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June 29, 2011

BY COURIER, EMAIL AND RESS

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street
27th Floor, Box 2329
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Detour Gold Corporation – Leave to Construct
Response to Interrogatories
Board File No.: EB-2011-0115

We are counsel to the Applicant, Detour Gold Corporation ("**Detour**").

Please find attached the responses of Detour to the Interrogatories of Board Staff. The responses have been filed on RESS and will be couriered to the Board's office. Please note, Board Staff IR#7(2) requested a copy of the Environmental Assessment Report (the "**Report**") be filed. The Report is 777 pages in length and is being provided in electronic format only. Hardcopies of the Report will be provided upon specific request.

If there are any questions, please contact the undersigned at your earliest convenience.

Yours truly,

AIRD & BERLIS LLP

Scott Stoll.

Scott A. Stoll
SAS/ hm
Encl.

cc: Derek Teevan
Wayne Clark
Carl Burrell
Linda Job
Juli Abouchar

Response to Board Staff Interrogatories
EB-2010-0115
Detour Gold Corporation
Leave to Construct
Detour Lake Power Project (Phase II)
Island Falls to Pinard TS

Interrogatory #1: Permits

Reference: (1) Exhibit B/Tab 6/Schedule 1/Page 5
(2) Exhibit B/Tab 1/Schedule 1/Page 4

Preamble: Reference (1) provides a list of permits and licences that may or will be required. Reference (2) Line 1 indicates that "span distances over watercourses will be determined in the permitting process …"

Question/Request:
1. Regarding Reference (1), please provide an updated tabulated list including current status and the timeline for obtaining each permit and approval.
2. With respect to Reference (2):
   a. Which permitting process is involved and which authority?
   b. Were such watercourse crossings identified in the Environmental Study Report?

Response:

1. The table below summarizes the anticipated environmental approvals associated with the Phase 2 development.

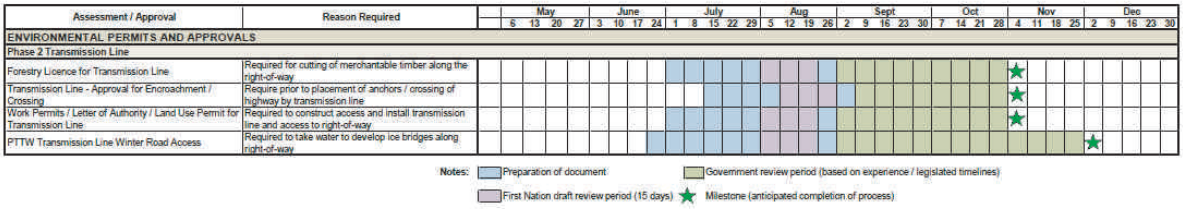
Permit / Licence / Assessment	Agency Responsible	Description	Status
Permit to Take Water *Ontario Water Resources Act*	MOE	May be required to create temporary ice bridges over watercourses to provide access during transmission line construction	Application in preparation. Figure 1 shows anticipated timing.
Work Permit *Public Lands Act / Lakes and Rivers Improvement Act*	MNR	Work / construction on Crown land.	Application in preparation. Figure 1 shows anticipated timing.
Forest Resource Licence (Cutting Permit) *Crown Forest Sustainability Act*	MNR	Clearing of Crown merchantable timber	Application in preparation. Figure 1 shows anticipated timing.
Land Use Permit	MNR	Tenure for permanent facilities on	Application in preparation.

Public Lands Act		Crown land (transmission line).	Figure 1 shows anticipated timing.
Work Permit (or other authorization) *Provincial Parks and Conservation Reserves Act*	MNR	Work / construction in the Fraserdale Wetland Complex Conservation Reserve.	Application in preparation. Figure 1 shows anticipated timing.

Fig 1:

amec

DETOUR GOLD PROJECT
2011 ENVIRONMENTAL ASSESSMENT AND PERMITTING SCHEDULE



Engineering approvals are also anticipated to be required as follows:

Highway Encroachment Permit (*Public Transportation and Highway Improvement Act*, Ontario Ministry of Transportation

- Aeronautical Obstruction Form (Transport Canada)
- NAVCAN Land Use (Canadian Aviation Regulations, Transport Canada)

2. Span distances for crossings over watercourses define whether a review is required under the *Navigable Waters Protection Act* under Transport Canada. All watercourse crossings were identified in the Individual Environmental Assessment document in Figure 6-3 at page 67, see Appendix A. An electronic copy of the Environmental Assessment has been appended to these interrogatory responses, Appendix B, and is available at:

http://www.detourgold.com/Theme/Detour/files/Environment/August%202010%20Update/EA%20Final.pdf

A hardcopy of the Environmental Assessment has not been provided as it is 777 pages.

The watercourse crossings required for the Phase 2 Transmission Line development will meet the requirements of the Aerial Cables - Power and Communications Minor Works Order established under the *Navigable Waters Protection Act*. No review is therefore needed.

Interrogatory #2: Stranded assets

Reference: Exhibit B/Tab 1/Schedule 1/Page 4

Preamble: Line 23 indicates that ratepayers will not be at risk to pay for stranded assets.

Question/Request:

1. Please identify the stranded costs that might be expected to occur.

2. Are there commitments made for the removal of the Island Falls switching station facilities referenced in the Environmental Study Report, or in any other forum?

3. Does Detour intend to assume the cost and any other responsibility for removing transmission and related facilities at Island Falls provided in Phase I but not required in Phase II?

4. What provision is being made by Detour for ultimate disposition of the line when the mining operation comes to an end?

5. Has Detour made plans for the deconstruction or abandonment of some or all of the transmission line at the end of life of the project, in the Environmental Study Report or elsewhere, and if so what are these plans?

Response:

1. Detour's current plan is to retain ownership of all line assets serving the mine from Pinard to Detour Lake, until such time as they are no longer required. The only assets serving the mine but not belonging to Detour will be the circuit reaker, ring bus extension and associated equipment at Pinard TS which Detour understands to be network assets. The stranded asset risk associated with these assets is mitigated via the Capital Cost Recovery Agreement (CCRA) between Hydro One and Detour Gold.

2. The removal of the Island Falls switching station facility is part of the Phase II project plan.

3. Yes.

4. As part of its approved (Dec 16, 2010) Environmental Assessment for the power project, Detour committed to removing the line when it is no longer needed, unless it is required by other developments in the area. This forms part of the closure plan for the mine. The company provides security to the Ministry of Northern development and Mines to provide financial assurance regarding the closure plan. The mount of the security changes as the assets in place change, as well as when financial parameters or environmental regulations may change.

5. Yes. Detour's commitment in question may be found as section 5.6 (page 23) of the Environment Assessment. For convenience, the referenced text follows:

5.6 Decommissioning

On completion of mining at the Detour Lake site, and assuming that there have been no other developments in the area, the transmission line between the Detour Lake site and Island Falls will be decommissioned and related infrastructure removed. Demolition materials will be disposed of in a licensed landfill, or alternatively the material will be transported to a recycling facility if appropriate. If wooden poles are used, they may be either cut off at surface or fully removed.

It is assumed that the DLPP 230 kV transmission line between Island Falls and the Pinard TS will provide reinforcement to the Ontario electrical grid for the longer term. In the unlikely event that the ownership of the transmission line from Island Falls to the Pinard TS is not transferred to another operator, it will be decommissioned in a similar manner.

Interrogatory #3: Line Design, Losses and Capacity

Reference: (1) Exhibit B/Tab 1/Schedule 1/page 3
(2) Exhibit B/Tab 2/Schedule 4/ Hydro One Technical Requirements
(3) Exhibit A/Tab 3/Schedule1/Page 1

Preamble: Reference (1) indicates at line 4 that the transmission line has been designed in conformance with Hydro One standards. The reference also indicates at line 12 that end to end transmission line losses (Pinard to Detour) are expected to be below 3%.
At Reference (2), section 2.9 indicates that Hydro One Networks will specify the minimum conductor size.

Questions/Request:
1. Please provide any update to the figure for expected transmission line losses, if available.

2. Please clarify the Hydro One standards in regard to acceptable line losses.

3. Please confirm that this particular level of losses also meets the standards of Hydro One?

4. What is the minimum conductor size that has been specified by Hydro One?

5. Confirm that both Phase I and Phase II sections of the line meet or exceed the minimum conductor size specified by Hydro One for a line of the final configuration.

6. Please advise whether any additional (spare) capacity is built into the design of the line i.e. could additional loads such as a transformer load station be added to the line at a later date, without reconductoring, and what is the available capacity for such an addition?

7. With respect to Reference (3) please explain why metering will be installed at the mine and not at Pinard TS? If metering is installed at the mine, who will bear the cost of the transmission losses between Pinard TS and the mine?

Response:
1. Transmission losses are expected to be 2.6% under assumptions of .99 power factor and 230kV, when the load is 95MW. Power factor will normally be

managed to unity. The maximum load is currently projected to be 91MW. In the final SIA report, the IESO stated that normal operating voltages at Pinard will be 230kV or higher.

2. Hydro One has not provided Detour with standards for line losses. Detour will bear the responsibility for losses on the line.

3. See response (2) above.

4. As Detour is not proposing to turn the line over to Hydro One, Hydro One has not provided Detour with a specific minimum conductor requirement. At the same time, the conductor size selected (795MCM ACSR, Drake) was chosen to minimize losses as well as serve the load requirements of the mine. In particular, this conductor size was selected to minimize corona and corona -associated losses.

5. Please see responses (3) and (4) above. Both Phase I & II use the same conductor.

6. The size of the line conductor was selected for loss and corona minimization, and has ampacity greater than is required to meet the currently planned load. It may be feasible to add other load facilities at a later date, but available capacity would be determined by a number of factors of which conductor ampacity is only one. A detailed planning study would be required at the time, in consultation with Hydro One and the IESO.

7. Hydro One prefers not to have customer owned metering inside Pinard TS. Detour will bear the cost of transmission losses between Pinard TS and the mine.

Interrogatory #4: Ownership of facilities

Reference: (1) Exhibit B/Tab 1/Schedule 1/page 4
(2) Compliance Bulletin 200606, issued on September 11, 2006 titled "Allocation of Costs to Customer Connections to Transmission System"/copy included as Attachment (I) to this Interrogatory #4

Preamble: Line 21 at the Reference (1) indicates that Hydro One will modify the 230kV bus at Pinard to a ring configuration and add a dedicated circuit breaker for the Detour load. Line 23 also indicates that:
"Detour will own the line and station facilities supplying the mine."
Reference 2) requires the apportionment of cost for facilities that are classed as Network, where the proposed cost responsibility is consistent with what is described as minimum connection requirements and it states in part that:

Question/Request:

1. Please clarify which station facilities will be owned by Detour. In particular, will Hydro One or Detour own the facilities at Pinard?

2. Please clarify the cost responsibility arrangement for the modification of the switchyard at Pinard TS. Please provide the details of the cost responsibility arrangement, in particular with respect to whether the arrangement is consistent with the provisions reproduced in Reference (2) in regard to the "minimum connection requirements".

3. Has there been, or will there be, an application to the Board by Hydro One or any other party for approval of the changes to Pinard TS? Please provide details of the application in which this may have occurred.

4. Will the modifications at Pinard result in an increase for provincial electricity rates, either directly or indirectly, and if so what is the effect?

5. Has there been any cost sharing agreed between Hydro One and Detour for changes to Pinard TS or for any portion of the line. What costs will be borne by Hydro One and/or the ratepayer as opposed to the applicant.

6. Is there any consideration at this time being given to transferring ownership of some or all of the transmission line to any other party, such as Hydro One?

Response:

1. Hydro one will own the facilities at Pinard TS. Detour will own the transmission line and the station facilities at the mine.

2. A Connection Cost Recovery Agreement (CCRA) is currently being finalized with Hydro One, consistent with the requirements of the TSC and with the compliance bulletin noted in Reference (2). A copy of the unexecuted CCRA is attached as Appendix C. Detour understands this agreement is final, with the exception of execution which is in progress. Detour notes that the compliance bulletin expressly states that it has neither the authority of the Transmission System Code nor a decision of a Board panel and reserves its right to seek clarification on the intent of section 6.3.5 of the Transmission system Code.

3. Hydro one is responsible for those permissions that it may require for work within Pinard TS. Detour's understanding is that Hydro One does not need to apply for any specific permissions with respect to the Pinard connection.

4. No.

5. Please see the attached draft CCRA agreement for details. As noted Detour is funding and constructing the proposed transmission line. In respect of Hydro One's work, it is Detour's understanding that the CCRA process protects both the ratepayer and Hydro One from bearing any cost associated with this connection.

6. No, not at this time.

Interrogatory #5: System Impact Assessment

Reference: (1) Exhibit B/Tab 6/Schedule 2/pages 6-7
(2) Exhibit A/Tab 2/Schedule 1/ Page 3/ Paragraph 7

Preamble: Applicant requirements as outlined in the draft SIA

Question/Request:
1. For each of the requirements listed by the IESO under "specific" and "general" requirements, please indicate how these will be achieved by Detour Gold Corporation. Please indicate if there is any potential conflict with or inability to implement the IESO's requirements and elaborate.

2. Please provide the final SIA document or, if it has not been completed, indicate an expected date for its issue.

3. Please confirm that the section of the line built in Phase I (i.e. Island Falls to Detour Gold mine project) does not require conductor, insulator or any other physical changes to enable it for operation in Phase II.

Response:

1. As the final SIA has now been received, see Appnedix D, the following response is in reference to this version of the SIA:

   2.1 Voltage Requirements:
   Detour has ordered all 230kV equipment to handle the voltage range indicated (201-270kV). For the transformers, this is accommodated through specification of a wide tap range. Interrupting time, relay settings and metering will all be installed as required by the IESO and the Market Rules. This is described in Section 3 of the SIA.

   2.2 Power Factor Requirements
   Power factor will be maintained in two ways. During normal operations, the motors operating the mills will inject VARs onto the system to maintain load power factor at unity by injecting VARs. During low load situations, for example, when the mills are down for maintenance, 13.8kv reactors will be placed on line to compensate for the capacitance of the line.

   2.3 Under-Frequency Load Shedding Requirements

This requirement will be met per the IESO Market Rule requirement. The substation at Detour Lake is being designed and built and will be commissioned in accordance with TSC, IESO and Hydro one requirements for relay and communications. UFLS relays will be part of the Detour Lake Protection and Control design and will be set per the IESO Market Rule requirements.

2.4 Protection Systems
Detour is working with both the IESO and Hydro one to ensure that all requirements of the TSC and Market Rules are met and coordinated with Hydro One. There will be a fibre optic communications link between Detour Lake and Pinard to facilitate protective coordination. One skywire on the transmission line between Island Falls and Detour Lake includes a fibre optic core. From Island Falls, Ontera Communications will supply the connection to Pinard.

2.5 Fault Levels
Per the TSC, the fault level contribution of the Detour transmission line and connected equipment will not result in an appreciable rise in available fault levels, which are well below the limits prescribed in the TSC (SIA, p. 22). The interrupting capability of the circuit breakers at Detour Lake are 40kA (Sect. 3.3 of the SIA) , well above the levels in the area (SIA, Table 5, Page 23).

2.6 IESO Telemetry Requirements
Detour will comply with the IESO telemetry requirements as required in the Facility Registration/ Market Entry process.

2.7 Reliability Standards
The specific requirements that apply to Detour are several and are expected to change from time to time. At this time, Detour's Emergency Preparedness Plan is still in development in consultation with the IESO and has not yet been reviewed to ensure that all applicable NERC and NPCC criteria are met. Detour will ensure that its operations and plans comply with the applicable standards.

2.8 Facility Registration/Market Entry Requirements
Detour is currently in the process of meeting the IESO requirements for the 115kV connection approved in EB-2010-0243. Once these have been met, work will commence to meet the additional requirements for the 230kV connection.

5.8 Northeast 115kV L/R and G/R Scheme
As required by the IESO, Detour will participate in the Northeast 115kV L/R Scheme (SIA, p. 29). The detour mine facility contains two mill lines, which can be taken off line individually or together as required to meet the requirements of a specific contingency, as well as taking the full facility off line if needed.

2. The final SIA has now been received from the IESO and is attached as Appendix D.

3. Confirmed.

Interrogatory #6: Customer Impact Assessment

Reference: Exhibit B/Tab 6/Schedule 3

Preamble: The pre-filed evidence includes a placeholder for the Customer Impact Assessment ("CIA") report.

Question/Request: If the CIA report is available please submit it to the Board. Otherwise, please provide an expected submission date.

Response:

The CIA, is attached as Appendix E.

Interrogatory #7: Environmental Assessment

Reference: Exhibit A/Tab 3/Schedule 1/Page 3/ lines12-14

Preamble: The pre-filed evidence at the Reference states that "prior to the beginning of construction on Phase I, Detour received approval of the environmental assessment for both phases of the power project, as well as all necessary permits to enable Phase I construction."

Question/Request:
1. Please confirm that the Environmental Assessment for Phase I has been approved, and confirm that approval covered both Phase I and II.

2. Please submit a copy of the ESR to the Board.

3. Have there been any objections to granting approval and, if so by which parties?

Response:

1. Confirmed

2. Due to the size of Environmental Assessment Report (777 pages), Detour has submitted it in electronic format only as Appendix B. Appendix B is 266MB and will not be submitted via RESS but will be delivered to the Board via CD.

   http://www.detourgold.com/Theme/Detour/files/Environment/August%202010%20Update/EA%20Final.pdf

3. No.

Interrogatory #8: Industry Standards and Codes

Reference: (1) Exhibit B/ Tab 1/ Schedule 1/ Page 3
(2) Exhibit B/ Tab 2/ Schedule 4/ Page 3

Preamble: Compliance with Industry Standards and Codes

The Reference (1) at line 8 reads:

> "Hydro One does not publish its detailed transmission designs, so Detour has designed the line to standards provided to Hydro One." On the other hand Reference 2 has the tile "Hydro One Networks Inc. Technical Requirements for the Design, supply, and installation of 230kV transmission line…."

Question/Request:

1. Please indicate the relevant standards for design and construction of the transmission facilities.

2. Please indicate the voltage and nature of any existing facilities in the right-of-way (e.g. rural distribution supply, underground cable, water pipes, railway lines etc.) which might affect construction or which might be affected by construction or operation of the line when commissioned.

3. For those facilities identified in question 2., please indicate what design and construction standards and procedures have been or will be applied to protect facilities and personnel from high voltage and other electromagnetic effects through direct and induced currents and voltages e.g. corrosion protection, cable location identification, and grounding for safety and "tingle" or "stray" voltage.

Response:

1. Detour has designed the line and built Phase 1 according to the Hydro One supplied design standard found at reference (2). This standard also includes the relevant standards from other standard setting bodies such as CSA. The supplied Hydro One document is a set of technical requirements which Detour followed to develop the design for the Pinard - Island Falls line. Hydro One has not provided its own line designs, which will vary from the Detour design for technical, economic and other reasons that do not apply to the Detour line.

2. The Detour right-of-way does not cross or infringe other utilities or railroads, with the exception of the Hydro One right -of-way that runs from Abitibi Canyon south to Island Falls.

   At some locations along this right-of way, Hydro One guy wires may intrude slightly on the Detour right-of way, as Hydro One appears to have placed these guys outside its proper right-of-way corridor when it had to reinforce its tower lines some years ago due to foundation problems.Detour may similarly have to place some guys slightly on the Hydro One right-of-way to properly stabilise its pole structures. Hydro One and Detour are both aware of this situation and have agreed to work cooperatively to accommodate each other's needs.
   Near Pinard TS, the Detour line will have to cross Hydro One's 115kV right-of-way (circuits C2H and C3H) to reach Pinard TS. The exact location and requirements for this crossing are currently being developed jointly by Hydro One and Detour's engineers.

   Once the technical details of the infringements and crossing have been agreed upon, Detour will complete an encroachment agreement with Hydro One.

3. As noted in the response to (2), the only facilities that will be crossed or encroached will be Hydro one's 115kV lines. Both companies comply with the applicable standards for these facilities.

Interrogatory #9: On Licensing

Reference: (1) Exhibit A/ Tab 2/ Schedule 1/ Page 3/ Paragraph 11
(2) Exhibit A/ Tab 3/ Schedule 1/ Page 1/ Line18-22
(3) EB-2010-0243 Detour Interrogatory Response to Board Staff, IR 10.1, Page 13

Preamble:
The pre-filed evidence at Reference (1) states that:
"Once constructed, Detour intends to retain ownership of the transmission line. A wholesale license application required for participation in the IESO market has been submitted to the OEB separately (Proceeding EB-2011-0079). An application to the IESO will also be made in due course to become a market participant."

The pre-filed evidence at Reference (2) states that:
"Detour proposes to construct, own and operate the Project and does not at this time plan to turn the Project over to a licensed transmitter. Measurement for settlement purposes will occur at the Mine and so Detour will not require a transmitter license. The Project is primarily intended to serve the needs of the Mine during operations, but will also be required for the final phases of construction, during the commissioning processes."
In the related earlier proceeding EB-2010-0243, Detour's response to Board Staff interrogatory # 10.1 states that:

"Detour would be a transmitter as defined in the OEB Act, section 57(b). Detour would be exempt from the requirement to obtain a transmitter license by virtue of the O. Reg. 161/99 Definitions and Exemptions, s.4.0.2. Detour would note that the transmission System Code contemplates an "unlicensed transmitter" at 2.0.66."

Question/Request:

1. Please clarify whether the potential future role that Detour Gold Corporation intends to play in the Ontario electricity market goes beyond the purchase of power from the electricity market for use at the mine, and if so what that role would be.

2. Reference 2 implies that Detour does not intend to apply for a transmitter licence – please confirm whether that is the case.

3. Even if it is exempt from obtaining a transmitter licence, please confirm Detour's understanding that it would still be a transmitter under section 57(b) of the Act.

4. Please clarify the basis for the statement in Reference (2), that "Measurement for settlement purposes will occur at the Mine and so Detour will not require a transmitter license."

5. Please confirm the understanding that Detour would be a Transmitter as defined in the Transmission System Code and that Detour would be subject to the provisions of the Transmission System Code.

Response:

1. At this time, Detour has no plans to be anything other than a load customer in the IESO market. Detour applied for and received an electricity wholesaler license from the OEB, License No.: EW-2011-0079. Other than the purchase of power, it may at some point in time choose to become a dispatchable load (e.g., qualify to supply operating reserve into the market).

2. Confirmed.

3. Confirmed.

4. The latter part of the sentence incorporates the prior sentence as well as Placement of the meter at the mine would restrict any other (third party) load on the line, as this would make it practically not possible to accurately calculate losses, for which Detour will be responsible. Detour's intent at this time is to use the line solely for its own load and not become a licensed transmitter.

5. Detour would fit in the definition of an unlicensed transmitter, section 2.066, under the Transmission System Code and be subject to those provisions of the Transmission System Code that apply to unlicensed transmitters, but not to those provisions that apply only to licensed transmitters. Section 3.0.5 of Transmission System Code indicates that the code applies to "all licensed transmitters".

Interrogatory #10: On Connecting Generation

Reference: Transmission System Code article 4.1

Preamble: The line is privately owned and located in areas where renewable generation facilities could be sited, and that may wish to connect to the line.

Question/Request:
1. Please confirm that Detour, as a transmitter defined by the Transmission System Code would comply with the Transmission System Code with respect to attaching renewable generation projects or generator customers.
2. As a privately owned line, does Detour anticipate accommodating additional connections? On what basis would Detour expect to address such requests and, where appropriate, facilitate such connections?
3. In EB-2010-0243, Detour indicated that Coral Power had expressed interest in connecting to the line. Has there been any further development in this regard?
4. Is Detour aware of any additional expressions of interest in such projects, perhaps from aboriginal groups?

Response:

1. Detour proposes to own and operate the line serving the mine as an unlicensed transmitter. The Transmission System Code is explicit in 3.0.5, that it applies to licensed transmitters. See response to 2, below.

2. Detour does not currently anticipate additional connection requirements. Detour's approach to requests for connection would be primarily to ensure that additional connections were at no net cost to Detour.

3. There have been no further developments with respect to Coral Rapids Power.

4. ACH Partners has asked Detour for the option to connect to the transmission line in the future, in the event the Iroquois Falls paper mill were to close and potentially strand some or all of its generation at Iroquois Falls, Twin Falls and Island Falls. Detour has agreed that, should this eventuality occur, it would work with ACH Partners to enable the connection, subject to the criterion noted in (2) above.

Interrogatory #11: Land Matters

Reference: (1) Exhibit A/Tab 3/Schedule 1/ Page 2
(2) Exhibit B/Tab 6/Schedule 4

Preamble:
Reference (1) lines 28-31 states that:
"In order to complete the project, Detour requires a number of permits and certain land rights both for construction and permanent rights. Detour will obtain the required land rights prior to entering the lands for the construction of the transmission line. A summary of the impacted landowners and rights holders is provided at Exhibit B, Tab 6, Schedule 3. "
Reference (2) provides a Table of Landowners & Mining Claims & Rights Holders.

Question/Request:
1. In regard to Reference (1) please confirm that the summary of the impacted landowners and rights holders is at Exhibit B, Tab 6, Schedule 4 (and not at schedule 3 as indicated).
2. In regard to Reference (2) please provide an updated table indicating also the and the status of negotiations/settlements of these easements.

Response:

1. Confirmed.

2. Detour does not necessarily require easements from all parties listed in the table in Exhibit B/Tab 6/Schedule 4.

The current status of land matters is provided in the table below:

Interested Party	Issue(s)	Status
ACH Limited Partnership	Require occupation of land at Island Falls for line and switching station (phase 1)	Sublease completed and approved by MNR
Hydro One Networks	Need to cross Hydro One C2H/C3H ROW to reach Pinard TS. Some Hydro One guy wires may encroach Detour ROW, some Detour guy wires may encroach Hydro One ROW.	Hydro One and Detour engineers working on ROW crossing details. Hydro One and Detour will enter into an encroachment agreement.
MNR	Land Use Permit Required for Detour ROW.	Survey under way to determine exact requirements. Completion of Hydro One ROW crossing details required.
Ontario Power Generation	Question whether Detour Facilities may encroach Abitibi Canyon Waterpower Lease area.	Does not appear that Detour facilities will encroach OPG lease area.
Ontario Northland Transportation Commission*	New item (June 28). May require easement over what appears to be an abandoned borrow pit and railway spur owned by ONTC. *Now, Ontario Northland Railways, was served a copy of the Notice of Application.	Survey commissioned.

Appendix A

Figure 6-3 from the Environmental Assessment Report

Map of Watercrossings

460000 475000 490000 505000 520000 535000 550000 565000 580000 595000 610000

5565000 5540000 5525000 5510000 5495000 5480000

ONTARIO QUEBEC

Kesagami Provincial Park

Little Abitibi Provincial Park

Pinard Moraine Conservation Reserve

Pinard

New Post 69 IR

Little Abitibi River

Wekweyaukastik River

North of the North French River Conservation Reserve

Kesagami River Outwash Plain Conservation Reserve

Fraserdale Wetland Complex Conservation Reserve

Island Falls

Little Abitibi Provincial Park

Tembec Wetland Complex Conservation Reserve

Detour Lake Site

1-Easter Creek
2-Easter Creek
3
4
5
6
7
8
9-Hopper Creek
10
11
12
13
14
15
16
17
18
19
20
21-Lawagamau River
22
23
24
25
26
27
28-Little Kesagami River
29
30
31
32
33
34-Kesagami River
35
36
37-Wekweyaukastik River
38
39
40
41
42
43
44-Beaver Dam
45
46-Beaver Dam
47-North French River
48
49
50
51
52
53
54
55
56
57
58
59-Little Abitibi River
60
61
62
63-Pond
64
65
66
67
68-Agassiz River
69-Little Agassiz River
70
71
72
73
74-Little Trappers Creek
75-Beaver Dam
76
77
78-Beaver Dam
79-Pond
80-Abitibi River
81-Abitibi River
82
83
84
85
86
87
88
89
90
91
92
93
94-Beaver Dam
95-Redsucker River
96
97
98
99-Beaver Dam
100
101
102
103
104-Avon Creek
105
106
107
108

P:\EM\Projects\2009\TC81510 2009 Detour Gold Project\GIS_Data\Transmission\Line_EA\SD_Maps\MXD_Maps\Preliminary_Water_Crossings.mxd

LEGEND

- Transmission Line End Points
- Proposed Transmission Line Route
- Regional Roads (OBM)
- Railway
- First Nation Land
- Provincial Park (OBM)
- Conservation Reserve (OBM)
- 104-Avon Creek — Water Crossing Location (Labelled with ID and watercourse name/description, if available)

0 12.5 25 50 75 100 Kilometres

NOTES:
- Water crossings identified using MNR OBM data, high resolution ortho imagery and NTS 50k vector sheets
- Base layers extracted from geogratis.ca National Topographic Database 1:250,000 and 1:50,000 vector sheets

Datum: NAD83
Projection: UTM Zone 17N

DETOUR GOLD amec

DETOUR LAKE POWER PROJECT

Preliminary Water Crossings

PROJECT N°: TC81510	FIGURE: 6-3
SCALE: 1:400,000	DATE: March 2010

Appendix B

Environmental Assessment

(Electronic Only)

Appendix C

Connection Cost Recovery Agreement

(Final – but unexecuted)

Connection and Cost Recovery Agreement

between

Detour Gold Corporation

and

Hydro One Networks Inc.

for

Detour Lake Gold Mine

Detour Gold Corporation (the **"Customer**") has requested and **Hydro One Networks Inc**. ("**Hydro One**") has agreed to a transmission connection of the Detour Gold Mine (the "Project") on the terms and conditions set forth in this Agreement dated June 30, 2011 (the "**Agreement**") and the attached Standard Terms and Conditions for Load Customer Transmission Customer Connection Projects V3 9-2007 R5 (the "**Standard Terms and Conditions**" or "**T&C**"). Schedules "A" and "B" attached hereto and the Standard Terms and Conditions are to be read with and form part of this Agreement.

Project Summary

The Customer is proposing to develop a 90 MW gold mine Project in north-eastern Ontario, approximately 185km northeast of the town of Cochrane. The Project will include two connection phases. To facilitate construction of the mine during the Project's first phase (Phase 1), the Customer will construct a new 115 kV 20 MVA substation and 143 kilometres of transmission line from the Detour Lake mine site to Island Falls in 2011 where it will be connected to Hydro One's 115 kV C3H circuit. The line supplying the mine development will be built largely on a pre-existing right of way from a point adjacent to a Hydro One 115 kV right of way just north of the Island Falls generating station (owned by ACH Partners Ltd.), to the mine site.

The second phase of the Project (Phase 2) in 2012 will involve the Customer constructing a 230 kV transmission line roughly adjacent to Hydro Ones existing double circuit 115 kV corridor from Island Falls to the 230 kV ringbus at Pinard TS. Disconnection from the 115 kV supply will occur with reconnection at Hydro Ones Pinard TS 230 kV ring bus using the new 230 kV extension and conversion of the Phase 1 line construction to 230 kV to a new 230 kV substation at the mine site. The Phase 2 connection will be used to supply operational power to the mine .

Term: The term of this Agreement commences on the date first written above and terminates 180 days after the 5th anniversary of the In Service Date.

Special Circumstances: (Describe any special circumstances)

In addition to the circumstances described in Section 5 of the Standard Terms and Conditions, the Ready for Service Date is subject to the Customer executing and delivering this Agreement to Hydro One by no later than June 30th 2011 (the "**Execution Date**").

T&C Amendments and Acknowledgements:

1) The Standard Terms and Conditions are hereby amended as follows:
   a. Section 1 is amended with the following :
      i. 1 e) is deleted and replaced with a new 1 e) as follows ;
      "subject to the extent that equitable remedies such as specific performance and injunction are in the discretion of the court from which they are sought, this Agreement constitutes a valid and binding obligation enforceable against it in accordance with its terms and conditions, and it is not a party to, bound or affected by or otherwise subject to any indenture, mortgage, lease, charter or bylaw provision, agreement or other instrument, or any statute, rule, regulation, judgment or other order which would be violated, contravened or breached by, or under which default by it would occur as a result of, the execution of this Agreement or the compliance with and performance of any of the terms, conditions and covenants contemplated herein"
      ii. 1 h) is added as follows;

"this Agreement shall be construed and enforced in accordance with, and the rights of the parties shall be governed by, the laws of the Province of Ontario, and, subject to Part H Section 21 of this Agreement, the courts of Ontario shall have exclusive jurisdiction to determine all disputes arising out of this Agreement.

b. Deleting:

"Hydro One shall use commercially reasonable efforts to complete the Hydro One Connection Work by the Ready for Service Date specified in Schedule "A" provided that:"

from the first paragraph of Section 5, and replacing it with the following:

"Hydro One shall use commercially reasonable efforts to complete the Phase 1 Hydro One Connection Work by the Ready for Service Date specified in Schedule "A", and the Phase 2 Hydro One Connection Work by the Phase 2 Ready for Service Date:"

c. Deleting Section 5(j) and replacing it with the following:

"Hydro One is able, using commercially reasonable efforts, to obtain all necessary land rights on terms substantially similar to the form of the easement that is attached hereto as Appendix "B" of these Standard Terms and Conditions for the Project, prior to the dates upon which Hydro One needs to commence construction of the Phase 1 Hydro One Connection Work in order to meet the Ready for Service Date, and the Phase 2 Hydro One Connection Work in order to meet the Phase 2 Ready for Service Date;"

d. Adding "and the Phase 2 Ready for Service Date" immediately after the term "Ready for Service Date" as it appears in the last paragraph of Section 5.

e. The number "180 " referenced in the fourth paragraph of Section 10.1 and in the last sentence of the second paragraph of Section 16 is hereby deleted and replaced with "540", to accommodate the provision of the Project Scope Phase 2 work identified in Schedule A after the Ready for Service Date.

f. Adding "and/or the Phase 2 Ready for Service Date, as applicable." to the end of the last paragraph of Section 16.

g. Deleting the definition "Hydro One Connection Work" from Appendix "A": Definitions and replacing it with the following"

"Hydro One Connection Work" means the work to be performed by Hydro One, which is described in Schedule "A" of the Agreement and, for greater clarity, includes the Phase 1 Hydro One Connection Work and the Phase 2 Hydro One Connection Work.

h. inserting the following immediately after the definition of "Ontario Energy Board Act" in Appendix "A": Definitions:

"Phase 1 Hydro One Connection Work" means the phase 1 work to be performed by Hydro One, which is described as phase 1 in Schedule "A" of the Agreement.

"**Phase 2 Hydro One Connection Work**" means the phase 2 work to be performed by Hydro One, which is described as phase 2 in Schedule "A" of the Agreement.

"Phase 2 Ready for Service Date" means the date, to be mutually agreed upon by the parties, upon which the Phase 2 Hydro One Connection Work is fully and completely constructed, installed, commissioned and energized to the Connection Point.

i. Adding "and/or the Phase 2 Ready for Service Date" immediately after the term "Ready for Service Date" as it appears in the definition of "Premium Costs" in Appendix "A": Definitions.

j. Deleting the definition "Ready for Service Date" from Appendix "A": Definitions and replacing it with the following:

"Ready for Service Date" means the date upon which the Phase 1 Hydro One Connection Work is fully and completely constructed, installed, commissioned and energized to the Connection Point.

Furthermore, the Customer acknowledges and agrees that it understands that this Agreement does not provide the Customer with or any grant the Customer any right to obtain any easement or land rights in respect of any lands owned by Hydro One. The Customer will have to negotiate the terms of any easements or land rights it requires with Hydro One's Real Estate Department.

In addition to the circumstances described in Section 5 of the Standard Terms and Conditions, the Ready for Service Date is subject to the Customer executing and delivering this Agreement to Hydro One by no later than June 30th 2011, (the "Execution Date").

Subject to Section 31, this Agreement constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all prior oral or written representations and agreements concerning the subject matter of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by the signatures of their proper authorized signatories, as of the day and year first written above.

HYDRO ONE NETWORKS INC.

_____
Brad Colden
Manager - Customer Business Relations
I have the authority to bind the Corporation.

DETOUR GOLD CORPORATION

_____
Name:
Title:
I have the authority to bind the Corporation.

Schedule "A" (Detour Lake Gold Mine)

PROJECT SCOPE

New or Modified Connection Facilities:

Phase 1- Hydro One is required to provide the connection from Island Falls SS to the C3H circuit and modify terminal C3H line protections at Hearst SS and Abitibi Canyon SS. The connection work includes a line tap from the circuit C3H to the terminating structure inside the Customer owned Island Falls SS. Hydro One will provide an MSO (Mid Span Opener) in between Island Falls SS and the Hydro One transmission line.

Phase 2 - Hydro One is required to perform all required outdoor station equipment, metering, protection, control and telecommunication work inside the fence at Pinard TS to accommodate a new 230 kV circuit into the existing ring bus on the existing R21D breaker bay position 3. The existing R21D will be re-terminated to a new breaker position as determined by Hydro One.

Connection Point:

Phase 1 : The circuit side of the dead end insulators inside the Customer's station at Island Falls SS.
Phase 2 : The strain insulators at the Customer's first tower immediately adjacent to Pinard TS 3 230 kV Ringbus breaker bay 3.

Ready for Service Date: September 1, 2011.

HYDRO ONE CONNECTION WORK

Part 1:Transformation Connection Pool Work

Hydro One will:

- Not Applicable

NOTES:

[**Where appropriate:** The Estimate of the Engineering and Construction Cost of the Transformation Connection Pool Work and the Estimate of Transformation Connection Pool Work Capital Contribution do not include any amounts associated with the easements and other land rights to be obtained by Hydro One from third parties for the Transformation Connection Pool Work. The actual cost of obtaining those easements and other land rights will be reflected in the Actual Engineering and Construction Cost of the Transformation Connection Pool Work and the Actual Transformation Connection Pool Work Capital Contribution.]

Part 2:Line Connection Pool Work

Hydro One will:

Phase 1

- Connect the new Island Falls SS (to be constructed by the Customer) to the C3H circuit. The connection work includes a line tap from the circuit C3H to the air circuit switch terminal. Provide an MSO (Mid Span Opener) in between Island Falls SS and the Hydro One transmission line. Remove same at end of Phase 1;
- Conduct and review the specifications of the protection equipment on the Customer's side of the Connection Point for Phase 1;
- Conduct and review and acceptance of power system components on the Customer's side of the Connection Point for Phase 1;
- Review acceptance of the technical specifications (including electrical drawings) for the Customer's Facilities for Phase 1; and
- Participate in the commissioning, inspection or testing of the Customer's Facilities preceding energization for Phase 1 (the Confirmation of Verification Evidence Report (COVER) Process).

- Provide all project management , design and engineering, equipment and material procurement, construction services, planning & support services necessary to support the line connection pooled activities;
-

Phase 2

- Reterminate the 230 kV R21D circuit out of Bay 3 at Pinard TS into a spare breaker bay at Pinard TS including but not limited to ;
    - Analyze tower #91 for removing the last span of conductors;
    - Prepare line layout design and drawings;
    - Prepare structural drawings;
    - Prepare insulator and hardware drawings;
    - Review the proponent's crossing drawings;
    - Update existing drawings;
    - Prepare bill of materials for engineered line components; and
    - Technical support to construction.
- Provide all project management , design and engineering, equipment and material procurement, construction services, planning & support services necessary to support the line connection pooled activities;

  Note: Since design details for the crossing of the 115 kV C3H/C2H corridor were not available as of the date of this Agreement, the cost estimates do not include any costs associated with the modification to Hydro One's towers/conductors for this crossing. If required, the cost of estimating the cost of such work is recoverable from the Customer;

NOTES:

[**Where appropriate:** The Estimate of the Engineering and Construction Cost of the Line Connection Pool Work and the Estimate of Line Connection Pool Work Capital Contribution do not include any amounts associated with the easements and other land rights to be obtained by Hydro One from third parties for the transmission line. The actual cost of obtaining those easements and other land rights will be reflected in the Actual Engineering and Construction Cost of the Line Connection Pool Work and the Actual Line Connection Pool Work Capital Contribution.]

Part 3:Network Customer Allocated Work

Hydro One will:

Phase 1

- Modify the LLR48 'B' protection settings for 115 kV line C3H at Abitibi Canyon SS and Hunta SS and issue protection settings in PCMIS for Phase 1 . Return the settings back to normal with the introduction of Phase 2;
- Provide all project management , design and engineering, equipment and material procurement, construction services, planning & support services necessary to support the Network Customer Allocated pooled activities ;

Phase 2

- Provide termination facilities for three customer owned S4T4 circuits at Pinard TS. The circuits are to be used for SCADA and teleprotection and to be terminated in the Control Building. HONI will provide/install duct between property line and Control building at Pinard TS for Ontera fibre entrance cable. Ontera to install single mode (SM) fiber optic cable to the Control building as well as a GE SONET JMUX and all associated hardware in the Control building;
- Perform engineering design and order telecom equipment required for connection of the customer's RTU to the Pinard TS hubsite. The customer will order equivalent equipment at Island Falls SS required for connection to the hubsite;
- Design , provide and install intra-building metallic cable (50 pair) between Control Building and 230 kV Relay Building at Pinard TS;
- Modify SCADA control circuits and SCADA points as required for protection control circuit changes:
- Design basic layout for adding 230 kV breaker in the ring bus configuration at Pinard TS. Design electrical arrangements for new circuit breaker and line, AC station service, equipment and steel bonding and grounding and cable trenches. Design required steel structures and footings:
- Design new 'A' and 'B' protections for the new 230 kV breaker at Pinard TS with GE C60 + SEL-2506 ('A' Group) and Schweitzer SEL-451 ('B' Group) relay modules. Design & issue drawings;
- Design new 'A' and 'B' protections for the new 230kV line with GE D60 ('A' group) and Schweitzer SEL-421 ('B' group) relay modules at Pinard TS . Design & issue drawings.
- Modify LX5 (D501P) 'A' and 'B' ZATM as a result of 230 kV breaker ring bus configuration change at Pinard TS;
- Modify trip, breaker failure and reclose circuits for 230 kV breaker 52-H9 (KL20) at Pinard TS. Design & issue EWDs, CWDs, and E/A drawings;
- Modify 'A' and 'B' protections for the 230 kV line R21D as a result of the new configuration. Design & issue EWDs, CWDs, and E/A drawings;
- Modify trip, breaker failure and reclose circuits for 230 kV breakers 52-H8 (PL22) and 52-H10 (PL20) as a result of relocating R21D. Design & issue EWDs, CWDs, and E/A drawings:
- Engineer procure and install all station outdoor equipment including but not limited to 230 kV breaker, disconnects and CVT's ;
- Provide all environmental planning, approvals and construction stage support (including Environmental Specification and monitoring) involving Hydro One facilities required to ensure the Hydro One work remains in compliance with all environmental legislation, including any needed archeological assessments on Hydro One property only;
- Provide all project management , design and engineering, equipment and material procurement, construction services, planning & support services necessary to support the Network Customer Allocated pooled activities ;
- Review the specifications of the protection equipment on the Customer's side of the Connection Point for Phase 2;
- Review and acceptance of power system components on the Customer's side of the Connection Point for Phase 2;

- Review acceptance of the technical specifications (including electrical drawings) for the Customer's Facilities for Phase 2; and
- Participate in the commissioning, inspection or testing of the Customer's Facilities preceding energization for Phase 2 (the Confirmation of Verification Evidence Report (COVER) Process).

Part 4:Network Pool Work (Non-Recoverable from Customer)

Hydro One will:

- Not Applicable

Part 5: Work Chargeable to Customer

Hydro One will:

- **Not Applicable**

Part 6: <u>Scope Change</u>

For the purposes of this Part 6 of Schedule "A", the term "Non-Customer Initiated Scope Change(s)" means one or more changes that are required to be made to the Project Scope as detailed and documented in Parts 1 to 5 of this Schedule "A" such as a result of any one or more of the following:

- any environmental assessment(s);
- requirement for Hydro One to obtain approval under Section 92 (leave to construct) of the *Ontario Energy Board Act* if the transmission line route selected by Hydro One is greater than 2 km in length;
- Hydro One having to expropriate property under the *Ontario Energy Board Act;*
- conditions included by the OEB in any approval issued by the OEB under Section 92 of the *Ontario Energy Board Act* or any approval issued by the OEB to expropriate under the *Ontario Energy Board Act*; and
- any IESO requirements identified in the System Impact Assessment or any revisions thereto.

Any change in the Project Scope as detailed and documented in Parts 1 to 5 of this Schedule "A" whether they are initiated by the Customer or are Non-Customer Initiated Scope Changes, may result in a change to the Project costs estimated in Schedule "B" of this Agreement and the Project schedule, including the Ready for Service Date.

All Customer initiated scope changes to this Project must be in writing to Hydro One.

Hydro One will advise the Customer of any cost and schedule impacts of any Customer initiated scope changes. Hydro One will advise the Customer of any Material cost and/or Material schedule impacts of any Non-Customer Initiated Scope Changes.

Hydro One will not implement any Customer initiated scope changes until written approval has been received from the Customer accepting the new pricing and schedule impact.

Hydro One will implement all Non-Customer initiated scope changes until the estimate of the Engineering and Construction Cost of all of the Non-Customer initiated scope changes made by Hydro One reaches 10% of the total sum of the estimates of the Engineering and Construction Cost of:

(i) the Transformation Connection Pool Work;
(ii) the Line Connection Pool Work;
(iii) Network Pool Work;
(iv) Network Customer Allocated Work; and
(v) the Work Chargeable to Customer.

At that point, no further Non-Customer initiated scope changes may be made by Hydro One without the written consent of the Customer accepting new pricing and schedule impact. If the Customer does not accept the new pricing and schedule impact, Hydro One will not be responsible for any delay in the Ready for Service Date as a consequence thereof.

CUSTOMER CONNECTION WORK

The Customer will:

- Design, procure and construct all Customer Facilities necessary for the Project;
- Provide all transmission line construction from the Detour Lake Mine site to Island Falls and to Pinard TS. The last structure location owned by the Customer at Pinard TS will be in a mutually agreed upon location just outside the station fence at Pinard TS. Egress from Pinard TS will at 90 degrees from breaker bay 3;
- Construct all transmission line from the mine site to Pinard TS which will be built to meet Hydro One's Technical Requirements for the Design , Supply and Installation of 230 kV Transmission Line Connecting to Hydro One Network's Facilities in Northern Ontario provided to Detour Gold on March 4th, 2010;
- Provide design details or any Customer owned asset encroaching on Hydro One property. Obtain any necessary encroachment agreements from Hydro One for any tower locations on Hydro One property at Pinard TS or any existing Hydro One transmission line crossings;
- Order all leased S4T4 circuits for telemetry and teleprotection into Pinard TS to Island Falls SS and Detour Lake CTS;
- Perform engineering design and order telecom equipment required for connection of the customer's RTU to the Pinard TS hubsite. The customer will order equivalent equipment at Island Falls SS and Detour Gold Minsite CTS required for connection to the hubsite;
- Obtain all necessary environmental approvals associated with the transmission line construction
- Provide transmission line termination facilities at Island Falls SS for the Hydro One tap from the C3H circuit;
- Arrange with Ontera to provide a 24 strand SM fiber cable to the Control Building in the duct constructed by HONI;
- Arrange with Ontera to provide GE SONET JMUX with all associated hardware to be installed in the Control building at Pinard TS;
- Provide to Hydro One at least eight weeks prior to the energization date for both Phase 1 and Phase 2 of the project a complete electrical design package (Electrical Design Package) in Adobe PDF format consisting of:
    1. A full drawing list including drawing title and revision of the submission;
    2. A full description of the Customer Facilities intended mode of operation, including any switching procedures to enable emergency generation;
    3. Existing and New Electrical single Line Drawings that includes major equipment nameplate data and protection location;
    4. IESO Equipment and Facility Registration forms;
    5. Protection Philosophy Document including addressing of main breaker failure;
    6. Short Circuit and Fault Calculations;
    7. New Substation Protection Settings & Relay Logic Diagrams;
    8. General Station Layout Drawing;

9. Isolation Device Control Drawings;
10. Main Power Transformer Protection EWD's. and DC Schematics;
11. Tripping Matrix as identified under the TCA; and
12. Other Customer Facility design documentation on request; and

- Provide to Hydro One at least four weeks prior to the energization date for both Phase 1 and Phase 2 of the project :
  1. A description of the Customer Facilities commissioning procedures;
  2. A initial copy of Hydro One's COVER form identifying the tests to be completed under the customers commissioning procedures.

EXISTING LOAD:

Not Applicable

OTHER RELEVANT CONSIDERATIONS:

Previous contracts **;**

1. Detour Gold Cost Study Estimate dated June 16th 2010; and
2. Detour Gold Pre-CCRA Letter Agreement dated April 7th 2011.

Cost Responsibility:

Hydro One and the Customer acknowledge that the Network modifications at Pinard TSare solely attributable to the Customer connection, constitute an "exceptional circumstance" as identified in section 6.3.5 of the Transmission System Code. The Customer shall bear the cost responsibility for these Network modifications.

EXCEPTIONAL CIRCUMSTANCES RE. NETWORK CONSTRUCTION OR MODIFICATIONS: (Yes/No). If yes, describe the exceptional circumstances and the network construction or modifications.

MISCELLANEOUS

Customer Connection Risk Classification: **High** Risk,

True-Up Points: Yearly following each anniversary of the In Service Date

Customer's HST Registration Number: 849840368

Documentation Required (after In Service Date): Any as built revisions to the Electrical Design Package identified in the Customer Connection Work.

Ownership: Hydro One will own all equipment provided by Hydro One as part of the Hydro One Connection Work.

Approval Date (if Section 92 required to be obtained by Hydro One): Not applicable

Security Requirements: $9,631,400

Security Dates: On Execution Date

Easement Required from Customer: (Yes/No) No

Easement Date: Not Applicable
Easement Term: Not Applicable

Approval Date (for OEB leave to construct): Not Applicable

Revenue Metering: IESO compliant revenue metering to be provided by the Customer

Customer Notice Info:

Attention: Derek Teevan – VP Aboriginal and Government Affairs
Fax # 416-304-0184

Schedule "B" (*Project Title*)

TRANSFORMATION CONNECTION POOL WORK – NOT APPLICABLE

Estimate of the Engineering and Construction Cost of the Transformation Connection Pool Work:

Estimate of Transformation Connection Pool Work Capital Contribution:

Actual Engineering and Construction Cost of the Transformation Connection Pool Work: To be provided 180 days after the Ready for Service Date

Actual Transformation Connection Pool Work Capital Contribution: To be provided 180 days after the Ready for Service Date

Capital Contribution Includes the Cost of Capacity Not Needed by the Customer:

LINE CONNECTION POOL WORK

Estimate of the Engineering and Construction Cost of the Line Connection Pool Work: $2,207,100.00

Estimate of Line Connection Pool Work Capital Contribution: $2,233,000.00

Actual Engineering and Construction Cost of the Line Connection Pool Work: To be provided 180 days after the Ready for Service Date

Actual Line Connection Pool Work Capital Contribution: To be provided 180 days after Ready for Service Date

Capital Contribution Includes the Cost of Capacity Not Needed by the Customer: Not Apprlicable

NETWORK CUSTOMER ALLOCATED WORK

Estimate of the Engineering and Construction Cost of the Network Customer Allocated Work: $10,549,300.00

Estimate of Network Customer Allocated Work Capital Contribution: $1,119,000.00

Actual Engineering and Construction Cost of the Network Customer Allocated Work: To be provided 180 days after Ready for Service Date

NETWORK POOL WORK (NON-RECOVERABLE FROM CUSTOMER): -

Not Applicable

WORK CHARGEABLE TO CUSTOMER:

Not applicable.MANNER OF PAYMENT OF THE ESTIMATE OF CAPITAL CONTRIBUTIONS AND WORK CHARGEABLE TO CUSTOMER

The Customer shall pay Hydro One the estimate of the Transformation Connection Pool Work Capital Contribution, the Estimate of Line Connection Pool Work Capital Contribution, the estimate of the Network Customer Allocated Work Capital Contribution and the estimate of the Engineering and Construction Cost of the Work Chargeable to Customer by making the progress payments specified below on or before the Payment Milestone Date specified below. Hydro One will invoice the Customer for each progress payment 30 days prior to the Payment Milestone Date.

Payment Milestone Date	Transformation Pool Work Capital Contribution	Line Pool Work Capital Contribution	Network Customer Allocated Work Capital Contribution	Work Chargeable To Customer	Total Payment Required
Pre CCRA Payment		$227,000.00			0.00
Execution Date		$1,159,446.00	$646,770.00		$1,806,216.00
Aug 31st 2011		$846,554.00	$472,230.00		$1,318,780.00

TRANSFORMATION CONNECTION REVENUE REQUIREMENTS AND LOAD FORECAST AT THE NEW OR MODIFIED CONNECTION FACILITIES Not Applicable

Annual Period Ending On:	New Load** (MW)	Part of New Load Exceeding Normal Capacity of Existing Load Facilities **[A]** (Note 1)	Adjusted Load Forecast (MW) [B]	Transformation Connection Revenue (k$) for True-Up, based on [A] or [B], whichever is applicable
1st Anniversary of In Service Date				
2nd Anniversary of In Service Date				
3rd Anniversary of In Service Date				
4th Anniversary of In Service Date				
5th Anniversary of In Service Date	Final Year for High Risk			
6th Anniversary of In Service Date				
7th Anniversary of In Service Date				
8th Anniversary of In Service Date				
9th Anniversary of In Service Date				
10th Anniversary of In Service Date	Final Year for Medium-High Risk			
11th Anniversary of In Service Date				
12th Anniversary of In Service Date				
13th Anniversary of In Service Date				
14th Anniversary of In Service Date				
15th Anniversary of In Service Date	Final Year for Medium-Low Risk			
16th Anniversary of In Service Date				
17th Anniversary of In Service Date				
18th Anniversary of In Service Date				
19th Anniversary of In Service Date				
20th Anniversary of In Service Date				

21st Anniversary of In Service Date				
22nd Anniversary of In Service Date				
23rd Anniversary of In Service Date				
24th Anniversary of In Service Date				
25th Anniversary of In Service Date	Final Year for Low Risk			

LINE CONNECTION REVENUE REQUIREMENTS AND LOAD FORECAST AT THE NEW OR MODIFIED CONNECTION FACILITIES-

Annual Period Ending On:	New Load** - (MW)	Part of New Load Exceeding Normal Capacity of Existing Load Facilities [C]	Adjusted Load Forecast (MW) [D]	Line Connection Revenue (k$) for True-Up, Based on [C] or [D], whichever is applicable
1st Anniversary of In Service Date	4.9			
2nd Anniversary of In Service Date				
3rd Anniversary of In Service Date				
4th Anniversary of In Service Date				
5th Anniversary of In Service Date	Final Year for High Risk			

NETWORK REVENUE REQUIREMENTS AND LOAD FORECAST AT THE NEW OR MODIFIED CONNECTION FACILITIES

Annual Period Ending On:	New Load** - (MW)	Part of New Load Exceeding Normal Capacity of Existing Load Facilities [C]	Adjusted Load Forecast (MW) [D]	Network Revenue (k$) for True-Up, Based on [C] or [D], whichever is applicable
1st Anniversary of In Service Date	10.4			
2nd Anniversary of In Service Date	78.1			
3rd Anniversary of In Service Date	91			
4th Anniversary of In Service Date	91			
5th Anniversary of In Service Date	91 Final Year for High Risk			

****** New Load based on Customer's Load Forecast which includes Part of New Load Exceeding Normal Capacity of Existing Load Facilities. "Overload" derived in accordance with Section 6.7.9 of the Transmission System Code and the OEB-Approved Connection Procedures. Any Customer load below the Normal Capacity of the Existing Load Facilities transferred to the New or Modified Facilities will not be credited towards the Transformation Connection Revenue Requirements, Line Connection Revenue Requirements or the Network Connection Revenue Requirements. The discounted cash flow calculation for Network Revenue requirements will be based on Incremental Network Load which is New Load less the amount of load, if any, that has been by-passed by the Customer at any of Hydro One's connection facilities.

1. Each party represents and warrants to the other that:

(a) it is duly incorporated, formed or registered (as applicable) under the laws of its jurisdiction of incorporation, formation or registration (as applicable);
(b) it has all the necessary corporate power, authority and capacity to enter into the Agreement and to perform its obligations hereunder;
(c) the execution, delivery and performance of the Agreement by it has been duly authorized by all necessary corporate and/or governmental and/or other organizational action and does not (or would not with the giving of notice, the lapse of time or the happening of any other event or condition) result in a violation, a breach or a default under or give rise to termination, greater rights or increased costs, amendment or cancellation or the acceleration of any obligation under (i) its charter or by-law instruments; (ii) any Material contracts or instruments to which it is bound; or (iii) any laws applicable to it;
(d) any individual executing this Agreement, and any document in connection herewith, on its behalf has been duly authorized by it to execute this Agreement and has the full power and authority to bind it;
(e) the Agreement constitutes a legal and binding obligation on it, enforceable against it in accordance with its terms;
(f) it is registered for purposes of Part IX of the *Excise Tax Act* (Canada). The GST registration number for Hydro One is 87086-5821 RT0001 and the GST registration number for the Customer is as specified in Schedule "A" of the Agreement; and
(g) no proceedings have been instituted by or against it with respect to bankruptcy, insolvency, liquidation or dissolution.

Part A: Hydro One Connection Work and Customer Connection Work

2. The Customer and Hydro One shall perform their respective obligations outlined in the Agreement in a manner consistent with Good Utility Practice and the Transmission System Code, in compliance with all Applicable Laws, and using duly qualified and experienced people.

3. The parties acknowledge and agree that:

(a) Hydro One is responsible for obtaining any and all permits, certificates, reviews and approvals required under any Applicable Laws with respect to the Hydro One Connection Work and those required for the construction, Connection and operation of the New or Modified Connection Facilities;

(b) the Customer shall perform the Customer Connection Work, at its own expense;

(c) except as specifically provided in the Agreement, the Customer is responsible for obtaining any and all permits, certificates, reviews and approvals required under any Applicable Laws with respect to the Customer Connection Work and those required for the construction, Connection and operation of the Customer's Facilities including, but not limited to, where applicable, leave to construct pursuant to Section 92 of the *Ontario Energy Board Act, 1998*;

(d) the Customer is responsible for installing equipment and facilities such as protection and control equipment to protect its own property, including, but not limited to the Customer's Facilities;

(e) the Customer shall provide Hydro One with Project data required by Hydro One, including, but not limited to (i) the same technical information that the Customer provided the IESO during any connection assessment and facility registration process associated with the Customer's Facilities in the form outlined in the applicable sections of the IESO's public website and (ii) technical specifications (including electrical drawings) for the Customer's Facilities;

(f) Hydro One may participate in the commissioning, inspection or testing of the Customer's Connection Facilities at a time that is mutually agreed by Hydro One and the Customer and the Customer shall ensure that the work performed by the Customer and others required for successful commissioning, inspection or testing of protective equipment is completed as required to enable Hydro One witnessing and testing to confirm satisfactory performance of such systems;

(g) unless otherwise provided herein, Hydro One's responsibilities under the Agreement with respect to the Connection of the New or Modified Connection Facilities to Hydro One's transmission system shall be limited to the performance of the Hydro One Connection Work;

(h) Hydro One is not permitted to Connect any new, modified or replacement Customer's Facilities unless any required Connection authorizations, certificate of inspection or other applicable approval have been issued or given by the Ontario Electrical Safety Authority in relation to such facilities;

(i) Hydro One may require that the Customer provide Hydro One with test certificates certifying that the Customer's Facilities have passed all relevant tests and comply with the *Transmission System Code***,** the Market Rules, Good Utility Practice, the standards of all applicable reliability organizations and any Applicable

Laws, including, but not limited to any certificates of inspection that may be required by the Ontario Electrical Safety Authority;

(j) in addition to the Hydro One Connection Work described in Schedule "A", Hydro One shall: provide the Customer with such technical parameters as may be required to assist the Customer in ensuring that the design of the Customer's Facilities is consistent with the requirements applicable to Hydro One's transmission system and the basic general performance standards for facilities set out in the *Transmission System Code*, including Appendix 2 thereof; and

(k) if Hydro One requires access to the Customer's Facilities for the purposes of performing the Hydro One Connection Work or the Customer requires access to Hydro One's Facilities for the purposes of the Customer Connection Work, the parties agree that Section 27.13 of the Connection Agreement shall govern such access and is hereby incorporated in its entirety by reference into, and forms an integral part of the Agreement. All references to "this Agreement" in Section 27.13 shall be deemed to be a reference to the Agreement;

(l) the Customer shall enter into a Connection Agreement with Hydro One or amend its existing Connection Agreement with Hydro One at least 14 calendar days prior to the Connection;

(m) Hydro One shall use commercially reasonable efforts to ensure that any applications required to be filed to obtain any permits or approvals required under Applicable Laws for the Hydro One Connection Work are filed in a timely manner; and

(n) the Customer shall use commercially reasonable efforts to ensure that any applications required to be filed to obtain any permits or approvals required under Applicable Laws for the Customer Connection Work or for the construction, Connection and operation of the Customer's Facilities are filed in a timely manner.

4. The following aspects of the Hydro One Connection Work and Hydro One's rights and requirements hereunder are solely for the purpose of Hydro One ensuring that the Customer Facilities to be connected to Hydro One's transmission system do not materially reduce or adversely affect the reliability of Hydro One's transmission system and do not adversely affect other customers connected to Hydro One's transmission system, Hydro One's:

(i) specifications of the protection equipment on the Customer's side of the Connection Point;
(ii) acceptance of power system components on the Customer's side of the Connection Point;
(iii) acceptance of the technical specifications (including electrical drawings) for the Customer's Facilities and/or the Customer Connection Work; and
(iv) participation in the commissioning, inspection or testing of the Customer's Facilities,

The Customer is responsible for installing equipment and facilities such as protection and control equipment to protect its own property, including, but not limited to the Customer's Facilities.

5. Hydro One shall use commercially reasonable efforts to complete the Hydro One Connection Work by the Ready for Service Date specified in Schedule "A" provided that:

(a) the Customer is in compliance with its obligations under the Agreement;
(b) any work required to be performed by third parties has been performed in a timely manner and in a manner to the satisfaction of Hydro One, acting reasonably;
(c) there are no delays resulting from Hydro One not being able to obtain outages from the IESO required for any portion of the Hydro One Connection Work or from the IESO making changes to the Hydro One Connection Work or the scheduling of all or a portion of the Hydro One Connection Work ;
(d) Hydro One does not have to use its employees, agents and contractors performing the Hydro One Connection Work or the Network Pool Work elsewhere on its transmission system or distribution system due to an Emergency (as that term is defined in the *Transmission System Code*) or a Force Majeure Event;
(e) Hydro One is able to obtain the materials and labour required to perform the Hydro One Connection Work with the expenditure of Premium Costs where required;
(f) where Hydro One needs to obtain leave to construct pursuant to Section 92 of the *Ontario Energy Board Act, 1998*, such leave is obtained on or before the date specified as the Approval Date in Schedule "A" of the Agreement;
(g) where applicable, Hydro One received the easement described in Section 24 hereof by the Easement Date specified in Schedule "A" of the Agreement;
(h) Hydro One has received or obtained prior to the dates upon which Hydro One requires any or one or more of the following under Applicable Laws in order to perform all or any part of the Hydro One Connection Work:
    (i) environmental approvals, permits or certificates;
    (ii) land use permits from the Crown; and
    (iii) building permits and site plan approvals;
(j) Hydro One is able, using commercially reasonable efforts, to obtain all necessary land rights on terms substantially similar to the form of the easement that

is attached hereto as Appendix "B" of these Standard Terms and Conditions for the Project, prior to the dates upon which Hydro One needs to commence construction of the Hydro One Connection Work in order to meet the Ready for Service Date;

(k) there are no delays resulting from Hydro One being unable to obtain materials or equipment required from suppliers in time to meet the project schedule for any portion of the Hydro One Connection Work provided that such delays are beyond the reasonable control Hydro One; and

(l) the Customer executed the Agreement on or before the date specified as the Execution Date.

The Customer acknowledges and agrees that the Ready for Service Date may be materially affected by difficulties with obtaining or the inability to obtain all necessary land rights and/or environmental approvals, permits or certificates.

6. Upon completion of the Hydro One Connection Work:

(a) Hydro One shall own, operate and maintain all equipment specified in Schedule "A" of the Agreement under the heading "Ownership"; and

(b) other than equipment referred to in (a) above that shall be owned, operated and maintained by Hydro One, all other equipment provided by Hydro One as part of the Hydro One Connection Work or provided by the Customer as part of the Customer Connection Work shall be owned, operated and maintained by the Customer.

The Customer acknowledges that:

(i) ownership and title to the equipment referred to in (a) above shall throughout the Term and thereafter remain vested in Hydro One and the Customer shall have no right of property therein; and

(ii) any portion of the equipment referred to in (a) above that is located on the Customer's property shall be and remain the property of Hydro One and shall not be or become fixtures and/or part of the Customer's property.

7. The Customer acknowledges and agrees that Hydro One is not responsible for the provision of power system components on the Customer's Facilities, including, without limitation, all transformation, switching, metering and auxiliary equipment such as protection and control equipment.

All of the power system components on the Customer's side of the Connection Point including, without limitation, all transformation, switching and auxiliary equipment such as protection and control equipment shall be subject to the acceptance of Hydro One with regard to Hydro One's requirements to permit Connection of the New or Modified Connection Facilities to Hydro One's transmission system, and shall be installed, maintained and operated in accordance with all Applicable Laws, codes and standards, including, but not limited to, the *Transmission System Code*, at the expense of the Customer.

8. Where Hydro One has equipment for automatic reclosing of circuit breakers after an interruption for the purpose of improving the continuity of supply, it shall be the obligation of the Customer to provide adequate protective equipment for the Customer's facilities that might be adversely affected by the operation of such reclosing equipment. The Customer shall provide such equipment as may be required from time to time by Hydro One for the prompt disconnection of any of the Customer's apparatus that might affect the proper functioning of Hydro One's reclosing equipment.

9. The Customer shall provide Hydro One with copies of the documentation specified in Schedule "A" of the Agreement under the heading "Documentation Required", acceptable to Hydro One, within 120 calendar days after the Ready for Service Date. The Customer shall ensure that Hydro One may retain this documentation for Hydro One's ongoing planning, system design, and operating review. The Customer shall also maintain and revise such documentation to reflect changes to the Customer's Facilities and provide copies to Hydro One on demand and as specified in the Connection Agreement.

Part B: Transformation Connection Pool Work and/or Line Connection Pool Work and/or Network Customer Allocated Work

10.1 To the extent that the Pool Funded Cost of the Hydro One Connection Work is not recoverable by Transformation Connection Revenue for the Transformation Connection Pool Work and/or Line Connection Revenue for the Line Connection Pool Work and/or Network Revenue for the Network Customer Allocated Work during the Economic Evaluation Period, the Customer agrees to pay Hydro One a Capital Contribution towards the Pool Funded Cost of the Transformation Connection Pool Work and/or a Capital Contribution towards the Pool Funded Cost of the Line Connection Pool Work and/or a Capital Contribution towards the Pool Funded Cost of the Network Customer Allocated Work and any amounts payable to Hydro One under Subsection 12 (a) (i) hereof.

An estimate of the Engineering and Construction Cost (not including Taxes) of the Transformation Connection Pool Work and/or Line Connection Pool Work and/or Network Customer Allocated Work is provided in Schedule "B" of the Agreement.

An estimate of the Capital Contribution for each of the Transformation Connection Pool Work, the Line Connection Pool Work and the Network Customer Allocated Work is specified in Schedule "B" of the Agreement (plus Taxes). The Customer shall pay Hydro One the estimated Capital Contribution(s) in the manner specified in Schedule "B" of the Agreement.

Within 180 calendar days after the Ready for Service Date, Hydro One shall provide the Customer with a new Schedule "B" to replace Schedule "B" of the Agreement attached hereto which shall identify the following:

(i) the actual Engineering and Construction Cost of the Transformation Connection Pool Work;
(ii) the actual Engineering and Construction Cost of the Line Connection Pool Work;
(iii) the actual Engineering and Construction Cost of the Network Customer Allocated Work;
(iv) the actual Engineering and Construction Cost of the Work Chargeable to Customer;
(v) the actual Capital Contribution required to be paid by the Customer for each of the Transformation Connection Pool Work, the Line Connection Pool Work and the Network Customer Allocated Work; and
(vi) the revised Transformation Connection Revenue and/or Line Connection Revenue requirements and/or Network Revenue requirements based on the Load Forecast or the Adjusted Load Forecast, whichever is applicable.

The new Schedule "B" shall be made a part hereof as though it had been originally incorporated into the Agreement.

If an estimate of a Capital Contributions paid by the Customer exceeds the actual Capital Contribution required to be paid by the Customer for any or all of the Transformation Connection Pool Work, the Line Connection Pool Work and the Network Customer Allocated Work, Hydro One shall refund the difference to the Customer (plus Taxes) within 30 days following the issuing of the new Schedule "B". If the estimate of a Capital Contribution paid by the Customer is less than the actual Capital Contributions required to be paid by the Customer for any or all of the Transformation Connection Pool Work, the Line Connection Pool Work and the Network Customer Allocated Work, the Customer shall pay Hydro One the difference (plus Taxes) within 30 days following the issuing of the new Schedule "B".

10.2 Hydro One shall not include the following amounts in the Capital Contributions referenced in Section 10.1, any capital contribution for:

(a) a Connection Facility that was otherwise planned by Hydro One except for advancement costs;
(b) capacity added to a Connection Facility in anticipation of future load growth not attributable to the Customer; or
(c) the construction of or modifications to Hydro One's Network Facilities that may be required to accommodate the New or Modified Connection other than Network Customer Allocated Work unless Hydro One has indicated in Schedule "A" of the Agreement that exceptional circumstances exist so as to reasonably require the Customer to make a Capital Contribution.

10.3 Notwithstanding Sub-section 10.2(c) above, if Hydro One indicates in Schedule "A" of the Agreement that exceptional circumstances exist so as to reasonably require the Customer to make a Capital Contribution towards the Network Pool Work, Hydro One shall not, without the prior written consent of the Customer, refuse to commence or diligently perform the Network Pool Work pending direction from the OEB under section 6.3.5 of the *Transmission System Code* provided that the Customer provides Hydro One with a security deposit in accordance with Section 20 of these Standard Terms and Conditions.

Until such time as Hydro One has actually begun to perform the Network Pool Work, the Customer may request, in writing, that Hydro One not perform the Network Pool Work and Hydro One shall promptly return to the Customer any outstanding security deposit related to the Network Pool Work.

10.4 If the Customer has made a Capital Contribution under Section 10.1 hereof and where this Capital Contribution includes the cost of capacity on the Connection Facility not needed by the Customer as indicated in Schedule "B" of the Agreement, Hydro One shall provide the Customer with a refund, calculated in accordance with Section 6.2.25 of the *Transmission System Code* if that capacity is assigned to another Load Customer within five (5) years of the In Service Date.

11. Hydro One shall perform a True-Up, based on Actual Load:

(a) at the True-Up Points specified in Schedule "A" of the Agreement; and
(b) the time of disconnection where the Customer voluntarily and permanently disconnects the Customer's Facilities from Hydro One's transmission facilities and the prior to the final True-Up Point identified in (a) above.

For True-Up purposes, if the Customer does not pay a Capital Contribution, Hydro One shall provide the Customer with an Adjusted Load Forecast.

Hydro One shall perform True-Ups in a timely manner. Within 30 calendar days following completion of each of the True-Ups referred to in 11(a), Hydro One shall provide the Customer with the results of the True-Up.

12(a) If the result of a True-Up performed in accordance with Section 11 above is that the Actual Load and Updated Load Forecast is:

(i) less than the load in the Load Forecast or the Adjusted Load Forecast, whichever is applicable, and therefore does not generate the forecasted Transformation Connection Revenue and/or Line Connection Revenue and/or Network Revenue required for the Economic Evaluation Period, the Customer shall pay Hydro One an amount equal to the shortfall adjusted to reflect the time value of money within 30 days after the date of Hydro One's invoice therefor; and

(ii) more than the load in the Load Forecast or the Adjusted Load Forecast, whichever is applicable, and therefore generates more than the forecasted Transformation Connection Revenue and/or Line Connection Revenue and/or Network Revenue required for the Economic Evaluation Period, Hydro One shall post the excess Transformation Connection Revenue and/or Line Connection Revenue and/or Network Revenue as a credit to the Customer in a notional account. Hydro One shall apply this credit against any shortfall in subsequent True-Up calculations. Where the Customer paid a Capital Contribution in accordance with Section 10.1 hereof, Hydro One shall rebate the Customer an amount that is the lesser of the credit balance in the notional account adjusted to reflect the time value of money, and the Capital Contribution adjusted to reflect the time value of money by no later than 30 days following the final True-Up calculation.

12(b) All adjustments to reflect the time value of money to be performed under Subsection 12(a) above shall be performed in accordance with the OEB-Approved Connection Procedures. As of the date of this Agreement, the time value of money is determined using Hydro One's after-tax cost of capital as used in the original economic evaluation performed in accordance with the requirements of the *Transmission System Code.*

13.1 With respect to the installation of embedded generation (as determined in accordance with Section 11.1 of the *Transmission System Code)* during the applicable True-Up period Hydro One shall comply with the requirements of Section 6.5.8 of the *Transmission System Code* when carrying out True-Up calculations if the Customer is a Distributor or the requirements of Section 6.5.9 of the Transmission System Code when carrying out True-Up calculations if the Customer is a Load Customer other than a Distributor.

13.2 With respect to energy conservation, energy efficiency, load management or renewable energy activities that occurred during the applicable True-Up period Hydro One shall comply with the requirements of Section 6.5.10 of the *Transmission System Code* when carrying out True-Up calculations provided that the Customer demonstrates to the reasonable satisfaction of Hydro One (such as by means of an energy study or audit) that the amount of any reduction in the Customer's load has resulted from energy conservation, energy efficiency, load management or renewable energy activities that occurred during the applicable True-Up period.

14. Hydro One shall provide the Customer with all information pertaining to the calculation of all Engineering and Construction Costs, Capital Contributions and True-Ups that the Customer is entitled to receive in accordance with the requirements of the *Transmission System Code*.

Part C: Work Chargeable to Customer, Network Pool Work and Premium Costs

15.1 The Customer shall pay Hydro One's Engineering and Construction Cost (plus Taxes) of the Hydro One Connection Work described asWork Chargeable to Customer in Schedule "A" of the Agreement which is estimated to be the amounts specified in Schedule "B" of the Agreement in the manner specified in Schedule "B" of the Agreement.

Hydro One shall identify the actual Engineering and Construction Cost of the Work Chargeable to Customer in the revised Schedule "B" provided to the Customer in accordance with Section 10.1 of this Agreement. Any difference between the Engineering and Construction Cost of the Work Chargeable to Customer (plus Taxes) and the amount already paid by the Customer shall be paid within 30 days after the issuance of the revised Schedule "B" by:

(a) Hydro One to the Customer, if the amount already paid by the Customer exceeds the Engineering and Construction Cost of the Work Chargeable to Customer (plus Taxes); or
(b) the Customer to Hydro One, if the amount already paid by the Customer is less than the Engineering and Construction Cost of the Work Chargeable to Customer (plus Taxes).

15.2 Subject to Sections 10.3 and 18 hereof, Hydro One shall perform the Hydro One Connection Work described as Network Pool Work in Part 3 of Schedule "A" of the Agreement at Hydro One's sole expense.

16. As the Project is schedule-driven and as the estimated costs specified in Schedule "B" of the

Agreement are based upon normal timelines for delivery of material and performance of work, in addition to the amounts that the Customer is required to pay pursuant to Section 10.1 and 15.1 above, the Customer agrees to pay Hydro One's Premium Costs if the Customer causes or contributes to any delays, including, but not limited to, the Customer failing to execute the Agreement by the Execution Date specified in Schedule "A" of the Agreement.

Hydro One shall obtain the Customer's approval prior to Hydro One authorizing the purchase of materials or the performance of work that attracts Premium Costs. The Customer acknowledges that its failure to approve an expenditure of Premium Costs may result in further delays and Hydro One shall not be liable to the Customer as a result thereof. Hydro One shall invoice the Customer for expenditures of Premium Costs approved by the Customer within 180 calendar days after the Ready for Service Date.

Part D: Right of Customer to By-Pass Existing Load Facilities

17.1 **Obligation to Notify Hydro One of Customer's Intent to Bypass an Existing Load Facility:** If the Customer chooses to exercise its rights under the *Transmission System Code* and the Agreement to bypass the Existing Load Facility, the Customer shall notify Hydro One, in writing, at least 30 days prior to transferring load from the Existing Load Facility Hydro One will then proceed in accordance with Section 6.7 of the *Transmission System Code*.

17.2 **Hydro One has not received a Notice of Customer Intent to Bypass an Existing Load Facility and Customer has Transferred Existing Load:** Where Hydro One determines that the Customer has transferred load from the Existing Load Facility without notifying Hydro One or the OEB, Hydro One will notify the Customer, all other load customers served by the connection facility and the OEB of a potential by-pass situation in accordance with the OEB-Approved Connection Procedures. If the Customer does not intend to by-pass the Existing Load Facility, the Customer must in accordance with the OEB-Approved Connection Procedures:

i. notify Hydro One and the OEB within 30 days of receiving Hydro One's notification of potential by-pass, that it has no intention of by-passing Hydro One's Existing Load Facility;
ii. transfer the load back to the Existing Load Facility within an agreed time period; and
iii. compensate Hydro One for the lost revenues.

17.3 The Customer agrees that Sections 17.1 and 17.2 above shall also be a term of the Connection Agreement.

Part E: Cancellation or Termination of Project and Early Termination of Agreement for Breach

18. Notwithstanding any other term of the Agreement, if at any time prior to the In-Service Date, the Project is cancelled or the Agreement is terminated for any reason whatsoever other than breach of the Agreement by Hydro One, the Customer shall pay Hydro One's Engineering and Construction Cost (plus Taxes) of the Line Connection Pool Work, the Transformation Connection Pool Work, the Network Pool Work, the Network Customer Allocated Work and the Work Chargeable to Customer incurred on and prior to the date that the Project is cancelled or the Agreement is terminated, including the preliminary design costs and all costs associated with the winding up of the Project, including, but not limited to, storage costs, vendor cancellation costs, facility removal expenses and any environmental remediation costs.

If the Customer provides written notice to Hydro One that it is cancelling the Project, Hydro One shall have 10 Business Days to provide written notice to the Customer listing the individual items listed as materials which it agrees to purchase. Hydro One shall deduct the actual cost of those individual items of materials being purchased by Hydro One from the Engineering and Construction Costs referred to above.

If Hydro One does not require all or part of the materials, the Customer may exercise any of the following options or a combination thereof:

(i) where materials have been ordered but all or part of the materials have not been received by Hydro One, the Customer shall have the right to require Hydro One, at the Customer's sole expense, to continue with the purchase of the materials and transfer title to those materials on an "as is, where is basis" to the Customer upon the Customer paying Hydro One's Engineering and Construction Costs (plus Taxes) provided that the Customer exercises this option within 15 Business Days of the termination or cancellation; or
(ii) where all or part of the materials have been received by Hydro One but have not been installed, the Customer shall have the right to require Hydro One, at the Customer's sole expense, to transfer title to the materials on an "as is, where is basis" to the Customer upon the Customer paying Hydro One's Engineering and Construction Costs (plus Taxes) provided that the Customer exercises this option within 15 Business Days of the termination or cancellation. The Customer shall also be responsible for any warehousing costs associated with the storage of the materials to the date of transfer; or

(iii) where all or part of the materials have been received by Hydro One and have been installed, the Customer shall have the right to require Hydro One, at the Customer's sole expense, to: transfer title to the materials on an "as is, where is basis" to the Customer upon the later of (A) the Customer paying Hydro One's Engineering and Construction Costs (plus Taxes); and (B) the date that Hydro One removes the materials from its property at the risk of the Customer; provided that the Customer exercises this option within 15 Business Days of the termination or cancellation. The Customer shall also be responsible for any Engineering and Construction Costs (plus Taxes) associated with the removal of the materials that have been installed by Hydro One.

The Customer shall pay Hydro One's Engineering and Construction Costs (plus Taxes) which become payable under this Section 18 within 30 calendar days after the date of invoice.

Part F: Sale, Lease, Transfer or Other Disposition of Customer's Facilities

19. In the event that the Customer sells, leases or otherwise transfers or disposes of the Customer's Facilities to a third party during the Term of the Agreement, the Customer shall cause the purchaser, lessee or other third party to whom the Customer's Facilities are transferred or disposed to enter into an assumption agreement with Hydro One to assume all of the Customer's obligations in the Agreement; and notwithstanding such assumption agreement unless Hydro One agrees otherwise, in writing, the Customer shall remain obligated under Sections 10.1 12, 15.1 and 16 hereof. The Customer further acknowledges and agrees that in the event that all or a portion of the Customer's Facilities are shut down, abandoned or vacated for any period of time during the Term of the Agreement, the Customer shall remain obligated under Sections 10.1, 12, 15.1 and 16 for the said time period.

Part G: Security Requirements

20. If Hydro One requires that the Customer furnish security, which at the Customer's option may be in the form of cash, letter of credit or surety bond, the Customer shall furnish such security in the amount and by the dates specified in Schedule "A" of the Agreement. Hydro One shall return the security deposit to the Customer as follows:

(i) security deposits in the form of cash shall be returned to the Customer, together with Interest, less the amount of any Capital Contribution owed by the Customer once the Customer's Facilities are connected to Hydro One's New or Modified Connection Facilities; and

(ii) security deposits in any other form shall be returned to the Customer once the Customer's Facilities are connected to Hydro One's New or Modified Connection Facilities and any Capital Contribution has been paid.

Notwithstanding the foregoing, Hydro One may keep all or a part of the security deposit: (a) where and to the extent that the Customer fails to pay any amount due under the Agreement within the time stipulated for payment; or (b) in the circumstances described in the OEB-Approved Connection Procedures.

Part H: Disputes

21. Prior to the existence of OEB-Approved Connection Procedures either party may refer a Dispute to the OEB for a determination. Once there are OEB-Approved Connection Procedures, all disputes, including, but not limited to, disputes related to:

(a) the cost and the allocation of the costs under this Agreement;
(b) the cost and the allocation of costs of the Hydro One Connection Work and notwithstanding Hydro One's decision not to allocate or to allocate any part of the costs of this work to the Customer at this time; or
(c) any other costs and the allocation of any other costs associated with, related to, or arising out of the connection of the Project to Hydro One's transmission system or Hydro One's policies in respect of connections generally,

shall be dealt with in accordance with the dispute resolution procedure set out in the OEB-Approved Connection Procedures.

22. Before and after the existence of OEB-Approved Connection Procedures, if a dispute arises while Hydro One is constructing the New or Modified Connection Facilities, Hydro One shall not cease the work or slow the pace of the work without leave of the OEB.

23. Hydro One shall refund to the Customer or the Customer shall pay to Hydro One any portion of Capital Contributions, as the case may be, which the OEB subsequently determines should not have been allocated to the Customer or should have been allocated to the Customer by Hydro One but were not, as the case may be, or should have been allocated in a manner different from that allocated by Hydro One in this Agreement.

Part I: Easement

24. If specified in Schedule "A" that an easement(s) is required from the Customer, the Customer shall grant an easement to Hydro One substantially in the form of the easement attached hereto as Appendix "B" of these

Standard Terms and Conditions for the property(ies) described as the Easement Lands in Schedule "A" on or before the date specified as the Easement Date in Schedule "A" (hereinafter referred to as the "Easement") with good and marketable title thereto, free of all encumbrances, first in priority except as noted herein, and in registerable form, in consideration of the sum of $2.00.

Part J: Events of Default

25. Each of the following events shall constitute an "Event of Default" under the Agreement:

(a) failure by the Customer to pay any amount due under the Agreement, including any amount payable pursuant to Sections 10.1, 12, 15.1, 16 or 18 within the time stipulated for payment;
(b) breach by the Customer or Hydro One of any Material term, condition or covenant of the Agreement; or
(c) the making of an order or resolution for the winding up of the Customer or Hydro One or of their respective operations or the occurrence of any other dissolution, bankruptcy or reorganization or liquidation proceeding instituted by or against the Customer or Hydro One.

For greater certainty, a dispute shall not be considered an Event of Default under this Agreement. However, a Party's failure to comply, within a reasonable period of time, with the terms of a determination of such a dispute by the OEB or with a decision of a court of competent jurisdiction with respect to a determination made by the OEB shall be considered an Event of Default under the Agreement.

26. Upon the occurrence of an Event of Default by the Customer hereunder (other than those specified in Section 25(c) of the Agreement, for which no notice is required to be given by Hydro One), Hydro One shall give the Customer written notice of the Event of Default and allow the Customer 30 calendar days from the date of receipt of the notice to rectify the Event of Default, at the Customer's sole expense. If such Event of Default is not cured to Hydro One's reasonable satisfaction within the 30 calendar day period, Hydro One may, in its sole discretion, exercise the following remedy in addition to any remedies that may be available to Hydro One under the terms of the Agreement, at common law or in equity: deem the Agreement to be repudiated and, after giving the Customer at least 10 calendar days' prior written notice thereof, recover, as liquidated damages and not as a penalty, the following:

(i) the sum of the amounts payable by the Customer pursuant to Sections 10.1, 12, 15.1 and where applicable, Section 16 less any amounts already paid by the Customer in accordance with Section 10.1, 12, 15.1 and 16 if this clause is invoked after the In-Service Date; or

(ii) the amounts payable under Section 16 and 18 less any amounts already paid by the Customer in accordance with Sections 10.1, 15.1 and 16 if this clause is invoked prior to the In-Service Date.

27. Upon the occurrence of an Event of Default by Hydro One hereunder (other than those specified in Section 25(c), the Customer shall give Hydro One written notice of the Event of Default and shall allow Hydro One 30 calendar days from the date of receipt of the notice to rectify the Event of Default at Hydro One's sole expense. If such Event of Default is not cured to the Customer's reasonable satisfaction within the 30 calendar day period, the Customer may pursue any remedies available to it at law or in equity, including at its option the termination of the Agreement.

28. All rights and remedies of Hydro One and the Customer provided herein are not intended to be exclusive but rather are cumulative and are in addition to any other right or remedy otherwise available to Hydro One and the Customer respectively at law or in equity, and any one or more of Hydro One's and the Customer's rights and remedies may from time to time be exercised independently or in combination and without prejudice to any other right or remedy Hydro One or the Customer may have or may not have exercised. The parties further agree that where any of the remedies provided for and elected by the non-defaulting party are found to be unenforceable, the non-defaulting party shall not be precluded from exercising any other right or remedy available to it at law or in equity.

Part K: Changes to Transmission Rates

29. In the event that the Transformation Connection Service Rate, the Line Connection Service Rate or the Network Service Rate is rescinded or the methodology of determination or components is materially changed, the Parties agree to negotiate a new mechanism for the purposes of the Agreement, provided that such new mechanism will not result in an increase in the amounts of Capital Contribution or Security Deposits payable by the Customer to Hydro One hereunder. The Parties shall have 90 calendar days from the effective date of rescission or fundamental change of the Transformation Connection Service Rate, the Line Connection Service Rate or the Network Service Rate to agree to a new mechanism that is, to the extent possible, fair to the parties and constitutes a reasonably comparable replacement for the Transformation Connection Service Rate, the Line Connection Service Rate or the Network Service Rate. If the Parties are unable to successfully negotiate a replacement within that 90 calendar day period, this shall be considered a dispute under the terms

of this Agreement and the parties shall follow the dispute resolution procedure set out in the OEB-Approved Connection Procedures.

Any settlement on a new mechanism pursuant to this Section 29 shall apply retroactively from the date on which the Transformation Connection Service Rate, the Line Connection Service Rate or the Network Service Rate was rescinded or fundamentally changed. Until such time as a new mechanism is determined hereunder, any amounts to be paid by the Customer under the Agreement shall be based on the Transformation Connection Service Rate, the Line Connection Service Rate or the Network Service Rate in effect prior to the effective date of any such changes.

Part L: Incorporation of Liability and Force Majeure Provisions

30. PART III: LIABILITY AND FORCE MAJEURE (with the exception of Section 15.5 thereof) and Sections 1.1.12 and 1.1.17 of the Connection Agreement are hereby incorporated in their entirety by reference into, and form an integral part of the Agreement. Unless the context otherwise requires, all references in PART III: LIABILITY AND FORCE MAJEURE TO "this Agreement" shall be deemed to be a reference to the Agreement and all references to the "the Transmitter" shall be deemed to be a reference to Hydro One.

For the purposes of this Section 30, the Parties agree that the reference to:

(i) the Transmitter in lines 3 and 4 of Section 15.1 means the Transmitter or any party acting on behalf of the Transmitter such as contractors, subcontractors, suppliers, employees and agents; and
(ii) the Customer in lines 3 and 4 of Section 15.2 means the Customer or any party acting on behalf of the Customer such as contractors, subcontractors, suppliers, employees and agents.

Part M: General

31. This Agreement is subject to the *Transmission System Code* and the OEB-Approved Connection Procedures. If any provision of this Agreement is inconsistent with the:

(a) *Transmission System Code,* the said provision shall be deemed to be amended so as to comply with the *Transmission System Code;*
(b) OEB-Approved Connection Procedures the said provision shall be deemed to be amended so as to comply with the OEB-Approved Connection Procedures; and
(c) Connection Agreement made between the parties, associated with the new customer connection facilities, on the same subject matter, the Connection Agreement governs.

32. The failure of either party hereto to enforce at any time any of the provisions of the Agreement or to exercise any right or option which is herein provided shall in no way be construed to be a waiver of such provision or any other provision nor in any way affect the validity of the Agreement or any part hereof or the right of either party to enforce thereafter each and every provision and to exercise any right or option. The waiver of any breach of the Agreement shall not be held to be a waiver of any other or subsequent breach. Nothing shall be construed or have the effect of a waiver except an instrument in writing signed by a duly authorized officer of the party against whom such waiver is sought to be enforced which expressly waives a right or rights or an option or options under the Agreement.

33. Other than as specifically provided in the Agreement, no amendment, modification or supplement to the Agreement shall be valid or binding unless set out in writing and executed by the parties with the same degree of formality as the execution of the Agreement.

34. Any written notice required by the Agreement shall be deemed properly given only if either mailed or delivered to the Secretary, Hydro One Networks Inc., 483 Bay Street, North Tower, 15th Floor, Toronto, Ontario M5G 2P5, fax no: (416) 345-6240 on behalf of Hydro One, and to the person at the address specified in Schedule "A" of the Agreement on behalf of the Customer.

A faxed notice shall be deemed to be received on the date of the fax if received before 3 p.m. on a business day or on the next business day if received after 3 p.m. or a day that is not a business day. Notices sent by courier or registered mail shall be deemed to have been received on the date indicated on the delivery receipt. The designation of the person to be so notified or the address of such person may be changed at any time by either party by written notice.

35. The Agreement shall be construed and enforced in accordance with, and the rights of the parties shall be governed by, the laws of the Province of Ontario and the laws of Canada applicable therein.

36. The Agreement may be executed in counterparts, including facsimile counterparts, each of which shall be deemed an original, but all of which shall together constitute one and the same agreement.

37. The Customer shall provide Hydro One with a copy of the Customer's final monthly bills associated

with the transmission of electricity from the Existing Load Facilities and/or the Customer's Facilities or authorize the IESO to provide Hydro One with same. Hydro One agrees to use this information solely for the purpose of the Agreement.

38. **Invoices and Interest:** Invoiced amounts are due 30 days after invoice issuance. All overdue amounts including, but not limited to amounts that are not invoiced but required under the terms of this Agreement to be paid in a specified time period, shall bear interest at 1.5% per month compounded monthly (19.56 percent per year) for the time they remain unpaid.

39. The obligation to pay any amount due hereunder, including, but not limited to, any amounts due under Sections 10.1, 12, 15.1, 16, 18 or 23 shall survive the termination of the Agreement.

Appendix "A": Definitions

In the Agreement, unless the context otherwise requires, terms which appear therein without definition, shall have the meanings respectively ascribed thereto in the *Transmission System Code* and unless there is something in the subject matter or context inconsistent therewith, the following words shall have the following meanings:

"Actual Load" means the actual load delivered by Hydro One to the Customer up to the True-Up Point in excess of the Normal Capacity of the Existing Load Facilities.

"Assigned Capacity" is calculated in accordance with Section 6.2.2 of the *Transmission System* Code.

"Adjusted Load Forecast" means a Load Forecast that has been adjusted to the point where the present value of the Transformation Connection Revenue and/or Line Connection Revenue and/or Network Revenue equals the present value of the Pool Funded Cost of the Transformation Connection Pool Work and/or the Pool Funded Cost of the Line Connection Pool Work and/or the Pool Funded Cost of the Network Customer Allocated Work.

"Agreement" means the Connection Cost Recovery Agreement, Schedules "A" and "B" attached thereto and these Standard Terms and Conditions.

"Applicable Laws" means any and all applicable laws, including environmental laws, statutes, codes, licensing requirements, treaties, directives, rules, regulations, protocols, policies, by-laws, orders, injunctions, rulings, awards, judgments or decrees or any requirement or decision or agreement with or by any government or governmental department, commission board, court authority or agency.

"Approval Date" means for the purpose of Subsection 5(f) of the Terms and Conditions, the date specified in Schedule "A" of the Agreement.

"Capital Contribution" means a capital contribution calculated using the economic evaluation methodology set out in the *Transmission System Code*.

"Connect and Connection" has the same meaning ascribed to the term "Connect" in the *Transmission System Code.*

"Connection Agreement" means the form of connection agreement appended to the *Transmission System Code* as Appendix 1, Version 1.

"Connection Facilities" has the meaning set forth in the *Transmission System Code.*

"Connection Point" has the meaning set forth in the *Transmission System Code* and for this project, is as specified in Schedule "A" of the Agreement.

"Customer Connection Work" means the work to be performed by the Customer, at its sole expense, which is described in Schedule "A" of the Agreement.

"Customer Connection Risk Classification" is as specified in Schedule "A" of the Agreement.

"Customer's Facilities" has the meaning set forth in the *Transmission System Code*, and includes, but is not limited to any new, modified or replaced Customer's Facilities.

"Customer's Property(ies)" means any lands owned by the Customer in fee simple or where the Customer has easement rights.

"Dispute" means a dispute between the Parties with respect to any of the matters listed in Section 6.1.4 of the *Transmission System Code* where either Party is alleging that the other is seeking to impose a term that is inconsistent or contrary to the *Ontario Energy Board Act*, the *Electricity Act, 1998*, Hydro One's transmission licence or the *Transmission System Code* or refusing to include a term or condition that is required to give effect to the Code.

"Distributor" has the meaning set forth in the *Transmission System Code.*

"Economic Evaluation Period" means the period of five (5) years for high risk connection, ten (10) years for a medium-high risk connection, fifteen (15) years for a medium-low risk connection and twenty-five years for a low risk connection commencing on the In Service Date whichever is applicable to the Customer as specified in Schedule "A" of the Agreement.

"Engineering and Construction Cost" means Hydro One's charge for equipment, labour and materials at Hydro One's standard rates plus Hydro One's standard overheads as well as interest during construction using Hydro One's capitalization rate in effect during the construction period.

***"Electricity Act,* 1998"** means the *Electricity Act, 1998* being Schedule "A" of the *Energy Competition Act,* S.O. *1998*, c.15, as amended.

"Existing Load" in relation to the Customer and each of the Existing Load Facilities is equal to the Customer's Assigned Capacity at each of the Existing Load Facilities on the date of this Agreement.

"Existing Load Facility or Existing Load Facilities" means the connection facility(ies) owned by Hydro One

as specified in the Existing Load Table in Schedule "A" of the Agreement where the Customer has Existing Load.

"Force Majeure Event" has the meaning ascribed thereto in the Connection Agreement.

"**GST**" means the Goods and Services Tax.

"Hydro One Connection Work" means the work to be performed by Hydro One, which is described in Schedule "A" of the Agreement.

"Hydro One Facilities" means Hydro One's structures, lines, transformers, breakers, disconnect switches, buses, voltage/current transformers, protection systems, telecommunication systems, cables and any other auxiliary equipment used for the purpose of transmitting electricity.

"Hydro One's Property(ies)" means any lands owned by Hydro One in fee simple or where Hydro One now or hereafter has obtained easement rights.

"IESO" means the Independent Electricity System Operator continued under the *Electricity Act, 1998.*

"In Service Date" has the same meaning ascribed to the term "comes into service" in the *Transmission System Code.*

"Incremental Network Load" means the Customer's New Load less the amount of load, if any, that has been by-passed by the Customer at any of Hydro One's connection facilities.

"Interest" means the interest rates specified by the OEB to be applicable to security deposits in the form of cash as specified in Subsection 6.3.11(b) in the *Transmission System Code*.

"Line Connection Pool Work" means the Hydro One Connection Work specified in Schedule "A" of the Agreement under the heading "Line Connection Pool Work".

"Line Connection Revenue" means the amount of line connection revenue attributable to that part of the Customer's New Load to be received by Hydro One through the monthly collection of the Line Connection Service Rate during the Economic Evaluation Period.

"**Line Connection Service Rate"** means the line connection service rate approved by the OEB in Hydro One's Rate Order from time to time, or any mechanism instituted in accordance with Section 29.

"Load Customer" has the meaning set forth in the *Transmission System Code.*

"Load Forecast" means the initial load forecast of the New Load in excess of the Normal Capacity of the Existing Load Facilities used in the initial economic evaluation for the Economic Evaluation Period.

"Material" relates to the essence of the contract, more than a mere annoyance to a right, but an actual obstacle preventing the performance or exercise of a right.

"Network Customer Allocated Work" means the construction of or modifications to Network Facilities specified in Schedule "A" of the Agreement under the heading "Network Customer Allocated Work" that are minimum connection requirements.

"Network Facilities" has the meaning set forth in the *Transmission System Code.*

"Network Pool Work" means the Hydro One Connection Work specified in Schedule "A" of the Agreement under the heading "Network Pool Work".

"Network Revenue" means the amount of network revenue attributable to the Incremental Network Load to be received by Hydro One through the monthly collection of the Network Service Rate during the Economic Evaluation Period.

"Network Service Rate" " means the network service rate approved by the OEB in Hydro One's Rate Order from time to time, or any mechanism instituted in accordance with Section 29.

"New Load" means the load at the New or Modified Connection Facility that is in excess of, for each of the Existing Load Facilities, the lesser of the Existing Load or the Normal Capacity.

"New or Modified Connection Facilities" means the facilities owned by Hydro One as specified in Schedule "A" of the Agreement.

"Normal Capacity" means, where the Customer is:

(a) the only Load Customer supplied by an Existing Load Facility, the total normal supply capacity of the Existing Load Facility as determined in accordance with the OEB-Approved Connection Procedures; and
(b) one of two or more Load Customers served by an Existing Load Facility, the Customer's pro-rated share of the total normal supply capacity of the Existing Load Facility as determined in accordance with the OEB-Approved Connection Procedures.

"OEB" means the Ontario Energy Board.

"OEB-Approved Connection Procedures" means Hydro One's connection procedures as approved by the OEB from time to time.

"Ontario Energy Board Act" means the *Ontario Energy Board Act* being Schedule "B" of the *Energy Competition Act,* S.O. *1998*, c. 15, as amended.

"Pool-Funded Cost" means the present value of the Engineering and Construction Cost and projected on-going maintenance and other related incremental costs (including, but not limited to applicable taxes, and net of tax benefits), of each of the Transformation Connection Pool Work, the Line Connection Pool Work and/or the Network Customer Allocated Work calculated in accordance with the principles, criteria and methodology set out in Appendices 4 and 5 of the Transmission System Code.

"Premium Costs" means those costs incurred by Hydro One in order to maintain or advance the Ready for Service Date, including, but not limited to, additional amounts expended for materials or services due to short time-frame for delivery; and the difference between having Hydro One's employees, agents and contractors perform work on overtime as opposed to during normal business hours.

"**Rate Order"** has the meaning ascribed thereto in the *Transmission System Code.*

"Ready for Service Date" means the date upon which the Hydro One Connection Work is fully and completely constructed, installed, commissioned and energised to the Connection Point. The Customer's disconnect switches must be commissioned prior to this date in order to use them as isolation points.

"Standard Terms and Conditions" means these Standard Terms and Conditions for Low Risk Transmission Customer Connection Projects and Appendices "A" and "B" attached hereto.

"Taxes" means all property, municipal, sales, use, value added, goods and services, harmonized and any other non-recoverable taxes and other similar charges (other than taxes imposed upon income, payroll or capital).

"Transformation Connection Pool Work" means the Hydro One Connection Work specified in Schedule "A" of the Agreement under the heading "Transformation Connection Pool Work".

"Transformation Connection Revenue" means the amount of transformation connection revenue attributable to that part of the Customer's New Load to be received by Hydro One through the monthly collection of the Transformation Connection Service Rate during the Economic Evaluation Period.

"**Transformation Connection Service Rate"** means the line connection service rate approved by the OEB in Hydro One's Rate Order from time to time, or any mechanism instituted in accordance with Section 29.

"Transmission System Code" or "Code" means the code of standards and requirements issued by the OEB on July 25, 2005 that came into force on August 20, 2005 as published in the Ontario Gazette, as it may be amended, revised or replaced in whole or in part from time to time.

"Transmitter's Facilities" has the meaning ascribed thereto in the *Transmission System Code.*

"True-Up" means the calculation to be performed by Hydro One, as a transmitter, at each True-Up Point in accordance with the requirements of Subsection 6.5.4 of the *Transmission System Code.*

"True-Up Point" means the points of time based upon the Customer Connection Risk Classification when Hydro One is required to perform a True-Up as described in Section 11 of these Terms and Conditions.

"Updated Load Forecast" means the load forecast of the New Load in excess of the Normal Capacity of the Existing Load Facilities for the remainder of the Economic Evaluation Period.

"Work Chargeable to Customer" means the Hydro One Connection Work specified in Part 4 of Schedule "A" of the Agreement under the heading "Work Chargeable to Customer".

Appendix "B": Form of Easement

INTEREST / ESTATE TRANSFERRED

The Transferor is the owner in fee simple and in possession of _____

_____

_____ (the **"Lands"**).

The Transferee has erected, or is about to erect, certain Works (as more particularly described in paragraph 1(a) hereof) in, through, under, over, across, along and upon the Lands.

1 The Transferor hereby grants and conveys to Hydro One Networks Inc, its successors and assigns the rights and easement, free from all encumbrances and restrictions, the following unobstructed and exclusive rights, easements, rights-of-way, covenants, agreements and privileges in perpetuity (the **"Rights"**) in, through, under, over, across, along and upon that portion of the Lands of the Transferor described herein and shown highlighted on Schedule "A" hereto annexed (the **"Strip"**) for the following purposes:

(a) To enter and lay down, install, construct, erect, maintain, open, inspect, add to, enlarge, alter, repair and keep in good condition, move, remove, replace, reinstall, reconstruct, relocate, supplement and operate and maintain at all times in, through, under, over, across, along and upon the Strip an electrical transmission system and telecommunications system consisting in both instances of a pole structures, steel towers, anchors, guys and braces and all such aboveground or underground lines, wires, cables, telecommunications cables, grounding electrodes, conductors, apparatus, works, accessories, associated material and equipment, and appurtenances pertaining to or required by either such system (all or any of which are herein individually or collectively called the **"Works"**) as in the opinion of the Transferee are necessary or convenient thereto for use as required by Transferee in its undertaking from time to time, or a related business venture.

(b) To enter on and selectively cut or prune, and to clear and keep clear, and remove all trees (subject to compensation to Owners for merchantable wood values), branches, bush and shrubs and other obstructions and materials in, over or upon the Strip, and without limitation, to cut and remove all leaning or decayed trees located on the Lands whose proximity to the Works renders them liable to fall and come in contact with the Works or which may in any way interfere with the safe, efficient or serviceable operation of the Works or this easement by the Transferee.

(c) To conduct all engineering, legal surveys, and make soil tests, soil compaction and environmental studies and audits in, under, on and over the Strip as the Transferee in its discretion considers requisite.

(d) To erect, install, construct, maintain, repair and keep in good condition, move, remove, replace and use bridges and such gates in all fences which are now or may hereafter be on the Strip as the Transferee may from time to time consider necessary.

(e) Except for fences and permitted paragraph 2(a) installations, to clear the Strip and keep it clear of all buildings, structures, erections, installations, or other obstructions of any nature (hereinafter collectively called the **"obstruction"**) whether above or below ground, including removal of any materials and equipment or plants and natural growth, which in the opinion of the Transferee, endanger its Works or any person or property or which may be likely to become a hazard to any Works of the Transferee or to any persons or property or which do or may in any way interfere with the safe, efficient or serviceable operation of the Works or this easement by the Transferee.

(e) To enter on and exit by the Transferor's access routes and to pass and repass at all times in, over, along, upon and across the Strip and so much of the Lands as is reasonably required, for Transferee, its respective officers, employees, agents, servants, contractors, subcontractors, workmen and permittees with or without all plant machinery, material, supplies, vehicles and equipment for all purposes necessary or convenient to the exercise and enjoyment of this easement and

(f) To remove, relocate and reconstruct the line on or under the Strip.

2. The Transferor agrees that:

(a) It will not interfere with any Works established on or in the Strip and shall not, without the Transferee's consent in writing, erect or cause to be erected or permit in, under or upon the Strip any obstruction or plant or permit any trees, bush, shrubs, plants or natural growth which does or may interfere with the Rights granted herein. The Transferor agrees it shall not, without the Transferee's consent in writing, change or permit the existing configuration, grade or elevation of the Strip to be changed and the Transferor further agrees that no excavation or opening or work which may disturb or interfere with the existing surface of the Strip shall be done or made unless consent therefore in writing has been obtained from Transferee, provided however, that the Transferor shall not be required to obtain such permission in case of emergency. Notwithstanding the foregoing, in cases where in the reasonable discretion of the Transferee, there is no danger or likelihood of danger to the Works of the Transferee or to any persons or property and the safe or serviceable operation of this easement by the Transferee is not interfered with, the Transferor may at its expense and with the prior written approval of the Transferee, construct and maintain roads, lanes, walks, drains, sewers, water pipes, oil and gas pipelines, fences (not to exceed 2 metres in height) and service cables on or under the Strip (the "**Installation**") or any portion thereof; provided that prior to commencing such Installation, the Transferor shall give to the Transferee thirty (30) days notice in writing thereof to enable the Transferee to have a representative present to inspect the proposed Installation during the performance of such work, and provided further that Transferor comply with all instructions given by such representative and that all such work shall be done to the reasonable satisfaction of such representative. In the event of any unauthorised interference aforesaid or contravention of this paragraph, or if any authorised interference, obstruction or Installation is not maintained in accordance with the Transferee's instructions or in the Transferee's reasonable opinion, may subsequently interfere with the Rights granted herein, the Transferee may at the Transferor's expense, forthwith remove, relocate, clear or correct the offending interference, obstruction, Installation or contravention complained of from the Strip, without being liable for any damages caused thereby.

(b) notwithstanding any rule of law or equity, the Works installed by the Transferee shall at all times remain the property of the Transferee, notwithstanding that such Works are or may become annexed or affixed to the Strip and shall at anytime and from time to time be removable in whole or in part by Transferee.

(c) no other easement or permission will be transferred or granted and no encumbrances will be created over or in respect to the Strip, prior to the registration of a Transfer of this grant of Rights.

(d) the Transferor will execute such further assurances of the Rights in respect of this grant of easement as may be requisite.

(e) the Rights hereby granted:

(i) shall be of the same force and effect to all intents and purposes as a covenant running with the Strip.

(ii) is declared hereby to be appurtenant to and for the benefit of the Works and undertaking of the Transferee described in paragraph 1(a).

3. The Transferee covenants and agrees to obtain at its sole cost and expense all necessary postponements and subordinations (in registrable form) from all current and future prior encumbrancers, postponing their respective rights, title and interests to the Transfer of Easement herein so as to place such Rights and easement in first priority on title to the Lands.

4. There are no representations, covenants, agreements, warranties and conditions in any way relating to the subject matter of this grant of Rights whether expressed or implied, collateral or otherwise except those set forth herein.

5. No waiver of a breach or any of the covenants of this grant of Rights shall be construed to be a waiver of any succeeding breach of the same or any other covenant.

6. The burden and benefit of this transfer of Rights shall run with the Strip and the Works and undertaking of the Transferee and shall extend to, be binding upon and enure to the benefit of the parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF the Transferor has hereunto set his hand and seal to this Agreement, this ___ day of _____ _____, 200__.

SIGNED, SEALED AND DELIVERED
In the presence of)
)
_____(seal)
Signature of Witness)
)
)
)
_____)
Signature of Witness

_____)
Transferor's Signature

_____(seal)
Transferor's Signature

SIGNED, SEALED AND DELIVERED)
In the presence of)
)
)
)
)
_____)
Signature of Witness

Consent Signature & Release of
Transferor's Spouse, if non-owner.

_____(seal)

CHARGEES

THE CHARGEE of land described in a Charge/Mortgage of Land dated _____

Between _____ and _____

and registered as Instrument Number _____ on _____ does

hereby consent to this Easement and releases and discharges the rights and easement herein from the said

Charge/Mortgage of Land.

Name	Signature(s)	Date of Signatures Y M D
	Per:	
	_____	
	_____	
	I/We have authority to bind the Corporation	

Appendix D

System Impact Assessment

REPORT

Power to Ontario.
On Demand.

System Impact Assessment Report

CONNECTION ASSESSMENT & APPROVAL PROCESS

Issue 1.0

Final Report

Project: Detour Lake 230 kV Connection
Applicant: Detour Gold Corporation

CAA ID 2009-359

Market Facilitation Department
June 8th, 2011

Document ID	IESO_REP_0728
Document Name	System Impact Assessment Report
Issue	Issue 1.0
Reason for Issue	Final Report
Effective Date	June 8th, 2011

System Impact Assessment Report

Detour Lake 230 kV Connection

Acknowledgement

The IESO wishes to acknowledge the assistance of Hydro One in completing this assessment.

Disclaimers

IESO

This report has been prepared solely for the purpose of assessing whether the connection applicant's proposed connection with the IESO-controlled grid would have an adverse impact on the reliability of the integrated power system and whether the IESO should issue a notice of conditional approval or disapproval of the proposed connection under Chapter 4, section 6 of the Market Rules.

Conditional approval of the proposed connection is based on information provided to the IESO by the connection applicant at the time the assessment was carried out. The IESO assumes no responsibility for the accuracy or completeness of such information, including the results of studies carried out by Hydro One at the request of the IESO. Furthermore, the conditional approval is subject to further consideration due to changes to this information, or to additional information that may become available after the conditional approval has been granted.

If the connection applicant has engaged a consultant to perform connection assessment studies, the connection applicant acknowledges that the IESO will be relying on such studies in conducting its assessment and that the IESO assumes no responsibility for the accuracy or completeness of such studies including, without limitation, any changes to IESO Base case models made by the consultant. The IESO reserves the right to repeat any or all connection studies performed by the consultant if necessary to meet IESO requirements.

Conditional approval of the proposed connection means that there are no significant reliability issues or concerns that would prevent connection of the proposed facility to the IESO-controlled grid. However, the conditional approval does not ensure that a project will meet all connection requirements. In addition, further issues or concerns may be identified by the transmitter(s) during the detailed design phase that may require changes to equipment characteristics and/or configuration to ensure compliance with physical or equipment limitations, or with the Transmission System Code, before connection can be made.

This report has not been prepared for any other purpose and should not be used or relied upon by any person for another purpose. This report has been prepared solely for use by the connection applicant and the IESO in accordance with Chapter 4, section 6 of the Market Rules. The IESO assumes no responsibility to any third party for any use, which it makes of this report. Any liability which the IESO may have to the connection applicant in respect of this report is governed by Chapter 1, section 13 of the Market Rules. In the event that the IESO provides a draft of this report to the connection applicant, the connection applicant must be aware that the IESO may revise drafts of this report at any time in its sole discretion without notice to the connection applicant. Although the IESO will use its best efforts to advise you of any such changes, it is the responsibility of the connection applicant to ensure that the most recent version of this report is being used.

HYDRO ONE

The results reported in this study are based on the information available to Hydro One, at the time of the study, suitable for a System Impact Assessment of this connection proposal.

The short circuit and thermal loading levels have been computed based on the information available at the time of the study. These levels may be higher or lower if the connection information changes as a result of, but not limited to, subsequent design modifications or when more accurate test measurement data is available.

This study does not assess the short circuit or thermal loading impact of the proposed connection on facilities owned by other load and generation customers.

In this report, short circuit adequacy is assessed only for Hydro One circuit breakers. The short circuit results are only for the purpose of assessing the capabilities of existing Hydro One breakers and identifying upgrades required to incorporate the proposed connection. These results should not be used in the design and engineering of new or existing facilities. The necessary data will be provided by Hydro One and discussed with the connection proponent upon request.

The ampacity ratings of Hydro One facilities are established based on assumptions used in Hydro One for power system planning studies. The actual ampacity ratings during operations may be determined in real-time and are based on actual system conditions, including ambient temperature, wind speed and facility loading, and may be higher or lower than those stated in this study.

The additional facilities or upgrades which are required to incorporate the proposed connection have been identified to the extent permitted by a System impact Assessment under the current IESO Connection Assessment and Approval process. Additional facility studies may be necessary to confirm constructability and the time required for construction. Further studies at more advanced stages of the project development may identify additional facilities that need to be provided or that require upgrading.

Table of Contents

Executive Summary

Description

This System Impact Assessment has examined the effects of the proposed connection of the 230 kV Detour Lake Gold Mine. The assessment relies on the technical studies conducted by AMEC Americas Limited ("the consultant"), an external consulting company retained by the Detour Gold Corporation.

Detour Gold Corporation is proposing to develop a new 230 kV connection for their expanded mine site. The expanded mine site is the second and final stage of the recomissioned Detour Lake Gold Mine located in Northeastern Ontario. The mine site will be connected through a 180 km, 230 kV tap line connected radially to the Pinard 230 kV bus and three 230/13.8 kV transformers. Peak load at the mine will be approximately 95 MW and will consist of various large induction and synchronous motors.

The project has an in-service date of fall 2012 and will begin operation after the temporary 115 kV, 20 MW Detour Mine connected to Island Falls SS has been decommissioned. Load from the 115 kV site will be transferred to the 230 kV connection, while the temporary 140 km tap line (built for 230 kV but operated at 115 kV) will be extended another 40 km and connected to the Pinard TS 230 kV bus. A separate SIA has studied the system impact of the temporary 115 kV Detour Mine (CAA #2010-380).

SIA Findings

All conclusions identified below are based on the project data provided by Detour Gold and the technical studies completed by the consultant and the IESO.

With the addition of the Detour Lake 230 kV Mine and under studied scenarios, the assessment concluded that:

1. The proposed project will not materially affect the reliability of the IESO-controlled grid.
2. The proposed facility will slightly increase system fault levels. However, there is sufficient short circuit capacity in the existing system to accommodate these increases. Short circuit contributions of the large synchronous motors at Detour are blocked by the variable frequency drives which connect these motors to the system.
3. Starting of the most impactive motor at the mine (2500 HP induction pump) will result in voltage sags of less than 1% at Pinard TS, within the acceptable 4% threshold for motor starting. Starting of the large synchronous motors at Detour result in a negligible effect on system voltages as the inrush current during starting is limited by their variable frequency drives. Starting of large motors at Detour will be staggered to help limit the impact on system voltages.
4. Under Flow North conditions, switching in of the new 180 km Detour circuit results in voltage rises of 1.8% at the Pinard 230 kV bus and 1.5% at the Pinard 500 kV bus, within the acceptable 10% threshold outlined in the Market Rules. Switching in of the new line under Flow South conditions results in lower voltage rises as a result of higher system fault levels due to the hydroelectric generation along the Moose River Basin.
5. The incorporation of the Detour Lake 230 kV Mine will not cause any pre-contingency or post-contingency thermal overloading of local area transmission. Any post-contingency violations of the H9K circuit's Long Term Emergency rating are mitigated by the rejection of load at Spruce

Falls and Detour Gold, to respect existing voltage collapse flow limits through the Spruce Falls T7 autotransformer.

6. With the proposed on-site reactors, the Detour facility will be capable of operating within the required 0.9 lead – 0.9 lag power factor at the defined metering point for all ranges of normal and maintenance/outage conditions at the mine.

   The switching in of the proposed reactors will be automatic and based on load levels at Detour. Exact details about reactor switching thresholds will be finalized before the IESO Market Entry process.

7. During maintenance outages at the mine, load levels will drop and would result in Mvar injection at Pinard TS due to the 40 Mvar charging capacitance of the 180 km radial line. These Mvar injections would contribute to the existing overvoltage issues at Pinard TS, but will be mitigated using the on-site reactors located at the mine.

8. Depending on the Mvar consumption at the Detour Mine when it operates at full capacity, voltages at the Detour 230 kV system can dip below 220 kV under steady state operation. This does not represent a concern to the IESO as voltages at Pinard TS will still remain within the required 220 – 250 kV operating range. The Detour Lake 230 kV Mine has specified that they will have the ability to operate within a 210 – 270 kV voltage range for all operating conditions due to the large tap range of their transformer's ULTCs.

   To ensure that voltages at the Detour Mine do not fall below 210 kV resulting in the undesirable tripping of load at Detour, the IESO will have to operate the voltages at Pinard TS at 230 kV or higher under normal operating conditions.

9. The loss of the D501P circuit in the existing system results in post-contingency voltages above the maximum allowable threshold of 250 kV at Pinard and Kapuskasing. This occurs in situations when load at the Spruce Falls mill is high and hydroelectric generation along the Moose River Basin is out of service, requiring load rejection to help maintain the post-contingency power flow levels through the Spruce Falls T7 autotransformer. The incorporation of the Detour Lake 230 kV Mine will not alleviate or contribute to this issue due to the ability of rejecting the entire Detour facility, including the Detour 180 km tap line. Existing system overvoltage concerns are mitigated by operating one Moose River Basin generation unit in condenser mode for reactive power support. The future system can be operated in the same manner.

10. To mitigate post-contingency overvoltage concerns at Pinard TS, contingencies that result in the tripping of the main 230 kV Detour breaker, which results in the loss of all load at Detour, must also trip the Detour circuit via the tripping of appropriate breakers at the Pinard 230 kV bus. This will ensure that the line will be disconnected and will not inject its 40 Mvar of charging capacitance into the Pinard 230 kV bus.

11. To help respect existing flow limits at Ansonville TS for the P502X contingency and Spruce Falls T7 for the D501P contingency, the proposed Detour Lake 230 kV Mine must connect to and participate in the Northeast 115 kV L/R & G/R Special Protection Scheme. The Northeast 115 kV L/R & G/R SPS is expected to maintain its Type III SPS classification after the incorporation of the proposed project.

IESO's Requirements for Connection

Transmitter Requirements

1. The transmitter must modify the existing 115 kV Northeast L/R & G/R scheme to allow for the selection of various load at the Detour Lake 230 kV Mine for the D501P and P502X contingencies. Selectable loads for rejection must include the Detour T1, Detour T2 transformers as well as the entire Detour facility including the 180 km Detour circuit.

Applicant Requirements

Specific Requirements: The following specific requirements are applicable to the applicant for the incorporation of 230 kV Detour Mine. Specific requirements pertain to the level of reactive compensation needed, operation restrictions, SPS, upgrading of equipment and any project specific items not covered in the general requirements:

1. The applicant is required to install facilities for and participate in the Northeast 115 kV Load & Generation Rejection SPS as directed by the IESO and Hydro One. The Northeast 115 kV Load & Generation Rejection SPS is designated as a Type 3 SPS and as such communication facilities associated with it are not duplicated. As such, communication facilities associated with incorporating the Detour Lake 230 kV Mine into the NE 115 kV SPS also do not need to be duplicated at this time. In the future, should designation of the SPS change to Type 1, communication facilities associated with the Northeast 115 kV Load & Generation Rejection SPS will need to be duplicated.
2. The applicant must work with the IESO to finalize the acceptable automatic switching thresholds for their proposed reactors, before the IESO Market Entry stage.
3. The applicant must ensure that breakers which isolate the 180 km Detour line at the Pinard 230 kV bus are tripped for any contingencies which result in the opening of the main 230 kV Detour breaker.
4. All 230 kV equipment at the Detour Lake 230 kV Mine must be capable of continuously operating in the range between 210 kV and 270 kV, as specified by the applicant.

General Requirements: The proposed connection must comply with all the applicable requirements from the Transmission System Code (TSC), IESO Market Rules and standards and criteria. The most relevant requirements are summarized below and presented in more detail in Section 2 of this report.

1. Protective relaying must be set to ensure that transmission equipment remains in-service for voltages between 94% of the minimum continuous and 105% of the maximum continuous values in the Market Rules, Appendix 4.1.
2. The Market Rules require that the connection applicant have the capability to maintain a power factor (pF) within the range of 0.9 lagging and 0.9 leading as measured at the defined metering point of this facility.
3. The connection applicant is required to ensure that the UFLS targets specified in Section 10.4.6 of Chapter 5 of the Market Rules and Section 4.5 of Market Manual 7.4 are met after the addition of the new facility. The connection applicant is required to submit during the IESO Market Entry process a revised schedule of feeder selections and their related load amounts for each shedding stage that will ultimately satisfy the UFLS targets.

4. The connection applicant shall ensure that new protection systems at the facility are designed to satisfy all the requirements of the Transmission System Code and any additional requirements identified by the transmitter.

   Any modifications made to protection relays by the transmitter after this SIA is finalized must be submitted to the IESO as soon as possible or at least six (6) months before any modifications are to be implemented on the existing protection systems.

5. The connection applicant shall ensure that the new equipment is designed to sustain the fault levels in the area. If any future system enhancement results in an increased fault level higher than the equipment's capability, the connection applicant is required to replace the equipment at its own expense with higher rated equipment capable of sustaining the increased fault level, up to maximum fault level specified in Appendix 2 of the Transmission System Code.

6. Appendix 2 of the Transmission System Code states that the maximum rated interrupting time for the 230 kV breakers must be ≤ 3 cycles. Thus, the connection applicant shall ensure that the installed breakers meet the required interrupting time specified in the Transmission System Code.

7. As specified in Appendix 4.17 and 4.22 of the Market Rules, the connection applicant is required to install all the equipment needed to provide telemetry data to the IESO on a continuous basis.

8. If revenue metering equipment is being installed as part of this project, the connection applicant should be aware that revenue metering installations must comply with Chapter 6 of the IESO Market Rules. For more details the connection applicant is encouraged to seek advice from their Metering Service Provider (MSP) or from the IESO metering group.

9. Prior to connecting to the IESO controlled grid, the connection applicant shall ensure that the proposed facility is compliant with the applicable reliability standards set by the North American Electric Reliability Corporation (NERC) and the North East Power Coordinating Council (NPCC).

10. The connection applicant must complete the IESO Facility Registration/Market Entry process in a timely manner before IESO final approval for connection is granted.

    Models and data, including any controls that would be operational, must be provided to the IESO at least seven months before connecting to the IESO-controlled grid. This includes both PSS/E and DSA software compatible mathematical models representing the new equipment for further IESO, NPCC and NERC analytical studies.

    The connection applicant must provide evidence to the IESO confirming that the equipment installed meets the Market Rules requirements and matches or exceeds the performance predicted in this assessment. This evidence shall be either type tests done in a controlled environment or commissioning tests done on-site. The evidence must be supplied to the IESO within 30 days after completion of commissioning tests.

    If the submitted models and data differ materially from the ones used in this assessment, then further analysis of the project will need to be done by the IESO.

Notification of Approval for Connection Proposal

It is recommended that a Notification of Conditional Approval for connection of the Detour Lake 230 kV Mine be issued to Detour Gold Corp. for a load connection of up to 95 MW, subject to IESO's requirements for Connection listed above, and any further requirements that may be identified by Hydro One Networks Inc. in the Customer Impact Assessment.

– End of Section –

1. Project Description

The 230 kV Detour connection is the final stage of the recommisioned and expanded Detour Lake Gold Mine and proceeds the temporary 115 kV, 20 MW Detour connection at Island Falls SS which will be built and energized in 2011 (CAA #2010-380).

The project has an in-service date of fall 2012 and will begin operation after the temporary 115 kV, 20 MW Detour Mine connected to Island Falls SS has been decommissioned. Load from the 115 kV site will be transferred to the 230 kV connection, while the new 140 km tap line built for the 115 kV connection will be extended another 40 km to Pinard TS and operated at 230 kV.

The mine will be connected through a 180 km, 230 kV tap line connected radially to the Pinard 230 kV bus and three 230/13.8 kV transformers connected via a common 230 kV bus. Peak load at the mine will be approximately 95 MW and will consist of various large induction and synchronous motors. The largest motors on site are four 7.1 MW synchronous machines located at the Ball Mills. Transformers T1 and T3 will be used to feed two independent yet identical productions lines. Transformer T2 will be used to feed lighting and other critical load at the mine. Emergency power for the project will be supplied by two 2.5 MW backup generators which will not be paralleled with the IESO controlled grid. A connection diagram of the 230 kV Detour facility is shown in Figure 1.

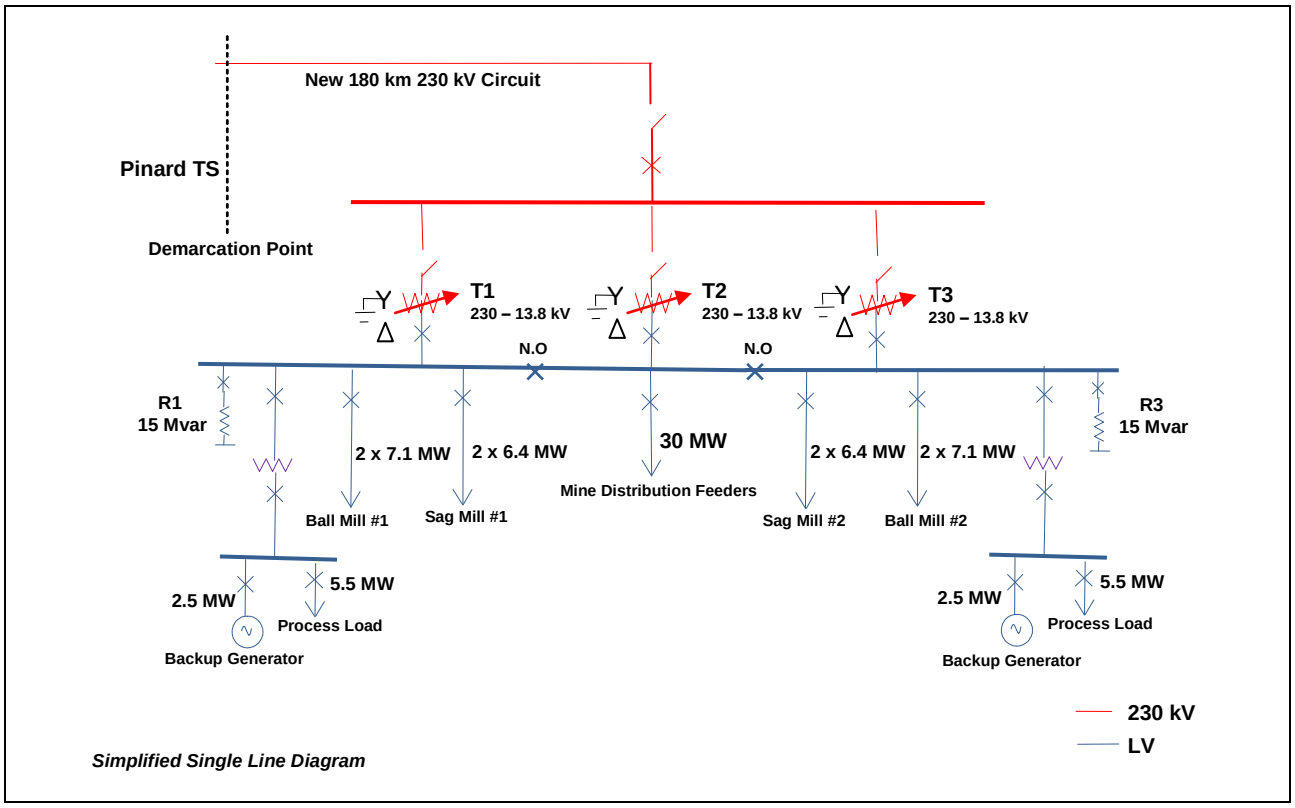


Figure 1: Detour Lake 230 kV Facility

The proposed connection arrangement of the 230 kV Detour facility into the Pinard 230 kV bus is shown in Figure 2.

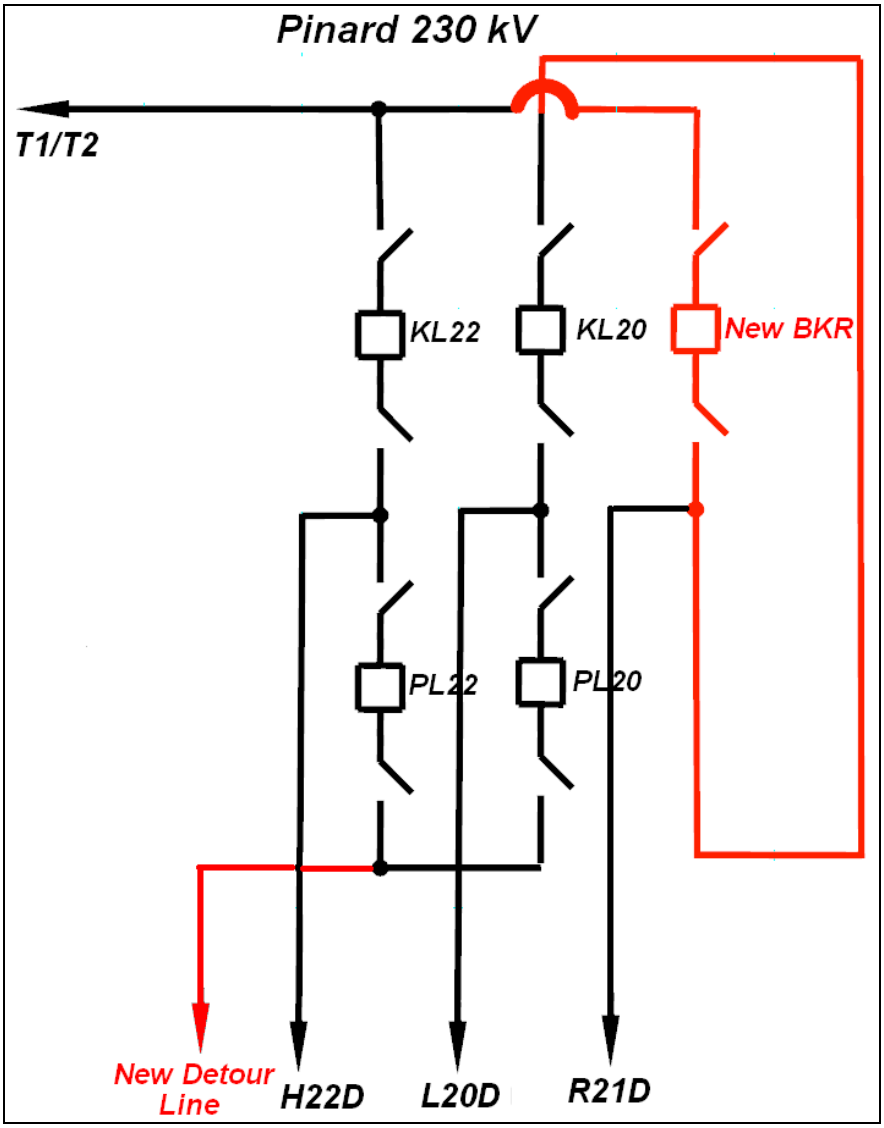


Figure 2: Connection Arrangement at Pinard TS

The proposed project will connect into the existing 230 kV ring bus at Pinard TS by adding a fifth breaker to the existing four-breaker arrangement. The existing R21D circuit will be moved to the new breaker diameter and the new Detour line will be connected to the old R21D breaker diameter between the H22D and L20D circuits. This connection arrangement will offer the benefit of preventing the existing Otter Rapids and Abitibi Canyon generation stations from being disconnected by configuration in case of double circuit contingencies to the H22D and L20D circuits. This double circuit contingency can result in the loss of all hydroelectric generation connected along the Moose River Basin.

– End of Section –

2. General Requirements

2.1 Voltage Requirements

Appendix 4.1, reference 2 of the Market Rules states that under normal conditions voltages are maintained within the range of 220 kV to 250 kV. However, the applicant specified that all 230 kV equipment at the Detour Lake 230 kV Mine will be capable of continuously operating in the range between 210 kV and 270 kV.

Fault interrupting devices must be able to interrupt fault current at the maximum continuous voltage. Appendix 2 of the Transmission System Code states that the maximum rated interrupting time for the 230 kV breakers must be ≤ 3 cycles. Thus, the connection applicant shall ensure that the installed breakers meet the required interrupting time specified in the Transmission System Code

Protective relaying must be set to ensure that transmission equipment remains in-service for at least 30 minutes for voltages up to 105% of the maximum continuous values in the Market Rules, Appendix 4.1.

If revenue metering equipment is being installed as part of this project, these metering installations must comply with Chapter 6 of the IESO Market Rules for the Ontario electricity market. For more details the applicant is encouraged to seek advice from their Metering Service Provider (MSP) or from the IESO metering group.

2.2 Power Factor Requirements

The Market Rules require that the connection applicant have the capability to maintain the power factor within the range of 0.9 lagging and 0.9 leading as measured at the defined metering point of the facility. For this facility the defined metering point is at Pinard TS.

2.3 Under-Frequency Load Shedding Requirements

Detour Gold has a total peak load at all its stations that is equal to or greater than 25 MW (95MW), therefore, is required to participate in the under frequency load shedding (UFLS) according to Section 4.5 of the Market Manual Part 7.4.

In all automatic UFLS areas, there must be at least 30% of area load connected to under-frequency relays according to Section 10.4, Chapter 5 of the Market Rules. In order to ensure at least 30% of area load shedding is achieved while taking into account UFLS relay and feeder outages as well as generation units that trip prematurely for low frequencies, 35% of the load of those distributors and connected wholesale customers with a peak load of 25 MW or greater must be connected to UFLS relays.

Each distributor and connected wholesale customer shall select load for UFLS based on their load distribution at a date and time specified by the IESO that approximates system peak.

For distributors and connected wholesale customers with a peak load of 50 MW or more and less than 100 MW, the UFLS relay connected loads shall be set to achieve the amount to be shed stated in the following table:

UFLS Stage	Frequency Threshold (Hz)	Total Nominal Operating Time (s)	Load Shed at stage as % of MP Load	Cumulative Load Shed at stage as % of MP Load
1	59.5	0.3	≥ 17	≥ 17
2	59.1	0.3	≥ 18	≥ 35

Distributors and connected wholesale customers, in conjunction with the relevant transmitter shall also shed those capacitor banks connected to the same station bus as the load to be shed by the UFLS facilities, at 59.5 Hz with a time delay of 3 seconds.

Inadvertent operation of a single under-frequency relay during the transient period following a System Disturbance should not lead to further system instability. For this reason, the maximum amount of load that can be connected to any single under-frequency relay is 150 MW.

The connection applicant is required to ensure that the UFLS targets specified in Section 10.4.6 of Chapter 5 of the Market Rules and Section 4.5 of Market Manual 7.4 are met after the addition of the new facility. The connection applicant is required to submit during the IESO Market Entry process a revised schedule of feeder selections and their related load amounts for each shedding stage that will ultimately satisfy the UFLS targets.

2.4 Protection Systems

The protection systems must be designed to satisfy all the requirements of the Transmission System Code as specified in Schedules E, F and G of Appendix 1 and any additional requirements identified by the transmitter. New protection systems must be coordinated with the existing protection systems. Facilities on Ontario's Bulk Power System (BPS) list must be protected by two redundant protection systems according to section 8.2.1a of the TSC. These redundant protections systems must satisfy all requirements of the TSC but in particular they may not use common components, common battery banks or common secondary CT or PT windings. As currently assessed by the IESO, this facility is not on the current BPS list. In the future, as the electrical system evolves, this facility may be placed on the BPS list.

The connection applicant is required to initiate an assessment of the protection systems proposed for the new facility with the transmitter.

The transmitter shall identify any protection relay modifications (e.g. equipment and settings) required to incorporate the new facility into the integrated power system. To allow sufficient time to assess the impact on power system reliability, the transmitter must submit any proposed protection relay modifications to the IESO as soon as the protection assessment for the new facility is finished or at least six (6) months before any actual modifications are to be implemented on the existing protection systems.

The IESO will evaluate the impact on system reliability due to any protection relay modifications and any modifications to functionality, timing or reach. The IESO will not assess aspects of protection systems which are solely the accountability of the transmitter (e.g. coordination of protection relays).

The connection applicant shall ensure that the new protection systems at the facility are designed to satisfy all the requirements of the Transmission System Code and any additional requirements identified by the transmitter.

Any modifications made to protection relays by the transmitter after this SIA is finalized must be submitted to the IESO as soon as possible or at least six (6) months before any modifications are to be implemented on the existing protection systems.

2.5 Fault Levels

The Transmission System Code (TSC), Appendix 2 establishes maximum fault levels for the transmission system. For the 230 kV system the maximum 3 phase symmetrical fault level is 63 kA and the single line to ground (SLG) symmetrical fault level is 80 kA (usually limited to 63 kA).

The TSC requires that new equipment be designed to sustain the fault levels in the area where the equipment is installed.

If any future system enhancement results in an increased fault level higher than the equipment's capability, the connection applicant is required to replace the equipment at their own expense with higher rated equipment capable of sustaining the increased fault level, up to the TSC's maximum fault level for the 230 kV system.

The connection applicant shall ensure that the new equipment be designed to sustain the fault levels in the area.

2.6 IESO Telemetry Requirements

In accordance with the telemetry requirements for connected wholesale customers and distributors (see Appendices 4.17 and 4.22 of the Market Rules) the connection applicant must install equipment at this project with specific performance standards to provide telemetry data to the IESO. The data is to consist of certain equipment status and operating quantities which will be identified during the IESO Market Entry Process.

As part of the IESO Facility Registration/Market Entry process, the connection applicant must also complete end to end testing of all necessary telemetry points with the IESO to ensure that standards are met and that sign conventions are understood. All found anomalies must be corrected before IESO final approval to connect any phase of the project is granted.

2.7 Reliability Standards

Prior to connecting to the IESO controlled grid, the proposed facility must be compliant with the applicable reliability standards established by the North American Electric Reliability Corporation (NERC) and reliability criteria established by the Northeast Power Coordinating Council (NPCC) that are in effect in Ontario. A mapping of applicable standards, based on the proponent's/connection applicant's market role/OEB license can be found here:

http://www.ieso.ca/imoweb/ircp/orcp.asp

This mapping is updated periodically after new or revised standards become effective in Ontario.

The current versions of these NERC standards and NPCC criteria can be found at the following websites:

http://www.nerc.com/page.php?cid=2|20

http://www.npcc.org/documents/regStandards/Directories.aspx

The IESO monitors and assesses market participant compliance with a selection of applicable reliability standards each year as part of the Ontario Reliability Compliance Program. To find out more about this program, write to orcp@ieso.ca or visit the following webpage: http://www.ieso.ca/imoweb/ircp/orcp.asp

Also, to obtain a better understanding of the applicable reliability compliance obligations and engage in the standards development process, we recommend that the proponent/ connection applicant join the IESO's Reliability Standards Standing Committee (RSSC) or at least subscribe to their mailing list by contacting rssc@ieso.ca. The RSSC webpage is located at:

http://www.ieso.ca/imoweb/consult/consult_rssc.asp.

2.8 Facility Registration/Market Entry Requirements

The connection applicant must complete the IESO Facility Registration/Market Entry process in a timely manner before the IESO grants the final approval for the connection.

Models and data, including any controls that would be operational, must be provided to the IESO. This information should be submitted at least seven months before energization to the IESO-controlled grid, to allow the IESO to incorporate this project into IESO work systems and to perform any additional reliability studies.

As part of the IESO Facility Registration/Market Entry process, the connection applicant must provide evidence to the IESO confirming that the equipment installed meets the Market Rules requirements and matches or exceeds the performance predicted in this assessment. This evidence shall be either type tests done in a controlled environment or commissioning tests done on-site. In either case, the testing must be done not only in accordance with widely recognized standards, but also to the satisfaction of the IESO. Until this evidence is provided and found acceptable to the IESO, the Facility Registration/Market Entry process will not be considered complete and the connection applicant must accept any restrictions the IESO may impose upon this project's participation in the IESO-administered markets or connection to the IESO-controlled grid.

The evidence must be supplied to the IESO within 30 days after completion of commissioning tests. Failure to provide evidence may result in disconnection from the IESO-controlled grid.

If the submitted models and data differ materially from the ones used in this assessment, then further analysis of the project will need to be done by the IESO.

– End of Section –

3. Data Verification

3.1 Tap Line

Specifications of the tap line as provided by the connection applicant are listed below.

Voltage	230 kV
Length	180 km
Rating	900 A
R/X/B	14.4/87.7/0.0006 Ohms (Mhos)
Charging Capacitance	40 Mvar

3.2 Transformers

Specifications for the three 230/13.8 kV step down transformers are listed below.

Transformation	230/13.8 kV
Rating	42/56/70/78 MVA (ONAN/ONAF/ONAF/ONAF)
Impedance	0.003 + j0.085 pu based on 42 MVA
Configuration	3 phase, high side: grounded wye, low side: delta
Tapping	under load tap changers at HV (259 kV – 201 kV in 23 steps)

The large tapping range of the Detour transformer ULTCs will allow the mine to operate at voltages between 210 - 270 kV.

3.3 Circuit Breakers and Switches

Specifications of the isolation devices provided by the connection applicant are listed below.

Circuit Breakers:

Maximum cont. rated voltage (kV)	270 kV
Rated continuous current (A)	2000 A
Rated short circuit capability (kA)	40 kA
Interrupting time (ms)	32-48 ms

Disconnect Switches:

Maximum cont. rated voltage (kV)	270 kV
Rated continuous current (A)	1200 A

The interrupting time of the 230 kV circuit breaker is 32-48 ms, which satisfies the Transmission System Code requirement of ≤ 3 cycles (50 ms).

The symmetrical rated short circuit breaking current of the 230 kV breakers is 40 kA. This value is below the maximum 3 phase symmetrical fault level of 63 kA established by the Transmission System Code for the 230 kV system. Fault studies shown in Section 5 of this report show that the 230 kV breaker ratings of 40 kA are sufficient to withstand fault levels at the proposed facility. The applicant should be aware that if any future system enhancement results in an increased fault level higher than the equipment's capability,

the applicant would be required to replace these breakers at its own expense with higher rated breakers up to the maximum fault level of 63 kA.

The 270 kV maximum continuous voltage rating meets IESO connection equipment criteria in Northern Ontario.

3.4 Synchronous Motors

The mine will have two independent production lines consisting of one ball & sag mill each. Each mill will consist of two large synchronous motors for a total of eight synchronous motors at the facility. The details of the motors are provided below:

Mill	Location	Rated Voltage (kV)	Rated HP	Operating MW	Mvar Capability
Ball Mill #1	Behind Detour T1	13.8	2 x 10000	2 x 7.1	+7.5 to -7.5
Sag Mill #1	Behind Detour T1	13.8	2 x 10000	2 x 6.4	+7.5 to -7.5
Ball Mill #2	Behind Detour T3	13.8	2 x 10000	2 x 7.1	+7.5 to -7.5
Sag Mill #2	Behind Detour T3	13.8	2 x 10000	2 x 6.4	+7.5 to -7.5

Each mill will be capable of adjusting its reactive power output from +/- 7.5 Mvar using their front end variable frequency drives. Reactive output will be controlled to achieve unity power factor at the HV side of the T1 and T3 transformers. This will result in a near unity power factor at Pinard TS and will ensure that the facility will have a minimum impact on the voltages at Pinard TS.

3.5 Reactors

The 230 kV Detour Lake Mine will be equipped with two reactors to help maintain the facility power factor within the required Market Rules range of 0.9 lead – 0.9 lag as measured at Pinard TS. Details of these reactors are given below.

Nomenclature	Location	Rating
R1	Behind Detour T1	15 Mvar @ 13.8 kV
R3	Behind Detour T3	15 Mvar @ 13.8 kV

To allow for operational flexibility, both reactors will be tapped so that they have the capability to supply 10 or 15 Mvar. The combination of reactors will be able to provide 10, 15, 20, 25 and 30 Mvar steps of reactive power. The reactors will be automatically switched in based on load levels at Detour.

– End of Section –

4. System Description

4.1 Existing System

The 230 kV Detour Mine is proposing to connect to the existing 230 kV bus at Pinard TS. The 230/115 kV power system around Pinard TS consists of several thermal and hydroelectric generating stations. Major load facilities in the local area include the Spruce Falls Paper Mill, Kapuskasing TS and Hearst TS. When hydroelectric facilities in Northern Ontario are shut down during off-peak demand hours or drought conditions, local area load is supplied by existing thermal units and power transferred from southern Ontario through the Flow North interface.

A diagram of the existing system is shown in Figure 3.

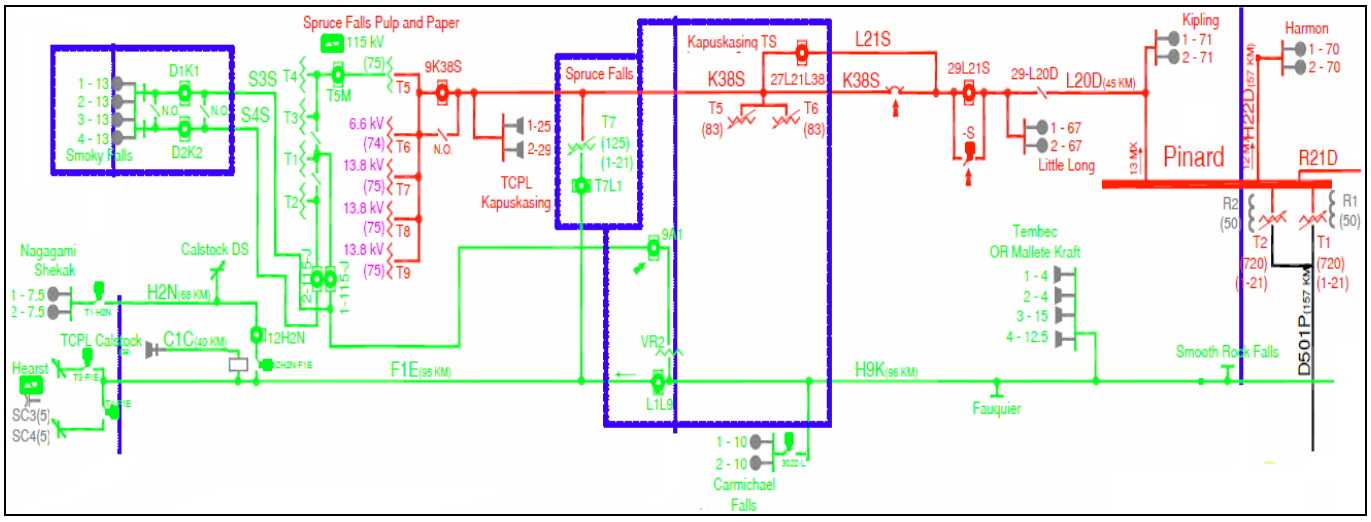


Figure 3: Existing Local Area Power System

The following thermal ratings were used for the studies:

Circuit	Section		Continuous		LTE	
			Amps	MVA	Amps	MVA
L21S	LITTLE LONG	KAPUSKASING	880	335.4	960	365.8
H9K	HUNTA	HUNTA H9K J	850	173.8	1100	224.9
	HUNTA H9K J	SMOOTH RCK J	270	55.2	270	55.2
	HUNTA H9K J	H9K 127A J	260	53.2	260	53.2
	SMOOTH RCK J	H9K 127A J	270	55.2	270	55.2
	H9K 127A J	TEMBEC SR J	370	75.7	470	96.1
	TEMBEC SR J	ISLAND FALLS JCT	360	73.6	360	73.6
	ISLAND FALLS JCT	FAUQUIER J	360	73.6	360	73.6
	FAUQUIER J	CARMICH FLJ	370	75.7	470	96.1
	CARMICH FLJ	SPRUCE F J	290	59.3	290	59.3
	SPRUCE F J	KAPUSKASING TS	850	173.8	980	200.4

Table 1: Local Area Equipment Thermal Ratings

The continuous ratings for the overhead conductors were calculated at the lowest of the sag temperature or 93°C operating temperature, with a 30°C ambient temperature and 4 km/h wind speed.

The long term emergency ratings (LTE) for the overhead conductors were calculated at the lowest of the sag temperature or 127°C operating temperature, with a 30°C ambient temperature and 4 km/h wind speed.

4.2 Load Forecasts and Historical Data

Table 2 shows the IESO forecasted extreme winter weather demand for the Northeast area for the years 2012 – 2015.

Year	Northeast Demand (MW)
2012	1,673
2013	1,660
2014	1,620
2015	1,615

Table 2: Northeast Area Demand Forecast

The forecasted extreme winter weather coincident peaks for the Northeast area show slight decrease in load demand. It should be noted that the above forecast does not take into account the recent shut down of the Kidd Creek 230 kV Metsite, resulting in the reduction of approximately 110 MW of load in the Northeast power system.

Figures 4-6 below display the MW demand of the load facilities in the local area from January 1, 2009 – June 1, 2010, plotted using hourly average samples obtained from IESO real-time telemetered data. These values are used to determine the load levels used for various study assumptions as per Section 5 of this report.

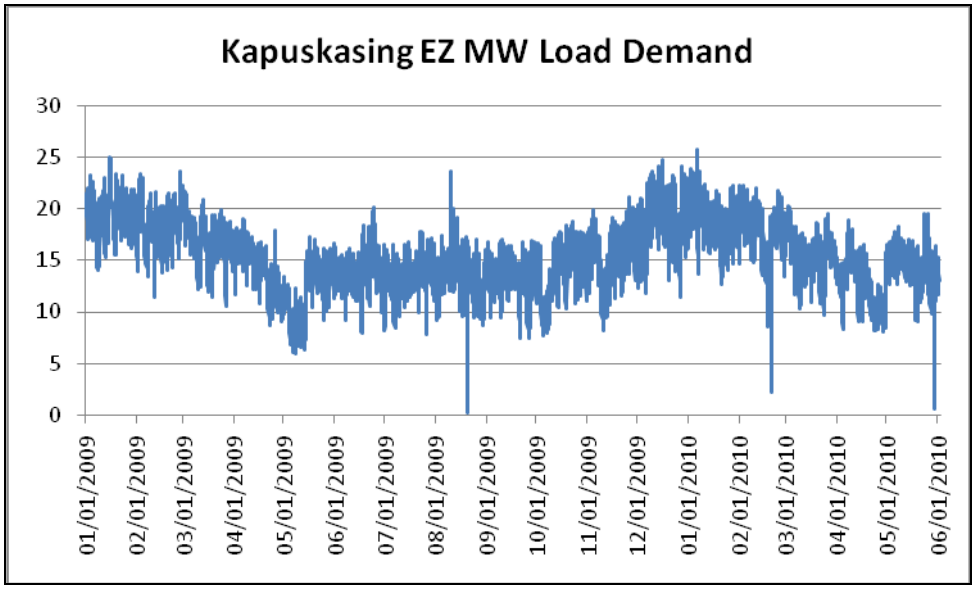


Figure 4: Telemetered Kapuskasing EZ MW Demand

The load behind the Kapuskasing EZ bus varies from a minimum of approximately 8 MW in the summer months to a maximum of approximately 25 MW in the winter months.

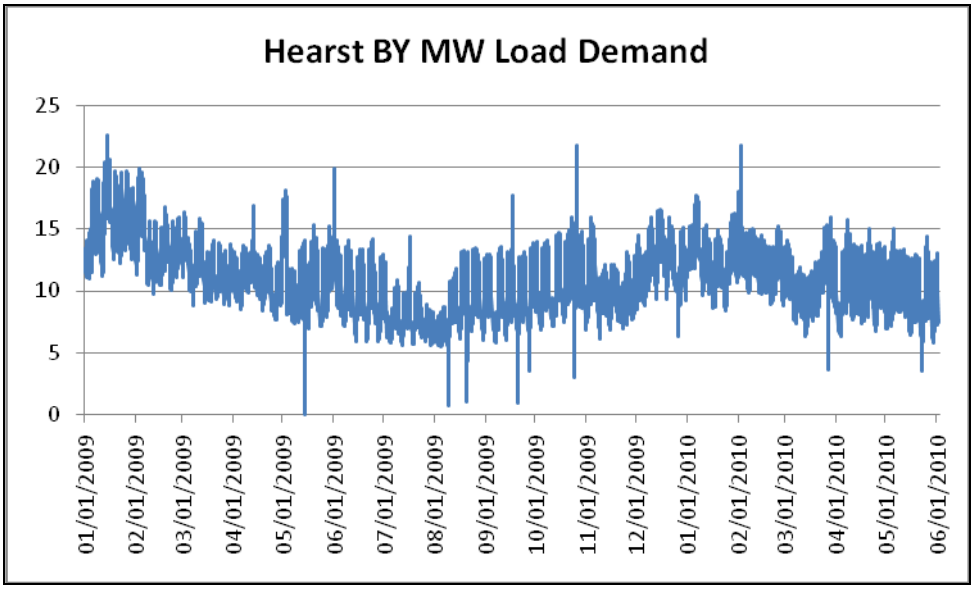


Figure 5: Telemetered Hearst BY MW Demand

The load behind the Hearst BY bus varies from a minimum of approximately 6 MW in the summer months to a maximum of approximately 20 MW in the winter months.

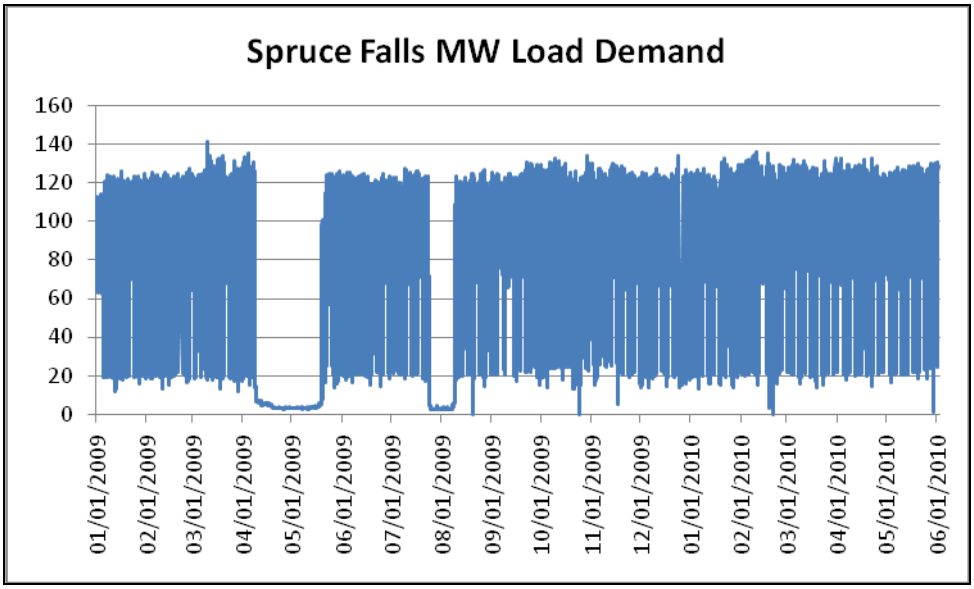


Figure 6: Telemetered Spruce Falls MW Demand

The load at the Spruce Falls mill varies from approximately 20 MW to 125 MW. As a participant of the OPA "Demand Response 2" (DR2) program, Spruce Falls shifts its production hours to consume electricity at off peak hours while running at minimum to half capacity during day time hours.

Figure 7 plots the operating voltages at the Pinard 230 kV bus from January 2010 to March 2011. The plot highlights the existing overvoltage concerns at Pinard TS with existing voltages routinely hovering around the 250 kV maximum permissible operating voltage.

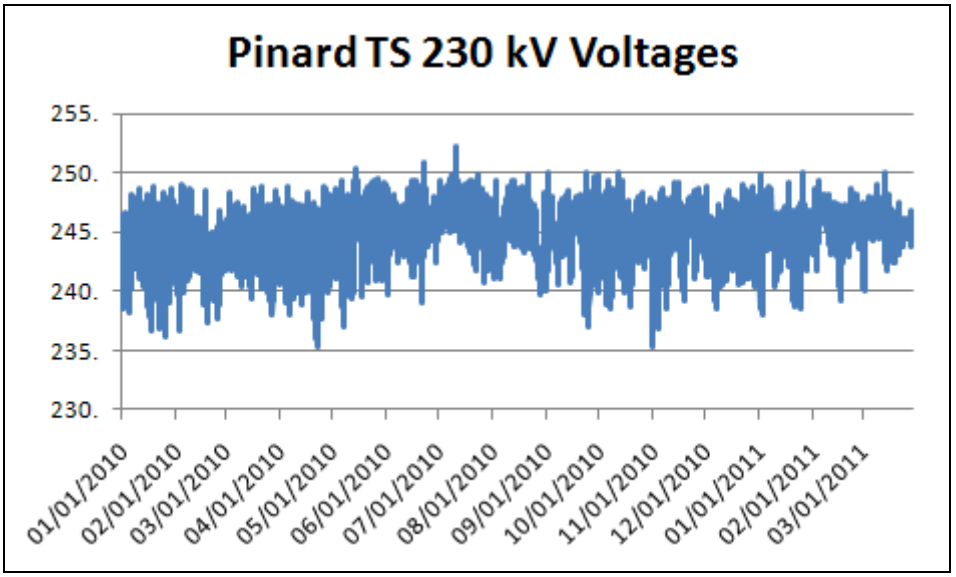


Figure 7: Pinard 230 kV Operating Voltages

– End of Section –

5. System Impact Studies

The system impact studies have been carried out by the consultant based on a scope of work provided by the IESO. The consultant's technical report has been attached to this SIA report and has concentrated on identifying the effects of the proposed facility in regards to:

1) Short circuit levels.

2) Voltage sags on the power system during the starting of large motors at the mine.

3) Voltage surges when switching in the 180 km Detour line.

4) Thermal loadings of local transmission equipment.

5) Post contingency voltage declines and rises at local area buses for various contingencies.

In addition to these studies, the IESO has performed its own review in regards to:

1) Pre-contingency voltages at Pinard TS and power factor requirements.

2) Post contingency voltage declines and rises at local area buses for the D501P contingency.

3) Required modifications to the Northeast 115 kV L/R & G/R SPS.

5.1 Study Assumptions

The winter 2010 base case was used as a starting point with the following assumptions and modifications: (These are the base assumption unless noted otherwise)

- The area was considered winter critical.
- Northeast area demand was scaled to approximately 1,500 MW to match the load forecast provided in the previous section and to take into account the recent 110 MW reduction in load at the Kidd Creek 230 kV Metsite facility.
- Power transfer through the Flow North Interface is 730 MW (before the addition of Detour)
- Local load levels were adjusted to reflect the historical data provided in the previous section, and set to a 0.9 power factor. The local load levels are as follows:

Station	MW Demand
Kapuskasing	20
Hearst	15
Spruce Falls Inc.	125

- All local area thermal generation is in-service (TCPL Kapuskasing, Calstock CGS, TCPL Tunis, NP Cochrane).
- Abitibi Canyon G2 and G3 units are operating in condenser mode, all other local area hydroelectric units are out of service (Harmon GS, Kipling GS, Little Long GS, Smoky Falls GS, Otter Rapids GS, Abitibi Canyon G1, G4 & G5, Nagagami & Shekak, Carmichael Falls).
- Pinard 230 kV reactors are in-service.
- Porcupine 230 kV SVC and Kirkland Lake 115 kV SVC are in-service

- Series compensation of X503E & X504E lines are in-service.
- Load is modeled as constant MVA for pre contingency and post contingency, post ULTC action.
- Voltage dependant load is used for post contingency, pre ULTC action.

To this study case, the consultant added the 95 MW, 230 kV Detour facility.

The following post-contingency operating limits were observed for the studies:

Interface	Limit (MW)	Contingency
Flow on A8K + A9K @ Ansonville	40 South / 50 North	Loss of P502X
Flow through Spruce Falls T7	75 South / 50 North	Loss of D501P
Flow on H9K @ Hunta	80 (In or Out)	Loss of D501P
Flow through Spruce Falls T7	40 North	Loss of L21S
Flow on H9K @ Hunta	80 In / 20 Out	Loss of L21S

Table 3: Applicable Post-Contingency Limits

5.2 Fault Level Assessment

In general, radial loads do not have a large impact on system faults levels. However, because the proposed project includes large motors, a short-circuit assessment has been conducted.

The short-circuit assessment evaluated the maximum contribution to fault current from the proposed facility. The pre-contingency voltages were assumed to be at maximum levels. All Detour Gold motors and generation resources were assumed in-service.

Fault contributions were calculated for a three phase fault and for a line-to-ground fault in the transmission system, close to the connection point. Both symmetrical and asymmetrical values were determined.

The fault current contributions from the 230 kV Detour Mine at Pinard TS, as calculated by the consultant are shown below.

Fault	Symmetrical Current (kA)	Asymmetrical Current (kA)
Three-Phase	0.39	0.56
Line-to-Ground	0.43	0.73

Table 4: Detour Gold 230 kV Short Circuit Contributions

The study results show a slight increase in fault levels with the incorporation of the Detour Lake 230 kV Mine. The large synchronous motors at the Detour facility do not contribute short circuit current since they are connected through variable frequency drives, which block fault current from flowing into the system.

Existing fault levels are outlined in Table 4, showing that there is sufficient capacity in the local area to accommodate the marginal increase in short circuit levels.

Bus	Total Fault Current Symmetrical (kA)		Total Fault Current Asymmetrical (kA)		Breaker Ratings Symmetrical/ Asymmetrical (kA)
	3-phase	L-G	3-phase	L-G	
Pinard 230 kV	13.0	16.4	16.7	22.1	50/53.9
Little Long SS	11.0	11.4	14.8	15.5	19.1/23.1

Table 5: Existing Short Circuit Levels

The proposed facility will slightly increase system fault levels. However, there is sufficient short circuit capacity in the existing system to accommodate these increases. No short circuit reliability issues are foreseen.

5.3 Motor Starting

The motor starting analysis was used to determine the effects of starting the Detour motor with the largest impact on system voltages.

Only the starting of the most impactful motor was simulated. The most impactful motor during starting is one of two 2500 HP induction feed pump induction motor. The starting of the large synchronous motors is less severe due to the variable frequency drives they are equipped with, which limit inrush current during motor starting. To limit excessive voltage sags, starting of the motors at the Detour site will be staggered. The analysis was completed assuming all other inductive load at the facility was in-service.

The consultant's study results show a maximum voltage sag of less than 1% at Pinard TS, which is within the acceptable 4% criteria outlined in the Transmission System Code.

Starting of the 2500 HP induction pump at the mine is the most impactive to system voltages but voltage sags are still within Transmission System Code criteria. The starting of the large synchronous motors results in negligible voltage sags. This is due to the variable frequency drives that each synchronous motor is equipped with, which limits inrush current during starting. Starting of large motors at the mine will be staggered to help limit their impacts on system voltages.

5.4 Line Switching

Line switching studies examined the expected voltage surges on the transmission system when the new 180 km Detour line is switched into service.

The IESO Market Rules (Section 4.4) limits switching surges to a maximum of 10% for line switching events.

The results of the consultant's study show that line switching surges remain within the Market Rules limits.

Under Flow North conditions, switching in of the new 180 km Detour circuit results in voltage rises of 1.8% at the Pinard 230 kV bus and 1.5% at the Pinard 500 kV bus, within the acceptable 10% threshold outlined in the Market Rules. Switching in of the new line under Flow South conditions results in lower voltage rises as a result of higher system fault levels due to the hydroelectric generation along the Moose River Basin.

5.5 Thermal Analysis

The thermal assessment examined the effects the proposed facility would have on the thermal loadings of the local transmission system.

The *Ontario Resource and Transmission Assessment Criteria* requires that all line and equipment loads be within their continuous ratings with all elements in service, and within their long-term emergency ratings with any element out of service. Lines and equipment may be loaded up to their short-term emergency ratings immediately following the contingencies to effect re-dispatch, perform switching, or implement control actions to reduce the loading to the long-term emergency ratings.

The consultant's study results show scenarios under which partial rejection of load at Detour is not sufficient to respect the LTE rating of the H9K circuit or the flow rating through the Spruce Falls T7 transformer. Under these operating conditions, rejection of the entire Detour facility will be sufficient to return flow levels to the acceptable limits. There are no thermal issues anticipated.

The incorporation of the proposed facility will not cause any pre-contingency or post-contingency thermal overloading of local area transmission. Any post-contingency violations of the H9K circuit's LTE are mitigated by the rejection of load at the Spruce Falls and Detour facilities, to respect existing post-contingency power flow limits through the Spruce Falls T7 autotransformer.

5.6 Pre-Contingency Voltage and Power Factor Analysis

This analysis focused on the impacts to the pre-contingency voltages at Pinard TS with the incorporation of the proposed project. Special attention was given to maintenance conditions at the mine which results in light load conditions at Detour and the resulting power factor at Pinard TS.

The IESO's *Ontario Resource and Transmission Assessment Criteria* states that maximum continuous voltages must be between 220 – 250 kV for the 230 kV system and 490 – 550 kV for the 500 kV system.

The IESO market rules requires all connected wholesale customers to have the capability of operating at a power factor between 0.9 lead – 0.9 lag at the defined metering point.

The study was conducted by stressing voltages at Pinard TS to their near maximum and minimum values. All other assumptions outlined in section 5.1 still hold. Under full load conditions Detour has agreed to maintain their power factor near unity, as described in section 3.4 of this report. This is to ensure that there is no reactive power injected into Pinard TS through the radial Detour line.

Pinard TS Max. Voltage

Detour Load	Detour Reactors (Mvar)	Bus Voltages (kV)			Power Flow into Pinard	Power Factor @ Pinard
		Pinard 230 kV	Pinard 500 kV	Detour 230 kV		
Detour Not Connected	-	247.9	546.6	-	-	-
95 @ 0.97 PF	None	245.9	542.2	236.2	-97.4 MW + 0.2 MX	Unity
5 @ 0.85 PF	None	251.8	554.0	257.2	-5.1 MW + 35.6 MX	0.14 Lead
5 @ 0.85 PF	30	247.8	546.4	241.0	-5.1 MW + 0.3 MX	Unity
12 @ 0.87 PF	None	251.1	552.7	254.7	-12.1 MW + 31.1 MX	0.36 Lead
12 @ 0.87 PF	25	247.7	546.3	241.0	-12.1 MW + 1.4 MX	0.99 Lead
25 @ 0.87 PF	None	249.7	550.0	249.1	-25.2 MW + 21.1 MX	0.76 Lead
25 @ 0.87 PF	15	247.6	546.0	240.8	-25.3 MW + 3.0 MX	0.99 Lead

Pinard TS Min. Voltage

Detour Load	Detour Reactors (Mvar)	Bus Voltages (kV)			Power Flow into Pinard	Power Factor @ Pinard
		Pinard 230 kV	Pinard 500 kV	Detour 230 kV		
Detour Not Connected	-	232.5	534.1	-	-	-
95 @ 0.97 PF	None	229.9	528.1	217.4	-97.4 MW – 8.5 MX	Unity
5 @ 0.85 PF	None	235.0	538.9	239.8	-5.1 MW + 30.4 MX	0.17 Lead
5 @ 0.85 PF	30	232.4	533.8	225.9	-5.1 MW - 0.2 MX	Unity
12 @ 0.87 PF	None	234.5	537.9	237.3	-12.1 MW + 25.9 MX	0.42 Lead
12 @ 0.87 PF	25	232.3	533.6	225.5	-12.1 MW – 0.2 MX	Unity
25 @ 0.87 PF	None	233.4	535.6	231.7	-25.2 MW + 15.5 MX	0.85 Lead
25 @ 0.87 PF	15	232.0	533.3	224.5	-25.3 MW - 0.1 MX	Unity

Table 6: Pinard Voltages and Detour Power Factor for Various Loading Conditions at Detour

The study results show that under light load conditions at Detour, the surge impedance loading of the180 km Detour line results in a 30-40 Mvar injection at Pinard TS. The resulting power factor at Pinard violates IESO market rules and contributes to existing overvoltage concerns. To mitigate these concerns, the proposed Detour reactors will need to be switched in. The study results with the proposed reactors verify that Detour will have the capability to control power factors to within the required limits. In addition, by operating within the required power factor range, the impacts to system voltages at Pinard TS will remain minimal for all operating conditions at the mine.

When the Pinard voltage is operated near its minimum of 230 kV, the voltage at the Detour can fall below 220 kV. This does not represent a concern to the IESO as voltages at Pinard TS can still be maintained within the required 220 - 250 kV range. The Detour Lake 230 kV Mine will have the ability to operate within a 210 – 270 kV voltage range for all operating conditions due to the large reactive capability of their transformer ULTCs. To ensure pre-contingency voltages at Detour do not drop below 210 kV resulting in the unwanted tripping of load, the IESO will operate voltages at Pinard TS at 230 kV or higher under normal operating conditions.

With the proposed on-site reactors, the Detour facility will be capable of operating within the required 0.9 lead – 0.9 lag power factor for all ranges of normal and maintenance/outage conditions at the mine. The switching of the reactors will be automatic and based on load levels at Detour. Exact details about reactor switching thresholds will be finalized before the IESO Market Entry process.

By operating within the required power factor range, the Detour facility will have a minimal effect on system voltages pre-contingency.

The continuous voltage at the Detour 230 kV bus can operate outside of the 220-250 kV range specified in ORTAC. This does not represent a concern to the IESO as the voltages at Pinard TS still remain manageable within the 220 - 250 kV range, regardless of the operating conditions at Detour. The Detour facility is capable of operating between a range of 210 - 270 kV due to the large reactive range of the ULTCs on their transformers. To ensure that voltages at Detour do not fall below this range, resulting in the unwanted tripping of load, the IESO will operate Pinard voltages at 230 kV or higher under normal operating conditions.

5.7 Post-Contingency Voltage Analysis

The assessment of the post-contingency voltage performance of the local transmission system was done in accordance with the IESO's *Ontario Resource and Transmission Assessment Criteria.* The criteria states that with all facilities in service pre-contingency, system voltage declines and rises on the IESO-controlled grid following a contingency shall be limited to 10% both before and after transformer tap changer action. In addition, post-contingency voltages on the 115 kV, 230 kV and 500 kV power system in northern Ontario can be no greater than 132 kV, 250 kV and 550 kV respectively.

The results of the consultant's studies show existing concerns with contingencies to the D501P circuit. Analysis of the D501P contingency with and without the proposed project has been repeated by the IESO in Tables 7 & 8 below.

Monitored Busses		Pre-Cont Voltage (kV)	***Loss of D501P*** (1)				***Loss of D501P – Little Long G1 Operating in Condenser Mode*** (2)			
Bus Name	Base (kV)		Pre-ULTC		Post-ULTC		Pre-ULTC		Post-ULTC	
			kV	%	kV	%	kV	%	kV	%
Hanmer TS	500	534.9	530.4	-0.8	530.4	-0.9	530.3	-0.9	530.3	-0.9
Porcupine TS	500	545	529	-2.9	528.9	-3	528.8	-3	528.7	-3
Pinard TS	500	546.6	-	-	-	-	-	-	-	-
Hanmer TS	220	248.3	246.4	-0.8	246.4	-0.8	246.4	-0.8	246.4	-0.8
Porcupine TS	220	247.7	242	-2.3	242	-2.3	242	-2.3	242	-2.3
Pinard TS	220	247.9	259.6	4.7	259.8	4.8	249.8	0.8	249.8	0.8
Little Long SS	220	246.5	257.3	4.4	257.5	4.5	247.6	0.4	247.6	0.5
Kapuskasing TS	220	241.1	250.2	3.8	250.4	3.8	243.3	0.9	243.4	1
Spruce Falls TS	220	241	250	3.7	250.2	3.8	243.2	0.9	243.3	1
Hunta SS	118	128.4	127.2	-0.9	127.5	-0.7	126.7	-1.3	127	-1.1
Kapuskasing TS	118	124.5	128.1	2.9	128.2	3	125.4	0.7	125.5	0.8
Spruce Falls TS	118	124.5	128.1	2.9	128.2	3	125.4	0.7	125.5	0.8
Hearst TS	118	125.5	127.7	1.7	127.7	1.8	126	0.4	126.1	0.5

Table 7: Existing System Voltage Study Results for the D501P Contingency

Notes:

(1) Post-Contingency Flow through S.F T7 = 10 MW North
L/R @ Spruce Falls TMP 3 & 4 = 90 MW

(2) Post-Contingency Flow through S.F T7 = 12 MW North
L/R @ Spruce Falls TMP 3 & 4 = 90 MW
Little Long G1 absorbing 15 MX post-contingency

Both the IESO and consultant's study results show that on the existing system, post-contingency overvoltage violations exist for the D501P contingency. These violations occur when load is rejected at the Spruce Falls mill to ensure post-contingency power flow limits through the Spruce Falls T7 autotransformer are respected. Overvoltage concerns are mitigated by operating one Moose River Basin generation unit in condenser mode.

Monitored Busses		Pre-Cont Voltage (kV)	***Loss of D501P – Little Long G1 Condensing , No L/R @ Detour Gold*** [3]				***Loss of D501P – Little Long G1 Condensing , L//R @ Detour Gold , Detour Line Remains Connected*** [4]				***Loss of D501P – Little Long G1 Condensing, L//R @ Detour Gold with Detour Line Rejected*** [5]			
Bus Name	Base (kV)		Pre-ULTC		Post-ULTC		Pre-ULTC		Post-ULTC		Pre-ULTC		Post-ULTC	
			kV	kV	kV	kV	kV	%	kV	%	kV	%	kV	%
Hanmer TS	500	532.4	Diverged	N/A	Diverged	N/A	530.3	-0.4	530.3	-0.4	530.3	-0.4	530.2	-0.4
Porcupine TS	500	541.2	Diverged	N/A	Diverged	N/A	528.9	-2.3	528.8	-2.3	528.8	-2.3	528.6	-2.3
Pinard TS	500	542.2	-	-	-	-	-	-	-	-	-	-	-	-
Hanmer TS	220	247.3	Diverged	N/A	Diverged	N/A	246.4	-0.4	246.4	-0.4	246.4	-0.4	246.4	-0.4
Porcupine TS	220	246.1	Diverged	N/A	Diverged	N/A	242	-1.7	242	-1.7	242	-1.7	242	-1.7
Pinard TS	220	245.9	Diverged	N/A	Diverged	N/A	258.6	5.2	258.7	5.2	249.8	1.6	249.9	1.6
Little Long SS	220	245.1	Diverged	N/A	Diverged	N/A	252.9	3.2	253	3.2	247.6	1	247.6	1
Kapuskasing TS	220	240.9	Diverged	N/A	Diverged	N/A	247	2.5	247.1	2.6	243.3	1	243.4	1
Spruce Falls TS	220	240.9	Diverged	N/A	Diverged	N/A	246.9	2.5	247	2.5	243.2	1	243.3	1
Detour Gold	220	236.2	Diverged	N/A	Diverged	N/A	265.6	12.5	265.7	12.5	-	-	-	-
Hunta SS	118	127.9	Diverged	N/A	Diverged	N/A	127	-0.7	127.3	-0.5	126.7	-0.9	127	-0.7
Kapuskasing TS	118	124.2	Diverged	N/A	Diverged	N/A	126.8	2.1	126.9	2.2	125.4	1	125.5	1
Spruce Falls TS	118	124.1	Diverged	N/A	Diverged	N/A	126.8	2.2	126.9	2.2	125.4	1	125.5	1.1
Hearst TS	118	125.3	Diverged	N/A	Diverged	N/A	126.9	1.3	126.9	1.3	126	0.6	126.1	0.6

Table 8: Voltage Study Results for the D501P Contingency with Detour In-Service

Notes:

(3) Post-Contingency Flow through S.F T7 = N/A
L/R @ Spruce Falls TMP 3 & 4 = 90 MW

(4) Post-Contingency Flow through S.F T7 = 12 MW North
L/R @ Spruce Falls TMP 3 & 4 = 90 MW
L/R @ Detour Gold = 95 MW
Little Long G1 absorbing 45 MX post-contingency

(5) Post-Contingency Flow through S.F T7 = 12 MW North
L/R @ Spruce Falls TMP 3 & 4 = 90 MW
L/R @ Detour Gold = 95 MW
Little Long G1 absorbing 16 MX post-contingency

The study results with the proposed facility in-service shows that the incorporation of the proposed facility will not contribute to existing issues. By participating in the Northeast L/R & G/R scheme, sufficient amount of load will exist to obey existing power flow limits at Spruce Falls. Rejection of the Detour 180 km line when all 95 MW of load at Detour is rejected will ensure that post-contingency voltages are manageable with the previous one Moose River Basin generating unit in-service and operating in condenser mode.

The loss of the D501P circuit in the existing system results in post-contingency voltages above the maximum allowable threshold of 250 kV at Pinard and Kapuskasing. This occurs in situations when load at the Spruce Falls facility is high and hydroelectric generation along the Moose River Basin is out of service, requiring load rejection to help maintain the post-contingency power flow limits through the Spruce Falls T7 autotransformer. The incorporation of the Detour Lake 230 kV Mine will not alleviate or contribute to this issue due to the ability to reject the entire Detour facility, including the Detour 180 km tap line. Existing system overvoltage concerns are mitigated by operating one Moose River Basin generation unit in condenser mode for reactive power support. The future system can be operated in the same manner.

The results of the consultant's study also show potential overvoltage concerns when all load behind Detour is lost via the tripping of the main 230 kV Detour breaker. Overvoltage concerns can be mitigated by the remote tripping of the breakers at Pinard TS which will disconnect the facility entirely. The IESO has repeated this study in Table 9 below.

Monitored Busses		Pre-Cont Voltage (kV)	***Loss of Detour 230 kV Bus – Detour Circuit Remains Connected***				***Loss of Detour 230 kV Bus – Detour Circuit Tripped***			
Bus Name	Base (kV)		Pre-ULTC		Post-ULTC		Pre-ULTC		Post-ULTC	
			kV	%	kV	%	kV	%	kV	%
Hanmer TS	500	532.4	536	0.7	536.4	0.7	534.8	0.4	534.8	0.4
Porcupine TS	500	541.2	548.5	1.4	549.5	1.5	544.8	0.7	544.8	0.7
Pinard TS	500	542.2	552.3	1.9	553.2	2	546.3	0.8	546.3	0.8
Hanmer TS	220	247.3	248.8	0.6	249	0.7	248.3	0.4	248.3	0.4
Porcupine TS	220	246.1	249.1	1.2	247.6	0.6	247.6	0.6	247.6	0.6
Pinard TS	220	245.9	250.9	2	251.2	2.2	247.7	0.7	247.7	0.7
Little Long SS	220	245.1	248.2	1.3	248.4	1.4	246.2	0.5	246.2	0.5
Kapuskasing TS	220	240.9	243.6	1.1	243.7	1.2	242	0.5	242	0.5
Spruce Falls TS	220	240.9	243.5	1.1	243.6	1.1	241.9	0.4	241.9	0.4
Detour Gold	220	236.2	-	-	-	-	-	-	-	-
Hunta SS	118	127.9	129	0.9	129	0.9	128.4	0.4	128.4	0.4
Kapuskasing TS	118	124.2	125.6	1.1	125.6	1.1	124.9	0.5	124.9	0.5
Spruce Falls TS	118	124.1	125.5	1.1	125.6	1.2	124.8	0.6	124.8	0.6
Hearst TS	118	125.3	126.1	0.7	126.2	0.7	125.7	0.3	125.7	0.3

Table 9: Voltage Study Results for the Loss of the Detour 230 kV Bus

To mitigate post-contingency overvoltage concerns at Pinard TS, contingencies that result in the tripping of the main 230 kV Detour breaker, which results in the loss of total load at Detour, must also trip the Detour circuit via the tripping of appropriate breakers at the Pinard 230 kV bus. This will ensure that the line will be disconnected and will not inject reactive power into the Pinard 230 kV bus.

5.8 Modification to the Northeast 115 kV L/R & G/R Scheme

The Northeast 115 kV Load and Generation Rejection Scheme was designed to address the problem of excess and under generation being imposed on the underlying 115kV system under contingency conditions involving the 500 kV, 230 kV and 115 kV systems north of Sudbury.

Due to the large capacity of the 230 kV Detour Lake Mine and its location in the Northeast power system, the 230 kV Detour connection must be added to the NE 115 kV L/R & G/R Scheme to address post-contingency thermal overloading of the H9K circuit, as well as to respect existing post-contingency operating limits at Spruce Falls TS and Ansonville TS. The L/R for Detour Lake should be initiated upon the detection of contingencies involving the D501P and P502X circuits.

North East 115 kV L/R & G/R Scheme			
OUTPUT: CONTROL ACTIONS		INPUT: CONTINGENCY SIGNALS	
		P502X	D501P
	Trip Entire Detour Facility (including 180 km line) *new*	X	X
	Trip Detour T1 Transformer *new*	X	X
	Trip Detour T3 Transformer *new*	X	X

Figure 8: Modifications to the Northeast 115 kV L/R & G/R Scheme

Tripping of the the T1 or T3 transformers will result in the rejection of the process line located behind each respective transformer. This will results in the rejection of approximately 32 MW load each and will provide smaller steps and more modularity in situations where load rejection is required.

In situations where large amounts of load rejection is required, the entire Detour facility can be rejected. This will result in the rejection of 95 MW of load. To ensure post-contingency voltages are manageable in the post-L/R system, the 180 km Detour line should be rejected as well. This will ensure that there are no reactive power injections at Pinard 230 kV from the charging capacitance of the new Detour line.

Rejection of the T2 transformer individually is not possible as it will reject all critical load at the Detour Mine. This will result in the gradual shutdown of all processes and load at the mine.

The proposed 230 kV Detour Lake Mine must participate in the North East 115 kV L/R & G/R Special Protection Scheme to address post-contingency thermal overloading of the H9K circuit, as well as to respect existing post-contingency operating limits at Spruce Falls TS and Ansonville TS. The facility must be able to be selected for L/R for the loss of the D501P and P502X circuits.

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Appendix E

Customer Impact Assessment

Hydro One Networks Inc.
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Toronto, Ontario
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CUSTOMER IMPACT ASSESSMENT

Detour Gold Corporation
Stage 2 - 230kV Connection to Pinard TS

Project #: AR-20291
Revision: 0
Date: June 22, 2011

Issued by:
Transmission Planning Department
System Development
Hydro One Networks Inc.

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1.0 Project Description

Detour Lake Placer Dome was a 20MW gold mine connected to the C2H/C3H circuits via Island Falls SS. In 2002, the mine was closed and Hydro One decommissioned all assets at Island Falls SS. Detour Gold Corporation now plans to reopen and expand the mine to a total peak load of 120MW. The mine will ultimately be supplied via a new 230kV single circuit transmission line from Pinard TS to the Detour Gold Mine site.

This project will be completed in 2 stages:

Stage 1 – Detour Gold will construct a new 230kV transmission line (initially operated at 115kV) between Island Falls SS and Detour Lake mine site. This line will supply a load of 20MW until the 230kV line from Island Falls SS to Pinard TS is built.

Stage 2 – Detour Gold will construct a new 230kV transmission line from Island Falls SS x Pinard TS. The 115kV Island Falls connection will then be disconnected, and the mine will operate at 230kV supplied from Pinard TS. *(See Appendix A – Figure 1)*

2.0 Technical Studies

Hydro One conducted studies to assess the impact of connecting the Detour Gold mine to the Hydro One transmission system. A separate assessment was completed for Stage 1 (115kV connection to C3H) This CIA will only address stage 2 of the connection. (230kV connection to Pinard TS)

Short-Circuit Study Analysis

The incorporation of Detour Gold Corporation mining facility into the Hydro One system will not change or affect the short circuit level at any of the connected customer stations in the area north of Hunta SS.

Steady State Voltage Performance

The study area consists of relevant busses in the northeast transmission system area. Steady State voltages were assessed under three probable operating scenarios.

1) All transmission elements in service
2) D501P circuit out of service
3) P502X circuit out of service

Under each of these scenarios, the effect of connecting the Detour Gold Mine was studied with maximum and minimum generation conditions.

Study Assumptions

- Studies were conducted using the winter 09/10 PSS/E model.
- Proponent data was acquired from revised connection application, forwarded by IESO (January 12, 2011)
- Loss of Detour Facility will trip new radial 180km transmission line from Pinard TS.
- Detour facility operates at unity power factor as specified in customer application.
- No future voltage controlling devices planned for the low voltage bus at the Detour Gold facility. (clarified by IESO and customer)
- Minimum generation conditions simulate night conditions when Northern area hydro units are shut down or at minimum operation. Power flows north on the P502X and D501P circuits.
- Maximum generation conditions simulate daytime conditions when Northern area hydro units are operating at full capacity. Power flows south on the P502X and D501P circuits.

- Generating units used to control max/min conditions are Harmon, GS, Kipling GS, Little Long GS, Smoky Falls GS, Otter Rapids GS, Abitibi Canyon GS, Calstock, Epcor.

Voltage Study Results

Voltage studies used average voltage levels for the 500kV and 230kV busses in the existing case (pre-Detour connection).

Detour Gold will install 2 x 15MVar switchable reactors on the low voltage collector bus at the customer site. This will ensure that voltage variations at the customers' connection points are within the acceptable Market Rule levels. These reactors will be switched as needed to control voltages during maintenance and outage conditions.

Detour Gold will be included in the NE LR/GR special protection scheme to avoid uncontrolled load interruptions in the area North and West of Hunta SS (in the event of D501P and P502X contingencies).

3.0 Reliability Impact

Detour Gold mining facility will be equipped with a main circuit breaker to provide isolation of the entire facility. The breaker can be used under fault or maintenance conditions to isolate the plant from the transmission system grid without affecting other Hydro One customers. If the entire Detour facility is out of service, the new 180km radial line will also be tripped to avoid voltage increases to the 230kV bus at Pinard TS.

Protection settings for the existing 230kV ring bus at Pinard TS will be modified to accommodate the new line. Protection and Control changes will be made to ensure that the Detour Gold line is tripped during fault conditions.

4.0 Conclusions and Recommendations

The proposed connection of the Detour Gold Mine can be incorporated into the 230kV bus at Pinard TS. Hydro One customers will not be adversely impacted by this connection.

Appendix A – Diagrams

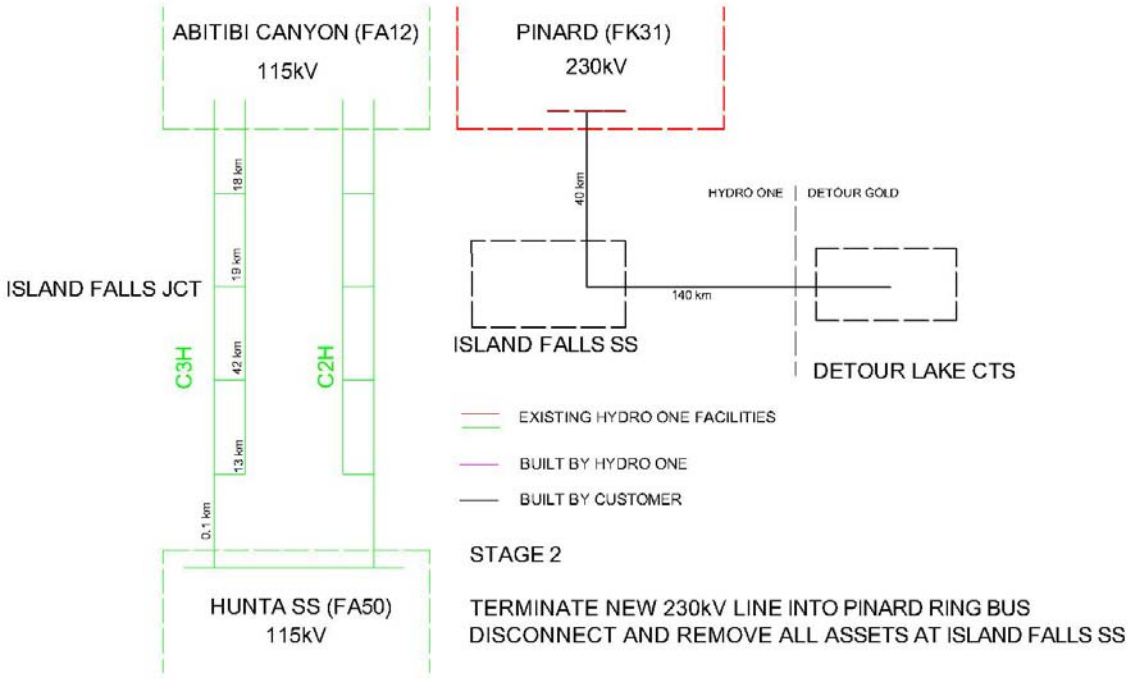

Figure 1 – Detour Gold Mine Connection (Stage 2)

APPENDIX B – STEADY STATE VOLTAGE RESULTS

Table 1 – All Transmission Elements In Service

Bus	All Elements I/S													
	Min Gen							Max Gen						
	Detour O/S (kV)	Detour I/S (kV)	ΔV post ULTC (%)	Loss of Detour pre-ULTC (kV)	ΔV pre ULTC (%)	Detour I/S - Maintenance conditions(kV)	ΔV post ULTC (%)	Detour O/S (kV)	Detour I/S (kV)	ΔV post ULTC (%)	Loss of Detour pre-ULTC (kV)	ΔV pre ULTC (%)	Detour I/S in Maintenance conditions (kV)	ΔV post ULTC (%)
Pinard TS 500kV	547.10	536.45	-1.95	532.00	-0.83	536.45	-1.95	531.85	535.95	0.77	532.00	-0.74	535.90	0.76
Pinard TS 230kV	244.35	246.69	0.95	244.64	-0.83	246.86	1.03	244.55	246.42	0.76	244.64	-0.72	246.60	0.84
Harmon GS 230kV	244.99	246.25	0.51	244.55	-0.69	246.40	0.57	244.51	246.03	0.62	244.55	-0.60	246.18	0.68
Kipling GS 230kV	247.48	247.43	-0.02	245.72	-0.69	247.65	0.07	245.43	247.21	0.73	245.72	-0.61	247.41	0.81
Little Long SS 230kV	247.46	248.14	0.28	246.42	-0.69	248.34	0.36	246.14	247.90	0.72	246.42	-0.59	248.12	0.80
Otter Rapids GS 230kV	244.57	246.16	0.65	245.15	-0.41	246.25	0.68	245.10	246.03	0.38	245.15	-0.36	246.11	0.41

Table 2 – Circuit D501P Out of Service

Bus	D501P O/S													
	Min Gen							Max Gen						
	Detour O/S (kV)	Detour I/S (kV)	ΔV post ULTC (%)	Loss of Detour pre-ULTC (kV)	ΔV pre ULTC (%)	Detour I/S in Maintenance conditions (kV)	ΔV post ULTC (%)	Detour O/S (kV)	Detour I/S (kV)	ΔV post ULTC (%)	Loss of Detour pre-ULTC (kV)	ΔV pre ULTC (%)	Detour I/S in Maintenance conditions (kV)	ΔV post ULTC (%)
Pinard TS 500kV	527.05	524.90	-0.41	524.20	-0.13	541.30	2.70	527.00	524.45	-0.48	523.90	-0.10	540.65	2.59
Pinard TS 230kV	238.55	237.56	-0.42	237.23	-0.14	244.99	2.70	238.50	237.34	-0.49	237.09	-0.10	244.68	2.59
Harmon GS 230kV	239.16	238.17	-0.41	237.84	-0.14	245.63	2.70	239.12	237.95	-0.49	237.71	-0.10	245.32	2.59
Kipling GS 230kV	243.12	240.68	-1.00	241.36	0.28	248.71	2.30	243.08	240.42	-1.10	241.19	0.32	248.31	2.15
Little Long SS 230kV	243.10	240.64	-1.01	241.34	0.29	248.69	2.30	243.06	240.37	-1.10	241.16	0.33	248.27	2.15
Otter Rapids GS 230kV	241.14	240.44	-0.29	240.20	-0.10	245.76	1.92	241.10	240.28	-0.34	240.11	-0.07	245.54	1.84

Table 3 – Circuit P502X Out of Service

Bus	P502X O/S													
	Min Gen							Max Gen						
	Detour O/S (kV)	Detour I/S (kV)	ΔV post ULTC (%)	Loss of Detour pre-ULTC (kV)	ΔV pre ULTC (%)	Detour I/S in Maintenance conditions (kV)	ΔV post ULTC (%)	Detour O/S (kV)	Detour I/S (kV)	ΔV post ULTC (%)	Loss of Detour pre-ULTC (kV)	ΔV pre ULTC (%)	Detour I/S in Maintenance conditions (kV)	ΔV post ULTC (%)
Pinard TS 500kV	550.25	552.70	0.45	549.95	-0.50	555.85	1.02	550.25	552.70	0.45	549.95	-0.50	555.85	1.02
Pinard TS 230kV	237.91	239.14	0.52	237.80	-0.56	240.50	1.09	237.91	239.14	0.52	237.80	-0.56	240.50	1.09
Harmon GS 230kV	239.05	240.04	0.41	238.96	-0.45	241.16	0.88	239.05	240.04	0.41	238.96	-0.45	241.16	0.88
Kipling GS 230kV	238.33	239.10	0.32	238.26	-0.35	239.98	0.69	238.33	239.10	0.32	238.26	-0.35	239.98	0.69
Little Long SS 230kV	239.25	240.02	0.32	239.18	-0.35	240.90	0.69	239.25	240.02	0.32	239.18	-0.35	240.90	0.69
Otter Rapids GS 230kV	239.12	240.13	0.42	239.03	-0.46	241.25	0.89	239.12	240.13	0.42	239.03	-0.46	241.25	0.89

***** System Base Voltages in PSSE

Pinard TS 500kV	500kV
Pinard TS 230kV	220kV
Harmon GS	220kV
Kipling GS	220kV
Little Long SS	220kV
Otter Rapids GS	220kV