

From: pharrington@nalcorenergy.com
To: phumphries@nalcorenergy.com
Subject: Fw: Sign off Case 8
Date: Thursday, May 20, 2010 12:09:59 PM

Paul

I sent this note to Gilbert yesterday. I have not had a reply. My concern is as discussed we have prepared a low cost scenario screening but the technical risks associated with this case are not fully appreciated in detail but we all know they exist

Regards Paul



Paul Harrington
Project Manager
Lower Churchill
Nalcor Energy - Lower Churchill Project
t. 709 737-1907 c. 709 682-1460 f. 709 737-1985
e. PHarrington@nalcorenergy.com
w. nalcorenergy.com

----- Forwarded by Paul Harrington/NLHydro on 05/20/2010 12:07 PM -----

From: Paul Harrington/NLHydro
To: Gilbert Bennett/NLHydro@NLHydro
Date: 05/19/2010 08:49 AM
Subject: Sign off Case 8

Gilbert

Jason will be sending you the description of what constitutes the Case 8 - Muskrat Stand-alone case. I understood that you had signed off on this already but I just want to make sure there is no breakdown in communication before we set off down this path. The drive behind this Muskrat Stand-alone case was to get the cap costs down as low as possible because we were advised that the LCC case did not work. So that caused the team to go with VSC (although the VSC overhead transmission is not yet proven in practice to operate within the design specifications and the Siemens model tests are underway and not yet complete) also the return period for the transmission tower design was reduced to 1:50 years and there were very few island upgrades based on the 600 MW Converter station at Labrador and 540MW station at Soldiers Pond. Jason will send you the sketch that was the basis for the cap cost estimate we have developed and provided to Investment Evaluation

I believe the most important result of the Muskrat Stand-alone case is what happens at the Labrador end to keep the costs to the minimum ,(which was the challenge that was put to the team at the time)- the Converter station would be located at Muskrat and there would be two 345 kVac lines from Muskrat to CF. This would avoid a substation at Gull and would reduce transmission costs- Jason will advise the cost saving that results from this configuration. This case is going for economic analysis.

This may be the lowest cost solution but may not be the design that is preferred and since Ed is talking sanctioning a project, now is the time to settle on the project we want to move forward with and that may not necessarily be the lowest cost solution. Perhaps the cap cost reduction using VSC is so great that we can now afford the 735kVac line from CF to Gull with a partial switchyard at Gull and two 230kVac lines from Gull to Muskrat. We do not get to know what the results are of the economic modelling so it is difficult for us to judge.

We can provide the costs and build the data for that variation on the Muskrat stand-alone (i.e the partial gull switchyard, one 735 kVac GI to CF and two 230kVac GI to MF) to Rob's team should this be decided as the Muskrat stand-alone case we want to carry forward into detailed design.

You have the sign off pen so pls let me know how you wish to proceed.

Regards Paul



Paul Harrington
Project Manager
Lower Churchill
Nalcor Energy - Lower Churchill Project
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w. nalcorenergy.com