

**PERMIT TO ALTER A BODY OF WATER**

---

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **MAY 06, 2019**

File No: **536-13**  
Permit No: **ALT10283-2019**

Permit Holder: **Nalcor Energy**  
**500 Columbus Drive**  
**P.O. Box 12800**  
**St. John's, NL, A1B 0C9**

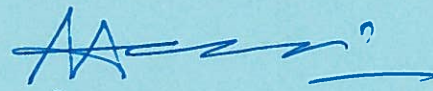
Attention: **Trent Pollett**

Re: **Menihok Dam- Spillway Gate Refurbishment**

---

Permission is hereby given for : **the refurbishment of 4 spillway gates at the Menihok hydroelectric generating facility and associated activities as detailed in the application received from Nalcor Energy on February 11, 2019 with additional information sent on March 29, 2019.**

- This Permit does not release the Permit Holder from the obligation to obtain appropriate approvals from other concerned municipal, provincial and federal agencies.
- The Permit Holder must obtain the approval of the Crown Lands Administration Division if the project is being carried out on Crown Land.
- This Permit is subject to the terms and conditions indicated in Appendices A and B (attached).
- It should be noted that prior to any significant changes in the design or installation of the proposed works, or in event of changes in ownership or management of the project, an amendment to this Permit must be obtained from the Department of Municipal Affairs and Environment under Section 49 of the *Water Resources Act*.



MINISTER

**APPENDIX A**  
**Terms and Conditions for Permit**

**Dam/Reservoir Design**

1. Reservoirs must be provided with a spillway of adequate capacity to safely discharge design flows at non-erosive velocities without causing flooding of the reservoir or damage to the spillway or section downstream channel.
2. The dam and appurtenant structures shall be constructed at the following coordinates:

Name	Datum	Northing (m)	Easting (m)	Zone
Menihék Spillway	NAD83	6038549.42	654707.96	Zone 19

3. The dam(s) must have the following dimensions:

Name	Spillway Sill Elevation (m)	Maximum Water Elevation (m)	Minimum Water Elevation (m)	Minimum Freeboard (m)
Menihék Spillway	478.99	486.93	479	1.54

4. To safely convey peak flows the dam(s) must be designed according to the following hydraulic criteria:

Name	Design Return Period (years)	Inflow Design Flood(m <sup>3</sup> /s)
Menihék Spillway	1/3 between 1:1000 and PMF	5917

**General Alterations**

5. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
6. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
7. Water pumped from excavations or work areas, or any runoff or effluent directed out of work sites, must have silt and turbidity removed by settling ponds, filtration, or other suitable treatment before discharging to a body of water. Effluent discharged into receiving waters must comply with the *Environmental Control Water and Sewage Regulations, 2003*.
8. All operations must be carried out in a manner that prevents damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.
9. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment must be confined to dry stable areas.

10. All vehicles and equipment must be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.
11. During the construction of concrete components, formwork must be properly constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.
12. Wood preservatives such as penta, CCA or other such chemicals must not be applied to timber near a body of water. All treated wood or timber must be thoroughly dry before being brought to any work site and installed.
13. Any areas adversely affected by this project must be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if considered necessary in the opinion of this Department.
14. The bed, banks and floodplains of watercourses, or other vulnerable areas affected by this project, must be adequately protected from erosion by seeding, sodding or placing of rip-rap.
15. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
16. Care must be taken to prevent spillage of pollutants into the water.
17. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
18. Sediment and erosion control measures must be installed before starting work. All control measures must be inspected regularly and any necessary repairs made if damage is discovered.
19. Fill material must be of good quality, free of fines or other substances including metals, organics, or chemicals that may be harmful to the receiving waters.
20. The attached Completion Report (Appendix C) for Permit No. 10283 must be completed and returned to this Department upon completion of the approved works. Pictures must be submitted along with the completion report, showing the project site prior to and after development.
21. This Permit is valid for four years from the date of issue. Work must be completed by that date or the application and approval procedure must be repeated. The following terms are valid for the life cycle of the dam structure: 23, 26, 40.
22. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.

### **Dam Safety**

23. The dam has been conditionally classified in the HIGH Consequence category based on the 2007 Canadian Dam Association (CDA) guidelines. To meet the CDA's Dam Safety guidelines (Current Edition) for dams of this classification, the owner must:
- Carry out an annual Dam Safety Inspection and provide the results to this Department,
  - Carry out a Dam Safety Review and submit a Dam Safety Report to this Department a maximum of every **seven years**,
  - Carry out dam operation, maintenance and surveillance operations in accordance with the OMS Manual and any recommendations of the most recent Dam Safety Review so that an acceptable level of the dam safety is ensured,
  - Prepare an Emergency Preparedness and Response Plan (EPRP) and ensure information in the plan is up to date on an annual basis.

### **Special Conditions**

24. The dam and associated works shall be designed according to the Canadian Dam Association Dam Safety Guidelines and associated Bulletins (most recent edition).
25. The dam and associated works must be designed and constructed under the direct supervision of an engineer eligible for membership with the Professional engineers and Geoscientists of Newfoundland and Labrador (or equivalent Canadian organization) who is able to demonstrate competence in the design, construction, and surveillance of dams.
26. The Department of Environment and Conservation may require the set-up of water resources monitoring and/or dam safety monitoring stations through a Memorandum of Agreement as per provisions of Section 31 of the Water Resources Act, SNL2002 Chapter W-4.01.
27. No work on the spillway gates shall take place until spring runoff has passed.
28. Refurbishment of the spillway gates shall be sequential with a maximum of 2 gates out of service at the same time.
29. During spillway gate refurbishment work, Menihek infrastructure must be able to pass the 1:100 year flow.
30. Any seepage through the stoplogs will be contained and discharged downstream. Any process water will be treated prior to discharge.
31. Any planned changes in the reservoir level will be communicated to the Water Resources Management Division.

### **Dam Construction**

32. Any noticeable deteriorated concrete will be removed before the placement of new concrete. All areas of the existing concrete gated spillway and piers in contact with new concrete shall be treated with high pressure water to remove any unsound materials. A bonding agent shall be applied to the concrete overlay.
33. Major cracks and joints in the concrete of the gated spillway section shall be sealed.
34. The existing steel gate hoist superstructure shall have any warped members replaced and any new steel members painted.
35. Work on the gates includes, but is not limited to, the replacement of rollers, bushings, insulated cladding, ladders, ladder hatches, handrails, electric heating components and switches.

36. Repairs to gate 1 will include covering of an existing opening with a welded plate. Repairs to gate 4 will include fixing a broken beam.
37. Stop-logs shall be placed in the upstream construction gains of the gates to block flow so that work can be carried out in the dry. The downstream work area will be kept dry using sandbags and pumps. Sandbags and debris must be removed before flow is restored.
38. Where pumping is used to bypass flow, the Permit Holder must provide pumps with sufficient capacity to prevent washout of dewatering control methods.
39. The transportation of labour and materials to the site must be along existing access roads.
40. The dam and spillway must be inspected regularly to identify any indications of structural failure, leaking, erosion or other problem so that immediate action can be taken to rectify the problem.

**APPENDIX B**

**Special Terms and Conditions for Permit**

---

1. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall keep all systems and works in good condition and repair and in accordance with all laws, by-laws, directions, rules and regulations of any governmental authority. The Permit Holder or its agent(s), subcontractor(s), or consultant(s) shall immediately notify the Minister if any problem arises which may threaten the structural stability of the systems and works, endanger public safety and/or the environment or adversely affect others and/or any body of water either in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for all damages suffered by the Minister and Government resulting from any defect in the systems and works, operational deficiencies/inadequacies, or structural failure.
2. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall operate the said Project and its systems and works in a manner which does not cause any water related and/or environmental problems, including but not limited to problems of erosion, deposition, flooding, and deterioration of water quality and groundwater depletion, in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for any and all damages associated with these problems caused as a result of changes, deficiencies, and inadequacies in the operational procedures by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
3. If the Permit Holder or its agent(s), subcontractor(s), or consultant(s) fails to perform, fulfil, or observe any of the terms and conditions, or provisions of this Permit, as determined by this Department, the Minister may, without notice, amend, modify, suspend or cancel this Permit in accordance with the *Water Resources Act*.
4. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) indemnify and hold the Minister and Government harmless against any and all liabilities, losses, claims, demands, damages or expenses including legal expenses of any nature whatsoever whether arising in tort, contract, statute, trust or otherwise resulting directly or indirectly from granting this Permit, systems and works in or outside the said Project areas, or any act or omission of the Permit Holder or its agent(s), subcontractor(s), or consultant(s) in or outside the said Project areas, or arising out of a breach or non-performance of any of the terms and conditions, or provisions of this Permit by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
5. This Permit is subject to all provisions of the *Water Resources Act* and any regulations in effect either at the date of this Permit or hereafter made pursuant thereto or any other relevant legislation enacted by the Province of Newfoundland and Labrador in the future.
6. This Permit shall be construed and interpreted in accordance with the laws of the Province of Newfoundland and Labrador.

- cc: Brian Harvey  
Director, Policy and Planning, Aboriginal Affairs Branch  
Intergovernmental and Aboriginal Affairs Secretariat  
brianharvey@gov.nl.ca
- cc: File Copy for Binder
- cc: Mr. Todd Russell  
President  
NunatuKavut Community Council  
P.O. Box 460, Station C  
Happy Valley-Goose Bay, NL A0P 1C0  
trussell@nunatukavut.ca
- cc: Ms. Paula Dawe, P.Eng.  
Manager, Drinking Water and Wastewater Section  
Water Resources Management Division  
Department of Municipal Affairs and Environment  
P.O. Box 8700  
4th Floor, West Block, Confederation Building  
St. John's, NL A1L 4J6  
pauladawe@gov.nl.ca
- cc: Fisheries Protection Division  
Ecosystem Management Branch  
Fisheries and Oceans Canada  
P.O. Box 5667  
St. John's, NL A1C 5X1  
FPP-NL@dfo-mpo.gc.ca
- cc: Innu Nation  
c/o Larry Innes and Paula Reid  
P.O. Box 119  
Sheshatshiu, NL A0P 1M0  
preid@innu.ca

**Appendix C - Completion Report**

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **MAY 06, 2019**

File No: **536-13**

Permit No: **ALT10283-2019**

Permit Holder: **Nalcor Energy**  
**500 Columbus Drive**  
**P.O. Box 12800**  
**St. John's, NL, A1B 0C9**

Attention: **Trent Pollett**

Re: **Menihék Dam- Spillway Gate Refurbishment**

Permission was given for : **the refurbishment of 4 spillway gates at the Menihék hydroelectric generating facility and associated activities as detailed in the application received from Nalcor Energy on February 11, 2019 with additional information sent on March 29, 2019.**

*I (the Permit Holder named above or agent authorized to represent the Permit Holder) do hereby certify that the project described above was completed in accordance with the plans and specifications submitted to the Department of Municipal Affairs and Environment and that the work was carried out in strict compliance with the terms and conditions of the Permit issued for this project.*

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

This completion report must be completed and forwarded to the following address upon completion of the approved work.

Department of Municipal Affairs and Environment  
Water Resources Management Division  
PO Box 8700  
St. John's NL A1B 4J6



**APPENDIX D**  
**Location Map for Permit**

---

