

Wesley Hawe

From: Paul Wilson <plwilson@mhi.ca>
Sent: Tuesday, August 16, 2011 3:05 PM
To: Fred Martin
Cc: Allen Snyder (amsnyder@[REDACTED]); Mack Kast (mkast@[REDACTED])
Subject: Biweekly reports
Attachments: 20110729 Biweekly Report 1.pdf; 20110812 Biweekly Report 2.pdf

Hi Fred, please find attached the finalized Biweekly reports 1 and 2.

Paul Wilson

August 16, 2011

File: NFLD
Status: Final

Newfoundland and Labrador
Board of Commissioners of Public Utilities
PO Box 21040
120 Torbay Road
St. John's, NL
A1A 5B2

Attention: Fred Martin, PUB Project Manager

Nalcor Submission Two Option Study Project – Biweekly Report 2

Manitoba Hydro International Ltd is pleased to present the biweekly report for the period July 31 to August 12. This report is divided into six sections: activities completed to date, activities planned for the next two weeks, legal compliance update, significant issues and findings, schedule, and cost and expenses.

1. Activities Completed To Date

These two weeks of the project involved technical and financial reviews of the material submitted by Nalcor.

Technical and Financial reviews under way in this period include:

- Muskrat Falls Hydro Generation Feasibility Study
- Isolated Island Hydro Generation Feasibility Study
- Wind Farm Cost and Energy
- AC Power System and HVDC Integration Studies
- Options Hydrology
- Options Reliability Study
- Nalcor System Load Forecast
- CPW Analysis
- HVDC Feasibility Study



Personnel involved at site this period:

- Al Snyder, Project Manager and Technical Lead
- Mack Kast, Financial Technical Lead
- Peter Rae, Muskrat Falls GS Feasibility
- Charly Cadou, Hydrology Reviews
- Les Recksielder, LIL HVDC Review
- Dr. Bagen Bagen, System Reliability

Fewer staff were involved in site visits during this reporting period compared to that originally planned due to the need to wait for more complete information to be made available.

Staff involved with studies this period in totality, in addition to staff at site include:

- Rick Horocholyn, Financial Modelling
- Craig Kellas, Load Forecasting
- Alex Gerrard, Isolated Island Option Hydro Feasibility Review
- Bob Dandenault, Combustion and Thermal Generation Operations Expert - O&M
- Paul Durkin, Thermal Engineering Review, Gryphon Engineering
- Enrico Colombo, SOBI Marine Crossing, CESI
- Support Staff of MHI:
 - o Carole Manaire for Logistics
 - o Ashley Maes for Sharepoint Management and Document Tracking

Graham Lawson of Energy Cable Consultants, Inc. was the alternate for the marine crossing review, but could not meet the stringent schedule or time commitment for the visit to complete the analysis. Accordingly, CESI was contracted to perform this review, and Enrico Colombo is scheduled to visit St. John's the week of August 14 – 21st.

MHI has engaged Gryphon Engineering of Ontario to begin the Thermal Review together with internal Manitoba Hydro staff.

A total of 60 Information Requests (IRs) have been filed to date by MHI, in addition to the nine information requests filed by the PUB. To date, all but 12 of the IRs have been answered and the Technical Staff are currently reviewing them for sufficiency, and in the case where not acceptable, new IRs are being

prepared to redress, or address new areas of inquiry.

2. Activities Planned for the Next Two Weeks

The visit schedule has not changed subsequent to the project team teleconference. Paul Wilson will be on site August 14 to 23rd to coordinate activities of the Technical Team for SOBI Review, Thermal Review, and the Load Forecasting Review.

The travel itinerary details are as follows:

Week of August 14 – August 20

Paul Wilson		Aug-14 10:15 AC0264	Aug-23 12:05 AC0127	Report coordination and PM	
Craig Kellas		Aug-16 19:12 AC 122	Aug-20 18:00 AC 697	Load forecasting	
Enrico Colombo		Aug-14 15:00 AC0823	Aug-19 22:00 AC0822	SOBI technical review	
Bob Dandenault		Aug-16 16:07 AC 692	Aug-20 AC 691 05:15	Thermal review	
Paul Durkin		Aug-16 16:07 AC 692	Aug-20 AC 691 05:15	Thermal review	

The core project team is committed to having at least one member on site each week until the final report is submitted.

Recognizing the project schedule and delivery dates need to be reviewed early the week of August 14, travel plans for the subsequent week may change.

Week of August 21 – 27 (Tentative)

Al Snyder					Technical report key findings draft
Mack Kast					Technical report key findings draft

Staff in Winnipeg will continue with their Technical Reviews as documents are made available.

3. Legal Compliance Update

Most of the legal compliance issues have been resolved. The matter of finalizing the PEGNL registrations is the last issue to be dealt with.

- 1) Manitoba Hydro International Ltd business registration: A ruling from the Registry of Companies office confirmed that MHI is exempt from the requirement to register, unless the scope of work substantially changes. This item is now closed.
- 2) Workplace Health, Safety and Compensation Commission registration: WHSCC issued a Certificate of Clearance indicating that MHI is in good standing. This item is now closed.

- 3) Professional Engineers and Geoscientists of Newfoundland and Labrador registrations (PEGNL):
 - Notices of registrations were received by a number of the engineers on this project on Friday, August 12.
 - Eight of the engineers on this project have processed their applications. Additional registrations may be necessary and MHI will review this requirement once all contractors have been engaged.
 - The Permit to Practice has been applied for in three disciplines (electrical, mechanical, and civil engineering). Issuance of this permit is expected during the next reporting period.
- 4) Non-Disclosure Agreement between MHI and Nalcor: This document was executed and is now in place. This item is closed.

4. Significant Issues and Findings

Cumulative Present Worth (CPW) Analysis Status Report

During this reporting period, the financial review team continued to review all available material and developed a tracking matrix.

1. CPW Analysis
 - a. The project team is continuing to identify all capital cost linkages from the CPW summary sheet back to the estimates of components within each option.
 - b. The project team is also reviewing the O&M Cost Estimates and the Fuel and Power Purchased information which have just recently been made available.
2. Fuel Price Review
 - a. The PIRA January 2010 fuel price forecast has been reviewed
 - b. The Historic Actual NYMEX New York Harbour # 2 Heating Oil spot market prices were reviewed. Nalcor has indicated they expect to take delivery of the required fuels in Newfoundland based on pricing at the New York Harbour hub. This analysis will be included in the final report.
 - c. A statistical analysis of historical, current market and forecast price data was carried out to compare to the data provided by Nalcor. This involved examination of the PIRA January 2010 0.7% Residual Fuel Oil Price Forecast. This analysis will also be included in the final report.

- d. Confidence statements, charts and graphics have been developed in preparation for the final report.
- e. The team is now working on a preliminary draft of findings and conclusions for the final report.

With the large volume of material which was made available at the end of this week, it appears most of the requested information tied to the CPW review and Fuel Price review is now available to the Project Team. However, this information now needs to be assessed and assimilated, including the impact of the PIRA January 2011 fuel price forecast; the high/low forecast price scenarios; the PPA tariff (wholesale level) developed for the sale of Lower Churchill power to NF Hydro, and the various sensitivity analysis scenarios.

A concerted effort is also being made to ensure all capex and opex numbers included in the CPW review are tied to the documents being reviewed by the Technical Team.

Technical Status Report

From all indications, Nalcor has been fast tracking the Muskrat Falls LIL HVDC Link Option and as the project definition has only changed from Gull to Muskrat in the last year, a great deal of information is in process or not yet available.

MHI's requests for detailed technical information on the Muskrat Falls LIL system has been slow to come or not made available. For example, the detailed HVDC Specification and Estimates are only now being finalized for DG3. To overcome this deficiency, a new detailed IR has been drafted.

The Isolated Island Option has suffered from a lack of data and filings. Details on the Holyrood life extension, and estimates for CT and CCCT were only made available this week. This material has now been forwarded to the Thermal assessment team in preparation for the visit next week.

The Wind Farm Review has been scaled back due to the immateriality of the capital costs of the three wind farms in the Isolated Island Option. One or two information requests are being prepared to obtain relevant information on the 3rd Wind Farm installation. This analysis will be completed in Winnipeg and no visit to St. John's is anticipated for this review.

Report

A report outline has been prepared and provided to the PUB Project Manager for comment.

A graphics designer has been engaged to develop template options, graphic designs, and art work for this public report. A number of options will be prepared and forwarded to the PUB Project Manager for review and comment.

5. Schedule

MHI has logged approximately 30% of the budgeted person hours as at the end of July. The MS Project schedule indicates that 28% of the project tasks are complete as at this report. Activities and deliverables are expected to accelerate provided that information is made available for the staff to complete their Technical Reviews.

It is expected that approximately thirty (30) new IRs will be filed the week of August 14th. Assuming it may take Nalcor approximately two weeks to provide responses, and a further two weeks for the MHI Project Team to assimilate the information, there is reason to believe that the earliest date that the Project Team can deliver a Comprehensive Preliminary Report is September 19th.

6. Costs and Expenses

A revised Project Budget has been accepted by the PUB Project Manager and now forms the basis of financial comparisons.

Costs to date to July 31st together with the related budget estimates are detailed in the attached spreadsheet PDF file. Labour hours to date are 119.5 + 437.25 = 556.75 hours.

The costs to July 31, 2011 are as follows:

Labour:	\$ 90,923
Expenses:	<u>\$ 31,601</u>
Total	<u>\$122,524</u>

Note: The expenses may not be up to date as some expenses (notably from credit cards) take about 4 weeks to show on our account reporting system due to a processing lag.

The next biweekly report is due August 26th.

Regards,



Paul Wilson
Managing Director Subsidiary Operations

plw / 20110812 Biweekly Report 2.docx

NEWFOUNDLAND - Review and Report on Two Generation Expansion Alternatives

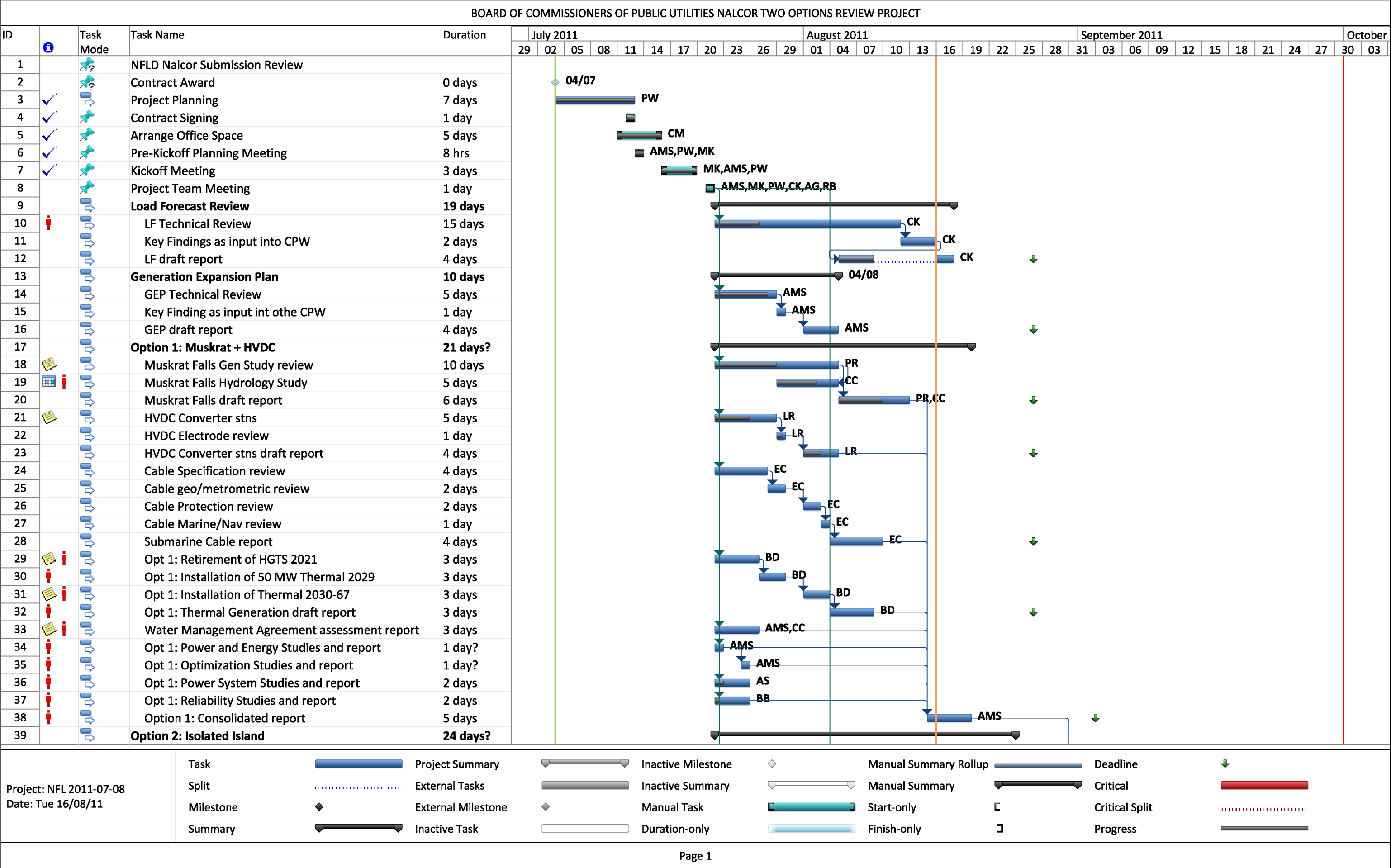
Time Tracking

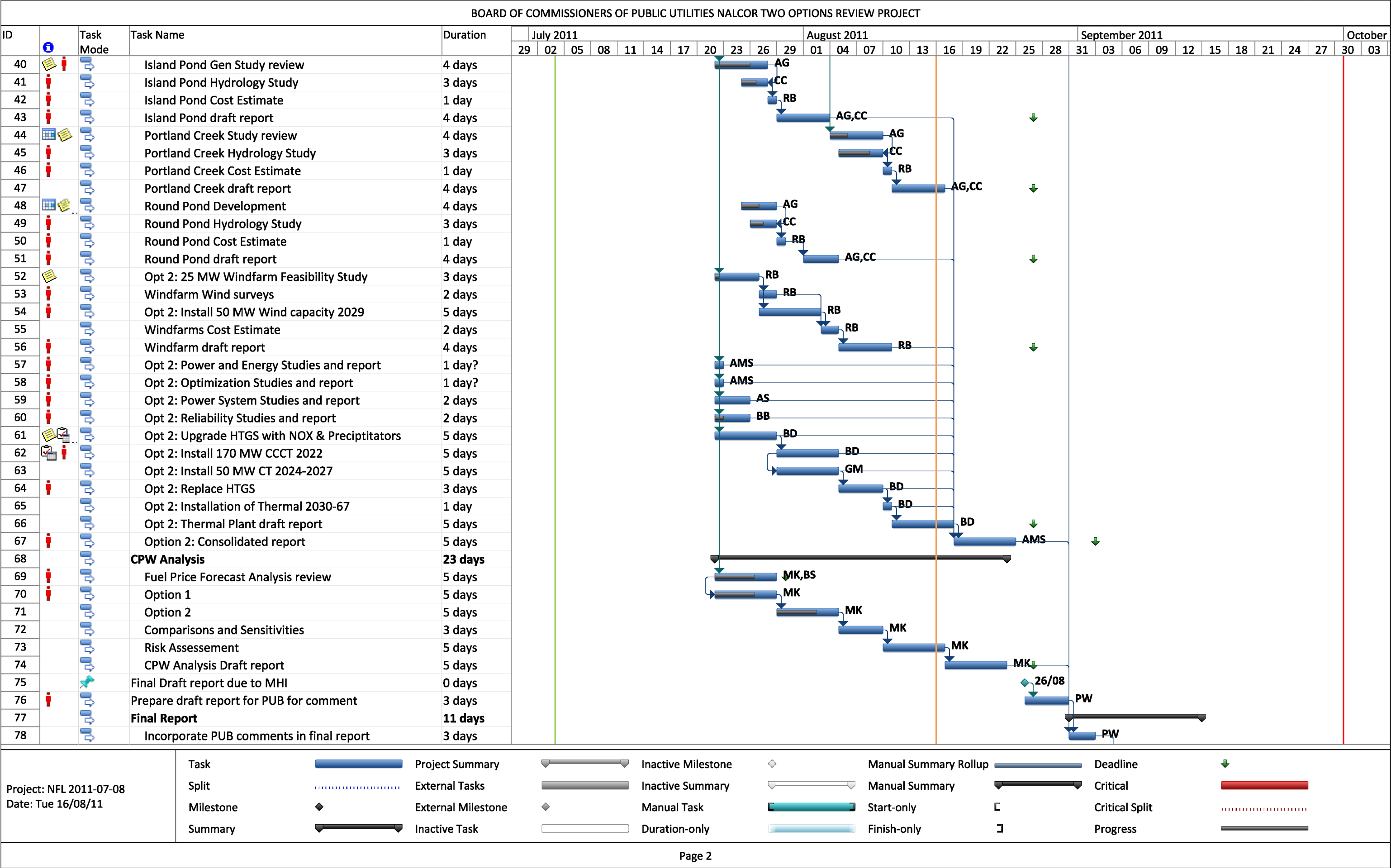
Time Period	Al Snyder	Peter Rae	Charly Cadou	Les Recksiedler	Randy Wachal	Robert Dandenault	Bob Bushau	Paul Durkin	Mack Kast	Allan Silk	Paul Wilson	Bagen Bagen	Alex Gerrard	Craig Kellas	Rick Horocholyn	Enrico Colombo	Sergio Meregalli	Brent Sandison	Gary Bishop	Total Hours	Total Days
July 1-15, 2011	12.00								36.50		55.00			9.00	7.00					119.50	14.94
July 16-30, 2011	38.00	38.00	-	13.50	6.00	9.00			91.00	-	79.25	17.00	23.00	58.50	36.00	-	-	28.00		437.25	54.66
July 31-Aug 13, 2011																				-	-
Aug 14-27, 2011																				-	-
Aug 28-Sept 10, 2011																				-	-
Sept 11-24, 2011																				-	-
Sept 25- Oct 9, 2011																				-	-
																				-	-
Total Actual hours	50.00	38.00	-	13.50	6.00	9.00	-	-	127.50	-	134.25	17.00	23.00	67.50	43.00	-	-	28.00	-	556.75	69.59
Total Budgeted hours	240.00	96.00	80.00	96.00	16.00	40.00	64.00	112.00	200.00	40.00	280.00	80.00	80.00	168.00	96.00	80.00		40.00	32.00	1,840.00	230.00
Balance remaining	190.00	58.00	80.00	82.50	10.00	31.00	64.00	112.00	72.50	40.00	145.75	63.00	57.00	100.50	53.00	80.00	-	12.00	32.00	1,283.25	160.41
Billing Rate	181	243	151	130	148	164	201	250	151	151	176	131	178	130	138	283	283	164	138		
Total Billed	9,063	9,215	-	1,755	885	1,474	-	-	19,284	-	23,662	2,231	4,083	8,775	5,913	-	-	4,585	-	90,923	
Total Budget	43,500	23,280	12,100	12,480	2,360	6,550	12,880	28,000	36,300	6,050	49,350	10,500	14,200	21,840	13,200	22,600	-	6,550	4,400	346,140	
Outstanding	(34,438)	(14,065)	(12,100)	(10,725)	(1,475)	(5,076)	(12,880)	(28,000)	(17,016)	(6,050)	(25,688)	(8,269)	(10,118)	(13,065)	(7,288)	(22,600)	-	(1,965)	(4,400)	(255,217)	

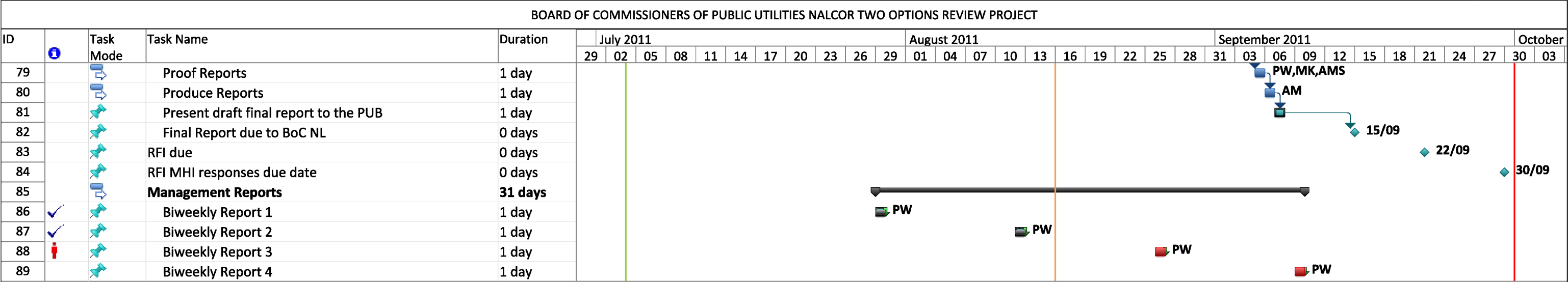
NEWFOUNDLAND - Review and Report on Two Generation Expansion Alternatives

Reimbursable Expenses

Time Period	Airfare (Wpg -NFLD)	Hotel (NFLD)	Car Rental	Perdiem/Meals	Airport Transfers	Comm & Reprod Costs	Residence Lease	Office Lease	Company Registration	PENGL Registrations	PENGL Permits to Practice	Automobile Lease	Int'l Airfare (UK-NFLD)	TOTAL Expenses
July 1-15, 2011	-							6,385.00						6,385.00
July 16-30, 2011	9,509.50	3,718.68	492.26	2,078.56		23.46		1,945.00		3,279.60	1,295.99			22,343.05
July 31-Aug 13, 2011														-
Aug 14-27, 2011														-
Aug 28-Sept 10, 2011														-
Sept 11-24, 2011														-
Sept 25- Oct 9, 2011														-
TOTAL	9,509.50	3,718.68	492.26	2,078.56	-	23.46	-	8,330.00	-	3,279.60	1,295.99	-	-	28,728.05
Admin Fee 10%	950.95	371.87	49.23	207.86	-	2.35	-	833.00	-	327.96	129.60	-	-	2,872.81
Total with Admin Fee	10,460.45	4,090.55	541.49	2,286.42	-	25.81	-	9,163.00	-	3,607.56	1,425.59	-	-	31,600.86
Original Budget \$	62,700.00	22,440.00	4,774.00	19,470.00	6,270.00	330.00	10,890.00	8,963.00	600.00	4,840.00	1,612.00	2,750.00	26,400.00	172,039.00
Budget Remaining	52,239.55	18,349.45	4,232.51	17,183.58	6,270.00	304.19	10,890.00	(200.00)	600.00	1,232.44	186.41	2,750.00	26,400.00	140,438.15







Project: NFL 2011-07-08
Date: Tue 16/08/11

Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Deadline	
Split		External Tasks		Inactive Summary		Manual Summary		Critical	
Milestone		External Milestone		Manual Task		Start-only		Critical Split	
Summary		Inactive Task		Duration-only		Finish-only		Progress	

NFL 2011-07-08

as of Sat 13/08/11

Dates

Start:	Mon 04/07/11	Finish:	Fri 30/09/11
Baseline Start:	NA	Baseline Finish:	NA
Actual Start:	Mon 04/07/11	Actual Finish:	NA
Start Variance:	0 days	Finish Variance:	0 days

Duration

Scheduled:	64 days?	Remaining:	47.12 days?
Baseline:	0 days	Actual:	16.88 days
Variance:	64 days?	Percent Complete:	28%

Work

Scheduled:	2,112 hrs	Remaining:	1,530.57 hrs
Baseline:	0 hrs	Actual:	581.43 hrs
Variance:	2,112 hrs	Percent Complete:	28%

Costs

Scheduled:	\$0.00	Remaining:	\$0.00
Baseline:	\$0.00	Actual:	\$0.00
Variance:	\$0.00		

Task Status

Tasks not yet started:	54
Tasks in progress:	28
Tasks completed:	8
Total Tasks:	90

Resource Status

Work Resources:	17
Overallocated Work Resources:	10
Material Resources:	0
Total Resources:	27

July 28, 2011

File: NFLD
Status: Final

Newfoundland and Labrador
Board of Commissioners of Public Utilities
PO Box 21040
120 Torbay Road
St. John's, NL
A1A 5B2

Attention: Fred Martin

Nalcor Submission Two Option Study Project – Biweekly Report

Manitoba Hydro International Ltd is pleased to present the first biweekly report for contract NL2011-001 in fulfillment of the requirements set therein. This report is divided into five project elements.

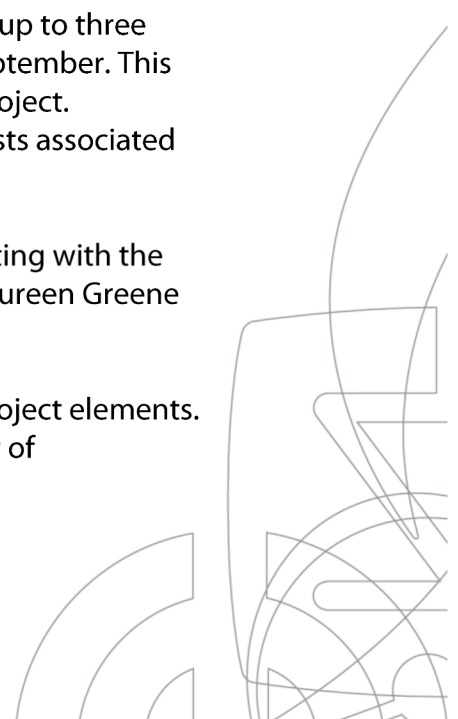
1. Activities completed to date

The first two weeks of the project involved project planning, and resource scheduling for the technical teams, and organizing the ground logistics. MHI has:

- secured suitable office space to operate in St. John's. Office space at 120 Torbay Road, Suite W100 has been outfitted.
- secured living accommodations (40 Cochrane Street) for up to three concurrent staff on site for the months of August and September. This will reduce the costs of hotels over the duration of the project.
- rented an automobile on monthly basis to reduce the costs associated with daily vehicle rentals.

Key project staff traveled to St. John's to attend the kick off meeting with the Board July 15th. The minutes have been finalized and sent to Maureen Greene to be filed as part of the Board documents.

Project Technical Leads have begun assigning staff to various project elements. Data gathering from Nalcor has also commenced with a number of



submissions received to date. Staff are analyzing the contents to see the extent of the project review required. Document assignment and tracking tools have been developed to aid the project managers in technical assignments.

During the period July 16th to July 29th, the Technical Leads attended a Nalcor introductory meeting in the Board's hearing room, and project teams visited Nalcor to begin investigation into the CPW analysis, and the Strait of Belle Isle marine crossing. The MHI Load Forecast Specialist also visited Nalcor to begin his part of the technical review since Paul Stratton (Nalcor's Senior Market Analyst) was on vacation from July 25th to August 16th.

The MHI project teams have prepared 57 requests for information which have been vetted by the Board's Project Manager and Director, and then forwarded to Nalcor.

Technical reviews under way in this period include:

- Muskrat Falls Hydro Generation feasibility study review
- Options Reliability study review
- Nalcor System Load Forecast review
- CPW analysis review
- HVDC Feasibility study review

Personnel involved so far are:

- Paul Wilson, Project Director
- Al Snyder, Project Manager and Technical lead
- Mack Kast, Financial Technical Lead
- Rick Horocholyn, Financial Specialist
- Craig Kellas, Load Forecasting
- Les Recksielder, HVDC Technical lead
- Dr. Bagen Bagen, System Reliability Expert
- Bob Dandenault, Combustion and Thermal Generation Operations Expert.
- Support staff of MHI have also been involved, Carole Manaigre for logistics, Ashley Maes and Caylin Cowie for Sharepoint management, and document tracking tools.

CESI of Italy has been selected and contracted for the SOBI marine crossing technical review. CESI representative is expected to be on site during the week of August 15-19th.

In consideration of the thermal engineering review requirements, MHI continues to follow up with its contacts to secure a suitable and experienced team lead. As time is of the essence, MHI plans to engage with Gryphon Engineering of Ontario to begin the review together with internal Manitoba Hydro staff. Additional talent may be brought in if a suitable candidate cannot be found.

2. Activities planned for the next two weeks

This visit schedule is somewhat revised after the project meeting today. It made good sense to have Mack Kast visit together with Peter Rae as there are a number of questions on the financial side of the Muskrat Falls GS cost estimate that need to be sorted out. Also, this would have Al Snyder on site with the bulk of the Technical Team the following week.

Week of July 31 - August 6

Mack Kast	CPW Analysis Lead
Peter Rae	Muskrat Falls feasibility review and cost estimate

Week of August 7 – 13

Al Snyder	Technical Project Manager
Les Recksiedler	HVDC review
Bagen Bagen	Power System LOLH and reliability review
Kin Ooi	Wind farm cost estimates and energy production review
Charly Cadou	MF and IIO plant Hydrology review
Bob Dandenault and/or Paul Durkin	Thermal review

Staff in Winnipeg will continue with their technical reviews as documents are made available.

3. Legal Compliance Update

A number of items need to be addressed to ensure full legal compliance on this project.

- 1) Manitoba Hydro International Ltd business registration: From our legal counsel's examination of the relevant regulations, MHI's need for registration is rather ambiguous. To clarify MHI's situation, MHI's legal counsel has requested a ruling from the Registry of Companies office on

MHI's need to register. However, MHI will proceed with the paper work and will engage a reputable law firm to obtain a legal address for the registration if the outcome of the ruling is that business registration is required.

- 2) Workplace Health, Safety and Compensation Commission registration: The application has been completed, and arrangements made to wire the funds to complete the application process. Once the funds are received, WHSCC will issue a letter of good standing for MHI. The last item to complete this action, in the event of a claim, is a Delegation of Signing Authority Certificate which has been requested from the Parent Company.

- 3) Professional Engineers and Geoscientists of Newfoundland and Labrador registrations (PEGNL):

Eight of the Engineers on this project have processed their applications. PEGNL is currently waiting on confirmation letters from the other Provincial Engineering Associations as the entire roster of project engineers are transfers. Additional registrations may be necessary and MHI will review this requirement once all contractors have been identified.

The Permit to Practice has been applied for in three disciplines (electrical, mechanical, and civil engineering). Issuance of this permit is dependent on the three responsible engineers obtaining their registrations. No issues have been identified and this step should be completed imminently.

4. Significant Issues and Findings

Although Nalcor has provided many documents, they have not done a very adequate job in identifying the documents and references for the various elements in the CPW.

As very few of the MHI requests for information have yet been received, this lack of information will continue to hamper our progress. There is an evident delay in the information release process from Nalcor.

The execution of the Non-Disclosure Agreement is still an issue to be resolved

as quickly as possible.

The MHI team has discovered that the Muskrat Falls cost estimates have been revised, subsequent to the 1999 Feasibility Studies, and the revised documents and supporting details have not been supplied. It is imperative that the technical review and CPW teams receive this revised information as soon as possible.

An information request on the HVDC Link and converter station siting on the Island will be drafted and forwarded to the Board for action. There are concerns about the distances involved for this project concept. Also, the reliable backup supply for a loss of HVDC link is a major concern not evidently addressed in the project concept. Al Snyder will be formulating this request.

By the submission of the next biweekly report (August 12th), MHI will be in a position to recommend to the Board whether the independent review can be completed in the time allowed, with the degree of quality expected. This decision is largely dependent on the timeliness and quality of the information filings from Nalcor over the next week.

5. Costs and Expenses

A revised project budget has been filed separately with this report.

Costs to date for the period July 4 – July 15th.

Labour

Al Snyder	12.0 hours
Mack Kast	36.5 hours
Paul Wilson	55.0 hours
Craig Kellas	9.0 hours
Rick Horocholyn	<u>7.0 hours</u>
Total	119.5 hours (14.9 days / budgeted 230 days)

\$19,522 in labour costs incurred to the end of the period.

Reimbursable Expenses

Airfare	\$1,494.06
Office	<u>\$7,780.59</u>
Subtotal	\$9,274.66

Some expenses (notably credit card bills) take about 4 weeks to show on our account reporting system due to a processing lag.

Regards,



Paul Wilson
Managing Director Subsidiary Operations