

Date : 11/17/2010 3:56:39 PM

From : "Thompson, Robert"

To : "Morrissey, Ken" , "Matthews, Elizabeth" , "'LeonaBarrington@nalcenergy.com'"

Subject : RE: QF

Attachment : Muskrat Falls Quick Facts Draft 3.doc;

Here are my edits on the Quick Facts. There are still three pieces of missing data that Nalcor should complete.

Impt Note: the capital costs of the three components were wrong here and I'm not sure why. As I understand it, all documents should agree that capital cost is MF 3.0, LIL 2.1 and ML 1.2.

From: Morrissey, Ken

Sent: Wednesday, November 17, 2010 3:26 PM

To: Thompson, Robert

Subject: QF

Robert:
EM wanted you to review,.
Ken

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Quick Facts

Muskrat Falls Development Generation and Transmission

Generation

- The Muskrat Falls generation station will have a capacity of 824 megawatts; enough to power XXXX homes.
- A concrete dam will be constructed in two sections with the north dam being 32 meters high and 432 meters long and the south dam being 29 meters high and 325 meters long.
- The reservoir will be 59 km long with an area of 101 km². The area of flooded land will be 41 km² at full supply level. The current reservoir for the Churchill Falls Generating Station is XX km².

Transmission

- A transmission link to be constructed between Labrador and Newfoundland will be approximately 1,100 kilometers long. The link will be a 735 kilovolt (kV) High Voltage direct current (HVdc) transmission system which will span from Muskrat Falls to Soldiers Pond.
- The transmission lines will be supported by lattice-type steel structures and located north of the Churchill River, requiring a cleared right of way approximately 80 m wide in addition to the existing right of way.
- The link will cross the Strait of Belle Isle under the seabed through tunneling, trenching and rock placement from Forteau, Labrador and connect with Newfoundland at Flower's Cove and have a capacity of 900 megawatts.
- The Maritime Link will start with a converter station at Bottom Brook, enter the Cabot Strait at Cape Ray and connect with Nova Scotia at Lingan, Cape Breton Island. This link will be approximately 180 kilometers long and will have a capacity of 500 megawatts.

Project Costs

- Estimated capital cost of the project is \$6.25 billion.
- The Muskrat Falls Generation Facility and transmission to Churchill Falls is estimated to cost \$~~3.02-5~~ billion.
- The Labrador-Island Link and system upgrades are estimated to cost \$~~1.8~~2.1 billion and the Maritime Link is estimated to cost \$~~1.2~~ billion.

Employment Benefits

- Muskrat Falls development will result in 18,370 person years of employment in Newfoundland and Labrador with total employment in Labrador equaling 7,500 person years. There will be an average of 2,800 people working per year.
- Canada-wide employment will be 47,800 person years. The direct project employment in this number s—consists largely of work of a specialty nature, such as steel fabrication, which cannot be completed in Newfoundland and Labrador. However, the greatest part of this number is the induced impact of spending that flows throughout the rest of Canada.
- A person year is equivalent to one person working 40 hours per week for 50 weeks.
- Muskrat Falls construction site accommodations will be designed for up to 1,000 people and will be removed when construction is complete.

Economic Benefits

- Total income to labour and business for Newfoundland and Labrador will be \$1.4 billion or \$220 million per year.
- Over \$210 million in taxes will accrue to the Government of Newfoundland and Labrador
- Canada-wide income to labour and business will be \$3.5 billion or \$540 million per year.
- Over \$520 million in taxes to the Government of Canada and \$290 million to other provincial governments.

Environment

- Newfoundland and Labrador will have an electricity system that will be greater than 98% carbon free which far exceeds any national or international standard.
- The development of Muskrat Falls would avoid approximately 82 million tonnes of emissions by 2065 – a significant number for a small province.
- It is anticipated that Muskrat Falls will reduce greenhouse gas emissions for other jurisdictions in the annual range of 1-1.4 million tonnes.