Telephone: 867-767-9187 ex. 24193
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August 20, 2024

Northwest Territories Power Corporation
4 Capital Drive
Hay River, NT X0E 1G2

Attention: Patrick Smith

File Number	**W2023L4-0001**
Type of Operation	**CLASS A - HYDRO**
Location	**Snare River, NT**

Dear Patrick Smith,

An inspection of the above noted operation was conducted on August 13, 2024 by Water Resource Officers Meaghan MacIntyre-Newell and Nahum Lee. Enclosed is a copy of the Water Use Inspection Report.

If you have any questions, please contact me at 867-767-9187 ex. 24193.

Sincerely,

Meaghan MacIntyre-Newell
Water Resource Officer
Environment and Climate Change
North Slave Region

Cc: Wendy Bidwell – Senior Water Resource Officer – GNWT ECC
Scott Stewart – Land and Water Superintendent – GNWT ECC
Rick Walbourne – Regulatory and Permitting Director – GNWT ECC
Kassandra DeFrancis – Regulatory Specialist - WLWB

WATER USE INSPECTION REPORT

LICENCE #:	**W2023L4-0001**	**EXPIRY DATE:**	**May 17, 2063**
LICENCEE:	**Northwest Territories Power Corporation**	**PREVIOUS INSPECTION:**	**March 14, 2024**
COMPANY REP:	**Patrick Smith**	**INSPECTION DATE:**	**August 13, 2024**

SNARE RAPIDS

STRUCTURAL CONDITION OF SNARE RAPIDS MAIN DAM

Dam	Snare Rapids Main Dam

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A									
Crest	Cracking	A	Subsidence	A	Heaving	A	Wave Erosion	A	Brushing Required	A
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A

Structural Condition of Dam Comments:

The Snare Rapids Main Dam was in good condition. At the time of inspection, there was some vegetation on the upstream and downstream face of the dam that should be removed before it becomes problematic.

SNARE RAPIDS MAIN DAM SPILLWAYS and DISCHARGE STRUCTURES

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Intake Structures	A	Discharge Structures	A
Seepage	A	Erosion	A
Downstream Discharge	A	Stage Discharge Curves	A
Forebay Level	A	Tail Race Level	A
Flow rate (Power House)		N/I	
Flow rate (Spillway)		N/I	
Power Production		3.7 mW	
Forebay Level		220.1 m	
Tailrace Level		217.9 m	

Spillways and Discharge Structures Comments:

At the time of Inspection, the Snare Rapids Forebay was measured at 220.1 m (722.7 ft; Figure 1) which is within the requirements outlined in the Licence. In the headgate building, rags were being used to absorb a substance leaking from a box (Figure 2). When a leak is observed, the cause of the

spill should be addressed immediately, and secondary containment be used to prevent discharge into the receiving environment. Part H, Condition 2 of the Licence requires NTPC to prevent any Unauthorized Releases from entering Water. Given the location of the source of contamination, it is unclear how NTPC will prevent the substance from entering the water. NTPC must provide the Inspector with evidence that the potential spill identified in the Snare Rapids Headgate building has been mitigated on or before 1300 hours MST on August 23, 2024. The Inspector notes that if a spill has occurred, it must be reported according to Part H, Condition 4 of the Licence.

The 5B Spillway was inspected and no concerns were noted (Figure 3).

SNARE FALLS

STRUCTURAL CONDITION OF SNARE FALLS MAIN DAM

Dam	Snare Falls Main Dam

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A								
Crest	Cracking	A	Subsidence	A	Heaving	A	Wave Erosion	A	Brushing Required	A
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A

Structural Condition of Dam Comments:

The Snare Falls Main Dam was in good condition; no concerns were noted.

SNARE FALLS MAIN DAM SPILLWAYS and DISCHARGE STRUCTURES

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Intake Structures	A	Discharge Structures	A
Seepage	A	Erosion	A
Downstream Discharge	A	Stage Discharge Curves	A
Forebay Level	A	Tail Race Level	A
Flow rate (Power House)		N/I	
Flow rate (Spillway)		N/I	
Power Production		5.09 mW	
Forebay Level		202.3 m	
Forebay Min Level		181.7 m	

WATER USE INSPECTION REPORT

Spillways and Discharge Structures Comments:

At the time of Inspection, the Snare Falls Forebay was recorded at 202.3 m and the Tailrace was recorded as 181.7 m; within the requirements outlined in the Licence. All facilities were clean and well-maintained. No concerns were noted.

STRUCTURAL CONDITION OF SNARE FALLS SIDE DAM #1

Dam	Snare Falls Side Dam #1

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A								
Crest	Cracking	A	Subsidence	A	Heaving	A	Wave Erosion	A	Brushing Required	U
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U

Structural Condition of Dam Comments:

Brushing of the Snare Falls Side Dam #1 is required on the upstream face and downstream face (Figure 4). No other concerns were noted.

STRUCTURAL CONDITION OF SNARE FALLS SIDE DAM #2

Dam	Snare Falls Side Dam #2

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A								
Crest	Cracking	A	Subsidence	A	Heaving	A	Wave Erosion	A	Brushing Required	U
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U

Structural Condition of Dam Comments:

Brushing is required on the crest, upstream face, and downstream face of Snare Falls Side Dam #2 (Figure 5). No other concerns were noted.

WATER USE INSPECTION REPORT

SNARE CASCADES

STRUCTURAL CONDITION OF SNARE CASCADES MAIN DAM

Dam	Snare Cascades

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A									
Crest	Cracking	A	Subsidence	A	Heaving	A	Wave Erosion	A	Brushing Required	A
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A

Structural Condition of Dam Comments:

The main dam at Snare Cascades was in good condition. The 2023 dam raise has been completed and no concerns were noted (Figure 6).

There are two fuel tanks located at Snare Cascades. One fuel tank is used to supply the heating system within the building and has secondary containment at potential failure points (Figure 7). The second tank has a refueling pump with no secondary containment (Figure 8). The Inspector recommends adding a drip tray under the pump and refueling location to prevent small spills from occurring and having a spill kit located in close proximity to the fuel tanks.

SNARE CASCADES MAIN DAM SPILLWAYS and DISCHARGE STRUCTURES

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Intake Structures	A	Discharge Structures	A
Seepage	A	Erosion	A
Downstream Discharge	A	Stage Discharge Curves	A
Forebay Level	A	Tail Race Level	A
Flow rate (Power House)		N/I	
Flow rate (Spillway)		N/I	
Power Production		2.27 mW	
Forebay Level		182.8 m	
Tailrace Level		174.3 m	

Spillways and Discharge Structures Comments:

At the time of Inspection, the Snare Falls Forebay was recorded at 182.8 m and Tailrace was recorded at 174.3 m which is within the requirements outlined in the Licence. All facilities were clean and well-maintained. No concerns were noted. There was minimal flow through the Snare Cascades spillway (Figure 9).

WATER USE INSPECTION REPORT

SNARE FORKS

STRUCTURAL CONDITION OF SNARE FORKS MAIN DAM and DYKE 3

Dam	Snare Forks Main Dam

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A									
Crest	Cracking	A	Subsidence	U	Heaving	A	Wave Erosion	A	Brushing Required	A
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U

Structural Condition of Dam Comments:

Brushing is required on the upstream and downstream faces of Snare Forks Dyke #1. It was also noted that there is some subsidence in the crest. These issues should be addressed as soon as possible.

SNARE FORKS MAIN DAM SPILLWAYS and DISCHARGE STRUCTURES

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Intake Structures	A	Discharge Structures	A
Seepage	A	Erosion	A
Downstream Discharge	A	Stage Discharge Curves	A
Forebay Level	A	Tail Race Level	A
Flow rate (Power House)		N/I	
Flow rate (Spillway)		N/I	
Power Production		3.68 mW	
Forebay Level		173.7 m	
Tailrace Level		156.8 m	

Spillways and Discharge Structures Comments:

At the time of Inspection, the Snare Forks Forebay was measured at 173.7 m (569.8 ft; Figure 10) which is within the requirements outlined in the Licence. All facilities were clean and well-maintained. No concerns were noted.

The Snare Forks Spillway appeared to be in good condition (Figure 11). Minimal water was moving over the spillway and no erosion was evident.

WATER USE INSPECTION REPORT

STRUCTURAL CONDITION OF SNARE FORKS DYKE 1

Dam	Snare Forks Dyke #1

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A									
Crest	Cracking	A	Subsidence	U	Heaving	A	Wave Erosion	A	Brushing Required	A
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	U

Structural Condition of Dam Comments:

Brushing is required on the upstream and downstream faces of Snare Forks Dyke #1. It was also noted that there is some subsidence in the crest (Figure 12). These issues should be addressed as soon as possible.

STRUCTURAL CONDITION OF SNARE FORKS DYKE 2

Dam	Snare Forks Dyke #2

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

Required Freeboard	A									
Crest	Cracking	A	Subsidence	A	Heaving	A	Wave Erosion	A	Brushing Required	A
Upstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A
Downstream Face	Cracking	A	Surface Erosion	A	Gullying	A	Wave Erosion	A	Brushing Required	A

Structural Condition of Dam Comments:

Snare Forks Dyke 2 appeared to be in generally good condition. Some preventative maintenance to remove vegetation and repair subsidence is required.

WASTE DISPOSAL – SOLID WASTE

Disposal Method		Off-site removal					
Open Dump	No	Landfill	No	Burn & Landfill	No	Underground	No
Offsite Removal	No	Other	Incinerate and removal				
Owner / Operator	Northwest Territories Power Corporation (NTPC)						

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Solid Waste Comments:

Waste from site, including hazardous waste, is segregated and staged for removal on the winter road. Untreated wood and scrap lumber have been stockpiled to be open-burned when conditions allow.

GENERAL CONDITIONS/REPORTS/PLANS

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I - Not Inspected

C &R Plan	A	Records & Reporting	A	Final Report	A
Geotechnical Inspection	A	Posting, Signage	A	Contingency Plan	A
Restorations Activities	A	Spills	A	O&M Plan	A
Maintenance	A	Modifications	A	Annual Report	A

General Condition Comments:

At the time of Inspection, NTPC was up-to-date with reports and plans. It is noted that a Dam Safety Review was conducted in 2024 and the report is forthcoming.

NON-COMPLIANCE/VIOLATIONS OF ACT OR LICENCE

1. **Part H, Condition 2**: The Licensee shall ensure that Unauthorized Releases associated with the Project do not enter any Water.
   Explanatory Remarks: A box leaking an unknown substance was observed in the Snare Rapids Headgate Building during the Inspection. NTPC must provide the Inspector with evidence that the potential spill identified has been mitigated on or before 1300 hours MST on August 23, 2024.

Inspector's Signature: 

WATER USE INSPECTION REPORT

INSPECTION IMAGES

Figure 1. Snare Rapids Forebay

Figure 2. Leaking substance in Snare Rapids Headgate

Figure 3. 5B Spillway

Figure 4. Snare Falls Side Dam 1

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Figure 5. Snare Falls Side Dam 2

Figure 6. Snare Cascades Main Dam

WATER USE INSPECTION REPORT

Figure 7. Snare Cascades fuel tank

Figure 8

Figure 9. Snare Cascades Spillway

Figure 10. Snare Forks Forebay

Figure 11. Snare Forks Spillway

Figure 12. Snare Forks Dyke 1