

# *Accidents and Malfunctions Plan Annual Update: 2021*

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*Site C Clean Energy Project*

*March 31, 2022*

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Impact Assessment Agency of Canada  
160 Elgin Street, 22nd Floor  
Ottawa, ON K1A 0H3

Attention: Mr. Nicolas Courville

Dear Mr. Courville:

**Re: Site C Clean Energy Project - Accidents and Malfunctions Plan 2021 Annual Update**

I am writing to provide an annual update on BC Hydro's Accidents and Malfunctions Plan for 2021. This update is being submitted in accordance with Condition 2.6 of the Site C Project Clean Energy Project's Decision Statement, issued to BC Hydro on November 25, 2014, and with reporting requirements outlined in the Accidents and Malfunctions Plan.

As per Condition 2.6 of the Decision Statement:

*"The Proponent shall implement the plan and provide to the Agency a review and summary of the implementation of the plan as well as any updates required to the plan on an annual basis commencing with construction. In the event of an occurrence of an accident or malfunction, the Proponent shall update the plan to incorporate new procedures and measures to avoid a reoccurrence, as necessary."*

As per Section 5.0 Reporting of BC Hydro's Accidents and Malfunctions Plan, BC Hydro will:

*"... develop a procedure for notifying BC Ministry of Environment; BC Ministry of Forests, Lands and Natural Resource Operations; Environment Canada and Fisheries and Oceans Canada in the event that an accident or malfunction as described in Section 3 occurs. The procedure will be developed in consultation with the named agencies prior to commencement of dam construction."*

In accordance with Decision Statement 2, the Accidents and Malfunctions Plan was developed by BC Hydro, in consultation with Environment Canada and the Environmental Assessment Agency, to prevent accidents and malfunctions and outline procedures in the case of occurrence of an accident or malfunction. The draft Accidents and Malfunctions Plan was submitted to the CEA Agency (now the Impact Assessment Agency of Canada, or IAAC) and Environment Canada on October 17, 2014. The final was submitted on June 5, 2015, and is available on the Site C Project Website at: [https://www.sitecproject.com/sites/default/files/Accidents and Malfunctions Plan.pdf](https://www.sitecproject.com/sites/default/files/Accidents_and_Malfunctions_Plan.pdf)

## Background

Construction began at the Site C Project on July 27, 2015 and has been ongoing since. The Project completed construction of the upstream cofferdam in February 2021 and the downstream cofferdam in March 2021. With these important components of the earthfill dam complete, the area between the two cofferdams was dewatered in Spring of 2021 to allow for the excavation of the centre section of the dam core trench.

With that milestone complete, crews excavated and then began placing material in the earthfill dam. To December 31, 2021, approximately 30 per cent of the total required volume of material had been placed in the dam.

Concurrent to dam construction, work advanced on roller-compacted concrete placements in the dam and core buttress. Together with the powerhouse and spillways buttresses, the dam and core buttress forms a key safety component in the Project's design.

In October 2021, BC Hydro completed the dam and core buttress, marking the completion of the Project's overall roller-compacted-concrete program. Since the program began in 2017, crews placed a total of 1.7 million cubic metres of roller-compacted concrete in the three large buttresses.

In the generating station, work on the concrete foundation and enclosure of the powerhouse structure were completed in 2021. Placement of the concrete that embeds the turbines and forms the floors in the powerhouse is advancing at a pace to match the turbines and generators contractor's schedule.

As of December 31, 2021, 81 penstock sections (out of a total of 90 sections) had been installed, and in the spillways, more than 50 per cent of the spillways concrete had been placed.

Away from the dam site, work progressed on all six segments of the Highway 29 realignment sub-project, including the substantial completion of the Halfway River bridge in August 2021 and the opening of the Farrell Creek East segment to traffic in October 2021.

Construction of the second 500 kV transmission line connecting Site C to the Peace Canyon Generating Station continued in 2021. All foundations were completed, and all towers were assembled and installed on the foundations by March 2021. In July 2021, conductor stringing began; by the end of the year, the line was approximately two-thirds complete.

## 2021 Accidents and Malfunctions

BC Hydro reported 1,850 environmental incidents within the internal BC Hydro incident management system (IMS) from January 1<sup>st</sup> to December 31<sup>st</sup>, 2021. The incident type summary for all reported environmental issues is as follows:

- 1,745 Spill/Pollution
- 33 Fish/Water
- 27 Land/Vegetation
- 41 Bird/Wildlife
- 4 Archeological

The vast majority of incidents on the Site C Project in 2021 were related to small volume spills of less than 5 litres. In these incidents, workers deployed spill response measures and contaminated soil was disposed of appropriately.

## Reporting

Through its Fish Hydro Management Committee (FHMC), which has representation of Fisheries and Oceans Canada (DFO) and the Province of B.C., BC Hydro has established an agency notification protocol that defines the nature of an accident/incident, its level/severity, who to notify and how (i.e., by phone, website, or e-mail). Although Environment Canada is not represented at FHMC, DFO did ensure that any notifications to them related to a deleterious substance spill to water would be conveyed to Environmental Canada upon receipt of an applicable notification. This notification procedure was agreed upon by FHMC on July 23, 2015, within roughly one week of the start of Site C Construction. A detailed description of this notification procedure is provided in Appendix A.

## Plan Updates

Section 6 of the Accidents and Malfunctions Plan requires that the Plan is updated annually. In 2021 BC Hydro reviewed this plan and since there were no significant learnings or modifications to procedures developed to avoid reoccurrence of incidents, BC Hydro determined that an update to the Plan was not required for 2021.

## Closure

Please do not hesitate to contact me at if you have any questions.

Regards,

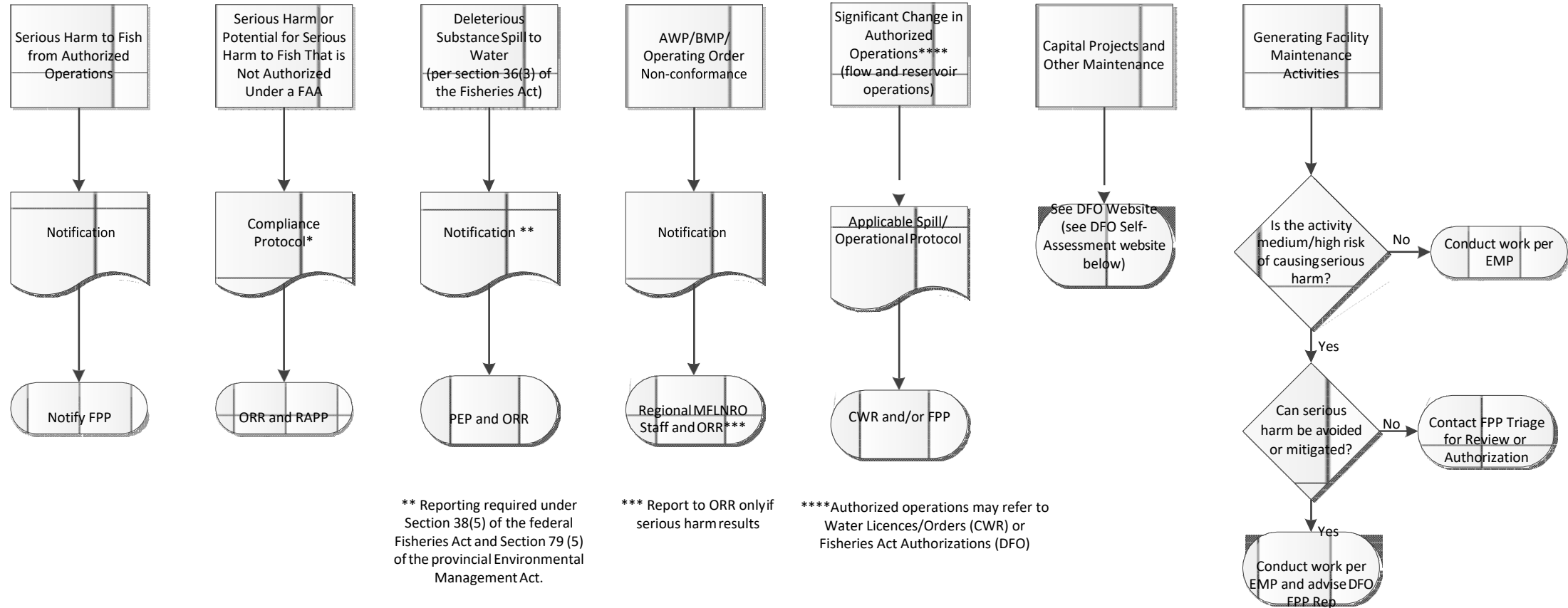


Greg Scarborough  
Manager, Environmental Mitigation, Monitoring and  
Compliance Site C Clean Energy Project

Attachments  
Appendix A – Agency Notification Process Chart

# Agency Notifications

Applicable to incidents, agreement non-compliance and generating plant maintenance. Does not include notifications in advance of projects related to request for review, permits or authorization.



\*\* Reporting required under Section 38(5) of the federal Fisheries Act and Section 79 (5) of the provincial Environmental Management Act.

\*\*\* Report to ORR only if serious harm results

\*\*\*\* Authorized operations may refer to Water Licences/Orders (CWR) or Fisheries Act Authorizations (DFO)

**Note on notification:** ensure that any reports to regulatory agencies state whether the event being reported is authorized/licenced/permited or not and which regulatory requirement (e.g. serious harm, deposit of a deleterious substance, etc.) has triggered the notification.

## \*Compliance Protocol timelines:

(notification of Serious Harm required per Section 38(4) of the Fisheries Act)

1. Report to local contacts as soon as possible.
2. Preliminary assessment within 24 hour or such time frame as otherwise agreed.
  - depending on nature of incident, assessment may include stranding and/or salvage.
3. Within 5 days or a time frame agreed to by all parties, review of the preliminary assessment and notify location contacts as to the status of compliance with all Acts, regulations, licenses, permits and authorizations.

See full Compliance Protocol for complete process.

## Types of Incidents

- Serious Harm: Stranding, entrapment, TDG, destruction of fish, habitat
- Protocols and procedures: deviation from ordered operational requirements and BMPs
- AWP Non-conformance: clearing exceedance, riparian area trespass
- Spills of Deleterious Substances to Water (administered by EC federally, MoE provincially)

Contacts:

## Department of Fisheries and Oceans

### Triage & Planning Unit (Authorizations & Reviews)

Telephone: Toll free 1-866-845-6776  
 Email: ReferralsPacific@dfo-mpo.gc.ca  
 Self-Assessment Website: <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>

### Observe, Record & Report (ORR)

Telephone: Toll free 1-800-465-4336  
 Email: PACRadioRoomRHQ@pac.dfo-mpo.gc.ca

Contacts:

## Province of BC

Report All Poachers and Polluters (RAPP)  
 Telephone: 1-877-952-7277

Provincial Emergency Program (PEP)  
 Telephone: Toll free 1-800-663-3456

## DFO Fisheries Protection Program – Large Hydro Unit

Brian Naito (Large Hydro Lead and Peace)  
 Telephone: 604-790-4260  
 Email: Brian.Naito@dfo-mpo.gc.ca

Dan Sneep (Lower Mainland and Coastal)  
 Telephone: 604-209-5764  
 Email: Daniel.Sneep@dfo-mpo.gc.ca

Dean Watts (Columbia)  
 Telephone: 250-371-1286  
 Email: Dean.Watts@dfo-mpo.gc.ca