Island generation facility is proposed to be five unit facility with a capacity of 2,250 MW producing 11.9 TWh per year on average by using an average annual daily flow of 1,740 m^3/s at a design head of approximately 86 m.

The Muskrat Falls reservoir which will operate at a FSL of 39 m will be the final reservoir in the Churchill River system. At FSL the surface area of the reservoir will be 100 km^2. The Muskrat reservoir will receive flow from the Gull Island facility as well as the local inflow over the bottom approximately 3,000 km^2 portion of the lower Churchill drainage basin, via a number of small streams and a few major tributaries such as Pinus River, Edwards Brook,

Upper Brook and Lower Brook. The outflow from the Muskrat Falls reservoir will be used to feed the Muskrat Falls hydroelectric facility, excess water will flow over the spillway and downstream to Lake Melville.

The Muskrat falls plant is expected to be a four unit, 824 MW facility, which will produce approximately 5 TWh of energy on average by using the average annual daily flow of 1,840 m^3/s at a design head of approximately 39 m.

Churchill River Drainage Basin Summary Table

Reservoir	Contributing Drainage Area (km^2)	Full Supply Level (m)	Storage capacity at FSL ($*10^6$ m^3)
Ossokmanuan	22,432	479.15	2,835
Smallwood	45,110	472.74	28,941
west forebay	1,108	452.93	309
east forebay	617	448.51	555
Gull Island	19,832	125	580
Muskrat Falls	3,256	39	50

Appendix B

Project Description

The attached project description has been extracted from Nalcor's Lower Churchill Project *Environmental Impact Statement.* The full text may be found on Nalcor's website, at http://www.nalcorenergy.com/content.asp?page=508.

4.0 PROJECT DESCRIPTION

4.1 Introduction

This Project Description for the Lower Churchill Hydroelectric Generation Project was prepared in accordance with the joint requirements for an EIS under the *CEAA* and the *NLEPA.* It intends to fulfill requirements as outlined in Section 4.3.3 of the EIS Guidelines (Appendix IB-E).

Since this Project's conception in the 1960s, considerable review and study of the proposed development sites have been carried out in an effort to advance and refine the Project Description. The Project Description has also benefited from, and evolved with, the advancement of technology, an improved understanding of the existing environment and enhanced industry standards for environmental protection and mitigation.

Through the continued design and optimization of the Project, as part of the iterative planning process, additional mitigation was developed. For example, in the design phase some Project components were optimized to reduce the amount of rock excavation required and thus the amount of spoil produced. Other design changes will reduce disturbance to areas of cultural importance, such as the rock knoll at Muskrat Falls.

As the Project enters the detailed design phase, the Project Description may undergo further definition to refine and optimize technical, economic and environmental features; consequently, specific descriptions of these features are approximate. Such refinements are consistent with the normal planning and design process; they will not affect the overall Project footprint or the predicted environmental effects. An overview of Project planning and associated design decisions is presented in Chapter 2 and Chapter 3.

4.2 The Project

The Project (Figure 4-1), located in central Labrador, comprises:

- the Gull Island dam, generation facility and reservoir (Figure 4-2);
- the Muskrat Falls dam, generation facility and reservoir (Figure 4-3);
- a 60 km double-circuit 230 kV transmission line connecting generation facilities at Gull Island and Muskrat Falls; and
- a 203 km single-circuit 735 kV transmission line connecting generation facilities at Gull Island and the existing Churchill Falls Power Station.

The Gull Island site is approximately 100 km southwest from the town of Happy Valley-Goose Bay, between Gull Island Rapids and Grizzle Rapids, just upstream from Gull Lake on the Churchill River. The Muskrat Falls generation site, also located on the Churchill River, is about 30 km southwest from Happy Valley-Goose Bay. The Muskrat Falls facility will be adjacent to a rock knoll connected to the north bank of the river by a natural spur of land.

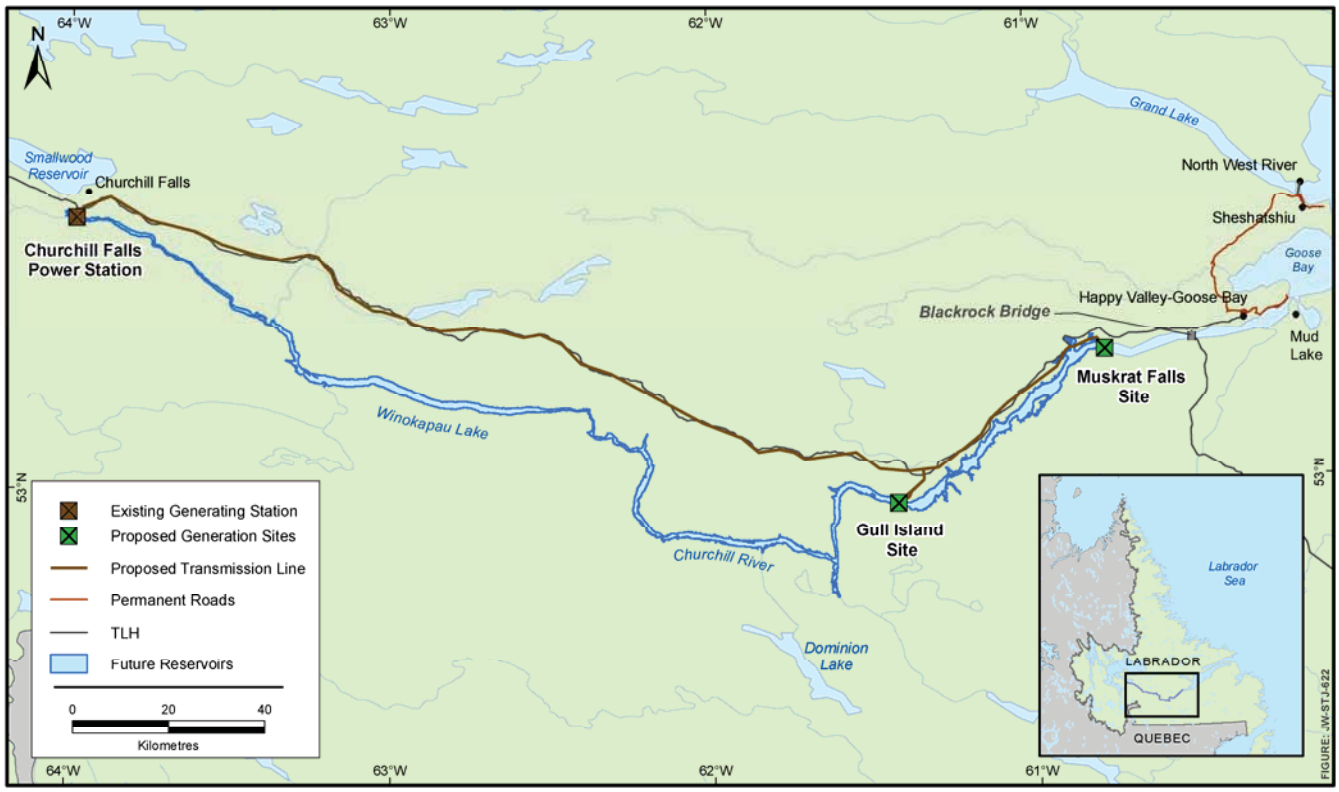


Figure 4-1 The Project

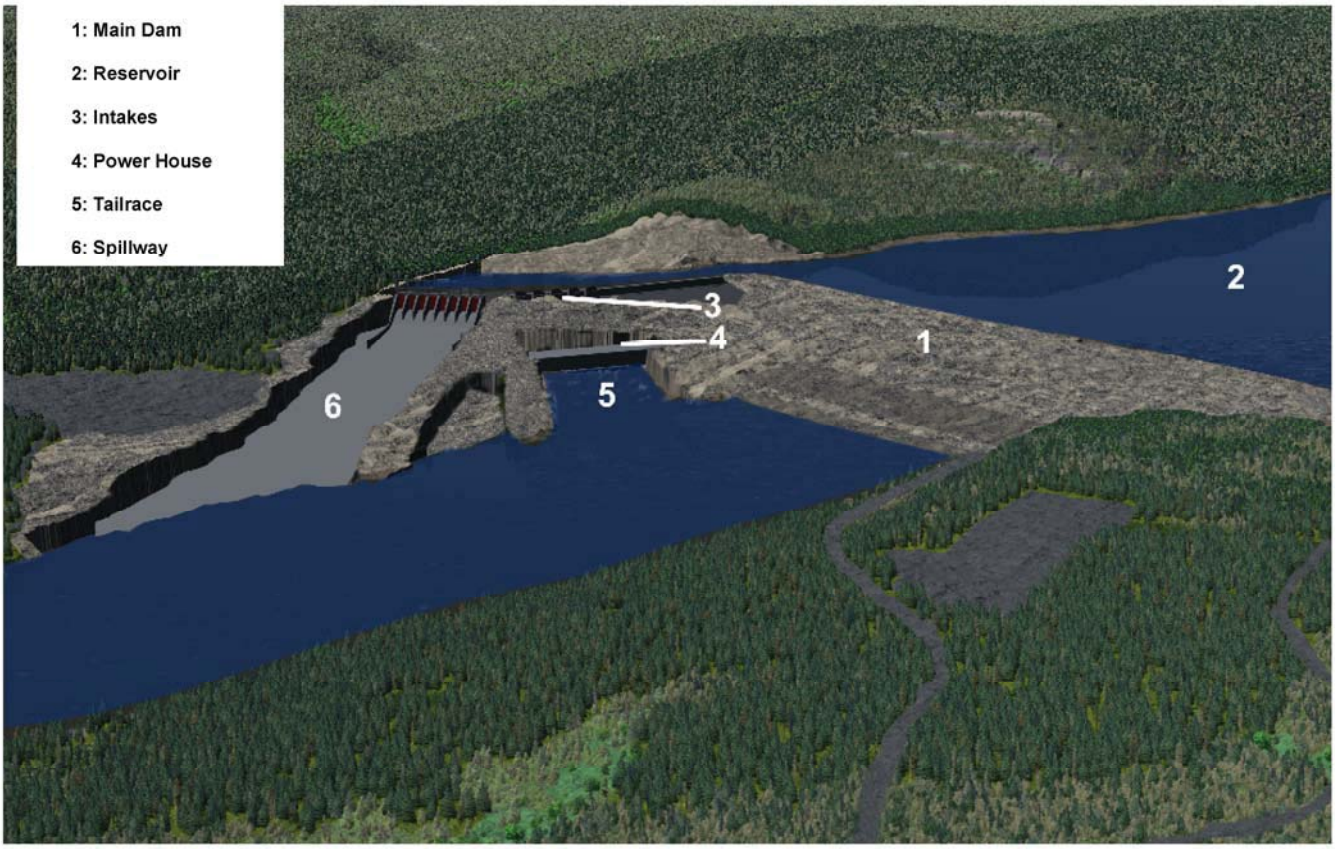


Figure 4-2 Conceptual Layout of Gull Island Generation Facility

Figure 4-3 Conceptual Layout of Muskrat Falls Generation Facility

Nalcor Energy is seeking approval to construct a 203 km long, 735 kV transmission line from the Gull Island site to the Churchill Falls Power Station and a 60 km long, 230 kV transmission line from Muskrat Falls to Gull Island, to be located within a one km wide corridor. The actual cleared right-of-way will be approximately 80 m, in addition to the existing right-of-way and for most of its length, the right-of-way will be adjacent to the existing transmission line right-of-way.

4.2.1 Gull Island Generation Facility

Figures 4-2 and 4-4 show details of the Gull Island Generation Facility. The concept for this site is for a single dam to span the river. Both the construction bypass as well as the operations spillway will be located on the south bank. The powerhouse will be within the dam structure on the downstream side. An approach channel will direct water from the reservoir into the power intakes, which directly connect to turbines. The water will pass through the turbines and exit through the draft tubes into the tailrace. The passage of flows in excess of power generation requirements will be through the spillway.

4.2.1.1 Main Dam

At 99 m high and 1,315 m long, the main dam will be the largest structure associated with the Gull Island Generation Facility. This concrete-faced structure will be constructed to Canadian Dam Association (CDA) standards and consist mainly of rockfill obtained from local excavations. The triangular cross-section will be 9 m wide at the crest with a maximum thickness of 300 m at the bottom. The dam axis will be perpendicular to the river flow.

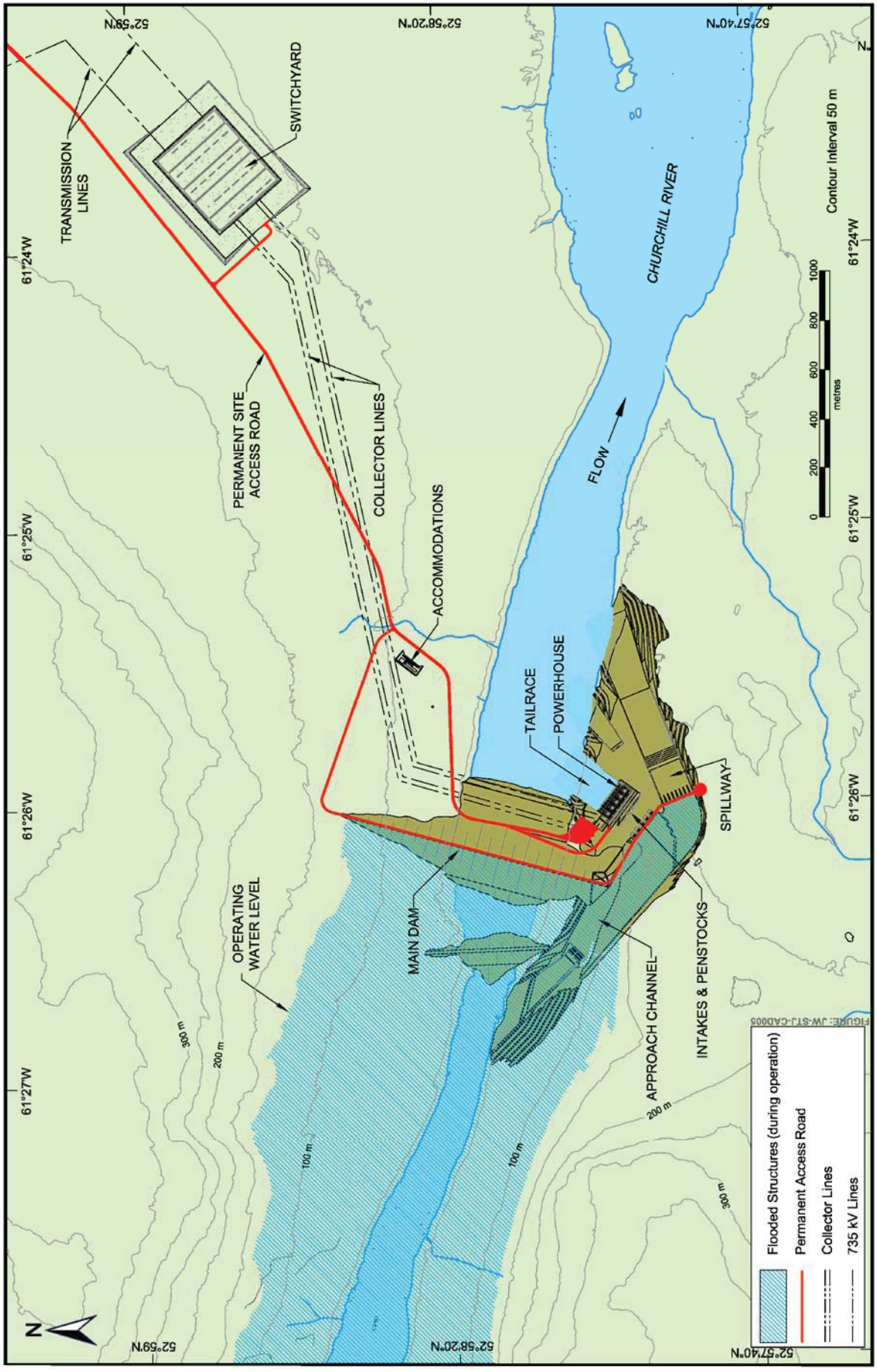


Figure 4-4 Gull Island Layout

The dam will consist of two main components: the main rockfill and an impervious upstream layer. The main rockfill provides stability to resist hydrostatic pressure forces exerted from the reservoir, while the reinforced concrete layer covering the upstream side provides an impervious layer to prevent water seepage.

A concrete cut-off wall, as well as a grout curtain, will be installed in the riverbed under the upstream side of the dam to control seepage. A cross-section of the Gull Island concrete faced rockfill dam (CFRD) is shown in Figure 4-5.

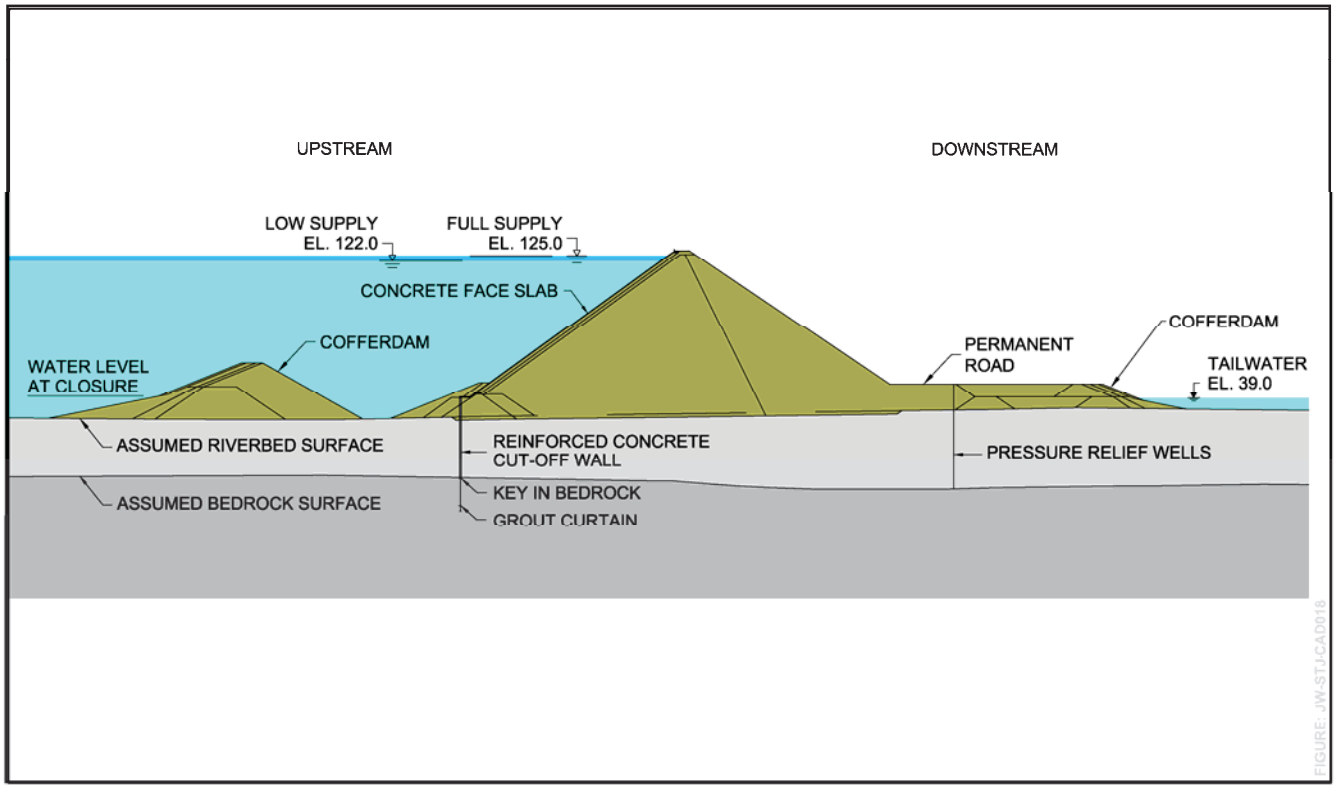


Figure 4-5 Cross-section of Gull Island Concrete Faced Rockfill Dam

4.2.1.2 Powerhouse

The 210 m long by 40 m wide powerhouse (Figure 4-6) will be anchored in bedrock on the south side of the river immediately downstream from the dam. The powerhouse will be above ground, enclosed in a metal-clad, concrete building with steel superstructure, its longitudinal axis approximately 30° to the river axis. Five turbines, each with a capacity of 450 MW, will provide a total installed capacity of 2,250 MW. The maximum discharge per turbine will be 590 m^3/s. In turn, total discharge from the powerhouse will be 2,950 m^3/s. The net head on the plant will be 86 m.

The diameter of the Francis turbine runners will be 7.2 m. The air-cooled generators will be directly coupled to the turbine shafts, with each generator connected to a power transformer via an individual isolated phase bus and generator breaker.

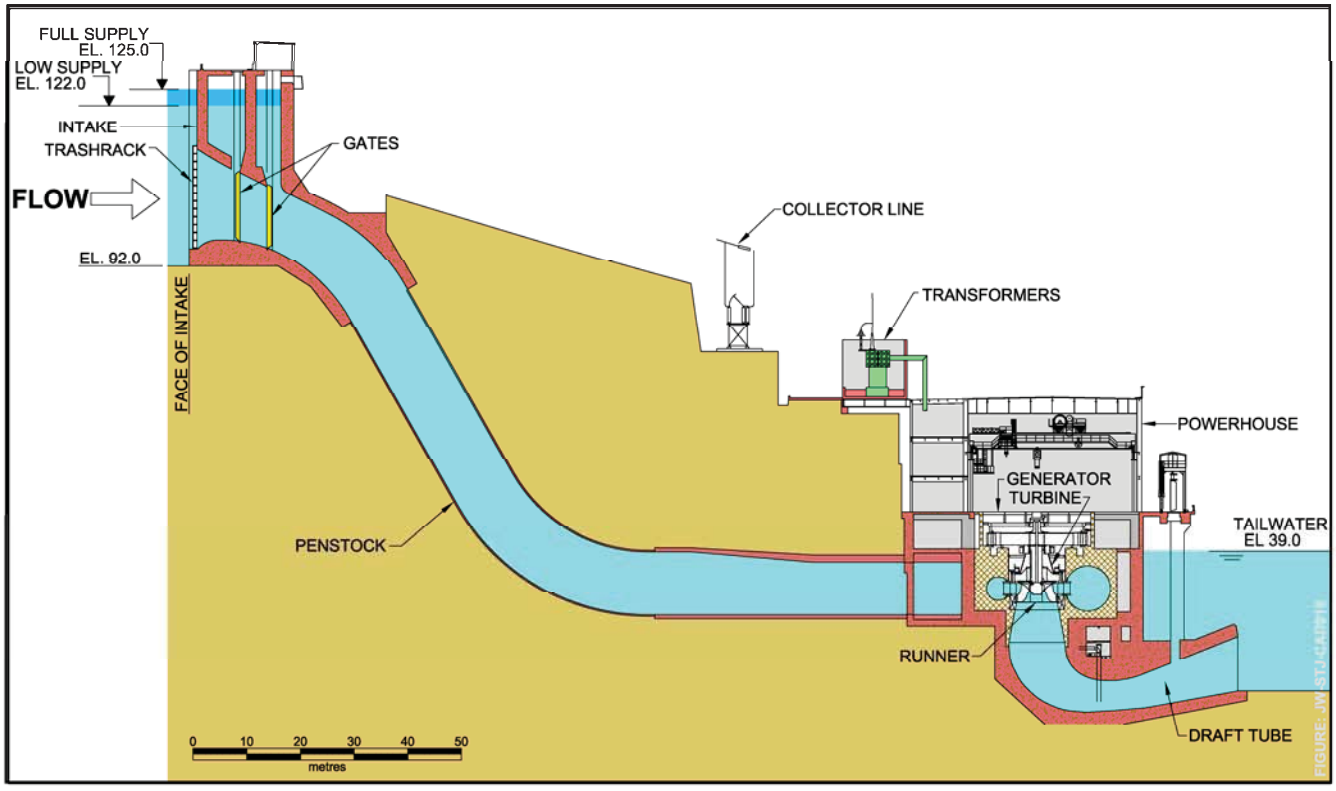


Figure 4-6 Cross-section of Gull Island Powerhouse

Auxiliary services for the powerhouse include:

- a raw water system (fed from the reservoir upstream of the turbines);
- a turbine cooling water system (discharged to the tailrace downstream of the powerhouse at approximately 100 L/s);
- a fire protection system;
- a service water system (capacity of 75 L/s);
- a potable water treatment system;
- a sewage treatment system (conventional septic tank followed by a metering tank and two circulating filter beds);
- a dewatering system for turbine water passages;
- a clearwater drainage system for powerhouse seepage, leakage from turbine seals and fire protection;
- a drainage system for dewatering intake and draft-tube gates (floor trenches drain to a sump and discharge to the tailrace); and
- an oily water drainage system (an oil interceptor will be incorporated at the entrance of the dewatering/ drainage sump to intercept any oil before it enters the sump) with an oil detection alarm.

In addition, the powerhouse design incorporates the following features to address environmental considerations for long term operations:

- energy-efficient lighting;
- a ventilation system for the distribution and/or direct exhaust of heat dissipated from the generators;
- oil separation systems for all areas where hydrocarbons are present;

- solid waste materials and garbage collection and delivery to a licensed disposal site;
- disposal of chemicals in accordance with the waste management section of the EPP;
- use of dyked or doubled-walled tanks to store controlled products (all controlled products will be in areas where the drainage is directed to an interceptor tank); and
- monitoring devices for emissions and discharges.

Diesel generators will be installed in the powerhouse for emergency use. Associated diesel fuel storage tanks will be certified, double walled and equipped with remote monitoring systems. All oil and waste oil will be stored in double-walled tanks inside the powerhouse. Batteries will be stored in a secure (no drain) dyked area in the powerhouse.

4.2.1.3 Reservoir and Zones of Clearing

Construction of the main dam will form a 232 km long reservoir from the Gull Island Generation Facility to the tailrace for the Churchill Falls Power Station. The elevation of the reservoir will be approximately 125 m asl at FSL and 122 m at LSL. At FSL, the area of inundation will be 85 km², resulting in a total surface area of 213 km². A series of maps illustrating the area of inundation is provided in Appendix IB-C.

Preparing the area for inundation involves removal of vegetation (timber and brush) along the reservoir perimeter to 3 m below LSL (ice impact zone). This area will extend vertically from elevations of 119 m (3 m below LSL) to 128 m (3 m above FSL), for a total of 44 km^2 (i.e., about 50 percent of the vegetation within the reservoir area will be affected) (Figure 4-7). The environmental assessment has been based upon a maximum cleared width of 15 m from the shoreline at FSL. The actual cleared width will be dictated by the reservoir preparation plan that will consider safety, terrain, biophysical and access requirements. The clearing strategy will result in a reservoir with a natural shoreline and riparian zone. As a result, the reservoir will be free of impediments to movement by boats or animals (e.g., swimming caribou). Reservoir preparation, combined with the operating regime of the reservoirs, will result in the development of a stable littoral zone, shoreline and vegetated riparian zone.

4.2.1.4 Approach Channel

A 137 m wide by 600 m long approach channel (Figure 4-4) will be excavated in rock on the south bank of the river, upstream from the intake and spillway. The invert elevation of the channel will be approximately 92 m at the intake, rising to approximately 99.5 m, 200 m upstream from the spillway. The channel will provide approach conditions to the power intakes and the spillway. At LSL, the maximum velocity will be 0.7 m/s for the powerhouse flow. In the event of the probable maximum flood (PMF), the average velocity in the approach channel will be 4.1 m/s near the entrance to the spillway.

4.2.1.5 Intake and Penstocks

The approach channel will direct the flow of water to the front of the intake structure where the sill elevation is 97 m. The intakes feed water into the penstocks. There will be one intake per penstock structure, each with a set of vertical lift operating gates with individual wire rope hoists in heated enclosures. There will also be one set of steel bulkhead gates with a permanent hoist system. Removable trash racks in each inlet, at the face of the power intakes, will prevent trash from entering the penstocks and damaging the turbines. There will be one permanent trash removal system.

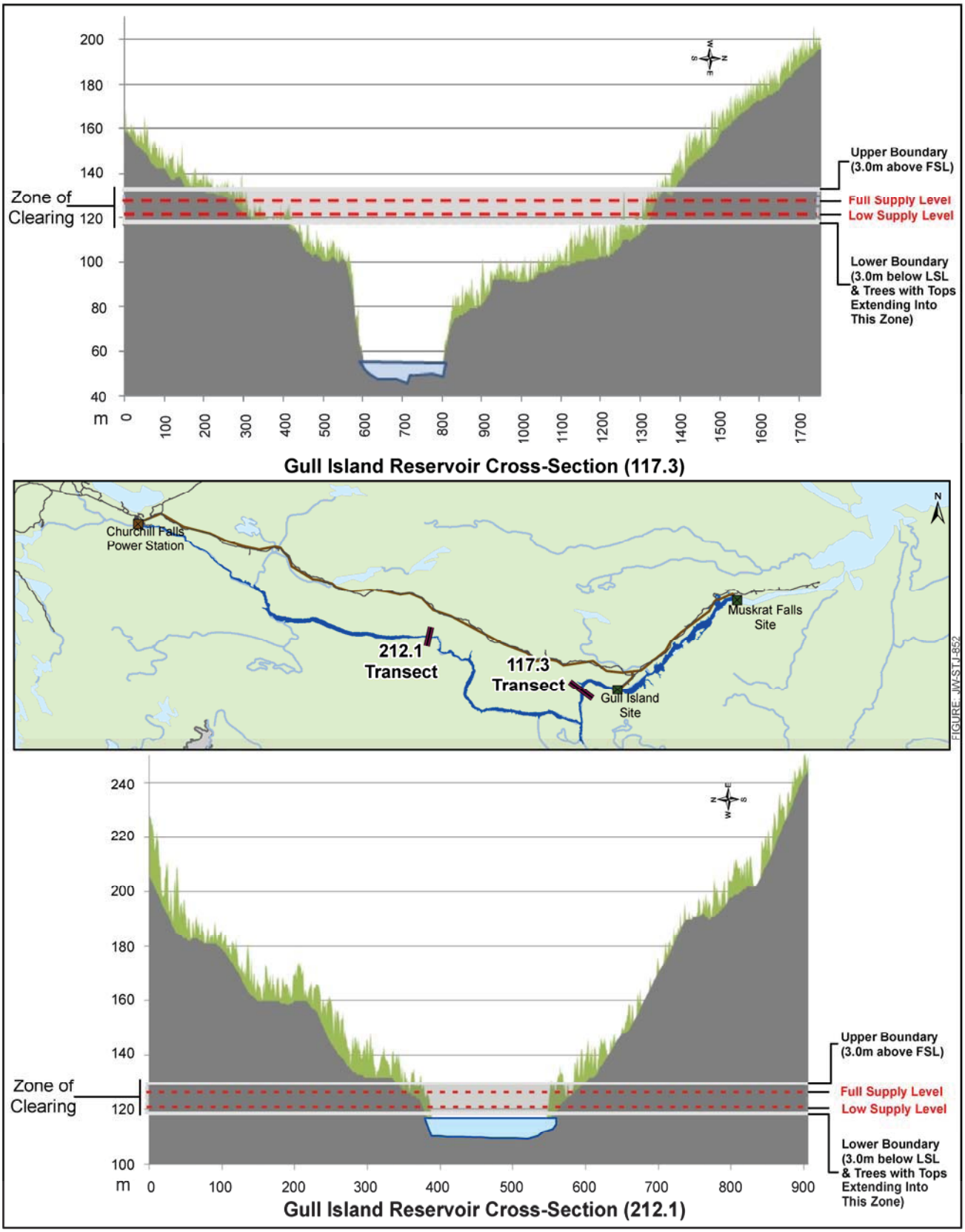


Figure 4-7 Extent of Reservoir Clearing at Gull Island

There will be one penstock per generation turbine, each consisting of a rock tunnel excavated between the intake and powerhouse and including:

- a concrete-lined section, 12 m in diameter and 80 m long; and
- a steel-lined section, 12 m to 10 m in diameter and 47 m long.

The vertical centreline of the turbine is approximately 160 m downstream from the face of the intake of the dam, as shown in Figure 4-6.

4.2.1.6 Tailrace

The tailrace channel (Figure 4-4) will direct water to the river after it passes through the turbines in the powerhouse. The 140 m wide by 200 m long tailrace channel will slope from the powerhouse draft tube to the river bottom. The tailrace water will flow at approximately 3 m/s.

4.2.1.7 Spillway

The spillway (Figure 4-8) will be used infrequently because the design flow capacity of the turbines is greater than the average flow of water into the reservoir. During spring runoff, turbine shut down for maintenance, or emergencies, the spillway will release water from the reservoir. The spillway will accommodate a probable maximum flood (PMF) of 20,800 m^3/s.

Located on the south bank, the spillway will have eight gated openings on a parabolic crest sloping down to a lined chute, a flip bucket, a large plunge pool and a short channel to the river. A cross-section of the spillway is shown in Figure 4-8.

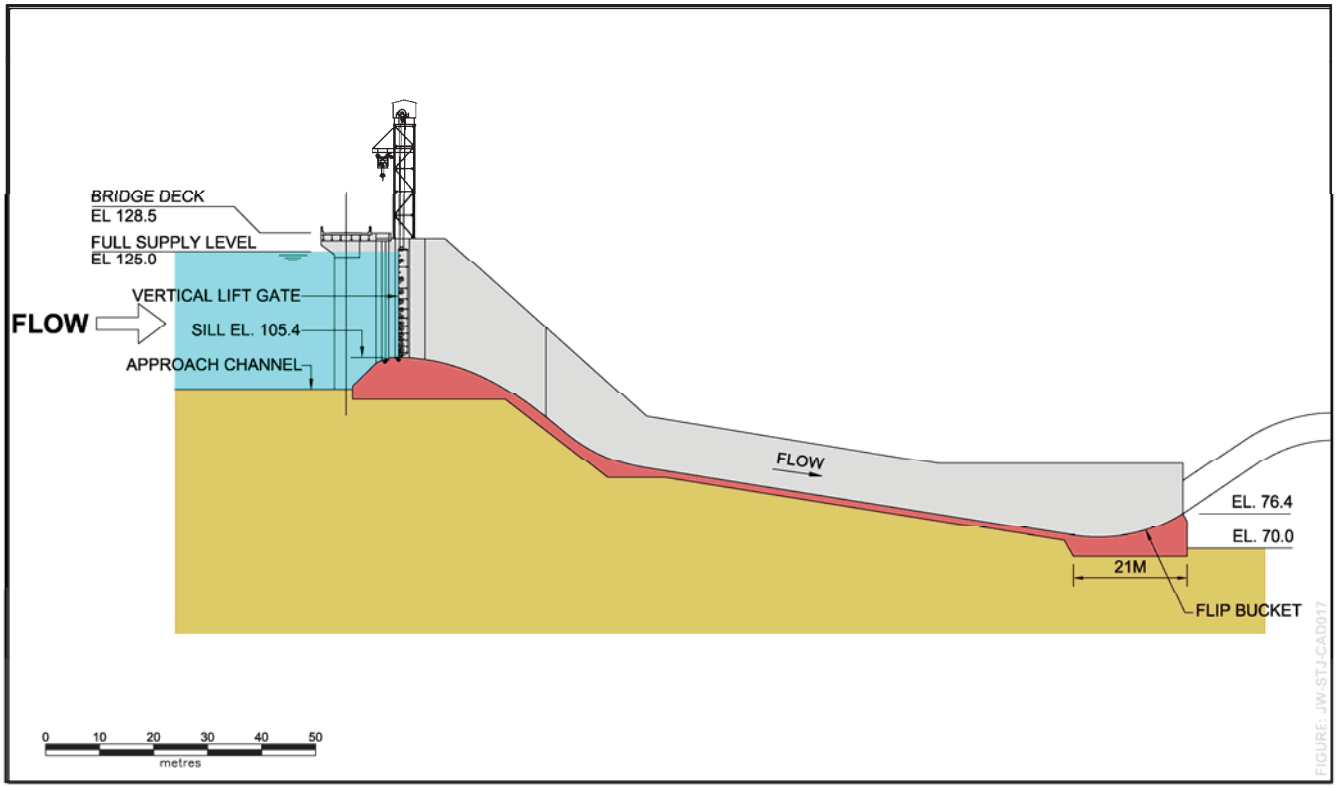


Figure 4-8 Cross-section of the Gull Island Spillway

The spillway will be equipped with eight, fixed-wheel vertical lift gates, each 13 m wide and 20 m high. The crest will discharge spillway flows at an elevation of 105.4 m into a 130 m wide, concrete-lined chute and flip bucket. The flip bucket allows the water to plunge into the unlined stilling basin (plunge pool) for the dissipation of its energy before passing into the discharge channel and the river. The elevation at the bottom of the 255 m long and 130 m wide plunge pool will be 14 m. The discharge channel will deliver water back to the river at less than 7 m/s.

4.2.1.8 Main Power Transformers and Switchyard

The main power transformers will be upstream from the powerhouse, at the same elevation as the powerhouse roof (66.5 m). The transformers will be dyked with drainage to an interceptor tank. The power transformers will raise the generation voltage to 230 kV, with collector lines transmitting power to a 230 kV/735 kV switchyard. Five separate collector lines run from the powerhouse to the switchyard, with one circuit from each turbine. Exiting the powerhouse on the south bank of the river, the lines will pass 3.5 km across the river to the switchyard on the north bank. This passage across the river requires constructing two 230 kV double-circuit and one single-circuit 230 kV overhead transmission lines. The locations of the collector lines and switchyard are shown in Figure 4-4.

The 230 kV section of the switchyard will receive the collector lines from the Gull Island powerhouse, as well as the double circuit 230 kV line from the Muskrat Falls Generation Facility. The 735 kV section of switchyard will connect the outgoing 735 kV line(s) to Churchill Falls.

The 580 m by 550 m gravelled switchyard site is on the north side of the river, 2.5 km east of the main dam, and will be contained within a galvanized steel security fence. A control building, to house all control, monitoring and telecommunications interfaces, will be located in the switchyard.

4.2.1.9 Permanent Access

Main access to the Gull Island site will be along an existing road (Figure 4-4), off the TLH, approximately 88 km from Happy Valley-Goose Bay. A permanent access road linking the Gull Island site to the TLH will extend approximately 10 km from the TLH intersection to the north shore of the Churchill River. Of the 10 km, 7 km are existing and will require upgrading, while 3 km will be new road construction. The access road will be gravel, with a 9.5 m wide top and 2:1 side slopes.

One stream crossing on the existing road will require the installation of a new 1,200 mm culvert. Four other existing culverts on this section at stream crossings will remain as is, except for the addition of slope protection on the inlet and outlet slopes.

4.2.1.10 Permanent Accommodations

A 40 person, self-contained accommodations building will be provided for maintenance staff during major shutdowns and overhauls (Figure 4-4). The building will include potable and firewater facilities, sewage and waste treatment, and heating, ventilation and air conditioning. The facilities will also be equipped with a kitchen, sleeping quarters, recreation and laundry rooms.

4.2.1.11 Security

All areas around the structures will be fenced with locked gates. All entrances to structures and buildings will be equipped with card access. Sensitive areas will be equipped with remote cameras. The generation facility will also include warning signs as required.

4.2.2 Muskrat Falls Generation Facility

Similar to the Gull Island Generation Facility, the construction of a dam at the Muskrat Falls site (Figures 4-3 and 4-9) will result in the formation of a reservoir. The excavation of the powerhouse will be on the south shore of the river, such that the elevation of the turbines will be below the elevation of the existing riverbed at the lower falls. The facility will not have penstocks; an approach channel will direct the water from the reservoir into the power intakes, which directly connect to turbines. The water will pass through the turbines and discharge through the draft tubes into the tailrace. The passage of flows in excess of power generation requirements will be through the spillway.

4.2.2.1 North and South Dams

The construction of two dams, one on the north and one on the south river bank, will result in the closure of the river. The north dam section will be 32 m high and 432 m long, while the south dam section will be 29 m high and 325 m long. The maximum width of the dams will be 30 m. The dams (Figure 4-10) will be constructed of roller compacted concrete (RCC), a specially proportioned, relatively dry mix zero-slump concrete, which has the strength and durability of conventional concrete.

The upstream face of the RCC dams will consist of a vertical wall, while the downstream-sloped face will be similar to a concrete staircase. To provide access across the top of the dams, a road will be built. Seepage through cracks or voids in the bedrock will be sealed by installing a grout curtain directly underneath the dams.

4.2.2.2 Powerhouse

The Muskrat Falls powerhouse will be a surface-type, concrete structure with a steel superstructure, 188 m long by 69 m wide. Four turbines each with a capacity of 206 MW will provide a total installed capacity of 824 MW. In turn, total discharge from the powerhouse will be 2,660 m^3/s. The net head will be 35 m.

The diameter of the turbine runners will be 9 m. The air-cooled generators will directly couple to the turbine shafts, with each generator connecting to a power transformer via an individual isolated phase bus and generator breaker. Generator components, such as bearings and bushings, will be self-lubricating or use biodegradable lubricants.

Mechanical equipment and environmental design aspects for the powerhouse are similar to the systems described for the Gull Island powerhouse in Section 4.2.1.2.

The location of the powerhouse is shown in Figure 4-9 and a general cross-sectional view is provided in Figure 4-11.

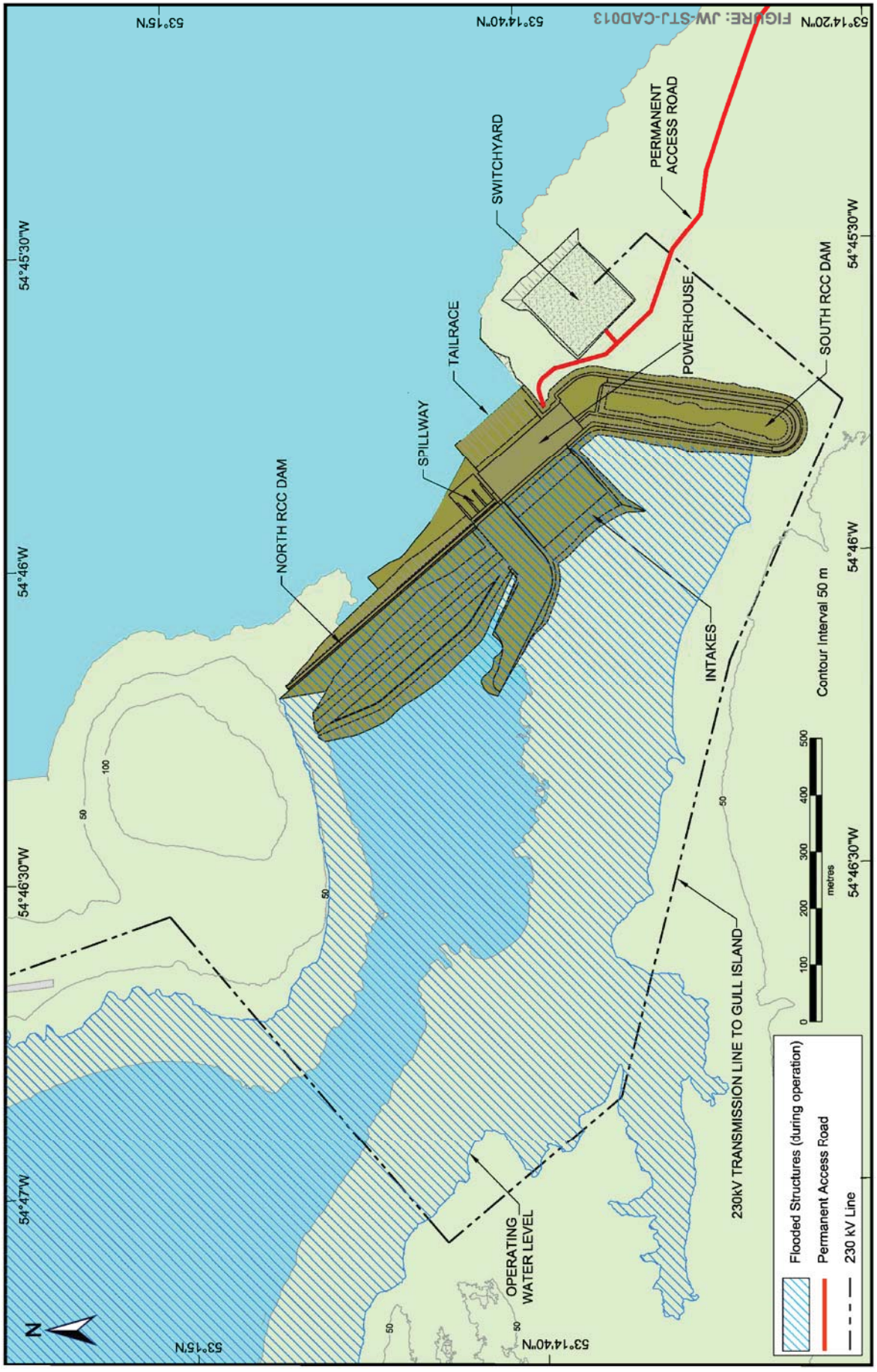


Figure 4-9 Muskrat Falls Layout

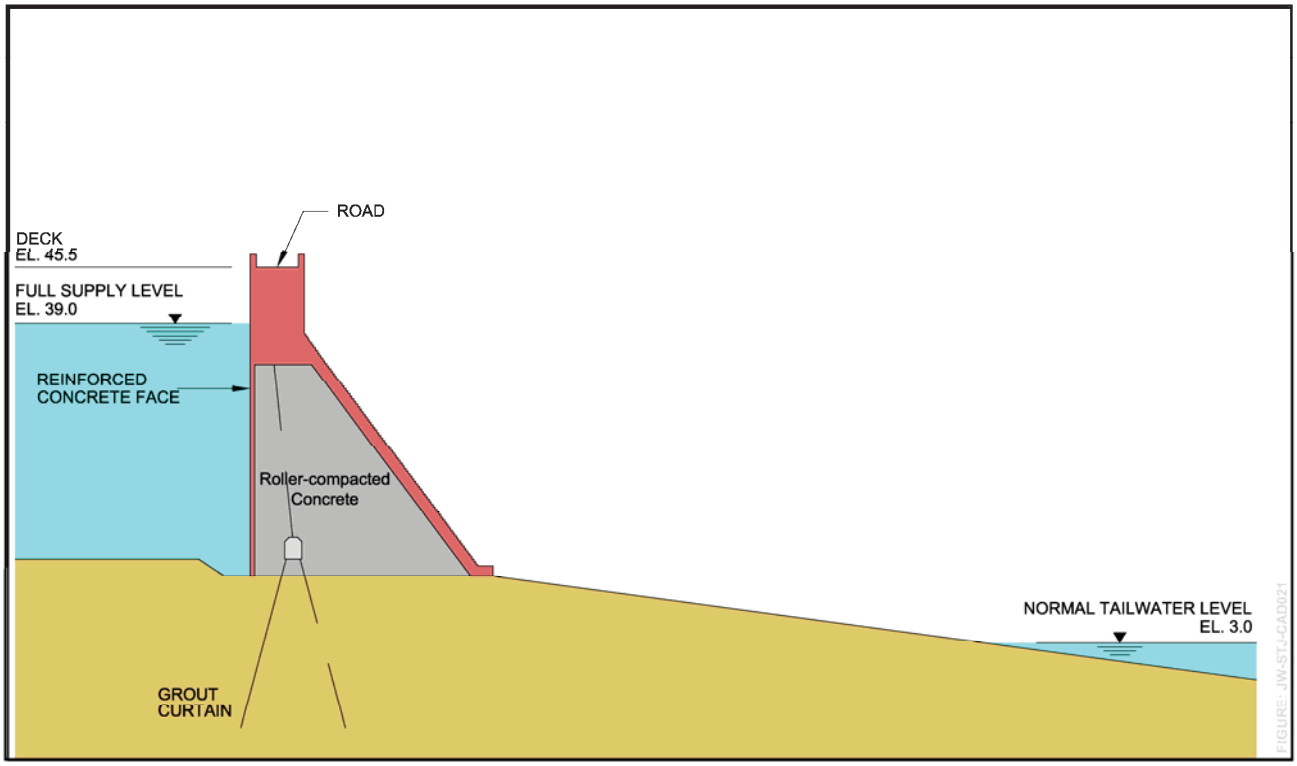


Figure 4-10 Cross-section of Muskrat Falls Roller-compacted Concrete Dam

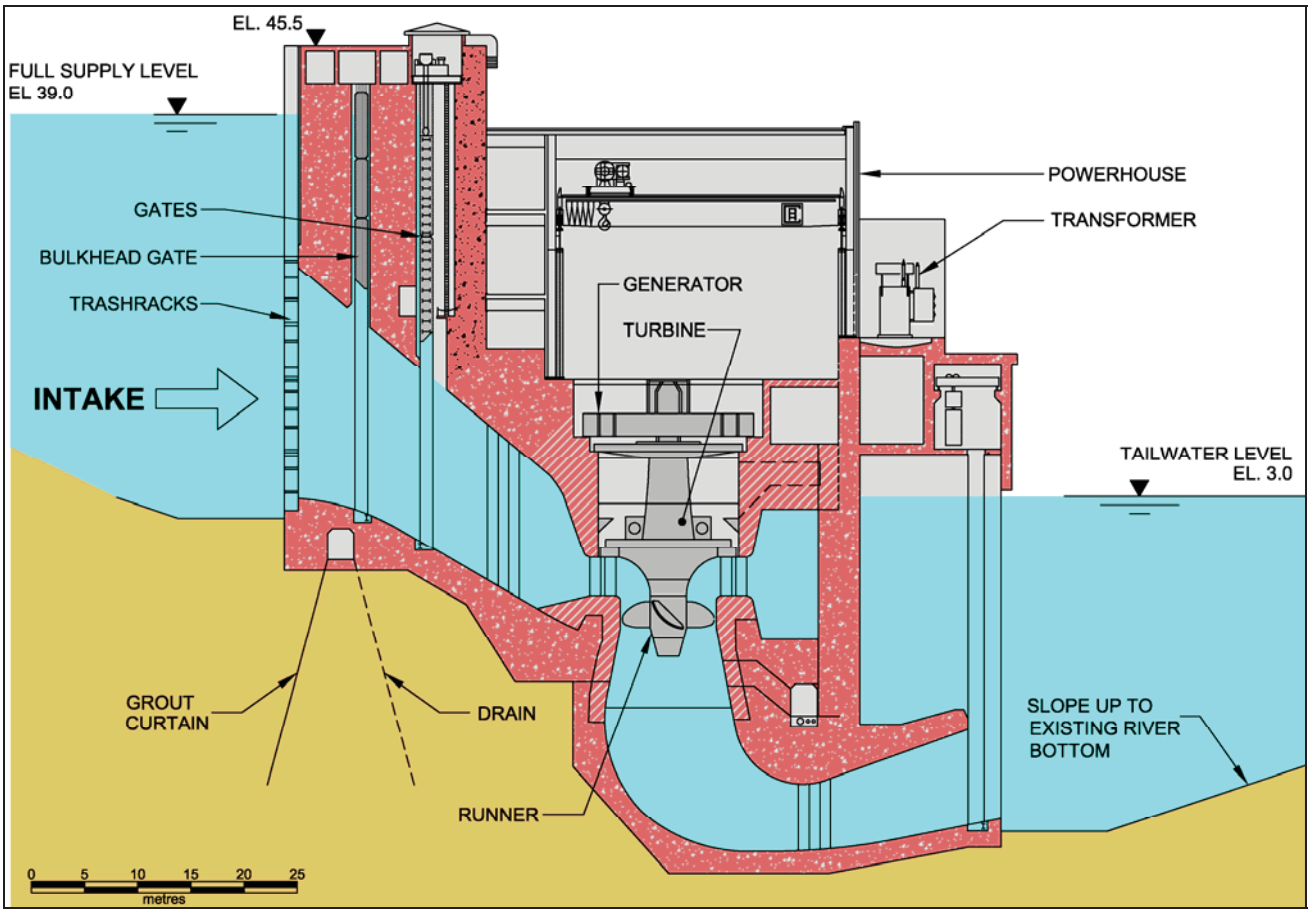


Figure 4-11 Cross-section of the Muskrat Falls Intakes and Powerhouse

4.2.2.3 Reservoir and Zones of Clearing

Construction of the north and south dams will result in the formation of a 59 km long reservoir. At FSL, the area of inundation will be 41 km², resulting in a reservoir with a total surface area of 101 km². The elevation of the reservoir will be 39 m at FSL and 38.5 m at LSL.

Preparing the reservoir area for inundation (Figure 4-12) involves removal of vegetation within a zone of elevation from 35.5 m (3.0 m below LSL) to 42 m (3.0 m above FSL). The environmental assessment has been based upon a maximum cleared width of 15 m from the shoreline at FSL. The actual cleared width will be dictated by the reservoir preparation plan that will consider safety, terrain, biophysical and access requirements. This will result in almost full clearing of the reservoir, except along existing riparian zones where only larger (taller) trees will be removed and existing shrubs left in place to provide refuge habitat until inundation.

4.2.2.4 Approach Channel

A 150 m wide by 138 m long approach channel to the power intakes will be excavated in rock on the south bank of the river. Its invert elevation will be 10 m. At normal operating levels, the maximum flow will be 0.6 m/s in the approach channel to the intakes.

4.2.2.5 Intake

The approach channel will direct the flow of water to the intake structure (Figure 4-11). The channel will have an invert elevation of 10 m sloping downwards to an elevation of 1 m at the intake entrance. The intake and powerhouse arrangement will provide a close coupling of the intake water passages to the powerhouse spiral cases. The intake structure will comprise four intakes. There will be one intake per unit, each with a set of vertical lift operating gates with individual wire rope hoists in heated enclosures. There will also be one set of steel bulkhead gates with a permanent hoist system. Removable trash racks in each inlet, at the face of the power intakes, will prevent trash from entering the intake water passages and damaging the turbines. There will be one permanent trash removal system.

4.2.2.6 Tailrace

The 138 m wide by 100 m long tailrace channel will slope upward from the powerhouse to an elevation of −10 m at the river. The water elevation at the tailrace will be approximately 3 m. The tailrace water will flow at approximately 1.5 m/s.

4.2.2.7 Spillway Channel

A spillway approach channel with an invert elevation of 5 m will be excavated in rock alongside the approach channel to the intakes. During PMF, the average velocity in the spillway channel will be 4 m/s at the entrance to the spillway.

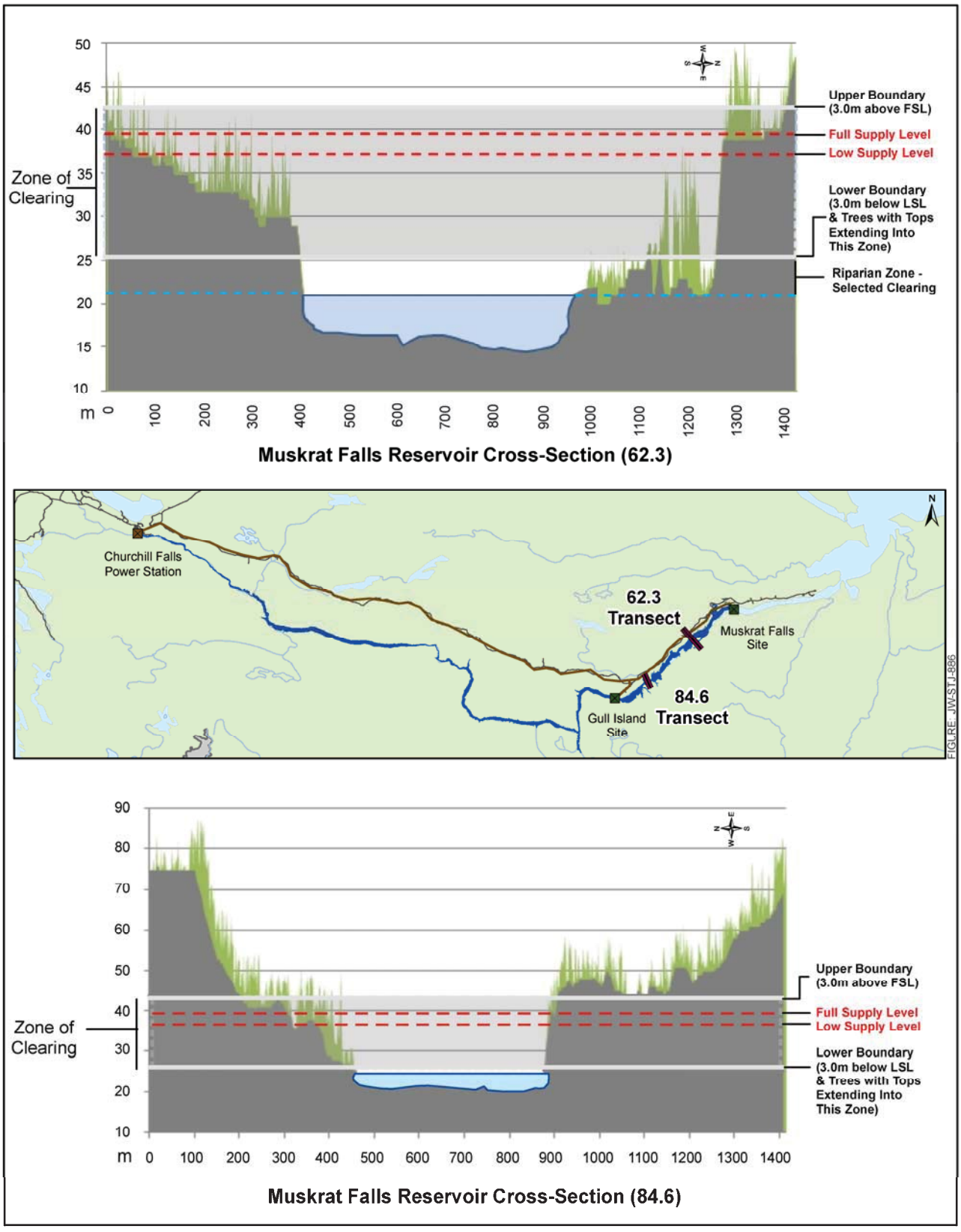


Figure 4-12 Extent of Reservoir Clearing at Muskrat Falls

4.2.2.8 Spillway

Similar to the Gull Island facility, the spillway (Figure 4-13) will be used infrequently. The spillway design has four submerged radial gates and can accommodate a full PMF flow of 22,420 m^3/s. It will be made of concrete and set into rock on the north side of the powerhouse.

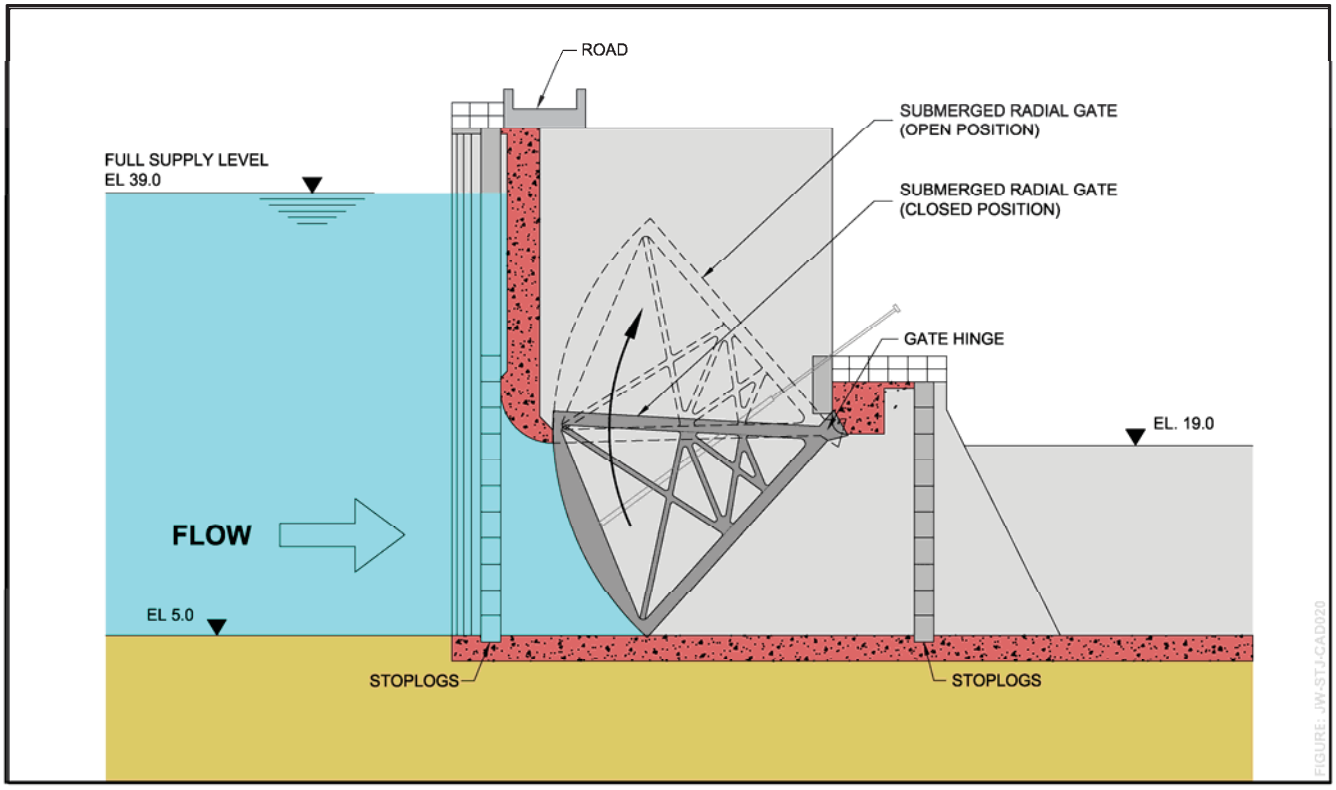


Figure 4-13 Cross-section of Muskrat Falls Spillway

The radial gates will be 12.5 m wide by 14.8 m high with sills at 5.0 m elevation, which is above the tailwater level of 3.0 m. The water will discharge directly into the river, as a high velocity jet, where a natural pool (formed by erosion from the existing falls) will dissipate the energy of the water.

4.2.2.9 Main Power Transformers and Switchyard

The main power transformers will be located on the draft tube deck of the powerhouse. The power transformers will raise the generation voltage to 230 kV. Collector lines connecting them to a 230 kV switchyard will consist of 230 kV underground cables in a 100 m long cable trench. The 230 kV switchyard will connect to an outgoing double-circuit 230 kV transmission line to Gull Island.

The switchyard will be located on the south side of the river, about 100 m east of the powerhouse (Figure 4-9). The 200 m by 200 m gravel surface switchyard area will be gated and fenced for security.

The switchyard will contain a control building to house all control, monitoring and telecommunications interfaces.

Appendix C

Letter dated March 19, 2009

FAXED Mar. 19/09

nalcor energy
LOWER CHURCHILL PROJECT

Hydro Place. 500 Columbus Drive.
P.O. Box 12800. St. John's. NL
Canada A1B 0C9
t. 709.737.1833 or 1.888.576.5454
f. 709.737.1985

Doc. No. 09-3/602

March 19, 2009

Mr. Andrew MacNeill, P. Eng.
Vice President and General Manager
Churchill Falls (Labrador) Corporation
P.O. Box 12500
St. John's, NL
A1B 3T5

Re: Water Management between Churchill Falls and the Lower Churchill Project

Dear Mr. MacNeill:

The purpose of this letter is to advise you that Nalcor Energy has obtained water rights from the Government of Newfoundland and Labrador for the purpose of developing the Lower Churchill Project. As the lower Churchill sites at Gull Island and Muskrat Falls are on the same body of water as the Churchill Falls development, provisions of the *Electrical Power Control Act, 1994* relating to water management and the *Water Management Regulations* are applicable to our respective organizations.

In accordance with subsection 5.5(1) of the *Act* and section 4 of the *Regulations,* please consider this letter as a formal request to initiate negotiations leading to a water management agreement. Please advise me at your earliest convenience as to when you will be ready to begin discussions on this matter.

If you have any questions or require further information, please contact me at (709) 737-1836 or by email at gbennett@nalcorenergy.com. I have also attached a copy of the lower Churchill water lease between Nalcor Energy and the Government of Newfoundland and Labrador for your reference.

Sincerely,

Gilbert J. Bennett, P. Eng.
Vice President – Lower Churchill Project

Encl.

Fax Confirmation Report

Date/Time : MAR-19-2009 03:13PM THU
Fax Number : 7097371800
Fax Name : NL HYDRO
Model Name : WorkCentre 4150

Total Pages Scanned: 13

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001	917099258326	03-19 03:06PM	05'21	013/013	EC	HS	CP

Abbreviations:
HS:Host Send PL:Polled Local CP:Completed TS:Terminated by System
HR:Host Receive PR:Polled Remote FA:Fail RP:Report G3:Group3
WS:Waiting Send MS:Mailbox Save TU:Terminated by User EC:Error Correct MP:Mailbox Print

FACSIMILE

nalcor energy
LOWER CHURCHILL PROJECT

TO: Andy MacNeill
FROM: Gilbert Bennett
COMPANY: CF(L)Co
DATE: 3/19/2009
FAX NUMBER: 925-8326
PAGES INCLUDING COVER: 13
PHONE NUMBER:
SENDER'S REFERENCE NUMBER:
RE: Letter regarding Water Management
YOUR REFERENCE NUMBER:
☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

[Click here and type return address]

Appendix D

Email dated October 27, 2009

Andrew MacNeill/cflco/NLHydro
10/27/2009 12:10 PM

To Gilbert Bennett/NLHydro@NLHydro
cc AMacNeil@nlh.nl.ca, Geoff Young/NLHydro@NLHydro, Peter Hickman/NLHydro@NLHydro
bcc
Subject Re: Water Management Agreement

At a meeting of the CF(L)Co Board of Directors on Friday, October 23, 2009, the Board considered, for approval, the draft Water Management Agreement that was negotiated by CF(L)Co and Nalcor Energy and recommended by the CF(L)Co negotiating team. The required Board approval was not achieved. Neither was the Board able to provide any direction as to how the agreement could be modified such that it might receive board approval. The CF(L)Co negotiating team is therefore not in a position to resume negotiations at this time.

Andrew MacNeill
VP& General Manager of CF(L)Co
Executive Leadership
Nalcor Energy - Churchill Falls
t. **709 925-8227** c. **709 685-5254** f. **709-925-8326**
e. **AMacNeill@nalcorenergy.com**
w. **nalcorenergy.com**

You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

Gilbert Bennett---10/26/2009 05:20:05 PM---Gentlemen: I would like confirmation of the followir

From: Gilbert Bennett/NLHydro
To: Peter Hickman/NLHydro, AMacNeil@nlh.nl.ca@NLHydro
Cc: Geoff Young/NLHydro@NLHydro
Date: 10/26/2009 05:20 PM
Subject: Water Management Agreement

Gentlemen:

I would like confirmation of the following two points regarding water management:

1) whether the CF Board approved the tentative water management agreement, and

2) any issues that were regarded by the Board as deficiencies, problems, or concerns that prevented the Board from approving the tentative agreement.

Thanks in advance,

Gilbert

Gilbert J. Bennett, P. Eng.
Vice President
Nalcor Energy - Lower Churchill Project
t. **709-737-1836** f. **709-737-1782**
e. **gbennett@nalcorenergy.com**
w. **nalcorenergy.com**
1.888.576.5454