

# *Accidents and Malfunctions Plan Annual Update: 2018*

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*Site C Clean Energy Project*

*March 29, 2019*

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Canadian Environmental Assessment Agency  
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 2018 Annual Update**

I am writing to provide an annual update on BC Hydro's Accidents and Malfunctions Plan for 2018. This update is being submitted in accordance with Condition 2.6 of the Site C Project's Decision Statement, issued to BC Hydro on October 14, 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 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. In 2018, significant progress was made across the project. At the dam site, the left bank excavation neared completion and work continued on Relocated Surplus Excavated Material RSEM areas L5, L6, and Area 25. Excavation of both diversion tunnels commenced and was ongoing from both the inlet and outlet portals.

On the right bank, excavation and placement of roller compacted concrete for the powerhouse was completed in 2018. Works on the service bay superstructure continued in 2018. Excavation also began for the foundation of the temporary fish passage facility. Assembly of the steel components for the turbine and generator works at site continued and construction of an assembly facility for the steel penstocks began near Fort St. John.

Work on the transmission line included tree clearing and vegetation removal, construction of access roads, and installation of transmission tower foundations. The realignment of Highway 29 at Cache Creek commenced with archaeological stripping and road construction taking place at Cache Creek West (4 km of road) in the summer of 2018 and fall respectively. In late 2018, reservoir clearing recommenced in the Moberly River Valley.

River diversion is scheduled to commence in 2020 with reservoir filling and operations beginning in 2023.

## 2018 Accidents and Malfunctions

BC Hydro reported 556 environmental incidents within the internal BC Hydro incident management system (IMS) from January 1<sup>st</sup> to December 31<sup>st</sup>, 2018. The incident type summary for all reported environmental issues is as follows:

- 492 Spill/Pollution
- 30 Fish/Water
- 13 Land/Vegetation
- 18 Bird/ Wildlife
- 3 Archeological

The vast majority of incidents on the Site C Project in 2018 are related to small volume spills of less than 5 litres. However, on September 8 and 9, 2018, a discharge of approximately four million litres of partially treated storm water into the Peace River occurred during a 55-mm rain event. The discharge was a relatively small volume of approximately 34 litres per second over a 26-hour period into a flow in the Peace River of approximately 1.2 million litres per second. As such, the water was immediately diluted with no harmful effects observed. Following this event, the Comptroller of Water Rights requested a review of the capacity of the care of water system on the right bank approach channel. Environment Canada is also investigating the incident. BC Hydro is taking action to increase the holding capacity and effectiveness of the care of water system and to remove the weathered acidic rock to reduce the potential for a similar reoccurrence.

## 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.

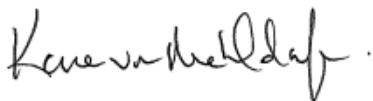
## Plan Updates

Section 6 of the Accidents and Malfunctions Plan requires that the Plan is updated annually. In 2018 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 2018.

## Closure

Please do not hesitate to contact me at [karen.vonmuehldorfer@bchydro.com](mailto:karen.vonmuehldorfer@bchydro.com) if you have any questions.

Regards,



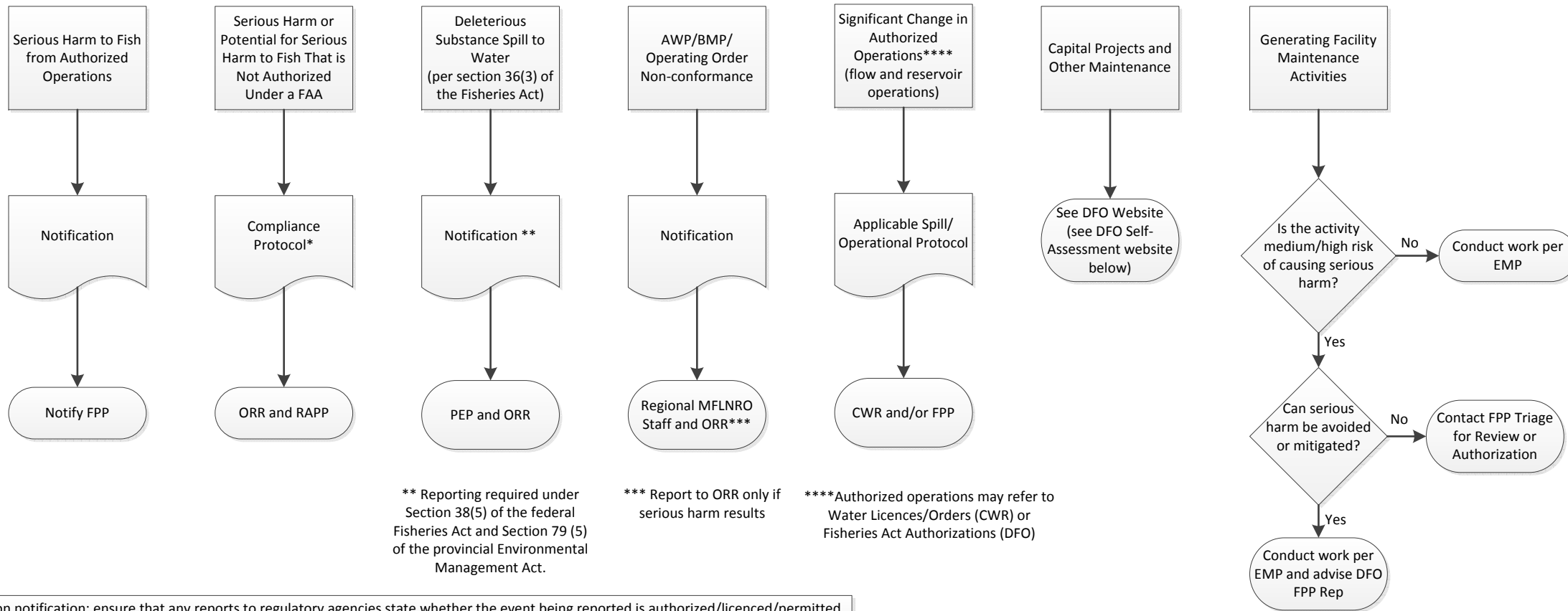
Karen von Muehldorfer  
Regulatory Manager, Site C Clean Energy Project

## 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.



**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, entrainment, 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