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Interventions

Northwest Territories Power Corporation - Snare Hydro Type A Water Licence Renewal

Submitted to: **Wek'èezhii Land and Water Board**

November 10, 2023

MVLWB File No.: W2023L4-0001

Canada 

Executive Summary

Northwest Territories Power Corporation (NTPC) submitted a Type A Water Licence Amendment Application to the Wek'èezhìi Land and Water Board (the Board). The mandate of Fisheries and Oceans Canada's Fish and Fish Habitat Protection Program (DFO) is to protect all fish and fish habitat; DFO-FFHPP conducted the review of the Water Licence Renewal Application to ensure that works, activities and undertakings are conducted in such a way that the proponents are in compliance with the applicable provisions of the *Fisheries Act*, and whether the information provided was sufficient to make such a determination. DFO is providing the following interventions in response to the Board's draft work plan which states that Interventions are due to the board on November 10, 2023.

1 Introduction

This submission summarizes DFO's assessment and recommendations concerning NTPC's Water Licence Renewal application. The purpose of this intervention is to provide expert advice to the Board regarding the completeness of the water licence renewal application and identify potential impacts to fish and fish habitat associated with the project changes.

2 Interventions

This intervention will focus on information provided by NTPC, submitted as part of the Water Licence Renewal application. The purpose of the intervention is to provide DFO's expert advice to the Board regarding the completeness of the provided information and to identify potential impacts to fish and fish habitat associated with the project.

2.1 Water Frequented by Fish

Review Comment Number	DFO-1
Subject/Topic	Summary of Renewal and Proposed Changes
References	<ul style="list-style-type: none">• Snare Hydro- Water Licence Application Form• Snare Hydro- Type A Water Licence Renewal- Figures and Lands• Snare Hydro - Draft Type A Water Licence Conditions• Snare Hydro- Water Licence- Engagement Plan• Snare Hydro- Water Licence - Engagement Log• Snare Hydro- Water Licence- Operations, Maintenance and Surveillance Manual• Snare Hydro- Spill Contingency Plan• Snare Hydro- Waste Management Plan• Snare Hydro-Water Licence- Conceptual Closure and Reclamation Plan

	<ul style="list-style-type: none"> • Snare Hydro- Emergency Preparedness Plan • Snare Hydro- Public Safety and Awareness Plan • Snare Hydro- Environmental Studies Summary and Screening-Level Environmental Assessment • Snare Hydro Dam Safety Overview • NTPC Dam Safety Program • NTPC Dam Seepage Monitoring Program • Request for Exception to Minimum Water Levels for Snare Hydro Water Licence N1L4-0150- March 2023
<p>Summary</p>	<p>NTPC has submitted proposals to the Wek'èezhii Land and Water Board for a Water Licence Renewal to consolidate and continue operation on the four generating stations, Snare Rapids, Snare Falls, Snare Cascades and Snare Forks, including operation changes proposed to reduce the minimum water elevation at BigSpruce Reservoir (above Snare Rapids) and Snare Falls. Snare Rapids, Snare Falls, and Snare Forks are currently under Water Licence N1L4-0150, Snare Cascades currently under Water Licence W2014L4-0004.</p> <p>A water licence is required to use, store and divert water for the hydroelectric power undertaking at the Snare Rapids, Snare Falls, Snare Cascades and Snare Forks Power Generation Facilities, located on the Snare River, Northwest Territories. An operational change has been proposed to reduce the minimum water elevation at Bigspruce Reservoir from 217.9 to 217.6 metres and at Snare Falls from 201.8 to 201.5 metres. This change is requested to account for natural low water levels in the Snare River, facilitate maintenance at these facilities and to avoid the requirement for Board approval for future maintenance.</p> <p>Snare Rapids, Snare Falls, Snare Cascades and Snare Forks are all categorized as waters frequented by fish. Fish known to inhabit the system include Lake Whitefish, Northern Pike, Walleye, Lake Trout, Longnose Sucker, Round Whitefish, White Sucker, Lake Cisco, Burbot and Arctic Grayling. Any water withdrawal from the BigSpruce Reservoir, Snare Rapids, Snare Falls, Snare Cascades and Snare Forks could have implications on the ability of each of these species to spawn, migrate, or reside in the outflow which connects BigSpruce Reservoir and Strutt Lake.</p>
<p>Importance of issue to the assessment process</p>	<p>Understanding the effects to fish and fish habitat in the outflows of BigSpruce Reservoir and operations of the facilities is important to maintaining the health of the fishery. BigSpruce and Lake Strutt likely</p>

	provides essential spawning, migration, and residence habitat to fish that inhabit both lakes.
Review Comment Number	DFO-2
Detailed Review Comment, Recommendations, and mitigation measures	<p><u>DFO Legislation</u></p> <p>The water licence application has been reviewed to determine whether it is likely to result in the death of fish by means other than fishing and the harmful alteration, disruption or destruction (HADD) of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the <i>Fisheries Act</i>; and, effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the Species at Risk Act. https://www.dfompo.gc.ca/pnw-ppe/indexeng.html</p> <p>NTPC is responsible to avoid causing the death of fish and the HADD of fish habitat which are prohibited by the <i>Fisheries Act</i> unless authorized by DFO. There is also a Duty to Report and a Duty to take corrective actions in the event an unauthorized death of fish or HADD of fish habitat occurs. NTPC is also responsible to avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals, and prevent the introduction of nonindigenous species. At this time, there are no listed aquatic species at risk on Schedule 1 of the federal Species at Risk Act within the vicinity of the facility.</p> <p>DFO will be requesting that NTPC submit a Request for Review form to DFO as part of our Regulatory review process. The information provided in the water license renewal application and the Request for Review form will help DFO determine if a <i>Fisheries Act</i> Authorization is required. This process can occur independent of the Water License Renewal process.</p>
Review Comment Number	DFO-3
	<p><u>Death of Fish and Existing Facilities</u></p> <p>Fisheries and Oceans Canada (DFO) and the NTPC have been working together for many years. Through monitoring and adaptive management, changes have been made to operations, flow requirements for fish and mitigation measures have been implemented by NTPC to avoid and mitigate impacts to fish and fish habitat to the greatest extent possible at some of their other facilities. Operation of the Snare Hydroelectric facility and associated dams have the potential to kill fish through entrainment and impingement at trash racks, turbine mortality, stranding and barotrauma.</p> <p>The fish and fish habitat protection provisions of the <i>Fisheries Act</i>, in combination with relevant provisions of the Species at Risk Act and the Aquatic Invasive Species Regulations, apply to the ongoing operation, modification, maintenance, decommissioning or any other work, undertaking or activity associated with an existing facility or structure in or near water frequented by fish, including a facility or structure that was</p>

	<p>constructed prior to the enactment of these provisions and associated regulations. The Management of Death of Fish (other than fishing), under the Fisheries Act and the Species at Risk Act (dfo-mpo.gc.ca)</p> <p>The proponent describes risks of entrainment and impingement at the intake from contact with the turbines and extreme and rapid changes in pressure with no data available on entrainment or impingement and no information to indicate if this or fish mortality occurs.</p> <p>Fisheries and Oceans Canada will apply its powers and authorities for regulating works, undertakings and activities (other than fishing) that will likely result in the death of fish (including listed aquatic species at risk), in a manner that conserves and protects fish and respects the rights of the Indigenous peoples of Canada (recognized and affirmed by Section 35 of the Constitution Act, 1982). The Management of Existing Facilities and Structures under the Fisheries Act and the Species at Risk Act (dfo-mpo.gc.ca)</p> <p>DFO Science has published the following paper to assist Proponents: “Science advice to the Fish and Fish Habitat Protection Program on Estimating Impacts and Offsets for Death of Fish”: Science Advisory Report 2022/052 (dfo-mpo.gc.ca)</p> <p>DFO recommends that NTPC continue to work with DFO to complete an assessment to determine the death of fish and HADD, which can occur independently of the Water License Renewal, which may require an authorization under the <i>Fisheries Act</i>. Should an Authorization be required, the Proponent will need to submit an application for a <i>Fisheries Act</i> authorization.</p>
<p>Review Comment Number</p>	<p>DFO-4</p>
	<p><u>Operations</u></p> <p>Operations and regulating flow has the potential to cause the death of fish; and the harmful alteration, disruption or destruction of fish habitat, especially during critical spawning times. Planned shutdowns of the Snare Hydroelectric plants shall try to avoid critical times as per the Restricted Activity Period Timing window guidance: Projects Near Water - Northwest Territories Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (dfo-mpo.gc.ca).</p> <p>The minimum water level reduction proposed should only occur when absolutely necessary and not within the timing windows to protect littoral zone habitat and fish spawning areas.</p> <p>The operational plan should include a regular maintenance schedule for cleaning of trash racks to mitigate impingement and death of fish.</p>

	Planned shutdowns should occur gradually to mitigate the effects of stranding, with pulse flows.
Review Comment Number	DFO-5
	<u>General Comments</u> DFO and NTPC have been working cooperatively for many years at some of their existing facilities. Both parties recognize the importance of protecting fish and fish habitat. NTPC continues to address DFO concerns and implement appropriate measures to ensure compliance with the <i>Fisheries Act</i> .