BC Hydro
Power smart

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July 11, 2018

Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

RE: Site C Clean Energy Project, PUBLIC Quarterly Progress Report No. 11

Dear Mr. Wruck,

BC Hydro has voluntarily provided the B.C. Utilities Commission with quarterly reports since the start of construction to be transparent about Site C's progress, accomplishments and challenges. Enclosed is the 11th Quarterly Site C Progress Report for the reporting period from January 01, 2018 to March 31, 2018.

I also want to provide an update to my October 04, 2017 letter to the Commission that acknowledged we would not meet river diversion in 2019 due to geotechnical issues and construction challenges. Over the past several months, we have worked diligently with our main civil works contractor to settle past issues resulting from that outcome.

I'm pleased to inform you that after a number of months of negotiations, we have reached a memorandum of understanding with our main civil works contractor on an updated contractual schedule – an important step in reaching our goal of achieving river diversion in 2020 and meeting the 2024 project in-service date.

The highlights of the Quarterly Progress Report include:

- Awarding three major contracts: generating station and spillways civil works, Site C substation, and powerhouse bridge and gantry cranes; and
- Launching the $20 million BC Hydro Peace Agricultural Compensation Fund to support agricultural production and agrifood initiatives in the Peace Region.

While the Site C project remains on time and within budget, in the report we acknowledge two areas of concern that impacted the overall health of the project: schedule and safety. For these reasons we classified the overall health of the project for this quarter as "red," or having serious concerns.

As noted above, we have worked hard over the past several months to improve our performance in these areas and since the reporting period, the overall health of the project has significantly improved and is now classified as "yellow," or having some concerns.

The first area of concern was related to the project schedule and the ongoing efforts to resolve various issues with the main civil works contractor that I referenced earlier. Last month, we reached a memorandum of understanding with the main civil works contractor.

The memorandum of understanding includes:

- a contractual schedule that achieves 2020 river diversion and keeps us on track to meeting the 2024 project in-service date;
- accelerating a number of critical construction activities and purchasing some additional key equipment;
- numerous incentive payments to the contractor if and when they meet critical project milestones; and
- a settlement of past issues that arose prior to May 31, 2018 and were described in my October 04, 2017 letter.

The total potential cost of the agreement over the life of the project is $325 million.

While the agreement will draw on our contingency budget from the main civil works contract, we have been able to manage the costs within the existing construction budget. Therefore, there is no impact to the overall project budget.

The final contractual agreement between BC Hydro and the main civil works contractor is expected to be complete later this month.

The second area of concern was about safety performance on the project. During the reporting period there were two lost time injuries, six medical attention treatment injuries and five near-misses – an increase from the previous quarter.

As you know, BC Hydro prides itself on its commitment to safety and we have taken steps to increase the focus on safety at site, with the goal of preventing all injuries. We have been working closely with all of our contractors in the development of a plan to improve safety performance.

During the reporting period, BC Hydro also developed its own plan to achieve the safety results we want. As part of that plan, we have implemented a senior-level safety steering committee with all prime contractors to address shared safety issues and opportunities. We're also hiring a permanent senior field safety manager and are regularly holding on-site safety conferences to improve the project's safety performance and culture. The contractors have confirmed their commitment to safety as well and developed plans to improve their performance.

With an agreement in place that resolves prior issues with our main civil works contractor, a revised contractual schedule that meets 2020 river diversion and a strengthened project team with independent oversight from EY Canada, BC Hydro is in a stronger position to deliver Site C within budget and on schedule for 2024.

Today, with the measures we have taken over the past several months, the overall health of the Site C project has returned to "yellow."

Sincerely,

Chris O'Riley

BC Hydro
Power smart

Site C Clean Energy Project

Quarterly Progress Report No. 11

F2018 Fourth Quarter

January 2018 to March 2018

PUBLIC

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1 Project Status

This Quarterly Progress Report No. 11 (**Report No. 11**) provides information concerning the Site C Clean Energy Project (**Project**) covering the period from January 1, 2018 to March 31, 2018.

1.1 Overview and General Project Status

Site C will be a third dam and hydroelectric generating station on the Peace River in northeast B.C. The Project will provide 1,100 megawatts of capacity and about 5,100 gigawatt hours of energy each year to the province's integrated electricity system. In December 2014, after a three-year-long independent environmental assessment by the federal and provincial governments, the Project received approval from the provincial government to proceed. Construction on the Project began in July 2015.

The Project includes the following key components (refer to Figure 1 and Figure 2):

- Access roads in the vicinity of the site and a temporary construction access bridge across the Peace River at the dam site;
- Construction of two temporary cofferdams across the main river channel to allow for construction of the earthfill dam;
- Worker accommodation at the dam site, with other workers being housed off site and in the region;
- The realignment of six segments of Highway 29 over a total distance of 30 kilometres;
- Shoreline protection at Hudson's Hope;
- Two new 500 kilovolt AC transmission lines that will connect the Site C facilities to the existing Peace Canyon Substation, along an existing right-of-way;

- An 800-metre roller-compacted-concrete buttress to enhance seismic protection;
- An earthfill dam, approximately 1,050 metres long and 60 metres high above the riverbed;
- A generating station with six 183 MW generating units; and
- An 83-kilometre-long reservoir that will be, on average, two to three times the width of the current river.

Figure 1 Site C project components

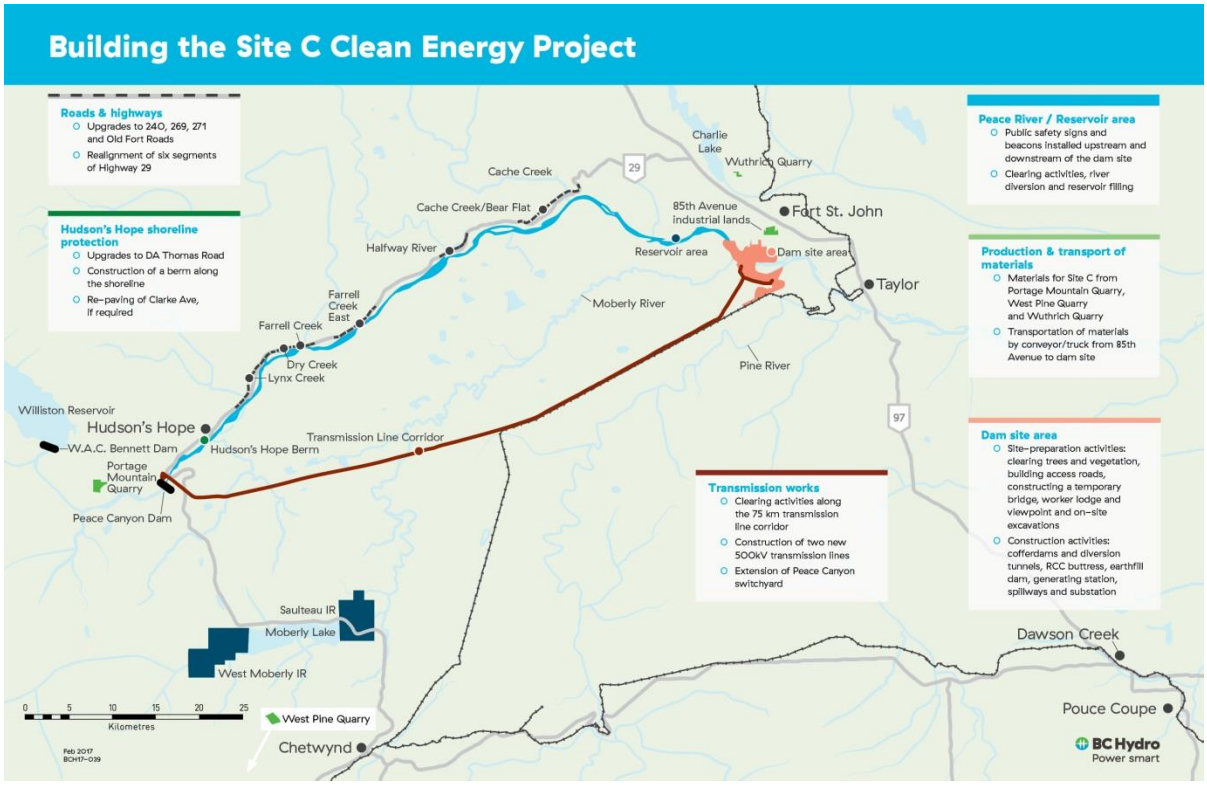
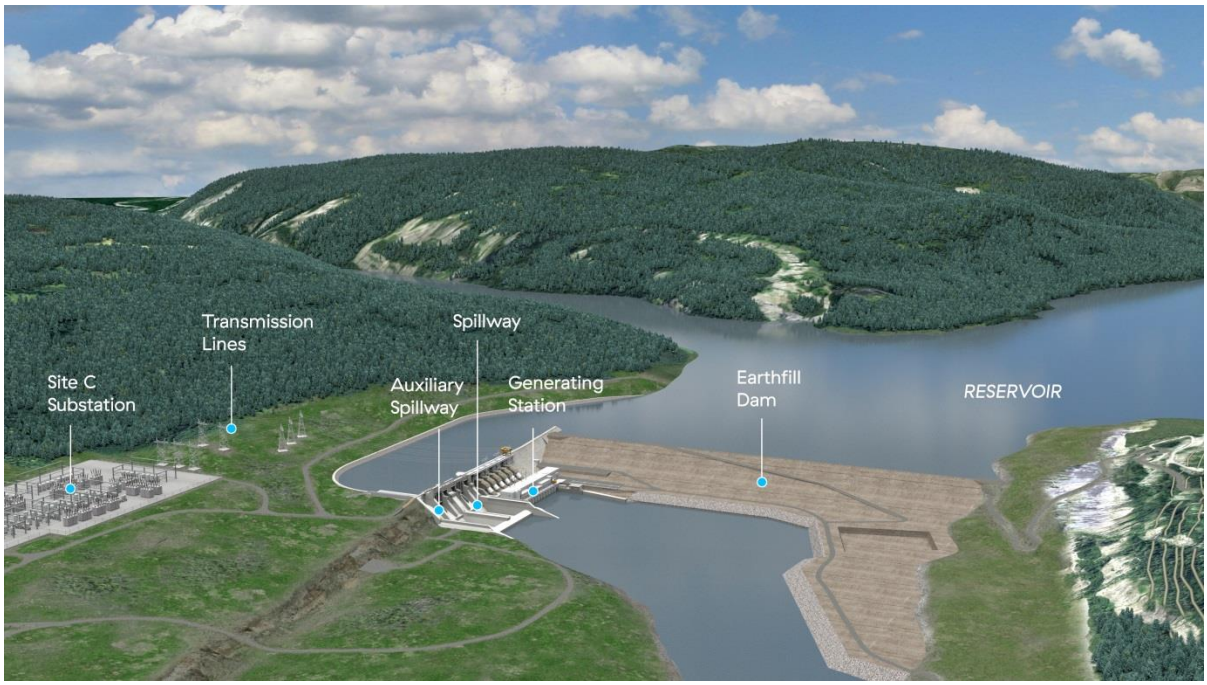


Figure 2 **An Artist's Rendering Depicts the Site C Earthfill Dam, Generating Station and Spillways, Substation, Transmission Lines and Reservoir**



Significant Project updates that occurred during the period from January 1, 2018 to March 31, 2018, include:

- In February 2018, the BC Hydro board of directors approved the revised Project budget of $10.7 billion;
- EY Canada continued to provide independent oversight for the project including budget oversight, schedule evaluation and risk assessment analysis;
- In February, BC Hydro launched the $20 million BC Hydro Peace Agricultural Compensation Fund to support agricultural production and agrifood initiatives in the Peace Region;
- In March 2018, BC Hydro announced the award of three major contracts: the generating station and spillways civil works contract, the Site C substation

contract and the generating station and spillways powerhouse bridge and gantry cranes contract. The generating station and spillways is the second largest contract to be awarded for Site C and it includes the delivery of civil works associated with the powerhouse, penstocks, spillways and power intakes for the dam;

- As of March 31, 2018, more than 350 metres had been excavated in the right bank drainage tunnel. The approximately one-kilometre-long tunnel is being built to house geotechnical instrumentation and provide drainage beneath the bedrock foundation of the roller-compacted concrete buttress; and
- Also in March 2018, BC Hydro provided $48,000 in grants to support five non-profit organizations in the Peace Region through its Generate Opportunities (**GO**) Fund.

These, and other, project updates are detailed in this report. Table 1 provides a dashboard based on the Project's status as at March 31, 2018.

Table 1 Project Status Dashboard

● Green: No Concerns; ● Amber: Some Concerns but in Control; ● Red: Serious Concerns

Status as of:		March 2018
Overall Project Health	●	Overall, the project is on time and on budget but recent contractor safety incidents, ongoing negotiations with the main civil works contractor to settle past disputes, the pending injunction application, and ongoing discussions around the Highway 29 re-alignment all contribute to serious concerns with the overall project health in the quarter.
Scope	●	Scope changes have been minimal and the changes are expected to be managed within the contingency of the revised project budget.
Schedule	●	The project is still on track for the overall in-service date of 2024. However, there are current schedule pressures due to ongoing negotiations with the main civil works contractor to settle past disputes, the pending injunction application, and ongoing discussions around Highway 29 re-alignment options.
Cost	●	The project budget ($10.7 billion including Treasury Board Reserve) was approved by the board of directors in February 2018. Current cost pressures result from ongoing negotiations with the main civil works contractor to settle past disputes. BC Hydro expects to manage the cost pressures within the contingency of the revised project budget.
Regulatory, Permits & Tenures	●	Permits are on track and meeting schedule requirements with 211 permits/authorizations obtained to date and an estimated 154 permits/authorizations remaining. Additionally, 18 annual environmental reports, required through either federal or provincial authorizations, were finalized and distributed this quarter.

Status as of:		March 2018
Environment	🟡	During the quarter there were no significant environmental incidents. The volume of water anticipated for spring freshet remains unknown but significant effort has gone into preparing the site to manage the flows. Additionally, the site continues to require the ability to treat water with high metal/PH concentrations and expects a treatment facility on-site in May 2018.
Procurement	🟢	The generating station and spillways large cranes and civil contracts were awarded in February and March 2018 respectively. The hydromechanical contract early works agreement was issued in March 2018. The Site C substation contract was awarded in February 2018, and an early works agreement was signed with the transmission line construction contractor in March 2018.
Indigenous Relations	🟡	Accommodation offers were extended to ten Indigenous groups. Six agreements are fully executed and in implementation. BC Hydro is continuing to engage with First Nations to respond to concerns related to cultural and heritage resource mitigations, including concerns in the Cache Creek-Bear Flats area.
Litigation	🟡	In January 2018, two Treaty 8 First Nations (West Moberly and Prophet River) each filed treaty infringement claims, followed by an interim injunction application. These claims assert, among other things, that the Site C Project is an infringement of their rights under Treaty 8. The injunction seeks to stop the Site C Project pending the trial of the treaty claim and is set to be argued in court from July 23 to August 3, 2018.
Safety	🔴	There were two lost time injuries, six medical attention treatment injuries and five serious incidents this quarter. For details refer to section 1.2.5 below. The right bank drainage tunnel work site was shut down for 24 days starting January 27, 2018 to complete a safety investigation related to an incident when a worker could have been seriously injured due to some shotcrete dislodging within the tunnel. BC Hydro and the main civil works contractor are working closely together to address safety incidents and the safety culture.
Stakeholder Engagement	🟢	BC Hydro continues to work with the communities, regional district and stakeholder groups on the implementation of various community agreements.

1.2 Post Reporting Period Update

Subsequent to the reporting period, on June 7, 2018, BC Hydro reached a memorandum of understanding with the main civil works contractor on an updated contractual schedule.

The memorandum of understanding includes:

- a contractual schedule that achieves 2020 river diversion and keeps the project on track to meeting the 2024 project in-service date;
- accelerating a number of critical construction activities and purchasing some additional key equipment;
- incentive payments to the contractor if and when they meet critical project milestones; and

- settlement of past issues that arose prior to May 31, 2018;

The total potential cost of the agreement over the life of the project is $325 million.

While the agreement will draw on the contingency budget from the main civil works contract, we have been able to manage the costs within the existing construction budget. Therefore, there is no impact to the overall project budget.

The final contractual agreement between BC Hydro and the main civil works contractor is expected to be executed in July 2018.

A second area of concern identified in section 1.1 relates to safety performance on the project. During the reporting period, there were two lost time injuries, six medical attention treatment injuries and five near-misses – an increase from the previous quarter.

BC Hydro prides itself on its commitment to safety and we have taken steps to increase the focus on safety at site, with the goal of preventing all injuries. We have been working closely with all of our contractors in the development of a plan to improve safety performance.

During the reporting period, BC Hydro also developed its own plan to achieve the safety results we want. Subsequent to the reporting period, and as part of that plan, we have implemented a senior-level safety steering committee with all prime contractors to address shared safety issues and opportunities. We are also hiring a permanent senior field safety manager and are regularly holding on-site safety conferences to improve the project's safety performance and culture. The contractors have confirmed their commitment to safety as well and developed plans to improve their safety performance.

With an agreement in place that resolves prior issues with our main civil works contractor, a revised contractual schedule that meets 2020 river diversion and a

strengthened project team with independent oversight from EY Canada, BC Hydro is in a stronger position to deliver Site C within budget and on schedule for 2024.

In July 2018, with the measures we have taken over the past several months, the overall health of the Site C project has returned to “yellow”.

1.3 Major Accomplishments, Work Completed, Key Decisions and Key Issues

1.3.1 Aboriginal Consultation

Pursuant to the Environmental Assessment Certificate and Federal Decision Statement, BC Hydro is required to consult with 13 Indigenous groups with respect to the construction stage of the Project. This consultation includes provision of information on construction activities, support for the permit review process, and review and implementation of mitigation, monitoring and management plans, and permit conditions.

Accommodation offers were originally extended to ten Indigenous groups. Six agreements have been fully executed and are in various stages of implementation. One agreement is in legal drafting. To date, Impact Benefits Agreements with Doig River First Nation, Halfway River First Nation, Saulteau First Nation and McLeod Lake Indian Band, and a Project Agreement with Dene Tha’ First Nation have been publicly announced.

1.3.2 Litigation

The details of the various proceedings and hearings with decisions pending are summarized in Table 2 below. On January 15, 2018 the West Moberly First Nations and the Prophet River First Nation each filed a Notice of Claim in B.C. Supreme Court asserting an infringement of Treaty 8 and seeking, among other remedies, a permanent injunction against the issuance of government permits and approvals for Site C. West Moberly First Nations has filed an interim injunction application seeking to stop the construction of Site C pending the hearing of their civil claim. The

injunction application is scheduled to be heard from July 23, 2018 to August 10, 2018 (in Vancouver).

Table 2 Summary of Proceedings with Hearings or Decisions Pending

Description		Date
B.C. Supreme Court: Treaty Infringement Claims		
West Moberly First Nations Prophet River First Nation	Notice of Claims filed	January 15, 2018
West Moberly First Nations	Injunction application filed Hearing date	January 31, 2018 July 23, 2018 – August 10, 2018
B.C. Court of Appeal:		
Prophet River First Nation West Moberly First Nations	Appeal filed Hearing date	November 30, 2016 Appeal is inactive. Requires leave of court to proceed
Environmental Appeal Board		
C. London	Hearing date	Written hearing of the matter through mid-July 2018
Other Proceedings		
Building Trades v. BC Hydro	Civil claim filed Response to claim filed	March 2, 2015 April 10, 2015

1.3.3 Permits and Government Agency Approvals

1.3.3.1 Background

In addition to the Environmental Assessment Certificate, the Water License and the Federal Decision Statement, provincial permits and federal authorizations are required to construct the Project. Timing of the application for these permits and authorizations is staged and aligned with the construction schedule, availability of detailed design information, and by project component. Approximately 385 permits will be required throughout the life of the project. Prior to the reporting period, 211 permits had been received and are being actively managed. During the reporting period, nine new permits were received in accordance with the schedule. BC Hydro has developed a coordinated First Nations consultation process with the Ministry of Forest, Lands, Natural Resource Operations and Rural Development to assist with the government permit workload. This coordinated consultation process was implemented in January 2018.

1.3.3.2 Federal Authorizations

Federal authorizations are required under the *Fisheries Act* (Fisheries and Oceans Canada) and the *Navigation Protection Act* (Transport Canada)*.* All major federal authorizations for construction and operation of the Site C dam and reservoir were received in July 2016. At this time, no further *Fisheries Act* authorizations are anticipated. Additional *Navigation Protection Act* approvals for discrete works in the reservoir (e.g., shoreline works, debris booms and Highway 29 bridges), are anticipated to be issued at the regional level.

In November 2017, the Canadian Wildlife Service added bank swallows to the *Species at Risk Act*, requiring a Canadian Wildlife Service permit to disturb bank swallow burrows. Colonies of burrows have been identified in portions of the dam site and potentially along some portions of the future reservoir. On March 15, 2018 BC Hydro received approval from the Canadian Wildlife Service to prevent nesting and remove inactive bank swallow burrows within the dam site. BC Hydro is working

closely with its main civil works contractor to mitigate bank swallow risks of nesting on site.

Subsequent to the reporting period, on April 5, 2018, Transport Canada contacted BC Hydro regarding the requirement for a potential amendment to the *Navigable Waters Protection Act* authorization arising from the change in design of the generating station and spillways. BC Hydro is working with Transport Canada to obtain any required amendment approvals.

1.3.3.3 Provincial Permits

The plan for obtaining Site C provincial permits involves a phased approach to the submission of applications to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development based on project components and construction schedule.

Provincial permits are required primarily under the *Land Act, Water Sustainability Act, Forest Act, Heritage Conservation Act,* and *Mines Act*. The majority of the permits are administered by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development and the Ministry of Energy, Mines and Petroleum Resources.

Approximately 340 provincial permits and approvals will be required throughout the life of the project. As of this reporting period, 184 permits have been obtained with another 38 permit submissions pending approval.

1.3.3.4 Environmental Assessment Certificate

BC Hydro is seeking an amendment to the Site C project's Environmental Assessment Certificate to optimize the design of the generating station and spillways.

The changes include: each generator will now be connected to a transformer located upstream of the units, on the transformer deck; the spillways originally had seven

gates, but will now be constructed with three radial gates and six low level outlets; and the discharge capacity of the spillways has been increased. These improvements will optimize capacity, minimize environmental risks, improve safety and facilitate the ease of long-term maintenance during operations. The footprint and the functional requirements of the generating station and spillways will remain the same.

As with any large construction project, refinements to the design are expected. We do not anticipate any impacts to the cost of the generating station and spillways.

As part of the amendment process, we have provided both the draft amendment and final amendment submission to Indigenous groups and local governments. On March 6, 2018 we provided an overview presentation to the Environmental Assessment Office's established technical working group comprised of Indigenous groups, local government representatives and federal and provincial regulators. On March 14, 2018 we provided a detailed technical presentation to Indigenous groups on both the design changes and the effects on water and aquatic life. We anticipate a decision on the amendment request by August 2018.

1.3.3.5 Permitting Improvement

In order to efficiently and effectively manage the large volume of permits required for the project, BC Hydro continues to engage with regulators, Indigenous groups and contractors to share information, seek feedback, and identify process improvements. Process improvements implemented include the following:

- BC Hydro continues to facilitate meetings with the Comptroller of Water Rights and contractors to ensure permit applications are coordinated, timely and sufficient;
- Regular permitting forums are being held with Indigenous groups to share information on upcoming permit applications and to seek feedback before

applications are submitted to regulators. In Fiscal 2018, one forum was held; and

- BC Hydro has implemented a coordinated First Nations consultation process with the Ministry of Forest, Lands, Natural Resource Operations and Rural Development to assist with the government permit workload.

1.3.4 Engineering and Construction

1.3.4.1 Engineering

Design activities for main civil works focused on several alternatives to accelerate the river diversion schedule. These included alternatives for the construction of the inlet portal structure, temporary stabilization measures for the outlet portal and design alternates for the construction of the roller-compacted concrete. The few remaining main civil works construction drawings are being released in accordance with project schedule requirements.

Construction support is underway for the hydromechanical equipment and spillways, power intakes and powerhouse contracts, with a focus on the early submittal packages required under the contracts. Several batches of construction drawings for the generating station and spillways contract were completed January 2018 through March 2018 and the remainder are being developed for issue to the contractor in accordance with the contract schedule.

The specifications and modelling for the Balance of Plant contract are progressing to meet the project schedule for a request for proposal. Balance of Plant and equipment supply contracts combined are 42 per cent complete. Design has advanced on the protection and control systems. Implementation design is at 95 per cent level for the 500 kV lines and the right bank substation. Peace Canyon gas insulated switchgear design is in progress and is at the 95 per cent level. Planning for Highway 29 final design has been updated to meet project schedule requirements. The tender package for Cache Creek west has been prepared and

design alternates for Cache Creek crossing have been developed in consultation with stakeholders.

A Technical Advisory Board meeting was held from late January 2018 to early February 2018 and several conference calls were also conducted to discuss options for acceleration of the outlet portal. The primary objective of this meeting was to update the Technical Advisory Board on the status of the Project with a focus on the excavations on both the right bank and left bank.

1.3.4.2 Construction

Refer to Appendix F for the full construction schedule.

Reservoir Clearing

As of March 31, 2018, clearing of the lower reservoir was substantially complete. The remaining clearing activities commenced in February 2018. Approximately 107,000 cubic metres of merchantable trees were cleared, processed and transported to local mills. There were 12.9 hectares of trees not cleared due to environmental constraints. These trees will be cleared in the fall of 2018.

As of December 31, 2017, clearing at Moberly River was approximately 45 per cent complete. There were no clearing activities at Moberly River drainage in the reporting period. Remaining clearing on Moberly River and disposal of wood waste of all cleared areas will commence in November 2018.

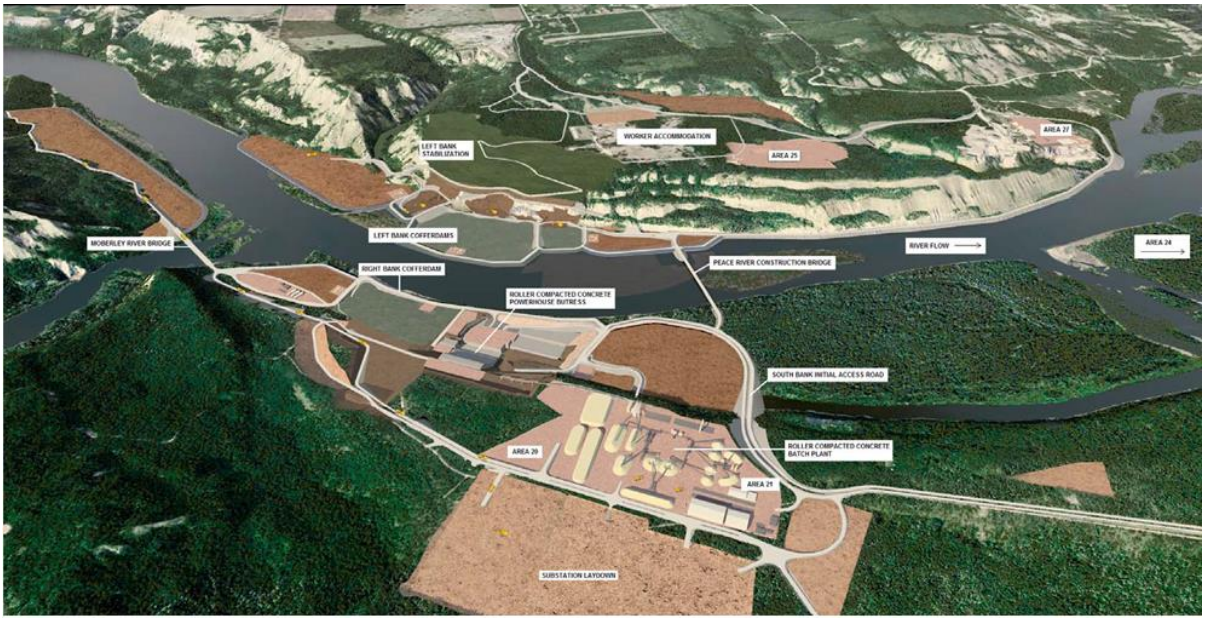
Disposal of wood waste at the dam site commenced in November 2017 and is now complete. A total of 230 debris piles have been disposed of by burning. Plans are in place to commence clearing for new areas in the eastern reservoir in fall 2018.

Main Civil Works

The scope of the contract includes the construction of the following major components:

- Diversion works (including two approximately 11-metre diameter concrete-lined tunnels approximately 750 m in length);
- Excavation and bank stabilization (approximately 26 million cubic metres of overburden and rock excavation);
- Relocation of surplus excavated material (including management of discharges);
- Dams and cofferdams (including a zoned earth embankment 1,050 metres long and 60 metres above the present riverbed and stage 1 and 2 cofferdams);
- Roller-compacted concrete (including a buttress approximately 800 metres long with 2 million cubic metres of concrete)
- Haul roads; and
- Inlet and outlet portals.

Figure 3 Map of Main Civil Works work Areas



Construction progress at site currently is split between work on the left bank and right bank.

Left Bank

As reported previously, some construction challenges were encountered on the left bank, which have delayed diversion to 2020. Work activities on the left bank are to stabilize the slope with a mass excavation, stabilize the diversion inlet and outlet portals and excavate a set of diversion tunnels in preparation for river diversion and construction of the earth embankment dam.

The activities during this period were focused on achieving the start of diversion tunneling in October 2018 to enable diversion of the Peace River in 2020.

The activities currently underway or completed include:

- continuation of the construction of a till haul road across the left bank, expected to be complete in October 2018;
- continuation of the left bank excavation (to allow access to the inlet and outlet portal), expected to be completed by October 2018; and
- stabilization of the diversion inlet portal, which includes benched excavation above the inlet portal to allow work to commence on construction of the inlet portals. This excavation is expected to be completed by August 2018.

Right Bank

The right bank scope of work includes the excavation of the powerhouse and spillway and dam, and placing roller-compacted concrete for the foundations to support the powerhouse, dam and spillway structures. The current activities on the right bank include excavation of the right bank drainage tunnel, excavation of the spillway, and placement of roller-compacted concrete in the powerhouse and spillway.

The main civil works contractor was only able to complete 30 per cent of the expected placement of roller-compacted concrete in 2017 due to various issues experienced throughout the work season. BC Hydro and the main civil works

contractor are reviewing options to mitigate the risk of not meeting the date of the transfer of responsibilities to the generating station and spillways contractor.

The main civil works contractor has completed 35 per cent of the linear metres (compared to plan of 50 per cent) in the right bank drainage tunnel to date, which is now expected to be complete by the end of 2018. The completion of the full work, including installation of drains and instrumentation, is now forecast for April 2019.

Spillway apron excavation is expected to commence shortly with completion scheduled for July 2018. Powerhouse roller-compacted concrete placement is also expected to commence shortly, with completion scheduled for October 2018. The 2018 aggregate production in support of roller-compacted concrete placement and cast in place concrete placement started in March 2018.

In-River Work

Following diversion in 2020, a cofferdam will be placed in the Peace River to provide safe access for the main dam construction. The current in-river work includes dredging in support of stage 1 cofferdams.

Earthfill Dam

This work is not scheduled to commence until 2019.

Ministry of Transportation and Infrastructure Public Road Upgrades

BC Hydro and the Ministry of Transportation and Infrastructure are exploring options to design the Highway 29 realignment at Cache Creek-Bear Flats to reduce the effects on potential burial sites and areas of cultural significance in the area. Consultation with Indigenous groups and property owners began in January 2018.

The Ministry of Transportation and Infrastructure has confirmed that a temporary detour option for Cache Creek-Bear Flats could be implemented to allow river diversion to continue as scheduled.

Transmission and Substation

Vegetation clearing, including the removal of merchantable and waste wood, was completed on the east half of the transmission line right-of-way, with the exception of two hectares of hand-falling located on the slope above the dam site. This work will be completed from August 2018 to September 2018. Clearing on the west half of the right-of-way is 37 per cent complete, but, due to an injunction application by West Moberly First Nations, further clearing has been voluntarily postponed until the earlier of the injunction decision or October 1, 2018.

The substation construction contract was awarded to F&M Installations Ltd. on February 16, 2018 and the contractor mobilized to site on March 28, 2018. Substation construction is now in progress.

A contract for the supply of transmission line overhead conductors was awarded to Nexans Canada on March 2, 2018.

An early works agreement was signed with the preferred proponent of the transmission line construction request for proposals on March 26, 2018. Subsequently to the reporting period, on May 4, 2018, the transmission line construction contract was awarded.

The 65 per cent design review milestone of the Peace Canyon gas-insulated switchgear expansion was completed on March 14, 2018.

Turbines and Generators

Voith Hydro Inc. continued assembly and welding of embedded turbine components in its temporary manufacturing facility on the right bank. The Voith São Paulo factory will supply the majority of turbine generator components and, by April 2018, had produced the first four cast steel parts for the turbine. Voith will commence turbine installation in the powerhouse by summer 2020.

Generating Station and Spillways

The contract for the generating station and spillways civil works was awarded to Aecon-Flatiron-Dragados-EBC Partnership in March 2018. All plans required to start work on schedule were completed by April 6, 2018. These included the Environmental Management Plan, the Safety Management Plan, and the Work Program and Schedule. The generating station and spillways contractor started work on schedule on the right bank on April 10, 2018. This work involves the preparation of the generating station and spillways contractor's infrastructure.

The powerhouse bridge and gantry cranes contract with REEL COH was signed in February 2018. Work has started on the design of the powerhouse bridge cranes.

An early works agreement for the supply of the hydromechanical gates was signed by the preferred proponent in March 2018. This contractor has started to design the draft tube gate anchors.

Quality Management

Implementation and monitoring of Quality Control and Quality Assurance Plans are required of all contractors. Table 3 below identifies quality management non-conformity instances during the quarter ending March 31, 2018.

Table 3 Quality Management Non-Conformity Report Metrics

Contract	Reported this Period	Closed this Period	Reported to Date	Closed to Date	Open as at March 31, 2018
Main Civil Works	76	143	795	496	299
Turbines and Generators	7	5	19	14	5
Transmission	2	1	12	11	1

Within the main civil works contract, the top three disciplines with the most non-conformities reported to date are earthworks (313), quality (130) and tunnel (112). Outstanding non-conformities are being resolved and reviewed weekly through face-to-face meetings with management from BC Hydro and the Contractor.

BC Hydro is reviewing one of the five non-conformities remaining open related to turbines and generators and has accepted the remedial actions proposed by the Contractor for the other four.

The two non-conformities reported this period for the transmission contracts are minor in nature and have been reviewed by BC Hydro. Contractors have implemented corrective actions accepted by BC Hydro.

1.3.5 Safety

The project status for safety was changed to red during this period due to two reported lost time injuries, six medical attention-treatments and five serious incidents that could have potentially caused a serious injury or fatality. The right bank drainage tunnel work site was shut down for 24 days beginning January 27, 2018, to complete a safety investigation related to an incident when a worker could have been seriously injured due to some shotcrete dislodging within the tunnel.

A public near miss occurred this period when a member of the public lost traction when backing up his truck outside of the Site C gates and backed into a ditch due to winter road conditions.

Furthermore, WorkSafeBC issued six inspections reports and wrote 15 orders against a contractor. In addition, the Ministry of Energy, Mines and Petroleum Resources issued two inspections reports and wrote three orders against the contractor.

BC Hydro is working closely with its prime contractors at site to improve the safety culture. With additional prime contractors coming on board, a senior-level site safety steering committee has been formed to address opportunities in this area. The committee has developed a vision for project safety of the workforce being “proud to perform world class work, where no one gets hurt” and is cooperating on common issues, such as silica management and signage.

There was an increase in contractor, employee and public near misses from the last reporting period. A near miss incident is an unplanned loss of control event that could have resulted in an injury but did not because of effective barriers or the person was missed/out of harm's way. It is a leading indicator to an accident that can prevent injuries and damages. Although near misses do not cause immediate harm, they precede events in which a loss or injury could occur. Contractors and employees are encouraged to report near misses to gain an opportunity to prevent future incidents. Generally, BC Hydro considers increased near miss reporting as positive and indicative of a stronger or improving safety culture.

Table 4 below identifies the project safety metrics during the quarter ending March 31, 2018.

Table 4 Safety Metrics

	Reported this Period (January 1, 2018 to March 31, 2018)[1]	Reported since Inception (July 27, 2015)[2]
Fatality & Serious Injury[2] (permanently disabling)	0	0
Lost Time Injury	2	10
Lost Time Injury Frequency (number of injuries resulting in lost time per 200,000 hours worked)[3]	0.46	0.22
Severity Rate (number of calendar days lost due to injury per 200,000 hours worked)[3]	56.38	12.13
Contractor near miss incidents	52	627
Employee near miss incidents	5	28
Public near miss incidents	1	6
Equipment/property damage reports[4]	22	321
WorkSafeBC orders	15	82

1 Numbers are subject to change due to timing of when data is retrieved and when injury is categorized.
2 Excludes health events unrelated to work standards.
3 BC Hydro is now capturing safety metrics data each week from our two prime contractors which includes hours worked. Submissions have improved during the reporting period, resulting in improvements in the timeliness and accuracy of the safety metrics.
4 Types of equipment and property damage include vehicle damage, motor vehicle accidents, minor electrical fire damage, etc. Equipment damage data is collected through contractor monthly reports not the BC Hydro Incident Management System.

1.3.6 Environment

1.3.6.1 Mitigation, Monitoring and Management Plans

The Environmental Assessment Certificate and Federal Decision Statement conditions require the development of draft and final environmental management, mitigation and monitoring plans, as well as the submission of annual reports on some of these plans.

Focus remains on finding a solution to the pH and metal limits imposed by the Water Comptroller as the ambient conditions throughout the site make compliance challenging. We have worked with the main civil works contractor to approve procurement of an on-site mobile water treatment plant, which will arrive in May 2018 and address pH and metals exceedances in the on-site water management.

As of the end of this quarter, all required submissions have been made in accordance with the schedule and requirements of the conditions, including all environmental protection plans required of the generating station and spillways contractor.

Also during the reporting period, 18 annual reports were submitted in accordance with the conditions.

1.3.6.2 Technical Committees Required under Schedule A of the Conditional Water Licence

Schedule A of the Conditional Water Licence requires that BC Hydro establish, with provincial and federal regulators, two technical committees to provide oversight and guidance to the refinement and implementation of BC Hydro's mitigation, monitoring and management plans. The two committees are: the Fisheries and Aquatic Habitat Mitigation and Monitoring Technical Committee; and the Vegetation and Wildlife Mitigation and Monitoring Technical Committee. Schedule A of the Conditional Water Licence outlines a delivery schedule linked to Site C project construction

component for when the technical committees must review and revise various mitigation and monitoring plans.

1.3.6.3 Environmental Compliance Inspections and Enforcement

Inspectors from the B.C. Environmental Assessment Office and Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Fisheries and Oceans Canada, Transport Canada and the Canadian Environmental Assessment Agency are expected to regularly inspect the Project to assess its compliance with Environmental Assessment Certificate conditions, provincial and federal permits and authorizations and the Federal Decision Statement conditions.

During this quarter, environmental compliance continued to focus on completing the channelization works at the areas of the dam site referred to as L3 and Garbage Creek. The upper portion of L3 was completed and included substantial re-contouring, channel armouring, water deceleration features and installations of two stilling basins. Due to soil saturation, works on the installation of the final sediment pond on the lower portion of L3 have been postponed to summer 2018. Water and mobilized sediment will be managed through other means, such as deceleration installations and collection and pumping.

Compliance officers from the B.C. Environmental Assessment Office, the Canadian Environmental Assessment Office, the Water Comptroller's Office, and various provincial agencies participated in a week long compliance promotion event on site from January 25, 2018 to January 28, 2018. No non-compliances were noted during this event.

During the quarter, the independent environmental monitor continued weekly inspections with a focus on the left bank water management and right bank sediment ponds. Overall, the weekly inspections indicated general environmental compliance across the dam site with continued efforts to achieve the reduced discharge limits for total suspended solids, acidity and metals. Issues were observed for excessive

greasing of equipment and hydrocarbon spills as well as gas cylinder storage issues. BC Hydro will be working with its onsite contractors to raise the awareness of both care of water and spill/leak prevention requirements.

No other provincial or federal inspectors visited the site during this quarter.

1.3.6.1 Heritage

In accordance with a number of Environmental Assessment Certificate and Federal Decision Statement conditions, the Site C Heritage Resources Management Plan addresses the measures that will be used to mitigate the adverse effects of the Project on heritage resources.

Following completion of 2017 field work, two annual reports and 22 archaeological interim reports were submitted to the Archaeology Branch and Indigenous groups in support of *Heritage Conservation Act* permit requirements. BC Hydro submitted the Heritage Resources Management Plan annual report to the Canadian Environmental Assessment Agency, B.C. Environmental Assessment Office, and the Archaeology Branch, per conditions detailed in the Environmental Assessment Certificate and Federal Decision Statement. Heritage compliance reviews of contract documents, contractor environmental plans and construction readiness plans were performed to ensure compliance; and two contractor compliance field inspections of archaeological sites were conducted by BC Hydro's heritage specialist. No heritage chance finds were reported in this quarter. Planning was started for the 2018 heritage program field work to meet regulatory requirements for pre-construction archaeological impact assessments in areas not accessible until now, systematic data recovery at selected archaeological sites, and palaeontological inspections.

1.3.6.2 Agriculture Mitigation and Compensation Plan – Framework

Establishment of the $20 million BC Hydro Peace Agricultural Compensation Fund is underway. The first fund board meeting is anticipated to be held in May 2018. The board will be made up of representatives from five regional agricultural organizations, the Peace River Regional District, three agricultural producer members-at-large and one Peace River Valley agricultural producer. BC Hydro posted the public request for proposals for the fund administrator, who will provide financial management, board secretariat and fund application process services, which closed on March 29, 2018. BC Hydro is now reviewing the responses. The $20 million will be transferred into the fund once BC Hydro approves the financial management plan prepared by the fund administrator and receives feedback from the board.

1.3.7 Labour, Employment and Training and Building Capacity Initiatives

Labour

To date, unions that have participated in the construction of Site C include: Construction Maintenance and Allied Workers (**CMAW**), the Christian Labour Association of Canada (**CLAC**) Local 68, Canada West Construction Union (**CWU**), Pile Drivers 2402, the Construction and Specialized workers Union (**CSWU**), Local 1611, the International Union of Operating Engineers (**IUOE**) Local 115, and the Ironworkers Local 97, the International Brotherhood of Electrical Workers (**IBEW**), MoveUP and the Teamsters Local 213.

In addition, ten unions affiliated with the BC Building Trades will be working on the installation of the turbines and generators. The International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers (**Boilermakers Union**) members have been working on this contract as of September 2017.

The Aecon-Flatiron-Dragados-EBC Partnership (the contractor for the Site C generating station and spillways) has signed a labour agreement for the generating

station and spillways civil works with the IUOE Local 115, the CSWU Local 1611 and CMAW.

F&M Installations has negotiated labour agreements with the IBEW for the electrical work on the Site C substation.

Employment

Contractors submit monthly workforce data electronically to BC Hydro. Table 5 shows a snapshot of the total number of construction contractors, non-construction contractors, engineers, and project team workers for this quarter by month.

Table 5 Site C Jobs Snapshot

Month	Number of B.C. Workers[5]	Number of Total Workers[5]	Percentage of B.C. Workers (%)
January 2018	1,498	1,743	86
February 2018	1,803	2,086	86
March 2018	1,804	2124	85

Refer to Appendix E for additional workforce information. The number of workers continues to vary as the construction work progresses.

Training and Capacity Building Initiatives

In September 2017, the Contractors Labour Committee agreed to establish an Indigenous labour subcommittee. The purpose of the subcommittee will be to support Indigenous training, labour and employment on Site C, through communication, consultation, coordination and cooperation among contractors on the Project.

BC Hydro has included apprentice targets in the generating station and spillways civil works contract, the transmission lines and the substation contracts. The Aecon-Flatiron-Dragados-EBC Partnership has also committed to providing

[5] Employment numbers provided by Site C contractors and consultants are subject to revision. Data not received by project deadline may not be included in the above numbers. Employment numbers are direct only and do not capture indirect or induced employment.

opportunities for apprentices that include a goal of up to 25 per cent apprenticeships on the project.

In August 2013, Northern Lights College started distributing the BC Hydro Trades and Skilled Training Bursary Awards. As of December 2017, 201 students had received bursaries, including 78 Indigenous students who have benefitted from the bursary in programs such as electrical, welding, millwright, cooking, social work, and many others.

BC Hydro continues to work with local employment agencies to ensure that as job opportunities become available, they are posted on the work website as well as on the Fort St. John Employment Connections website. In February 2018, Site C contractors reported 642 workers on site from the Peace River Regional District. This is a total of 41 per cent of the construction and non-construction contractor's workforce.

1.3.8 Community Engagement and Communication

1.3.8.1 Local Government Liaison

The Regional Community Liaison Committee, which is comprised of local elected officials and local Indigenous groups, met on January 31, 2018. The next meeting is scheduled for May 16, 2018. A total of 11 communities have participated as committee members, including eight local governments and three local Indigenous groups (McLeod Lake, Doig River and Blueberry River) as well as the two MLAs for Peace River North and Peace River South. Representatives from the Ministry of Transportation and Infrastructure and the Project's major contractors, including Peace River Hydro Partners, Voith and ATCO Two Rivers Lodging Group, also attended the meeting as invited guests.

1.3.8.2 Business Liaison and Outreach

BC Hydro continued to implement its business construction liaison and outreach by attending local chamber of commerce meetings in Fort St. John and Chetwynd.

During this reporting period, the project team sent out six notifications to the Site C business directory.

1.3.8.3 Community Relations and Construction Communications

BC Hydro continued to implement its construction communications program during this reporting period. The program includes updating and maintaining the project website www.sitecproject.com with current information and photos of construction and providing information to local and regional stakeholders as required.

Construction Bulletins

Bi-weekly construction bulletins were issued throughout this reporting period. These bulletins are posted on the project website and sent by email to the web-subscriber list.

Public Enquiries

In total, BC Hydro received 485 public enquiries between January 1, 2018 and March 31, 2018, compared to 207 in the previous quarter. The majority of these enquiries continued to be about business and job opportunities, with limited construction impact concerns from local residents. Table 6 shows the breakdown of some of the most common enquiry types.

Table 6 Public Enquiries Breakdown

Enquiry Type[6]	January 2018	February 2018	March 2018
Job Opportunities	162	86	111
Business Opportunities	30	15	22
General Information	19	15	13
Construction Impacts[7]	3	0	1

1.3.8.4 Communications Activities

Based on a search using the media database Infomart, there were 562 stories in B.C. news media between January 2018 and March 2018 on the Site C Project, compared to 1,180 stories in the previous quarter.

1.3.8.5 Housing Plan and Housing Monitoring and Follow-Up Program

BC Hydro and BC Housing signed a Contribution Agreement on July 19, 2016 related to the development, construction and operation of a building in Fort St. John comprised of 50 residential rental units. This agreement is the outcome of detailed discussions between the two partners to find the most appropriate approach to meeting the Project's environmental assessment conditions and the housing terms of the Community Measures Agreement with the City of Fort St. John. The agreement structured the financial contribution from BC Hydro to enable financially viable operation of the affordable housing units in the near-term and financially viable operation of all 50 units of affordable housing in the longer term.

The housing project is under construction by Western Canadian Properties Group with six floors framed. Construction is on track for substantial completion by December 2018.

[6] This table is a sample of enquiry types and does not include all enquiry types received.

[7] The nature of the construction impact inquiries is primarily air quality, noise and traffic conditions.

1.3.8.6 Labour and Training Plan

In accordance with Environmental Assessment Certificate Condition 53, a Labour and Training Plan was developed and submitted to the Environmental Assessment Office on June 5, 2015.

This plan, as well as Environmental Assessment Certificate Condition 45, includes reporting requirements to support educational institutions in planning their training programs to support potential workers in obtaining Project jobs in the future. This report was issued to the appropriate training institutions in the Northeast Region of B.C., in July 2016 and July 2017. The next report will be issued in July 2018.

This plan and Environmental Assessment Certificate Condition 45, also require the establishment of a daycare. This measure is being implemented through a contribution agreement with School District 60 in the North Peace. The daycare is under construction as part of a new school in Fort St. John and in January 2018, School District 60 announced the YMCA as their selected daycare operator. The daycare is anticipated to open in July 2018.

1.3.8.7 Health Care Services Plan and Emergency Service Plan

The Project health clinic is contracted by BC Hydro with Halfway River International SOS Medical Ltd., a partnership between Halfway River First Nation and International SOS. The clinic continues to operate in its permanent location within the Two Rivers Lodge, and based on camp occupancy was staffed 24/7 during this period with a nurse practitioner and advanced care paramedics. BC Hydro and the clinic operator continue to liaise with the local health care community.

The clinic provides workers with access to primary and preventative health care and work-related injury evaluation and treatment services and is currently open seven days a week, 12 or 24 hours a day. Since opening the Project health clinic, there have been a total of 5,168 patient interactions. During the reporting period, there were 453 patient interactions, of which 92 were occupational and

361 non-occupational. Several preventive health themes were promoted to workers including: extreme cold, mental health and protecting hands and preventing hand injuries.

1.3.8.8 Property Acquisitions

During this quarter, BC Hydro negotiated with property owners to access their lands in order to conduct the 2018 field season, which is required to inform design and mitigation options for the various projects.

In the next quarter, if permission to enter private properties is denied for the required 2018 field season, BC Hydro will rely on the powers of entry under section 9 of the *Expropriation Act*.

1.4 Key Procurement and Contract Developments

The Project procurement approach was approved by the board of directors in June 2012 for the construction of the Project. The procurement approach defined the scope of the major contracts and their delivery models, as summarized in Table 7 below.

Table 7 Major Project Contracts and Delivery Models

Component	Contract	Procurement Model	Anticipated Contract Timing
Worker Accommodation	Worker accommodation and site services contract	Design-Build-Finance-Operate-Maintain	Completed
Earthworks	Site preparation contracts	Predominantly Design-Bid-Build	Completed
	Main civil works contract	Design-Bid-Build	Completed
Reservoir/ Transmission Clearing	Multiple reservoir clearing contracts to be awarded over seven to eight years	Design-Bid-Build	Five contracts completed (lower and east reservoirs)
Generating Station and Spillways	Turbines and generators contract	Design-Build	Completed
	Generating station and spillways civil works contract	Design-Bid-Build	Completed
	Hydromechanical equipment contract	Supply Contract	F2019
	Balance of plant equipment supply	Supply Contracts	F2019 to F2020
	Balance of plant contract	Design-Build/ Design-Bid-Build	F2019 to F2021 Request for Supplier Qualifications to be issued June 2018
Electrical and Transmission Infrastructure	Transmission lines construction contract	Design-Bid-Build	F2019
	Site C substation contract	Design-Bid-Build	Completed
	Peace Canyon substation upgrade contract	Design-Build	Completed
Highway 29 Re-alignment	Design-Bid-Build in partnership with B.C. Ministry of Transportation and Infrastructure with anticipated contracts being awarded through 2018 and 2019.		

1.4.1 List of Major Contracts Awarded (in excess of $50 million)

Since inception of the Project, five major construction contracts (e.g., greater than $50 million in value) have been awarded: worker accommodation, north bank site preparation, main civil works, turbines and generators, and generating station and spillways civil works. The contracts were procured through a public competitive process and awarded based on a rigorous evaluation process within the budget established for each contract. A list of contracts in excess of $50 million awarded to March 31, 2018 is shown in Table 8 below.

Table 8 Major Project Construction Contracts Awarded

Work Package	Contract Value[8] ($ million)	Current Status
Site Preparation: North Bank	60	Contract executed July 2015
Worker Accommodation	469	Contract executed September 2015
Main Civil Works	1,818	Contract executed December 2015
Turbine and Generators	464	Contract executed March 2016
Generating Station and Spillways Civil Works	1,604	Contract executed March 2018

1.4.2 Large Contracts to Date (Excess of $10 million)

BC Hydro has provided a table in Appendix B which shows the breakdown to date of the contracts awarded in excess of $10 million and cumulative variances.

1.4.3 Contract Management

1.4.3.1 Material Changes to the Major Contracts

The main civil works contract is a unit price contract and as such variations in quantities and design are expected over the term of the contract. Since contract award in December 2015, the main civil works contract value has increased by $71 million to reflect approved changes to date. The changes are managed within project contingency.

[8] Contract value reflects the current value including executed change orders to the end of the reporting period.

1.4.3.2 Contingency and Project Reserve Draws

As a result of the change in timing for river diversion and other factors including an increase in direct and indirect costs, BC Hydro revised the project budget to $10.7 billion, which was approved by the provincial Treasury Board in January 2018 and the BC Hydro board of directors in February 2018. This revised budget includes contingency of $858 million and reserve subject to the control of Treasury Board of $708 million.

Refer to Appendix D for more detailed information regarding contingency and project reserve draws.

1.5 Plans During Next Six Months

Table 9 below presents the key milestones for activities planned during the next six months that reflect a plan to complete river diversion in 2020.

Table 9 Key Milestones (April to September 2018)

Milestone	Updated Plan (February 2018)	Forecast/ Actual Date	Variance (months)	Current Status
Substation construction contractor mobilization	April 2018	March 2018	1	Complete
Turbine first stage embedded parts	May 2018	May 2018	0	Complete
Complete inlet portal	August 2018	August 2018	0	On track
Cache Creek-Bear Flats route re-alignment options	August 2018	August 2018	0	On track
Supply of anchors for draft tube maintenance gates	September 2018	September 2018	0	On track
Completion of transmission clearing	September 2018	March 2019	0	At risk

1.6 Impacts on Other BC Hydro Operations

For the reporting period, there were no material impacts on the generation operation at the GM Shum and Peace Canyon Dams or on water management at the Williston and Dinosaur reservoirs.

1.7 Site Photographs

Refer to Appendix A for site construction photographs.

2 Project Schedule

2.1 Project In Service Dates

As filed with the British Columbia Utilities Commission Inquiry respecting Site C on October 4, 2017, BC Hydro identified that the river diversion milestone will move from 2019 to 2020. This did not impact the overall in service dates, as shown below.

Table 10 Project In-Service Dates

Description/Status	Final Investment Decision Planned In-Service Date[9]	Updated Plan (February 2018)	Forecast Date	Status and Comments
5L5 500kV Transmission Line	October 2020	October 2020	October 2020	On track
Site C Substation	November 2020	October 2020	October 2020	On track
5L6 500kV Transmission Line	July 2023	August 2023	August 2023	On track
Unit 1 (First Power)	December 2023	December 2023	December 2023	On track
Unit 2	February 2024	February 2024	February 2024	On track
Unit 3	May 2024	May 2024	May 2024	On track
Unit 4	July 2024	July 2024	July 2024	On track
Unit 5	September 2024	September 2024	September 2024	On track
Unit 6	November 2024	November 2024	November 2024	On track

[9] Based on plan at Final Investment Decision, December 2014.

3 Project Governance, Costs and Financing

3.1 Project Governance

With increased internal and external oversight of project performance, BC Hydro is confident that we will deliver the project on time and within the updated budget. Examples of the new measures include:

- EY Canada provides independent oversight for the project including budget oversight, timeline evaluation and risk assessment analysis.
- Hiring of an interface manager, developing an interface management plan and implementing an interface register.
- Increasing the number of BC Hydro on-site representatives that oversee construction contracts.

3.2 Project Budget Summary

Table 11 below presents the updated budget approved in February 2018, represented in nominal dollars.

Table 11 Project Budget Summary

Description	Updated Budget Approved February 2018 (Nominal $ million)
Dam, Power Facilities, and Associated Structures	5,320
Offsite Works, Management and Services	1,868
Total Direct Construction Cost	**7,188**
Indirect Costs	1,484
Total Construction and Development Cost	**8,672**
Interest During Construction	1,320
Project Cost, before Treasury Board Reserve	**9,992**
Treasury Board Reserve	708
Total Project Cost	**10,700**

* Budget values are rounded to the nearest $5 million and include allocations of contingency.

3.3 Project Expenditure Summary

Table 12 provides a summary of the updated budget for the total Project, the current forecast total Project cost and the variance between the two. It also presents the cumulative updated budget amount planned to March 31, 2018 compared to the cumulative actual costs incurred to March 31, 2018 and the variance between the two.

Table 12 Total Project Expenditures - Updated Budget Compared to Forecast and Life to Date – Updated Budget Compared to Actual Expenditures to March 31, 2018 ($ million Nominal)

	Total Project			Life to Date, to March 31, 2018		
Description	**Updated Budget**	**Forecast**	**Variance**	**Updated Budget**	**Actual Expenditures**	**Variance**
Total Project Costs	9,992	9,992	0	2,313	2,354	(42)
Treasury Board Reserve	708	708	0	0	0	0
Authorized Project Cost	**10,700**	**10,700**	**0**	**2,313**	**2,354**	**(42)**

Table 13 below provides a summary of the F2018-F2019 Service Plan Project expenditures for Fiscal 2018, the actual Project expenditures for Fiscal 2018 and the related variance.

Table 13 Actual Fiscal 2018 Project Expenditures Compared to 2017/18 to 2019/20 Service Plan ($ million Nominal)

Description	**2017/18 to 2019/20 Service Plan Fiscal 2018**	**Actual Expenditures Fiscal 2018**	**Variance**
Total Project Costs	735.5	723.5	12.0
Treasury Board Reserve	-	-	-
Authorized Project Cost	**735.5**	**723.5**	**12.0**

Variances between the plans to date amounts occur due to differences in the timing of project implementation activities. The variance of $12 million between actual and plan life to date is primarily due to a shift of some property purchases and mitigation

and compensation expenditures into future periods, as well as delayed expenditures on highways, offset by earlier than planned expenditures for main civil works and generating station and spillways civil scopes of work. Further explanations are in Appendix D.

3.4 Internal Project Financing versus External Borrowings to Date

To date, all project funding has been from internal borrowings and there has been no Site C Project specific debt issued. As part of BC Hydro's debt management strategy, BC Hydro's exposure to variable debt is managed within a board approved range of 5 per cent to 25 per cent and a target of 15 per cent. In addition, to lock in low interest rates, since F2017 BC Hydro has hedged $6.7 billion of its future forecast long-term debt issuances out to F2024 through the use of derivative contracts.

As at March 31, 2018, $1.8 billion in hedges have settled with a realized gain of $75 million and $4.9 billion of hedges remain outstanding with an unrealized value of $83 million.

4 Material Project Risks

This section describes the material Project risks that have high residual exposure to BC Hydro. Commercially sensitive numbers and content, and/or content that could be seen to prejudice BC Hydro's negotiating position, are redacted in the public version. Note that the residual consequence and residual probability levels are qualitative assessments. Refer to Table 14 for a list of risks.

Table 14 Material Project Risks

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure[10]
Permit, Approvals and Environmental Compliance	Permits and licences are still required for several portions of construction activity. Delays to these permits and licences could result in delays to the associated construction work. BC Hydro is proactively working with contractors, federal and provincial authorities, and First Nations to mitigate this risk. The Project must comply with the requirements of the Environmental Assessment Certificate (Provincial) and the Federal Decision Statement as well as conditions in licenses, permits and authorizations. Some early contractors on the Project initially experienced difficulties in adapting their construction methodologies to achieve the Project's environmental commitments. This has improved since BC Hydro has added additional environmental specialists and is evidenced by the nearly 90 per cent compliance or partial compliance recorded during environmental inspections. There are two outstanding challenges of Project permits/approvals: (i) An appeal of one of the Conditional Water Licences is before the Environmental Appeal Board (**EAB**); that appeal is proceeding in writing. On January 19, 2018, the EAB set dates for the written hearing of this matter to proceed through various steps that conclude by July 2018 and a ruling can be expected 3-4 months later; and (ii) An appeal of the dismissal of the judicial review of 36 provincial permits. The appellants (two First Nations) are not actively pursuing the appeal and will require a court order to proceed.	→

[10] Arrow direction represents the change since the last Quarterly Progress Update report.

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure[10]
Litigation	There remains a risk that litigation could be initiated with respect to construction matters. In January 2018, two First Nations each filed a Notice of Civil Claim in B.C. Supreme Court in which they assert, among other things, that the Site C project is an infringement of their rights under Treaty 8. Related to this claim, the West Moberly First Nations filed an application for an injunction to stop construction of Site C pending the hearing of their civil claim. The injunction application is scheduled to be heard from July 23, 2018 to August 10, 2018. In addition, in a separate civil claim against the Province for treaty infringement, Blueberry River First Nations may proceed to trial in early August 2018. Blueberry River First Nations and the Province are engaged in mediation. It is unclear at this time what the implications of this mediation and/or this trial may be to the Site C Project.	↑
Indigenous Relations	BC Hydro has agreements in place with six First Nations, who have indicated they do not oppose or object to the Project. These agreements provide First Nations with Project benefits and mitigate the risk of legal challenges. In the absence of agreements with all of the identified potentially affected First Nations, there remains risk of challenges to authorizations issued for the Project. BC Hydro is continuing to negotiate agreements with several First Nations. The status of some specific negotiations is confidential at this time.	→
Procurement	BC Hydro has received positive and competitive market responses in major contract procurements to date. Market response risks will continue to be monitored. Some risk remains for major procurements yet to be completed, including balance of plant and the Highway 29 Realignment.	→
Labour Relations and Stability	Due to multiple employers at site with different union affiliations there is a risk of site labour disruption that could result in issues. All major contracts contain no strike, no lockout, and no raiding provisions; BC Hydro has implemented a site wide Labour Relations Contractor Committee to support labour stability on the site.	→

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure[10]
Geotechnical	Changes to geotechnical ground conditions remain a risk to schedule and cost. There have been extensive geotechnical studies over many years. Construction plans have been developed to mitigate these impacts. For example, the left bank slope is being excavated to remove known historical instability. BC Hydro has recently redesigned the left bank slope profile to incorporate the temporary till haul road for the construction of the main dam to mitigate construction execution risks associated with instability events.	→
Construction cost – labour	Potential cost increases could arise if there is competition with other projects for labour resources, labour instability, or changing workforce demographics. Based on current market conditions in the infrastructure and energy sector, the labour risk is low; however, previous federal announced pipeline projects could impact labour prices and availability of skilled labour. There remains the potential for market labour conditions to shift in the future and, if so, this risk may increase.	→
Construction cost – commodities and equipment	Construction commodity and equipment cost risks have declined slightly over the past year and Canadian exports are down. Key commodities such as steel, diesel and gasoline are below the BC Hydro's forecast when preparing the original cost estimate. Diesel and gasoline rack pricing are currently slightly below the baseline rate established for fuel escalation in the main civil works contract. There remains an external risk of higher-than-expected commodity costs (including diesel), if there were to be a material change in market conditions or changes to the North American Free Trade Agreement that may impact Site C contracts yet to be awarded that include commodities.	→

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure[10]
Construction execution	The main civil works contractor has experienced delays on several of their critical path activities, resulting in a one year schedule delay. Efforts have been made to mitigate construction execution risk and include a redesign of the left bank excavation. BC Hydro has initiated discussions with Peace River Hydro Partners and an experienced contractor to provide the expertise, resources and equipment for the scope of work to stabilise the outlet portal. The main civil works contractor experienced low production rates with the right bank roller-compacted concrete placement. This resulted in the powerhouse roller-compacted concrete buttress being only partially completed in 2017 and BC Hydro and the contractor have re-sequenced the work for the 2018 season to recover productivity for the remaining roller-compacted concrete. Critical path construction activities that involve the main civil works and the generation station and spillways contractors have been identified as an interface risk. BC Hydro is actively coordinating between the main civil works contractor and the generating station and spillways civil contractor to identify potential interface issues. There is risk exposure when the generating station and spillways civil contractor arrives on site and the responsibility for work areas transfers from the main civil works contractor. If oil and gas sector activity returns to pre-2014 levels, there may be a risk in accessing skilled and qualified workers for the project workforce, due to a low unemployment rate in the region and multiple contractors competing for a similar workforce.	↑

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure[10]
Foreign exchange, interest and taxes	Some of Site C project costs are in foreign currency, and will be affected by fluctuations in the exchange rate between the Canadian dollar and these foreign currencies. Approximately 20 per cent of the overall Site C direct construction costs are based on foreign currency. The Canadian dollar has weakened significantly compared to the U.S. dollar since the 2014 capital cost estimate was developed. However, the award of major contracts (particularly the turbine and generators contract, main civil works contract and generating station and spillway civil works contract) has reduced BC Hydro's exposure to currency fluctuations by transferring the risk to the contractor after award. The impact on future procurements may depend on future movement in foreign exchange markets, future movement in commodity and equipment markets, and the ability of the proponents to source from a range of foreign markets. Residual risk on contracts yet to be procured is partially mitigated through contractor flexibility around sourcing of material, resulting in an exposure to a basket of currencies, rather than solely the U.S. dollar. Interest during construction costs will be affected by fluctuations in market interest rates. BC Hydro has reduced its exposure to variable rate debt and increased its exposure to fixed rate debt. In March 2016, the British Columbia Utilities Commission approved a Debt Hedging Regulatory Account for BC Hydro to capture the gains and losses related to the hedging of future debt issuance. BC Hydro has hedged 50 per cent of its forecast future debt issuances from F2017 to F2024 through the use of derivative contracts. There is the potential for a change in tax rates applicable to Site C (e.g., PST, carbon tax) as well as the potential for a portion of GST to be unrecoverable. BC Hydro is monitoring potential changes to federal and provincial taxes and their potential effects. Where appropriate, BC Hydro will secure advance rulings on tax applicability to reduce uncertainty in treatment.	→

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure[10]
Safety	With many workers on site and pieces of equipment there is a potential of a serious contractor or BC Hydro worker safety incident that could result in a work stoppage and a WorkSafeBC investigation. Serious injuries are those that are life-threatening or could cause permanent injury. All near misses and safety incidents are entered into the BC Hydro Incident Management System to report and track safety incidents. Contractor safety management plans are required and in place prior to commencement of work and safety training and worker safety equipment is required. The main civil works contractor experienced four serious safety incidents during the reporting period. BC Hydro is working with the contractor to increase their focus on worker safety. BC Hydro is implementing a senior level safety steering committee with contractor membership to address safety concerns and address interface safety risks between contractors.	↑

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Site C Clean Energy Project

Quarterly Progress Report No. 11

Appendix A

Site Photographs

Figure A-1 **Installing Conveyor Equipment at the Approach Channel and Powerhouse Buttress on the South Bank. Photo taken January 19, 2018.**

Figure A-2 **The Turbines and Generators Contractor Delivering Equipment to their Work Area. Photo taken January 24, 2018.**

Figure A-3 **Aerial View of the North Bank with Cofferdam and Excavation, Facing Northwest. Photo taken February 28, 2018.**

Figure A-4 **Aerial View of the South Bank, Facing Northwest with the Crusher Plant in the Foreground. Photo taken February 28, 2018.**

Figure A-5 **Aerial View of the South Bank, with Generating Station and Spillways Aggregate Area. Photo taken February 28, 2018.**

Figure A-6 **Laydown Area R6. Photo taken March 15, 2018.**

Figure A-7 **Tailrace Wall Excavation. Photo taken March 17, 2018.**

Figure A-8 **Overview of Left Bank Excavations and Inlet Portal Works. Photo taken March 20, 2018.**

Figure A-9 **Area A – Continued Mining Feed Aggregate for the Permanent Crusher. Photo taken March 22, 2018.**

Figure A-10 **Before and After: Waste Wood Pile Burning. Photos taken in March 2018.**

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Appendix B

Summary of Individual Contracts Exceeding $10 Million

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Appendix C

Project Progression

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Appendix D

Detailed Project Expenditure

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Appendix E

Workforce Overview

Table E-1 Current Site C Jobs Snapshot (January 2018 to March 2018)[11]

	January 2018		February 2018		March 2018	
Type of Work	**Number of B.C. Workers**	**Number of Total Workers**	**Number of B.C. Workers**	**Number of Total Workers**	**Number of Total Workers**	**Number of B.C. Workers**
Construction and Non-Construction Contractors[12] (including some subcontractors). Excludes work performed outside of B.C. (e.g., manufacturing)	983	1195	1309	1557	1611	1331
Engineers and Project Team[13]	515	548	494	529	513	473
TOTAL	1498	1743	1803	2086	2124	1804

Employment numbers provided by Site C contractors and consultants are subject to revision. Data not received by project deadline may not be included in the above numbers.

BC Hydro has contracted companies for major contracts, such as main civil works, who have substantial global expertise. During the month of February 2018, there were three workers in a specialized position working for Site C construction and non-construction contractors, which were subject to the Labour Market Impact Assessment process under the Federal Temporary Foreign Worker Program. Additionally, there were 32 management and professionals working for Site C construction and non-construction contractors through the Federal International Mobility Program.

[11] Employment numbers are direct only and do not capture indirect or induced employment.

[12] Construction and Non-Construction Contractors includes work performed on Site C dam site, transmission corridor, reservoir clearing area, public roadwork, worker accommodation and services.

[13] Engineers and Project Team are comprised of both on site and off site workers. The Project Team includes consultants, BC Hydro construction management and other offsite Site C project staff. An estimate is provided where possible if primary residence is not given.

Table E-2 Preliminary Site C Apprentices Snapshot (January 2018 to March 2018)

Month	Number of Apprentices
January 2018	8
February 2018	17
March 2018	22

Data is subject to change based on revisions received from the contractors.

Table E-3 Current Site C Job Classification Groupings

Biologists and laboratory	Carpenters	Inspectors	Construction managers / supervisors	Crane operators	Electricians	Engineers
Foresters	Health care workers	Heavy equipment operators	Housing staff	Heating, ventilation, and air conditioning	Kitchen staff	Labourers
Mechanics	Millwrights	Office staff	Pipefitters	Plumbers	Sheet metal workers	Truck drivers
Underground mining	Welders	Surveyors	Security guards	Boilermakers		

Table E-4 Aboriginal Inclusion Snapshot (March 2017 to March 2018)

Month	Number of Indigenous Workers
March 2017	221
April 2017	188
May 2017	211
June 2017	213
July 2017	193
August 2017	181
September 2017	172
October 2017	132
November 2017	96
December 2017	78
January 2018	118
February 2018	190
March 2018	213

The information shown has been provided by BC Hydro's on-site construction and non-construction contractors and their subcontractors that have a contractual requirement to report on Indigenous inclusion in their workforce.

Employees voluntarily self-declare their Indigenous status to their employer and there may be Indigenous employees that have chosen not to do so; therefore, the number of Indigenous employees may be higher than shown in the table.

As with any construction project, the number of workers — and the proportion from any particular location — will vary month-to-month and also reflects the seasonal nature of construction work. The number of workers will also vary as a contract's scope of work is completed by the contractor.

Women

During the period of January 2018 to March 2018, there were between 228 and 256 women working for Site C construction and non-construction contractors. The number of women was provided by on-site construction and non-construction contractors and engineers that have a contractual requirement to report on the number of women in their workforce.

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Appendix F

Site C Construction Schedule

Table F-1 Site C Construction Schedule