From: Carter, Paul

To: Quinlan, Krista; Coffey, Bernard

Subject: FW: Note on cofferdam at Muskrat Falls

Date: Wednesday, November 16, 2016 4:28:59 PM

Attachments: ATT00001.jpg

See below

From: Quinton, Diana

Sent: Wednesday, November 16, 2016 4:27 PM

To: Carter, Paul

Subject: FW: Note on cofferdam at Muskrat Falls

FYI

From: <u>karenoneill@nalcorenergy.com</u> [<u>mailto:karenoneill@nalcorenergy.com</u>]

Sent: Wednesday, November 16, 2016 4:26 PM

To: Bown, Charles W.; Quinton, Diana

Cc: PHarrington@lowerchurchillproject.ca; GBennett@nalcorenergy.com

Subject: Note on cofferdam at Muskrat Falls

Hi Charles,

I'm sending along the following note from the MF project team as a heads up in case you receive any inquiries. I understand that has also been some talk on social media this afternoon on this topic.

Yesterday there was an increased water level noticed in between the upstream and downstream cofferdams and additional pumps were brought on to deal with that situation. The pumps are doing their job and levels are back to normal. Our cofferdam experts inspected the cofferdam and noticed there was a slumping or sloughing in one area of the upstream face of the upstream cofferdam, at or around where the final closure point was. It is believed that this may have been the cause of the increased water level between the two cofferdams. We understand that this is a normal feature, when a cofferdam is first put under increased water levels on the upstream side and the pressure differential across the cofferdam is increased.

Our experts advise that the structure is safe and stable and they are working on a repair method. As a precautionary measure, individuals who were working in the area below the upstream cofferdam were asked to move. We took this action as a precautionary safety measure while the cofferdam while we had the expert review.

The leakage rate through the cofferdam is now back to flows as per design and that indicates that there may have been some initial increased leakage. The leakage seems to have been resealed. Today some further cofferdam crest surface cracks running north- south were noticed and our experts also inspected those and have indicated that they are normal and nothing to be concerned about.

Our experts advise that this is not outside of the ordinary when exposing a cofferdam to differential water levels for the first time, the cofferdam is stable and repairs will be carried out. However it does demonstrate that there are factors other than the installation/operation of the ice/log boom that are driving the need to raise levels passed the 21.5m level. The sooner we can gradually expose the cofferdam to water levels past the 21.5 m level the sooner we can be assured of the cofferdam construction and hence protection of the temporary and permanent assets. We may experience further issues and the available time before river conditions prevent rectification of such issues is almost spent.

Thanks Karen



Karen O'Neill

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