



**PARAGRAPH 35(2)(b) FISHERIES ACT AUTHORIZATION (A DEEMED
PARAGRAPH 34.4(2)(B) AND 35(2)(B) FISHERIES ACT AUTHORIZATION
ISSUED UNDER THE AMENDED FISHERIES ACT)**

Authorization issued to

Northwest Territories Power Corporation (*hereafter referred to as the "Proponent"*)

Attention to: Matthew Miller
Taltson Twin Gorges Generating Station
4 Capital Drive
Hay River, NT
X0E 1G2

Location of Proposed Project

Nearest community (city, town, village): Fort Smith
Province: Northwest Territories
Name of watercourse, waterbody: Taltson River
Longitude and latitude: -111.39221°, 60.419155°

Description of Proposed Project

The proposed project of which the work, undertaking or activity authorized is a part involves:

Taltson Twin Gorges Generating Station is a hydroelectric facility which supplies the main power to the South Slave communities and has been in operation since the 1970's. As part of the annual maintenance and inspections program the facility is required to temporarily shutdown the powerhouse for approximately 2 to 3 weeks each summer. While the facility is shutdown there is partial dewatering of the Taltson River below the plant, and upstream of Elsie lake resulting in fish being stranded. The proponent is seeking approvals for death of fish as a result of stranding during the annual shutdown periods.

Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in serious harm fish

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in serious harm to fish, are:

- Annual powerhouse shutdown during the summer for a period of approximately 2 to 3 weeks, resulting in the stranding of fish in the tailrace below the generating station and Elsie Falls.

The serious harm to fish likely to result from the proposed work(s), undertaking(s), or activity(ies), and covered by this authorization includes

- Death of fish as a result of stranding resulting in a loss of approximately 420 kilograms/year (kg/yr) of Age 1 equivalents, that does not include any aquatic species at risk listed under *Species at Risk Act* and species listed in the Aquatic Invasive Species Regulations.

Conditions of Authorization

The above described work, undertaking or activity that is likely to result in serious harm to fish must be carried on in accordance with the following conditions.

1. Conditions that relate to the period during which the work, undertaking or activity that will result in serious harm to fish can be carried on

The work, undertaking or activity that results in serious harm to fish is authorized to be carried on during the following period:

From: **Date of issuance** to August 30, 2027

If the Proponent cannot complete the work, undertaking or activity during this period, Fisheries and Oceans Canada (DFO) must be notified in advance of the expiration of the above time period. DFO may, where appropriate, provide written notice that the period to carry on the work, undertaking or activity has been extended.

The periods during which other conditions of this authorization must be complied with are provided in their respective sections below. DFO may, where appropriate, provide written notice that these periods have been extended, in order to correspond to the extension of the period to carry on a work, undertaking, or activity.

2. Conditions that relate to measures and standards to avoid and mitigate serious harm to fish

2.1 List of measures and standards to avoid and mitigate serious harm to fish as noted in the Taltson Twin Gorges Generating Station and Facilities, Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act, dated November 15, 2018 (herein referred to as Taltson Twin Gorges Application) and outlined below:

2.1.1 Measures to be implemented during shutdown:

2.1.1.1 Implement pulse flows, where the time between the cessation of flow and the start of the pulse flow is approximately 72 minutes, to allow fish to emigrate out of the shallow waters into deeper waters immediately prior to shutdown.

2.1.1.2 Implement night-time shutdown, conducting the final step of the shutdown by 05:00h.

2.1.2 Measures to be implemented during offsetting:

2.1.2.1 Sediment and erosion control: Sediment and erosion control measures must be in place and shall be upgraded and maintained, such that release of sediment is avoided at the location.

2.1.2.2 All sediment and erosion control measures shall be inspected daily to ensure they are functioning properly and are maintained and/or upgraded as required to prevent entry of sediment into the water.

2.1.2.3 Sediment and erosion control measures shall be implemented prior to work and left in place until all areas of the work site have been stabilized. This shall include the use of sediment curtains or other appropriate measures.

- 2.1.2.4 Only clean material free of fine particulate shall be placed in or near water and no acid-generating rock will be used.
- 2.1.2.5 Any stockpiled materials shall be stored and stabilized a safe distance away from any watercourse, drainage course or swales to prevent erosion and subsequent entry into the water body or removed from the site.
- 2.2 Contingency measures as described below shall be put in place if monitoring required in condition 3 below indicates that the measures and standards to avoid and mitigate serious harm to fish are not successful.
 - 2.2.1 If the outlined mitigation measures in condition 2.1 are not possible to implement, an alternate mitigation measure described in the Taltson Twin Gorges Application shall be implemented.
- 2.3 Dates by which these measures and standards shall be implemented: Measures and standards to avoid and mitigate serious harm to fish shall be implemented for the duration of the Authorization.
- 3. **Conditions that relate to monitoring and reporting of measures and standards to avoid and mitigate serious harm to fish**
 - 3.1 Monitoring of avoidance and mitigation measures: The Proponent shall monitor the implementation of avoidance and mitigation measures referred to in section 2 of this authorization and report to DFO, by **December 31 of each year**, and indicate whether the measures and standards to avoid and mitigate serious harm to fish were conducted according to the conditions of this authorization. This shall be done, by:
 - 3.1.1 Demonstration of effective implementation and functioning: Provide a memorandum report which includes the start and end dates, and the mitigation measures implemented to complete the annual maintenance and inspection shut down.
 - 3.1.2 Contingency measures: Providing details of any contingency measures that were followed, to prevent impacts greater than those covered by this authorization in the event that mitigation measures did not function as described.
 - 3.2 Other monitoring and reporting conditions: not applicable.
- 4. **Conditions that relate to the offsetting of the serious harm to fish likely to result from the authorized work, undertaking or activity**
 - 4.1 Scale and description of offsetting measures: Offsetting measures shall be carried out in accordance with the measures set out in the Taltson Twin Gorges Application, including:
 - 4.1.1 Walleye study in Little Buffalo River and Slave River:
 - 4.1.1.1 Conduct a field spawning study to understand the factors affecting the Walleye productivity in these rivers.
 - 4.1.1.2 Gather traditional knowledge of river basins to support the Walleye spawning study.
 - 4.1.2 Habitat enhancement at Bluefish Hydroelectric:
 - 4.1.2.1 Placement of suitable spawning substrate (cobble and gravel blend), in the Yellowknife River immediately downstream of Bluefish Hydroelectric facility (tailrace), to provide spawning opportunities for Lake Trout, Lake Whitefish and/or Cisco, for a minimum area of 400m².
 - 4.2 Offsetting criteria to assess the implementation and effectiveness of the offsetting measures: All fish and fish habitat offsetting measures shall be completed and functioning according to the criteria below and as set out in the Taltson Twin Gorges Application, including:
 - 4.2.1 Related to Walleye study in Little Buffalo River and Slave River:
 - 4.2.1.1 Identification of key locations and timing period for migration for the Walleye spawning activities in the rivers.
 - 4.2.1.2 A compilation report of the traditional knowledge gathered on the river basins.
 - 4.2.2 Related to habitat enhancement at Bluefish Hydroelectric:

- 4.2.2.1 Spawning substrate was placed in described location and spatial extent, and shown to be stable.
 - 4.2.2.2 Observe spawning activity of Lake Trout, Lake Whitefish and/or Cisco on new spawning substrate.
 - 4.2.2.3 Increase in egg survival rates on the new spawning substrate compared to the control site (also located in the tailrace).
- 4.3 Contingency measures: If the results of monitoring as required in condition 5 indicate that the offsetting measures are not completed by the date specified and/or are not functioning according to the above criteria in 4.2, the Proponent shall give written notice to DFO and shall implement the contingency measures and associated monitoring measures, as contained within the approved offsetting plan (attached to this authorization or referenced in section 4.1), to ensure the implementation of the offsetting measures is completed and/or functioning as required by this authorization.
- 4.3.1 Scale and description of contingency measures:
- 4.3.1.1 Related to Walleye study in Little Buffalo River and Slave River: Should the investigation and knowledge gathering not provide sufficient information to determine key locations and timing period for migration for Walleye activities an additional year of data collection will be undertaken.
 - 4.3.1.2 Related to habitat enhancement at Bluefish Hydroelectric: Should there be less fish or lower egg density at the new spawning substrate compared to the control site for Lake Trout, Whitefish and/or Cisco an investigation into whether the habitat is being used by any fall spawning species shall be conducted.
 - 4.3.1.3 Related to habitat enhancement at Bluefish Hydroelectric: Should the spawning habitat yield lower results in both monitoring efforts additional spawning substrate (approximately 200m²) can be placed in a new area.
- 4.3.2 Monitoring measures to ensure offsetting contingency is completed and/or functioning as required:
- 4.3.2.1 Related to Walleye study in Little Buffalo River and Slave River: an additional year of data collection shall be undertaken as described in condition 5.
 - 4.3.2.2 Related to habitat enhancement at Bluefish Hydroelectric: three snorkel surveys, as described in condition 5, will be conducted in the spring to determine if there is increased fish use for spring spawners for a minimum of 3 years.
 - 4.3.2.3 Related to habitat enhancement at Bluefish Hydroelectric: the spawning substrate placed in a new location shall be according to the requirements of condition 5, for a minimum of 3 years.
- 4.4 The Proponent shall not carry on any work, undertaking or activity that will adversely disturb or impact the offsetting measures.
- 4.5 Other conditions related to offsetting: not applicable.

5. Conditions that relate to monitoring and reporting of implementation of offsetting measures (described above in section 4):

5.1 Schedule(s) and criteria: The Proponent shall conduct monitoring of the implementation of offsetting measures according to the Taltson Twin Gorges Application, and as described below:

5.1.1 List of timeline(s) and monitoring and reporting criteria:

- 5.1.1.1 Related to Walleye study in Little Buffalo River and Slave River:
 - 1) Complete desktop review of existing data, and gather traditional knowledge in fall 2020 to spring 2021.
 - 2) Conduct field study that includes photographs, fish sampling, and fish habitat mapping in spring 2021.
- 5.1.1.2 Related to habitat enhancement at Bluefish Hydroelectric:
 - 1) Complete an as-built survey and photographic log following placement of spawning substrate in 2021.

- 2) Conduct three snorkel surveys each monitoring year to collect underwater photographs, substrate characteristics, water depth and velocity, presence of fish spawners, egg density and viability in the fall, a minimum in 2021 and 2022, with a potential requirement of years 2023, 2024 and 2025.
- 5.2 List of reports to be provided to DFO: The Proponent shall report to DFO on whether the offsetting measures were conducted according to the conditions of this authorization by providing the following:
- 5.2.1 Related to Walleye study in Little Buffalo River and Slave River:
 - 1) Final summary report of Walleye study to be submitted on or before December 31, 2021.
 - 5.2.2 Related to habitat enhancement at Bluefish Hydroelectric:
 - 1) As built drawings and photographic log to be submitted on or before December 31, 2021.
 - 2) Summary reports on snorkel surveys to be submitted on or before March 31, 2022 and 2023, with a potential requirement of years 2024, 2025 and 2026 depending on the success of the offsetting.
- 5.3 Other monitoring and reporting conditions for offsetting: not applicable.

Authorization Limitations and Application Conditions

The Proponent is solely responsible for plans and specifications relating to this authorization and for all design, safety and workmanship aspects of all the works associated with this authorization.

The holder of this authorization is hereby authorized under the authority of Paragraph 35(2)(b) of the *Fisheries Act*. R.S.C., 1985, c.F. 14 to carry on the work(s), undertaking(s) and/or activity(ies) that are likely to result in serious harm to fish as described herein. This authorization does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This authorization does not permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish unless authorized by regulations made by Governor in Council.

This authorization does not permit the killing, harming, harassment, capture or taking of individuals of any aquatic species listed under the *Species at Risk Act* (SARA) (s. 32 of the SARA), or the damage or destruction of residence of individuals of such species (s. 33 of the SARA) or the destruction of the critical habitat of any such species (s. 58 of the SARA).

At the date of issuance of this authorization, no individuals of aquatic species listed under the *Species at Risk Act* (SARA) were identified in the vicinity of the authorized works, undertakings or activities.

In accordance with *An Act to amend the Fisheries Act and other Acts in consequence*, this authorization is deemed to have been issued under the authority of paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act* as those paragraphs read after the day on which section 22 of *An Act to amend the Fisheries Act and other Acts in consequence* came into force, on August 28, 2019.

The failure to comply with any condition of this authorization constitutes an offence under Paragraph 40(3)(a) of the *Fisheries Act* and may result in charges being laid under the *Fisheries Act*. This authorization must be held on site and work crews must be made familiar with the conditions attached.

This authorization cannot be transferred or assigned to another party. If the work(s), undertaking(s) or activity(ies) authorized to be conducted pursuant to this authorization are expected to be sold or transferred,

or other circumstances arise that are expected to result in a new Proponent taking over the work(s), undertaking(s) or activity(ies), the Proponent named in this authorization shall advise DFO in advance.

Date of Issuance: ____August 14, 2020____

Approved by: _____

David Nanang
Regional Director General
Ontario and Prairie Region
Fisheries and Oceans Canada