

Navigation Protection Program (NPP)
820-800 Burrard Street
Vancouver BC
V6Z 2J8

Our file: **2008-500822**

APPROVAL

OWNER: **BC Hydro and Power Authority (BC Hydro)**
333 Dunsmuir Street
13th Floor
Vancouver, BC V6B 5R3
Canada

SITE LOCATION: **Amendment of approval under the Canadian Navigable Waters Act (CNWA) dated 2022-05-06 of the following work(s) below, located in Peace River, approximately at 56° 11' 51.62 N, 120° 54' 56.31 W, on unsurveyed foreshore or land covered by water being part of the bed of Peace River, District Lot 4425, Peace River District, Plan EPP85446, City of Fort St. John, in the Province of British Columbia.**

WORK(S):

- **Dam, Spillway, Cofferdams, Diversion Tunnels, Generating Station and Reserve Surplus Excavated Materials (RSEM) R5b**

As per the application (detailed above) to the Minister of Transport, submitted pursuant to the *Canadian Navigable Waters Act*, for an approval of the work per the attached twelve (12) plans, the Minister hereby approves the work pursuant to subsection 7(6) for the construction of the above mentioned work, in accordance with the following terms and conditions:

General

1. The works are to be constructed or installed in accordance with the attached approved plans.
2. Once the construction of the works are completed, the owner shall provide a Statutory Declaration to Transport Canada that the works are built and placed in conformity with the approved plans and site pursuant to the *Canadian Navigable Waters Act*, its regulations and the terms and conditions of approval.
3. As built plans of the works are to be forwarded to Transport Canada within three (3) years upon construction of the project and commencing operation. (Construction related terms and conditions are attached in appendix A)

LIDAR Survey

4. The owner shall conduct an Airborne LIDAR survey of the downstream area to site of the Water Survey Station 07FA004 (Peace River above Pine River) (56° 11' 57" N 120° 48' 52" W). The survey shall take place post construction, but prior to the operations. (This survey can be conducted at the same time as the LIDAR survey in Condition 42)

Dam Operations

5. The CNWA Approval including the cover letter and its Terms and Conditions shall be posted at the dam site office during operations. (See appendix A for construction related posting)
6. While operating, the owner shall maintain a minimum water flow release of 390 cubic meters per second from the Site C dam as measured from the dam or a site no more than 6.5km downstream of the dam (consistent with condition 4.1 in the Decision Statement issued under section 54 of the *Canadian Environmental Assessment Act, 2012*).
7. The owner shall maintain the flow discharge and elevation levels as required by Transport Canada. The Minister may also limit changes to ramp rates as required for navigation safety.
8. The owner shall maintain records and data related to flow discharge, dam safety, surveillance and dam operations, including the Operation, Maintenance and Surveillance Manual, and provide these records to Transport Canada upon request.

Signage

9. The proponent shall develop a draft Operations Public Safety Signage Plan, to be submitted to the Navigation Protection Program at Transport Canada a minimum of 90 days prior to the filling of the reservoir. A final plan shall be submitted to Transport Canada a minimum of 30 days prior to filling of the reservoir for approval.
10. The owner shall install and maintain warning signs on both banks of the waterway at locations approximately 800-1,000m upstream of the dam site. Unless otherwise approved by Transport Canada, each Sign shall state;

**WARNING DAM AHEAD
WATER LEVELS AND FLOWS
MAY CHANGE WITHOUT NOTICE**

Signs must be in accordance with the Canadian Dam Association Technical Bulletin on Public Safety around Dams 2011, or as updated. See Appendix B for Examples taken from the Bulletin.

11. Install and maintain warning signs on both banks of the river at locations approximately 800m, approximately 2.5 kms and 6 kms downstream of the dam site. Unless otherwise approved by Transport Canada, the Signs shall be worded similar to the following:

At approximately 800m

**DANGER
KEEP OUT
DAM OUTFLOW
ACCESS BEYOND THIS POINT
MAY RESULT IN DROWNING**

At approximately 2.5 kms

**WARNING
KEEP AWAY
DAM AHEAD
WATER LEVELS AND FLOWS MAY
CHANGE WITHOUT NOTICE**

At approximately 6 kms (Old Fort)

**NOTICE
DAM AHEAD
WATER LEVELS AND FLOWS MAY
CHANGE WITHOUT NOTICE**

Signs must be in accordance with the Canadian Dam Association Technical Bulletin on Public Safety around Dams, 2011 or as updated. See Appendix B for Examples taken from the Bulletin.

Public Safety Signage Plan During Construction

12. The proponent shall install and implement the Peace River Diversion Public Safety Signage Plan, approved by Transport Canada, and as amended from time to time by BC Hydro, and be in accordance with the *Canadian Dam Association Technical Bulletin on Public Safety around Dams, 2011* or as updated.

Portage System

13. A non-motorized vessel portage system includes appropriate boat launches and the transportation of non-motorized vessels and allowable passengers for each such vessel. The owner is only required to portage non-motorized vessels that are already waterborne, that have arrived by water to the boat launch from another location and have met the notification requirements.
14. The owner is required to portage up to the allowable number of passengers based on the certified capacity of the portaged vessel. The owner can request this information as part of its notification requirements.

The owner shall:

- (a) Between May 15 and September 15, provide a portage system operating in both directions from downstream of the construction zone to upstream of the construction zone to transiting non-motorized vessels between the hours of 7am and 7pm daily. The portage system shall be able to transport the non-motorized watercraft typically transiting the river
 - (b) Post notice of the suspension of service and post the reason for the suspension of service on the owner's public facing website, or at the point of reservation, and at the portage locations, if the portage system is not in operation at any time during the operating period of May 15 to September 15, or the reservoir is being filled
 - (c) Operate the portage system if provided notification a minimum of 7 days in advance, unless multiple vessels are transiting together (a public or groups event) in which case a minimum 2 weeks of notice is required
 - (d) Provide adequate information about the portage system and notification requirements using the Boater Communications Protocol, and:
 - i. For the initial start of the portage system, and opening of the reservoir boat launches, publicize in regional newspapers bi-weekly for the first month, weekly for the next 2 months (can be combined with river closure information)
 - ii. For the next 5 years of operation, publicize weekly for the months of April to August.
 - iii. Permanently post notice at the Peace Island Park boat launch
 - iv. Permanently post notice at the Halfway River replacement boat launch
 - v. Permanently post notice at the Lynx Creek, boat launch
 - vi. Post portage information on the owner website, on a dedicated page related to the project
15. Install and maintain a sign on the opposite bank of the portage indicating that the portage is on the opposite side. The sign shall be a minimum of 72" x 48", a white background with black lettering.
16. The owner shall comply with any direction from Transport Canada modifying the requirements in this section in regards to the Portage System.

Discharge in excess of maximum diversion rate

17. The owner shall provide notification for discharges in excess of 2700 m³/s (discharge greater than maximum generation capacity) to Transport Canada and the public using the Boater Communications Protocol as soon as the date and extent of the discharge is known.

Audible warnings for flow release changes

18. The owner shall:
- (a) Install and maintain audible warning devices that meet the current Canadian Dam Association Guidelines to cover the downstream tailrace and spillway discharge area. The audio devices shall emit a signal that is clearly distinguishable throughout the downstream tailrace and spillway discharge danger area and downriver for 1.5km or a distance specified by Transport Canada
 - (b) Operate the warning signals upon a discharge from the spillway, except to maintain the minimum flow requirement of 390 cm/s or during spillway or low-level outlet gate testing, reservoir filling, or generating unit commissioning
 - (c) Operate the warning signals upon an increase of flows from the tailrace as specified by Transport Canada
 - (d) The owner shall provide flow data and video recordings of flows and water levels downstream of the tailrace upon request by Transport Canada
 - (e) Audible warning signals are only required to operate during daylight hours
 - (f) Conduct ongoing maintenance and inspection of audio warning devices

- (g) Conduct tests of the audio warning devices at least 2 times a year
- (h) Maintain records of maintenance tests, inspections and repairs of all audible warning devices for a period of 5 years

Monitoring of flows downstream

19. The owner shall work with the Water Survey of Canada and relevant provincial partners under the Federal-Provincial Hydrometric Program Agreement to ensure that hydrometric data from the below hydrometric stations on the Peace River are collected, stored and reported as a part of the National Hydrometric Database. The owner shall provide the information to Transport Canada as outlined below and as otherwise requested. Upon direction by Transport Canada, the owner shall reinstate, or arrange with Water Survey of Canada to reinstate, any discontinued hydrometric survey stations or install and maintain new hydrometric survey stations on the Peace River and ensure that water level and flow data is collected, stored and made available for the purpose of navigation.

Station Name	Prov	Water Survey Station ID
PEACE RIVER ABOVE PINE RIVER	BC	07FA004
PEACE RIVER NEAR TAYLOR	BC	07FD002
PEACE RIVER ABOVE ALCES RIVER	BC	07FD010
PEACE RIVER AT DUNVEGAN BRIDGE	BC	07FD003
PEACE RIVER NEAR ELK ISLAND PARK	BC	07FD934
PEACE RIVER ABOVE SMOKY RIVER CONFLUENCE	BC	07FD901
PEACE RIVER AT PEACE RIVER	BC	07HA001
PEACE RIVER NEAR CARCAJOU	BC	07HD001
PEACE RIVER AT FORT VERMILION	BC	07HF001
PEACE RIVER AT PEACE POINT	BC	07KC001

20. The owner shall provide records of discharges from the dam or data collected from relevant hydrometric stations on a given date or time to assist in determining the causes of any reported impacts on navigation upon request by Transport Canada.
21. In addition to the data required to be collected by the owner pursuant to section 6 of the CEEA 2012 Decision Statement, the owner shall prepare and submit to Transport Canada a report of the data collected from the following sites showing actual measurements of water flow and levels compared to the predicted water flows and levels done through modeling presented by BC Hydro in its Environmental Impact Statement for the Project. This review shall be done at 5, 10 and 15 years after start of operational flows, and the results for each review period shall be submitted to Transport Canada within 6 months of the end of each review period. The report shall cover the period of operations preceding the report include a summary of findings, supporting tables or graphs and data sets for the Water Survey of Canada stations:
- (a) Near Taylor 07FD002
 - (b) Near Dunvegan bridge 07FD003
 - (c) Near Peace Point 07KC001
22. The owner shall conduct a review of any navigational impacts on operations of the 3 existing ferries (La Crete, Shaftsbury and Little Red River Cree Nation/Fox Lake) on the Peace River. A report of this review must be submitted to Transport Canada after the first year of operation and thereafter every 5 years for the next 10 years after the start of dam operations. On the 10th year Transport Canada will determine if continued review is warranted. As part of the review process the owner shall:
- (a) Prior to the start of dam operations,
 - i. Contact the ferry operators and establish a reporting protocol that the ferry operators can use to report any groundings, strandings or inability to operate a ferry due to water levels.
 - ii. Provide a copy of this reporting protocol to Transport Canada.

- (b) Submit to Transport Canada a report of all navigational impacts reported to the owner after the first year of operation and thereafter every 5 years for the next 10 years after the start of dam operations. On the 10th year, Transport Canada will determine if continued reporting is warranted. The owner shall provide the following in the report:
 - i. Water levels recorded from the nearest hydrometric station and,
 - ii. Information about flow releases from the dam at or around the times of the reported navigational impact and an analysis of the findings.
- 23. If another water control or large withdrawal structure is built on the Peace River downstream of Site C, Transport Canada will determine which of the downstream monitoring requirements will remain in effect.

Reservoir Filling

- 24. The owner shall submit a draft operational debris management plan to Transport Canada for review and approval no later than 90 days prior to reservoir filling. The owner shall submit a final operational debris management plan no later than 30 days prior to reservoir filling.
- 25. Prior to reservoir filling, the owner shall:
 - (a) Complete the clearing plan in the reservoir area in accordance with the Environmental Assessment and Water License Conditions, as outlined in the Joint Review Panel and the Vegetation Clearing and Debris Management Plan as per the British Columbia Environmental Assessment Office Certificate Conditions,
 - (b) Submit documentation to Transport Canada that these conditions have been fulfilled, and
 - (c) Provide Transport Canada with the same information, at the same time it is being provided to Canadian Environmental Assessment Agency to meet condition 4.2 of the CEAA 2012 Decision Statement:

The Owner shall, 90 days prior to initiating reservoir filling, provide the Agency with estimates of downstream water flows and water levels to Peace Point, Alberta for scenarios at minimum, average and maximum rates of reservoir filling and a description of how these estimates have been used to undertake reservoir filling in a manner that would minimize impacts on downstream water flows and water level conditions.

- 26. 90 days prior to the start of the filling of the reservoir, the owner shall provide the public with information about the reservoir filling using the Boater Communications Protocol and the following:
 - (a) Publication in regional newspapers bi-weekly for the first month, weekly for the next 2 months
 - (b) Posted notice at the Peace Island Park, boat launch
 - (c) Posted notice at the Halfway River replacement boat launch
 - (d) Posted notice at the Lynx Creek, boat launch
 - (e) Posted notice at the Hudson Hope, boat launch
 - (f) Post information on the owner website, on a page related to the project

Reservoir Operation Operating Regime

- 27. Except for emergency operating conditions or planned drawdowns the owner shall operate the reservoir between the elevations of 460.0 meters ASL, the minimum operating level, and 461.8 meters ASL, the full supply level, measured at the dam using Geodetic Survey of Canada datum.
- 28. The owner shall install and maintain staff water level gauges, at the dam and at each of the 3 boat launches as outlined in condition 48. The owner shall at a minimum of once a week post, on a webpage related to the project, the current level of the reservoir.

Drawdowns for planned maintenance, upgrades and unplanned repairs

- 29. The owner shall provide information about planned drawdowns below the reservoir level of 460 meters ASL, 20 days prior to the start of the drawdown of the reservoir, using the Boater Communications Protocol and:

- (a) Publicize in regional newspapers weekly for the first month, bi-monthly for the 2nd month and once per month for the remaining length of the drawdown or by other public media or publication methods upon agreement with Transport Canada.
- (b) Posted notice at the Halfway River replacement boat launch.
- (c) Posted notice at the Lynx Creek, boat launch.
- (d) Posted notice at the Hudson Hope, boat launch.
- (e) Post information on the owner website, on a page related to the project.
- (f) Notice to Transport Canada

Emergency drawdowns

30. The owner shall provide information about an emergency drawdown below the 460.0 meters ASL to Transport Canada and the public as soon as the date and extent of the drawdown is known using the Boater Communications Protocol, and:

- (a) Initial and ongoing notifications to the regional media outlets, throughout the period of the drawdown
- (b) Posted notice at the Halfway River replacement boat launch
- (c) Posted notice at the Lynx Creek, boat launch
- (d) Posted notice at the Hudson Hope, boat launch
- (e) Post information on the owners website, on a page related to the project
- (f) Notice to Transport Canada

Drawdowns ordered by the Comptroller

31. For drawdowns below the 460.0 meters ASL operating regime, as ordered by the Comptroller of Water Rights in accordance with the Province of BC *Water Act or Water Sustainability Act*, the owner shall provide information about a drawdown ordered by the Comptroller to Transport Canada and the public as soon as the date and extent of the drawdown is known using the Boater Communications Protocol, and:

- (a) Posted notice at the Halfway River replacement boat launch
- (b) Posted notice at the Lynx Creek, boat launch
- (c) Posted notice at the Hudson Hope, boat launch
- (d) Post information on the owners website, on a page related to the project
- (e) Notice to Transport Canada

Emergency surcharges

32. In the event of an emergency surcharge greater than elevation 462.10 m that will extend beyond 24 hours the owner shall provide information to Transport Canada and the public as soon as the date and extent of the surcharge is known using the Boater Communications Protocol, and:

- (a) Posted notice at the Halfway River replacement boat launch
- (b) Posted notice at the Lynx Creek, boat launch
- (c) Posted notice at the Hudson Hope, boat launch
- (d) Post information on the owners website, on a page related to the project
- (e) Notice to Transport Canada

Debris Management on the Reservoir

33. The owner shall maintain the active debris management plan (from condition 24) to remove debris from the reservoir for the first 5 years from the start of reservoir filling. This system will consist of equipment to marshal debris, move it a collection site and remove it from the waterway.
34. Long term debris management shall be dependent on the actual accumulation of debris. The owner shall revise its operational debris management plan and submit to Transport Canada for review and approval, 1 year prior to the end of the first 5 year period.
35. The owner shall continually monitor the reservoir, advise the public of areas of potentially floating debris and remove the debris in an expedient manner.
36. Debris storage at the dam site shall not block vessel navigation access to the Moberly River.
37. The owner shall cut or remove submerged or partial submerged timbers that are potential hazards to navigation. Timbers not removed shall be cut to Elevation 455m ESL unless otherwise approved by Transport Canada.
38. The owner shall conduct further debris management activities that Transport Canada may require.

Post filling reservoir survey and long term safety and shoreline monitoring

39. The owner shall;
 - (a) Submit a draft boating safety and shoreline monitoring plan 90 days prior to the filling of the reservoir for Transport Canada review. A final plan must be submitted 30 days prior to reservoir filling for Transport Canada approval. This plan must include details meeting parameters of b) to d) below.
 - (b) Conduct a safety survey of the reservoir post filling and prior to May 30th of the first year after reservoir filling and report the findings to Transport Canada. This information will be used to determine when the full access for the public to the reservoir is granted.
 - (c) Conduct an annual safety survey of the reservoir prior to the boating season and report any potential navigation safety concerns to Transport Canada.
 - (d) Conduct a safety inspection at any time for all or a portion of the reservoir and report the findings to Transport Canada upon request.

Sediment survey

40. The owner shall:
 - (a) Conduct a hydrographic survey of the Halfway River embayment to determine sediment deposition rates. The area to be surveyed is bank to bank, 1.5km upstream from the new Halfway River Bridge to the site of the confluence of the Halfway River embayment at approximately 56°13'9.80"N 121°26'50.87"W at 10 year and 15 year intervals from start of operation. Survey results are to be provided to Transport Canada within 6 months of each survey period.
 - (b) Conduct hydrographic surveys for portions of the reservoir and report as required to Transport Canada.

Navigation aids

41. The owner shall:
 - (a) Place, operate, inspect and maintain white lights on the dam at a location to maximize the sightline, facing upstream on the Peace River reservoir.
 - i. These lights shall have a nominal range of 5km.
 - ii. Final location shall be approved by Transport Canada.
 - (b) Install and maintain other navigation aids as required by the Transport Canada.

LIDAR Survey

42. The owner shall conduct an Airborne LIDAR survey of the reservoir area post construction and clearing, but prior to the filling of the reservoir. This survey shall be the basis for bathymetric mapping. (This survey can be conducted at the same time as the LIDAR survey in Condition 4)

Mapping

43. Prior to starting operation of the boat launches, the owner shall produce and make publicly available a map or maps of the reservoir at a scale that is usable to vessel operators. The map(s) must be available on the internet and the owner must provide paper copies for purchase by the public at a nominal fee equivalent to the cost of marine charts. Drafts of these map(s) must be submitted to Transport Canada for review 120 days prior to full access to the reservoir being granted. The map or maps must be reviewed and updated every 10 years or when required by Transport Canada due to a significant change in the reservoir. The map must show at the minimum, the following information:

(a) Map information

- i. Date of Issue
- ii. Scale bar
- iii. Scale
- iv. True North to be indicated
- v. Depth datum
- vi. Emergency contact information

(b) Amenities

- i. Boat launches
- ii. Navigation aids
- iii. In-water works

(c) Depths

- i. Bathymetry contours shall be delineated in meters as follows; 0, 1, 2, 5, 10, 20, 30, 40, 50
- ii. The datum for depth at 0m shall be the 460.0 ASL

(d) Marking of navigation hazards

- i. Small or individual hazards shall be marked as point features with unique symbology.
- ii. Areas with multiple hazards may be outlined with a polygon using appropriate symbology.
- iii. Fish habitat compensation areas to be marked and outlined with a polygon using appropriate symbology.

Signage and notifications

44. The owner shall provide boater information about the reservoir using the Boater Communications Protocol and signage at the following locations:
- (a) Halfway River boat launch
 - (b) Lynx Creek boat launch
 - (c) Hudson Hope boat launch
 - (d) On the owner website, on a dedicated page on a site related to the project
45. In the year that the public boat launches are opened, the owner shall establish and chair a reservoir marine user group, open to all interested users of the reservoir, to discuss issues or concerns related to navigation on the reservoir.
46. The owner shall arrange and hold a minimum of one meeting per calendar year for the reservoir marine user group and maintain the minutes and contact lists. The meetings are to be held at Fort St John or a location agreed upon by members of the group.
- (a) The owner is responsible for documenting and actioning any issues or concerns related to navigation that arise during these meeting

- (b) Unresolved issues may be submitted by either the owner or user group members to Transport Canada for review
- (c) Minutes of the meetings must be provided to Transport Canada upon request
- (d) After 5 years, meetings may cease if the majority of the reservoir marine user group makes a motion to end them

Emergency dock at dam site

47. The owner must not restrict the use or access of any docking or landing facility at the dam site for use in an emergency. Signage at this facility shall have emergency contact information.

Boat launches

48. The owner shall construct the three boat launches prior to filling of the reservoir.
- (a) Near Halfway River
 - (b) At Lynx Creek
 - (c) At Hudson Hope

Decommissioning

49. Unless otherwise specified in the Act, the owner shall submit notice and detailed plans to the Minister responsible one year prior to the planned decommissioning date.

Indigenous Relations

50. In regards to Indigenous groups affected by the proposed project, the Proponent, in consultation with the Department of Transport, shall:
- (a) Collaborate with Indigenous groups to:
 - i. Develop, implement and manage a plan to monitor the terms and conditions in this approval;
 - ii. In the event of unforeseen circumstances related to navigation, identify and develop additional mitigation measures to address impacts to current use of lands and resources for traditional purposes; and
 - iii. Share information about the project
 - (b) Establish committees and/or mechanisms for dialogue among the Proponent, Indigenous groups, and the governments of Canada and British Columbia on ways to mitigate the impacts of the project as it relates to navigation
 - (c) Inform Indigenous groups about project activities that may affect access to land and waters for the purpose of those uses
 - (d) Notify without delay Indigenous groups of an occurrence that results in a significant interference to navigation which poses a serious and imminent danger of such an occurrence, and which occurrence is not captured by this authorization; and
 - (e) Provide funds to Indigenous groups to support their capacity to carry out these activities.

SIGNED ON April 19, 2024
at the NPP regional office of Pacific



Eric Leung
NPP Officer
Programs Group
Transport Canada
Pacific Region
For the Minister of Transport