



7th Floor - 4922 48th Street,
P.O. Box 2130, Yellowknife NT X1A 2P6

Tel: 867-669-0506 Fax: 867-873-6610
www.mvlwb.com

Staff Report

Applicant: Northwest Territories Power Corporation	
Location: Taltson Twin Gorges	File Number(s): MV2011L4-0002
Date Prepared: June 6, 2022	Date of Board Meeting: July 7, 2022
Subject: Taltson Twin Gorges Modification Request - Turbine and Generator Refurbishment	

1. Purpose

The purpose of this Report is to present to the Mackenzie Valley Land and Water Board (MVLWB/the Board) a modification of the turbine and generator refurbishment submitted by Northwest Territories Power Corporation (NTPC) in accordance with Part G, conditions 1 and 3 of Water Licence (Licence) MV2011L4-0002.

2. Background

- August 31, 2012 – Issuance of Licence MV2011L4-0002;
- March 22, 2022 – Modification Request received;
- April 13, 2022 – Modification Request deemed complete and distributed for review and comment;
- May 11, 2022 – Comments and recommendations due and received;
- June 1, 2022 – Responses due and received;
- **July 7, 2022 – Modification Request presented to the Board for decision; and**
- August 30, 2027 – Expiration of Licence MV2011L4-0002.

3. Discussion

Project Description

The Northwest Territories Power Corporation (NTPC) owns and operates the Taltson Hydroelectric Facility (Taltson Hydro), located 56 km northeast of Fort Smith, Northwest Territories within the Taltson River watershed. Taltson Hydro was built in 1965 and supplies power to the South Slave communities of Enterprise, Fort Resolution, Fort Smith, Hay River and K'atlodeeche First Nation.

A Licence was first issued January 1, 1997 for storage and diversion of water for hydroelectrical purposes. It was renewed in 2011. The Facility includes the Nonacho Lake Reservoir and control structures, Twin Gorges Dam and Reservoir, Trudel Creek, and the intake, penstock, Spillway, tailrace and powerhouse.

A refurbishment of key infrastructure at the facility began in 2020 to ensure the continued reliability of power generation for the South Slave Region. The refurbishment for supporting infrastructure on the site included the replacement of the facilities for staff lodging, replacement of maintenance buildings, construction of additional storage areas, operation of existing quarries and the construction and operation of a winter road to transport equipment and materials. In 2019 NTPC obtained Type B WL MV2019L8-0008 and Type A Land Use Permit (LUP) MV2019F0015 to regulate the construction and operation of the Taltson Winter Road. The refurbishment for supporting infrastructure at the facility is regulated by Permit MV2020X0004 issued in 2020. At Permit issuance, the Board acknowledged the connections between some of the activities applied for under the Permit and the existing Licence (MV2011L4-0002). The Board anticipated that NTPC would need to consider that modifications to the Power Generating Facilities would require submissions under Part G (modifications) of Licence MV2011L4-0002.

In 2023, NTPC plans to complete the refurbishment of the turbine and generator within the generating plant at Taltson, which is regulated by Type A WL MV2011L4-0002. The turbine and generator are two key pieces of infrastructure within the generating plant that convert energy from water flowing through the facility into electricity. Recent assessments of the turbine and generator have determined that a major overhaul is required to extend the life of the facility and to ensure the continued reliability of power generation for the South Slave Region.

Description of Request

In accordance with Part G, conditions 1 and 3 of Licence MV2011L4-0002, NTPC have provided sufficient notification to the Board regarding the proposed modification, including relevant design plans, construction schedules, and confirmation that the associated works would not be in contravention of conditions of the Licence. Part G, condition 2 requires NTPC to obtain written consent from the Board to proceed with its proposed modifications.

The definition for ‘modification’ in the Licence includes *any alteration to a physical work that introduces a new structure or eliminates an existing structure but does not alter the purpose or function of the work nor include an expansion*. The requirements for Modification requests are being replaced in more recent authorizations with the need for the development and submission of Design and Construction Plans for Board approval.

To support the proposed modifications, NTPC submitted an overall summary of planned overhaul activities at site, a Turbine Report and Design Drawings, a summary of potential environmental impacts, and confirmation from the Inspector that the proposed activities would constitute a modification as defined.

Management Plans

The Taltson Hydroelectric Facility Spill Contingency Plan and Waste Management Plan have been updated to include additional measures for dealing with spill response and or waste for the overhaul. These have been submitted, reviewed and approved under Type A Land Use Permit MV2020X0004. Updated plans have been submitted in support of the Permit Amendment and Water Intake Facility Modification Request.

Board staff have requested that NTPC clearly identify whether these most recent updates apply to Licence MV2011L4-0002 so that the most recent versions of approved Plans for the Taltson Facility have been copied to all applicable authorizations on the Public Registry.

Engagement

An updated Public Engagement Plan (PEP) has been provided and was distributed separately for public review. Appendix A specific to this modification, did not include an engagement log. Engagement has occurred for the modification work in general under the Land Use Permit (MV2020X0004) and as presented in the project description update and modification request for the water intake facility and being reviewed separately.

Appendix A of the updated PEP provides a plan for engagement, but this process has not yet begun for the turbine and generator overhaul as the project is still over a year away. Over 2022 and 2023 NTPC will engage with stakeholders as outlined in Appendix A. The 2022 Water Licence Annual Report will include all engagement under the water licence and include the more detailed engagement for the overhaul. In its review of the 2021 Water Licence Annual Report, the Board directed NTPC to complete the engagement as required and ensure it is reflected in the 2022 Water Licence Annual Report.

Preliminary Screening

As the scope of work is replacing existing infrastructure and does not contravene any of the conditions or requirements of MV2011L4-0002, Board staff suggest that no additional preliminary screening or amendments to the Licence are required.

4. Comments

Inspection Reports

An Annual Dam Safety Inspection was completed in July 2021 by Courage Projects Ltd.

No records of any Water Resource Inspection have been submitted on file.

5. Public Review

By May 13, 2022, comments and recommendations on the Modification were received from one Party:

- Government of the Northwest Territories (GNWT) – Environment Assessment and Monitoring (EAM).

The submission consisted only of a no comment letter. NTPC acknowledged the review. No concerns were identified.

6. Security

There are no securities associated with this Licence.

7. Conclusion

No outstanding concerns or recommendations have been identified regarding the modification.

8. Recommendation

Board staff recommend the Board **make a motion to approve the modification of the turbine and generator as per Part G, conditions 1 and 3 of Water Licence (Licence) MV2011L4-0002.**

A draft letter is attached.

9. Attachments

- [Taltson Hydroelectric Facility Turbine and Generator Modification Cover Letter](#)
 - [Hydraulic Design and Turbine Report](#)
 - [Overhaul Scope Summary](#)
 - [Operations under New Turbine](#)
 - [Environmental Impacts Summary](#)
 - [Inspector Confirmation Re: Modification](#)
- Review Comment Table
- Draft Letter from the Board

Respectfully submitted,



Shannon Allerston
Regulatory Specialist

Reviewer Comments and Proponent Responses

Project: Taltson Hydroelectric Facility

Board: Mackenzie Valley Land and Water Board

Organization: Northwest Territories Power Corporation (NTPC)

No.	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response
GNWT-ENR - EAM (Environmental Assessment and Monitoring) - Erin Goose				
1	Cover Letter	No Comment	N/A	NTPC thanks GNWT-ENR-EAM for their time reviewing the submission.