Government of Newfoundland and Labrador
Department of Natural Resources
Office of the Minister

DEC 2 3 2016

Mr. Darryl Shiwak
Minister, Lands and Natural Resources
Nunatsiavut Government
P.O. Box 70
Nain, NL A0P 1L0

Dear Mr. Shiwak:

Muskrat Falls Initial Impoundment Requirements

Thank you for your letter dated November 30, 2016, in which you requested clarity regarding statements made during the November 25 teleconference between myself, the Premier, Minister Trimper, Nalcor CEO Stan Marshall, NunatuKavut President Todd Russell, Innu Nation Grand Chief Anastasia Qupee, and MHA Randy Edmunds. You also requested clarity regarding points raised in my November 22, 2016, letter, as well as information provided in the *Hatch Response to the Third Party Review of the Winter Headpond Freeze-up* dated November 12, 2016. I am pleased to provide the following information to address the questions in your letter.

1. Government's Response to Headpond Freeze-up Program Reviews

   Hatch's November 3, 2016, report, *Muskrat Falls Winter Headpond Freeze-up Program,* outlines the conditions necessary for formation of a stable ice cover, and recommends that the reservoir level be maintained at 25 metres to facilitate the formation of a stable ice cover in the reservoir and also minimize the formation of an ice dam downstream. Both of the independent reviews of the freeze-up program acknowledged risks of flooding and damage to the site if water levels are not raised sufficiently. Both reviews also acknowledged that lower elevation levels might only suffice in the event of certain favourable scenarios. Hatch's subsequent *Hatch Response to Third Party Review of Winter Headpond Freeze-up,* in relation to the two independent reviews of Nalcor's freeze-up program, concluded that the 25m elevation remains the option with the most acceptable level of risk for a stable ice cover. On December 2, 2016, Nalcor announced ice conditions on the river preclude installation of the boom upstream of Muskrat Falls before 2017 when conditions are suitable, and water levels required for safe installation have been reached in the reservoir.

   Evidence and significant work completed, to date, by the independent experts that have been engaged on the freeze-up program concludes that the most responsible course of action at this late stage of the season is to follow Hatch's recommendation for Nalcor to raise the reservoir level at 25 metres to facilitate the formation of stable ice cover.

2. Contingency Level Built into the Design of the Ice Boom

   Nalcor has confirmed that the ice boom, which accelerates the formation of a stable ice cover, was designed to cope with water velocities and load associated with operation at 25 metres, not 24 metres. These were the engineering design criteria that were provided to the log boom designer, and no contingency was requested or built into the design.

3. Impacts to Frazzle Ice Issue by not Putting the Ice Boom in Place this Winter

   As a result of current ice conditions in the river, installation of the boom upstream of Muskrat Falls will not be carried out in 2016 as planned, but will now be carried out in 2017 when conditions are suitable, and water levels required for safe installation have been reached in the reservoir. In the absence of installing the ice boom, the downstream ice will form and dam as it has historically occurred. Controlling and stabilizing the flow of the river, which will happen once Nalcor reaches the 25m level, will create a much more stable ice cover upstream of the spillway, and the historic flooding due to ice damming will not occur. Nalcor is focused on protecting infrastructure while ensuring public safety at the site from winter ice conditions and minimizing delays to the overall construction schedule. Nalcor is progressing work on the construction of the additional temporary cofferdams that will be used to protect the site infrastructure this winter.

4. Is 25 Metres the Highest the Water Will be Raised this Winter and How Will this be Communicated to the Public?

   Following the independent reviews discussed above, and re-engaging Hatch to consider the reviews, the 25 meter elevation level remains the highest water level planned this winter. Nalcor is currently taking steps to construct additional temporary cofferdams that will be used to protect the site infrastructure this winter. Nalcor has indicated that it does not intend to raise water levels beyond 25 metres as this would affect the upstream facilities' freeboard (vertical distance between the crest of the embankment and the reservoir water surface). Work is also progressing on the cofferdam to address the water seepage observed in mid-November. This work is expected to be completed in the coming weeks, and at that time, Nalcor will begin to gradually raise water levels in the Muskrat Falls reservoir. Nalcor continues to update stakeholders on progress with the cofferdam repairs, and when the river impoundment resumes, residents and stakeholders will be notified and the cofferdam will be monitored closely.

   Our government will closely coordinate with Nalcor any planned changes in reservoir levels and will communicate any such changes directly to the leaders of the Innu Nation, Nunatsiavut Government, and the Nunatukavut Community Council, and Nalcor will follow this communication with a related public news release.

5. Spring Water Levels and Real-time Water Monitoring Stations

   With respect to spring water levels, as committed to following the October 26 meeting, government has directed Nalcor to release water from the reservoir in the spring of 2017, which will facilitate the opportunity for additional mitigation measures.

As for the water level monitoring stations, the Department of Environment and Climate Change (ECC) and Environment and Climate Change Canada (ECCC) data comes from the same instruments and real time monitoring stations. The province's hydrometric, water quality, climate and web-cam stations are mapped and listed online at http://www.env.gov.nl.ca/wrmd/ADRS/v6/Graphs_List.asp. Real-time monitoring can be viewed from either the ECC or ECCC websites.

Prior to reservoir flooding, there were two hydrometric stations measuring flow and water level in the immediate area upstream of the dam. The first is Churchill River Above Upper Muskrat Falls, 03OE001, which is located approximately 1,000m upstream of the spillway dam. Data from this hydrometric station is posted online at http://www.env.gov.nl.ca/wrmd/ADRS/v6/Template_Station.asp?station=03OE001. Station 03OE001 was relocated and is now NLENWQ0003. It will report water levels when the reservoir rises again to over 21.6m. At that time, the Department will put the link to this station back on its website.

The second station is Churchill River Mid Pool, 03OE015, which is located approximately 600m upstream of the spillway dam at http://www.env.gov.nl.ca/wrmd/ADRS/v6/Template_Station.asp?station=03OE015. The station itself is above the 25m flood line, but it has two water level sensors. One sensor is only operational below 19m, the other is only operational for water levels 19m or higher. A manual switch-over is required to report the correct sensor on the ECC website; i.e., above or below 19m. On ECC's station table there are links to the same station data on an Environment and Climate Change Canada (ECCC) website at https://wateroffice.ec.gc.ca/report/report_e.html?type=realTime&stn=03OE015. Station 03OE015 is reporting although currently there are some problems with the sensor.

6. Methylmercury Monitoring Program

With respect to methylmercury (MeHg) water sampling results; at present ECC has received the initial baseline data plus several data sets from the initial flooding. This data was shared with all Indigenous groups on December 12 during the course of the teleconference to finalize the department's MeHg water quality monitoring program. Once Nalcor receives the sampling results from the laboratory, the company has committed to provide it to ECC. Eventually all data will be posted in a public environment.

7. Clearing of Trees, Vegetation, and Soil from the Initial Impoundment Area

Nalcor has confirmed that no clearing activity is currently underway in the reservoir area and no soil has been removed. The company has captured LiDAR (Light Detection and Ranging remote sensing) and orthoimagery for the cleared reservoir, and is following up with the contractor to confirm data processing times. LiDAR and orthoimagery is the technology Nalcor is using to reliably gather the data on the volume of material cleared to date. Nalcor will publish the information upon receiving it, which is not expected to be available before 2017.

Our government remains committed to the agreement reached on October 25, 2016, and continued collaboration and communication between all parties. We look forward to reviewing the draft agreement you are discussing with other Indigenous leaders.

Sincerely,

SIOBHAN COADY, MHA
St. John's West
Minister

c. Johannes Lampe, President of Nunatsiavut Government
Honourable Dwight Ball, Premier
Grand Chief Anastasia Qupee, Innu Nation
President Todd Russell, Nunatukavut Community Council
Honourable Perry Trimper, Minister of Environment and Climate Change