BC Hydro
Power smart

Site C Clean Energy Project

Quarterly Progress Report No. 25

F2022 Fourth Quarter

January 1, 2022 to March 31, 2022

PUBLIC

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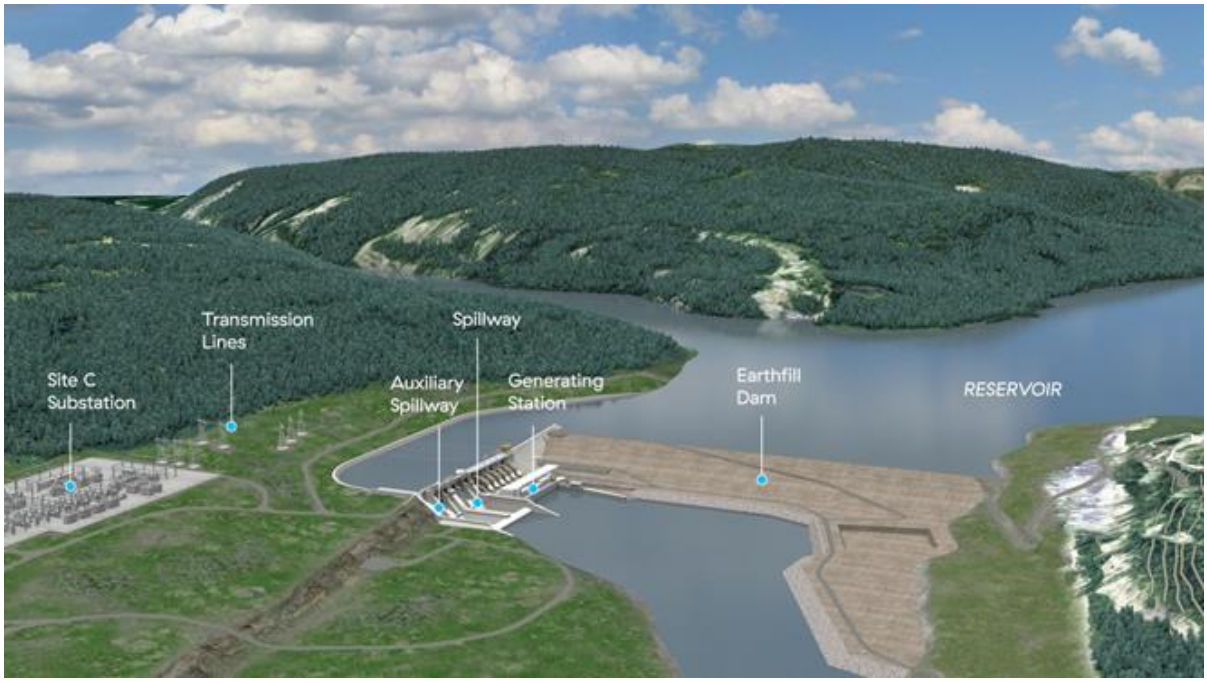
1 Executive Summary

1.1 Overview and General Project Status

Site C will be the third dam and hydroelectric generating station on the Peace River in northeastern British Columbia (**B.C.**). Once complete, Site C will provide 1,100 megawatts of capacity, and produce about 5,100 gigawatt hours of energy per year – enough to power the equivalent of 450,000 homes per year in B.C.



Construction on Site C began on July 27, 2015.

Quarterly Progress Report No. 25 covers the period January 1 to March 31, 2022 (the reporting period).

As of March 31, 2022, the Site C Project is more than 60% complete and BC Hydro remains on track to complete the Project within the approved budget of $16 billion and the Project final in-service date of 2025.

The overall Project health status remains “amber”, however, there are still cost, schedule and scope risks remaining, including the continuation of the COVID-19 pandemic, commercial negotiations with contractors, design changes due to unknown field conditions, the availability of skilled craft workers, and obtaining remaining authorizations for the completion of the Project. BC Hydro also continues to monitor inflation rates and supply chain disruptions for any impacts to the Project.

BC Hydro continued to work with the Project Assurance Board, special advisor Peter Milburn, EY Canada, and the Technical Advisory Board to actively manage these ongoing Project risks.

The most significant challenge during the reporting period continued to be the impacts of the global COVID-19 pandemic.

BC Hydro’s COVID-19 proof of vaccination policy came into effect on January 10, 2022, making Site C a fully vaccinated work site. During this reporting period, there was a significant increase in cases of COVID-19 at site due to Omicron, mirroring what was happening throughout the rest of the province. The majority of the cases were a result of community transmission from outside of the Project. BC Hydro implemented rapid testing to screen workers as they returned to site after the holiday period and into February 2022, and this likely prevented additional cases of COVID-19 at site. The Project continues to operate under health orders related to industrial camps and large projects.

The second key challenge includes the continued work required to design, procure and implement foundation enhancements to address the geotechnical issues previously identified on the right bank in early 2020. During the quarter, the Technical Advisory Board and independent dam experts continued to review and provide input to the design and construction of the right bank foundation enhancements. These enhancements include installation of large piles to further extend the foundation deeper into the bedrock and changes to the design of the

approach channel above the powerhouse and spillways. During the quarter, installation of the steel piles continued in the spillways stilling basin and work commenced on the excavations required for pile installation in the powerhouse tailrace area. The Technical Advisory Board and independent dam experts have confirmed that the Project design continues to meet the highest safety standards and international best practices.

During the quarter, the trial that was scheduled to begin in March 2022 for the treaty infringement claim filed by West Moberly First Nations in January 2018, as amended, was adjourned. The parties to the litigation are continuing confidential discussions to seek to settle this litigation.

Despite challenges, the Project continued to progress through the winter months, including achieving the significant construction milestone of placing the second 500 kV transmission line into service ahead of schedule. Excavations were substantially completed in the approach channel, the balance of plant procurements were completed, and BC Hydro and Site C contractors began planning for the upcoming summer construction season, including resuming operation of the till conveyor system, reinstalling the Peace River debris boom, and preparing for an increased workforce on site.

BC Hydro and Site C contractors continue to schedule work and explore strategies to complete work delayed by the COVID-19 pandemic as efficiently as possible. If successful, this will result in lowering the schedule risk and could result in an earlier in-service date; however, achieving an earlier in-service date remains subject to uncertainty and to the risks summarized in this report. The sections below discuss the major challenges and successes during the quarter in further detail.

1.2 COVID-19 Pandemic at Site

BC Hydro's COVID-19 proof of vaccination policy came into effect on January 10, 2022, making Site C a fully vaccinated work site.

Rapid testing and screening of all workers returning to site took place throughout January and February 2022. In mid-February 2022, the rapid testing program shifted to focus on testing of symptomatic workers, case and contact management, and as requested by Site C contractors and/or individual workers.

During this reporting period, there was a significant increase in cases of COVID-19 at site due to Omicron, mirroring what was happening throughout the rest of the province. Cases began to decline in February 2022.

COVID-19 cases at site have now stabilized at a low level, allowing for easing of several COVID-19 safety measures.

As of March 31, 2022, the onsite medical clinic had administered 4,835 COVID-19 vaccinations, of which 2,233 were first doses, 1,930 were second doses, 672 were boosters.

1.3 Adjournment of West Moberly First Nations Treaty Infringement Trial

As of January 21, 2022, the trial that was scheduled to begin in March 2022 for the treaty infringement claim filed by West Moberly First Nations in January 2018, as amended, was adjourned. The parties to the litigation are continuing confidential discussions to seek to settle this litigation.

1.4 The B.C. Supreme Court decision in *Yahey v British Columbia*

On June 29, 2021, the Supreme Court of British Columbia released its decision in *Yahey v British Columbia* (the **Blueberry River Decision**), determining that the cumulative impacts from a range of provincially authorized industrial activities (primarily oil and gas and forestry) within Blueberry River First Nations traditional

territory constituted an infringement of Blueberry River First Nations Treaty 8 rights. BC Hydro was not a party to that court case.

BC Hydro continues to be issued permits and authorizations in accordance with its construction timelines. As of March 31, 2022, 550 of the estimated 640 provincial and federal permits required for the Project have been received and are actively being managed. The remaining permits and authorizations fall within the footprint and description of the Project that was approved in 2014. The remaining permits and authorizations are required for construction activities to achieve completion of Site C.

BC Hydro continues to consult with Blueberry River First Nations and all Treaty 8 First Nations, and remains willing to negotiate an Impact Benefit Agreement with Blueberry River First Nations.

1.5 Right Bank Foundation Enhancements Installation Continues

The Project continues to implement foundation enhancements to address geotechnical issues in the bedrock foundation on the Project's right bank. Ongoing reviews by the Technical Advisory Board and independent dam experts continue to confirm that the design of the foundation enhancements meets the highest safety standards and international best practices. The foundation enhancements include the installation of 96 large diameter vertical steel piles to further extend the foundation deeper into the bedrock and enhancements to the design of the approach channel above the powerhouse and spillways.

During the reporting period, the installation of 48 piles within the spillways stilling basin was completed, and work commenced on the excavations required for pile installation in the powerhouse tailrace area. As of March 31, 2022, crews had installed 48 out of 96 piles.

In preparation for the installation of the approach channel lining scheduled for late spring 2022, the removal of tower crane bases was initiated within the approach

channel and the excavations of overburden material and bedrock were substantially completed.

1.6 Project Environmental Compliance

Environmental compliance on the Project remains high. During the reporting period 11,280 environmental compliance inspections were completed, with a compliant or partial compliant result of 97% across all contractors and works areas.

During the reporting period, BC Hydro responded to four separate Environmental Assessment Office inspection reports (based on inspections completed between August and December 2021). A further Environmental Assessment Office inspection and an Impact Assessment Agency of Canada inspection were completed; the draft inspection reports were not issued during the reporting period.

During the reporting period the Project received an Environmental Assessment Office Order directing repair of ditch erosion within the Ministry of Transportation and Infrastructure's ditch line along Old Fort Road and into BC Hydro lands. The Project is working with the Ministry of Transportation and Infrastructure to obtain approval to repair their ditch.

The Impact Assessment Agency of Canada inspection represented the first inspection by that agency in more than two years due to COVID-19 related travel restrictions.

1.7 Upholding Commitments to the Environment, Indigenous Nations and Local Communities

During the reporting period, BC Hydro continued to uphold its commitments to the environment, Indigenous Nations and local communities.

Throughout the quarter, BC Hydro continued to engage, build relationships and find solutions together on topics that are most important to the First Nations communities affected by Site C.

BC Hydro continued to secure the appropriate permits, authorizations and leaves to commence construction required for the Project. As of March 31, 2022, 550 (86%) of the estimated 640 provincial and federal permits have been received. This includes the recently issued order-in-council to temporarily exclude a designated quarry site, referred to as Area E, as well as the access road from the Agricultural Land Reserve.

Work advanced in the areas of environmental monitoring and assessment, as well as in the Project's fish, wildlife, habitat, vegetation management and heritage programs.

BC Hydro continues to advance economic opportunities for Indigenous Nations through capacity building and procurement opportunities. Approximately $618 million in Site C procurement opportunities have been awarded to Indigenous-designated companies since the beginning of the Project. Working on the Site C Project has helped Indigenous-designated businesses to build and solidify their reputations, expand the scale of their operations, and develop new expertise to compete in the regional economy.

In March 2022, 337 Indigenous people were working on the Site C Project, compared to 346 in March 2021. The Project high was reached in October 2019, with 428 Indigenous people working on the Site C Project.

Throughout the quarter, BC Hydro worked closely with First Nations, local government, and health authority stakeholders to ensure worker and public safety while managing the COVID-19 pandemic at Site C. Through regular communications, these stakeholders were kept informed about pandemic related updates on the Project.

1.8 Construction Continued Through the Winter Months

Construction of the Project continued to advance through the winter months. BC Hydro and Site C contractors continue to schedule work and explore strategies to complete work delayed by the COVID-19 pandemic as efficiently as possible. If successful, this will result in lowering the schedule risk and could result in an earlier in-service date; however, achieving an earlier in-service date remains subject to uncertainty and to the risks summarized in this report.

In the generating station and spillways civil works area, construction progressed with the ongoing placement of concrete in the powerhouse, intakes and spillways; and installation of the penstock sections. By concrete volume, the generating station and spillways civil works sub-project is approximately 70% complete.

In the main civil works area, capping of the roller-compacted concrete with conventional concrete was completed in February 2022. In late March 2022, with the cold temperatures at site coming to an end, the construction of the dam shell resumed.

Excavations for the approach channel were substantially completed with approximately 1.5 million cubic metres excavated during this reporting period.

Off-dam site, during the reporting period, the second 500 kV transmission line connecting Site C to the Peace Canyon generating station was completed and energized ahead of schedule. Crews completed the Cache Creek bridge foundation and steel girders placement and construction advanced on the Farrell Creek and Lynx Creek segments of Highway 29. Construction continued on the Hudson’s Hope berm.

1.9 Project Status Dashboard for the Quarter

BC Hydro, with oversight from the Project Assurance Board, is focused on completing the Site C Project within the budget of $16 billion and a 2025 in-service date, without compromising on safety, scope and quality. To report on Project status, BC Hydro uses a dashboard system where key Site C Project areas are classified as red (at risk), amber (moderate issues) or green (on target).

The Project Status Dashboard as of March 31, 2022, is provided in Table 1. There were no changes to the performance indicators from the previous quarter.

Table 1 Project Status Dashboard

● On Target ● Moderate Issues ● At Risk

Status as of:		March 31, 2022
Overall Project Health	●	As of March 31, 2022, overall Project health remained "amber." The Project is more than 60% complete; however, there are still potential risks remaining. BC Hydro continues to review, assess, mitigate, manage and monitor potential risks to the Project. The Technical Advisory Board and independent experts continued to review and confirm that BC Hydro's foundation enhancements solution is appropriate and sound, and will make the right bank structures safe and serviceable over the long operating life of Site C.
Safety	●	In anticipation of the potential impacts from the more transmissible Omicron variant for workers returning in January 2022, the Project implemented mandatory rapid testing for workers returning to site. By the middle of February 2022, cases were declining quickly and rapid testing was shifted to the testing of symptomatic workers, case and contact management, and as requested by Project contractors and/or individual workers. Additionally, BC Hydro's proof of vaccination mandate came into effect on January 10, 2022. With the expected increase in work activity and workers, the Project is seeing some increase in safety and security incidents. To keep workers safe, BC Hydro and contractor safety and construction teams are working on enhanced worker safety management plans.
Scope	●	Scope remained "amber" as of March 31, 2022. Provisions are included in the Project plans for potential scope adjustments for site conditions and interfaces. As construction progresses, there remains a risk of design changes due to unknown field conditions. The design, value engineering and constructability reviews for the right bank foundation enhancements continue to be finalized. The Technical Advisory Board and independent experts have confirmed that BC Hydro's right bank foundation enhancements solution is appropriate and sound and will make the right bank structures safe and serviceable over the long operating life of Site C; they will continue to review the designs as they are finalized.

Status as of:		March 31, 2022
Schedule	🟡	Schedule remained "amber" as of March 31, 2022. The Project is currently on schedule to achieve the approved 2025 in-service date and is more than 60% complete; however, a significant amount of work and potential schedule risks remain. BC Hydro is actively reviewing, assessing, mitigating, managing and monitoring these remaining risks. BC Hydro and Site C contractors continue to schedule work and explore strategies to complete work delayed by the COVID-19 pandemic as efficiently as possible. If successful, this will result in lowering the schedule risk and could result in an earlier in-service date; however, achieving an earlier in-service date remains subject to uncertainty and to the risks summarized in this report.
Cost	🟡	Cost remained "amber" as of March 31, 2022. The revised budget, approved in June 2021, addresses cost pressures due to the COVID-19 pandemic, the need for foundation enhancements on the right bank, and other cost pressures the Project was managing prior to the COVID-19 pandemic. Potential cost risks remain, including the continuation of the COVID-19 pandemic, commercial negotiations with contractors, design changes due to unknown field conditions, the availability of skilled craft workers and obtaining remaining authorizations for the completion of the Project. As of March 31, 2022, the life-to-date actual costs are $8.8 billion, which results in an estimated $7.2 billion of remaining costs.
Quality	🟢	The overall quality rating for the Project remained "green" during the reporting period, indicating that the work generally conforms to the requirements of the drawings and specifications. When quality issues are identified, BC Hydro works with the responsible contractor to rectify in a timely manner.
Regulatory, Permits and Tenures	🟡	The status of the regulatory, permits and tenures indicator remained "amber" as of March 31, 2022. Overall, BC Hydro continues to be issued permits and authorizations in accordance with construction timelines. As of March 31, 2022, 550 of the estimated 640 provincial and federal permits required for the Project have been received and are actively being managed. The remaining permits and authorizations fall within the footprint and description of the Project that was approved in 2014. The remaining permits and authorizations are required for construction activities to achieve completion of Site C. During the reporting period, BC Hydro received an order-in-council temporarily excluding a designated quarry site referred to as Area E, as well as the access road, from the Agricultural Land Reserve for the purpose of quarrying and hauling. BC Hydro has requested an amendment to the Project's Environmental Assessment Certificate to allow for contingency hauling on public roads if the conveyor carrying till material from 85th Avenue Industrial Lands to the dam site breaks down for reasons beyond BC Hydro's control. If a decision on the requested amendment is not made prior to the conveyor operating season of May to October and a need to implement contingency hauling arises due to a conveyor breakdown, there is a risk to the construction schedule. A decision is expected in late June 2022. BC Hydro is also awaiting a decision on an Environmental Assessment Certificate amendment request to relocate the Cache Creek boat launch required by the Certificate to a location close to the Halfway River. A decision on this amendment is expected in May/June 2022.

Status as of:		March 31, 2022
Environment	●	Environmental work continued to focus on daily environmental compliance inspections and ensuring care of water features across the Project were ready for spring snowmelt. Focus remains on minimizing sediment and erosion across the dam site, care of water, hydrocarbon management, wildlife attractant management and invasive weed control. The temporary fish passage facility was closed during the winter months with a planned re-opening date of April 1, 2022. Depending on water elevations at the diversion tunnel outlet, the fishway operations may be augmented by a contingent "trap and haul" program in spring 2022. During the reporting period, BC Hydro responded to four separate Environmental Assessment Office inspection records (based on inspections completed between August and December 2021). A further Environmental Assessment Office inspection and an Impact Assessment Agency of Canada inspection were completed; the draft inspection reports were not issued during the reporting period. Inspection focus was primarily on management of potentially acid generating rock, sediment and erosion management and waste management. Environment Canada initiated an investigation on October 10, 2018, with regards to a rainfall event in September 2018. In the month of September 2018, approximately 55 mm of rain fell causing the release of approximately four million litres of low pH storm water into the Peace River. BC Hydro subsequently increased the care of water system capacity along with other actions to reduce the potential of future similar events and no similar events have occurred; however, the investigation is still ongoing.
Procurement	●	As of March 31, 2022, the status of the procurement indicator remained "amber" due to the remaining right bank foundation enhancements procurements that still need to be negotiated. A number of commercial agreements have been established to deliver the right bank foundation enhancements and the remaining changes are anticipated to be approved in 2022. All six balance of plant packages have now been awarded. During the reporting period, the remaining four contracts (architectural, permanent upstream fishway and other out structures, heating, ventilation and air conditioning, and fire detection and protection) were completed and awarded.
Indigenous Relations	●	BC Hydro has a mandate from the Government of British Columbia to reach project or impact benefits agreements with the ten Indigenous Nations that are most impacted by Site C. Seven of ten agreements are fully executed and in implementation. There are three mandated First Nations with whom BC Hydro has not negotiated agreements. Consultation is ongoing with impacted First Nations regarding options and site-specific plans for managing identified burial and cultural sites impacted by reservoir inundation, in particular in the Halfway River and Cache Creek Bear Flats areas.
Litigation	●	As of January 21, 2022, the trial that was scheduled to begin in March 2022 for the treaty infringement claim filed by West Moberly First Nations in January 2018, as amended, has been adjourned. The parties to the litigation are continuing confidential discussions to seek to settle this litigation.

Status as of:		March 31, 2022
Stakeholder Engagement	●	BC Hydro continues to work with the communities, regional district and stakeholder groups on the implementation of various community agreements. Throughout the reporting period, BC Hydro continued sharing COVID-19 updates (through emails) with local community representatives and Northern Health and participated in one open house.

1.10 Significant Project Updates for the Quarter

Significant Project updates that occurred between January 1 and March 31, 2022, include the following:

- On January 10, 2022, BC Hydro's COVID-19 proof of vaccination policy came into effect for all BC Hydro employees and all other individuals working at a BC Hydro facility, including those working on the Project. Refer to sections 1.2 and 2.1.2 for more information.
- In March 2022, the second of two 500 kV transmission lines on the Project was completed and energized ahead of schedule, completing the work to connect the new Site C substation to the BC Hydro grid. Refer to section 3.1.7 for more information.
- In March 2022, the 85th Avenue conveyor operations resumed. This five-kilometre-long till conveyor system operates in the non-freezing months, typically between late March and early November. Refer to section 3.1.1 for more information.
- In March 2022, the GO Fund administered by Northern Development Initiative Trust on behalf of BC Hydro distributed more than $12,000 to two non-profit organizations in the Peace Region. As of March 31, 2022, $585,025 had been distributed to 67 projects since the fund was launched. Refer to section 12.1 for more information.
- In March 2022, 19 Peace Region agricultural projects received over $400,000 in funding through the BC Hydro Peace Agricultural Compensation Fund and as

of March 31, 2022, more than $1.6 million had been distributed to 72 projects. Refer to section 10.6 for more information.

- By the end of March 2022, the procurement for the remaining four balance of plant contracts (architectural; permanent upstream fishway and other out structures; heating, ventilation and air conditioning; and fire detection and protection) had been completed and awarded. Refer to section 3.1.5 for more information.
- Powerhouse construction continued throughout the reporting period, including concrete placements in the powerhouse, intakes and spillways; and installation of penstock sections. Refer to section 3.1.3 for more information.
- In March 2022, there were 4,430 total workers on the Site C Project. Of the total workers, 3,124 (71%) were from British Columbia, and there were 798 workers on site from the Peace River Regional District (22% of the construction and non-construction contractors' workforce). The onsite contractor workforce number also includes 12% women (447 workers), 337 Indigenous workers and 172 workers who are working for various contractors as apprentice carpenters, electricians, millwrights, ironworkers, mechanics, boilermakers and heavy equipment operators. Refer to section 11.3 for further information.

Refer to Appendix A for site construction photos from the reporting period and refer to Appendix B for a list of work completed since the Project commenced in 2015.

2 Safety and Security

BC Hydro and contractor safety systems, teams and focus will be an important part of ensuring worker safety for an active 2022 construction season on the Project. Multiple contractors and work fronts will be active across the Project, most notably in the following areas: the powerhouse, including continuing the advancement of the build-out of generating units, penstocks and spillways; the development of new and extended sources of aggregates for the earthfill dam core, with increasing volumes of heavy haul traffic at site; and the approach channel and permanent fishway, which are significant new work scopes starting up.

By March 2022, the Project started seeing increased levels of work activity as well as increased number of workers. As a result, there has been some increase in safety and security incidents including for higher hazard work such as working from heights, fire-related incidents, and equipment contacts on construction roads. Construction management and safety teams are working together to refresh worker safety risk management plans. The Project's enhanced Drug Prevention Program remains a priority.

2.1.1 Management of COVID-19

In late December 2021, to manage the Omicron wave that was evident across North America, the Project implemented mandatory rapid testing for workers returning to site, including workers staying in the accommodations lodge and residing in local communities. Workers staying in the accommodations lodge were required to test prior to accessing their room upon arrival at site, and local workers were required to test prior to their first workday of a shift, and every subsequent three days.

Site C saw a heavy increase in cases after the seasonal holidays, with more than 500 cases in January 2022 alone. Between January and March 2022, 732 cases were reported on the Project, for a total of 1,086 cases. BC Hydro estimates the

rapid testing program prevented more than 1,000 additional cases from developing at site.

By the middle of February 2022, cases were declining quickly and rapid testing was shifted to the testing of symptomatic workers, case and contact management, and as requested by Project contractors and/or individual workers. Also, individual rapid testing packages were made available for Project workers to use on their own time.

Starting in March 2022, and with support from Northern Health, the Project began easing several measures including relaxing mask mandates and the restoration of most facilities and services in the accommodation lodge. Northern Health has reviewed and accepted BC Hydro's Communicable Disease Management Plan, effective April 7, 2022.

As of March 31, 2022, COVID-19 at site was stable and cases were being managed effectively.

2.1.2 Site C COVID-19 Vaccination Program

On January 10, 2022, BC Hydro's mandatory proof of vaccination policy came into effect requiring all workers on the Project to be fully vaccinated. By January 10, 2022, over 99% of the workers onsite had verified their vaccination status, which is linked to site access cards. As of March 31, 2022, the onsite medical clinic had administered 4,835 COVID-19 vaccinations of which 2,233 were first doses, 1,930 were second doses, and 672 were boosters.

During the early 2022 Omicron surge, there were no cases of individuals with serious symptoms, and no one required hospitalization, which could be attributed to the high vaccination rate on the Project. No additional COVID-19 measures were required by Northern Health for the Project.

2.1.3 Powerhouse Dust Cleaning

With the powerhouse enclosed by mid-December 2021, and large-scale heaters moving air and dust around, concentrations of dust, which potentially include respirable silica, had been accumulating in the powerhouse, creating an increased exposure risk for workers. Over the seasonal holidays, BC Hydro contracted with a third party to complete a deep cleaning of the powerhouse. An occupational hygienist helped prepare safe work procedures, BC Hydro provided HEPA-filter vacuums, and the site safety coordination team provided oversight during the work.

As the accumulation of dust in the powerhouse is an ongoing safety concern, BC Hydro and powerhouse contractors have been working together to ensure both contractor work areas and the general areas of the powerhouse are cleaned on a regular basis.

2.1.4 BC Hydro Safety Forum

Based on BC Hydro's monitoring of safety incident trends, the safety team facilitated a collaborative eye protection safety discussion with all contractors on February 8, 2022.

Eye injuries are a serious safety issue; 149 eye injuries were recorded on the Project between January 2020 and December 2021.The group discussed safety hazards to eyes such as flying objects, particles and dust, sparks, chemical burns, abrasions, optical radiation exposure, and more. As eye protection can prevent up to 90% of all eye injuries, the group reviewed the different classes of glasses, goggles and visors designed to protect workers' eyes and faces based on the hazards associated with their work.

2.1.5 Safety Mentoring Program

The Site C safety team developed a Safety Mentoring Program during the quarter to support BC Hydro front line workers in the field, including construction officers,

resident engineers, quality inspectors, and others. This mentoring program identifies employees motivated to help achieve good safety performance, and supports these employees with the tools and skills to feel confident as safety ambassadors in the field. For example, the safety team developed a Respectful Interventions course, a foundational skill for effective interactions with our contractors' workforce.

2.1.6 Security Update

With an increasing number of workers joining the Project, and the relaxation of public health measures allowing for workers to travel into local communities, the BC Hydro security team is seeing an increase in worker incidents related to drugs, alcohol, and aggressive behaviour. In March 2022, these categories accounted for 25 (47%) security incidents and resulted in a site ban for eight workers. The enhanced Drug Prevention Program, supported by the recently completed Gate A infrastructure improvements and the planned increased use of drug detection dogs, remains a priority.

During the reporting period, BC Hydro worked closely with the Ministry of Transportation and Infrastructure, local RCMP detachments, the Site C security services provider and a transportation contractor to implement robust security precautions for the delivery of large powerhouse equipment to site. The equipment was delivered without incident.

2.1.7 Safety Verifications

In this reporting period, the Site C safety team completed a total of 194 formal, planned safety verifications for the Project – an average of 64 per month. The closure rate for these verifications (resolution of nonconformances identified in the verifications) was 92%, showing the continued collaboration between the BC Hydro safety and construction teams. Of these 194 safety verifications, 25% were clean sheet verifications, where no nonconformances were found during the verification.

Further, 84% of all safety verifications conducted during the reporting period identified at least one good safety practice.

For this reporting period, safety team verifications focused on the following hazards:

- Fall protection anchors and personal protective equipment;
- Guards and barriers on scaffolding and equipment with rotating components;
- Lockout and tagout of mechanical equipment;
- Working on or near water sources;
- Emergency response, including worker rescue plans; and
- Field compliance with safe work procedures.

2.1.8 Summary of Safety Performance Metrics

From July 2015 through March 2022, all Project work fronts completed more than 41 million work hours, with no fatalities and one permanent partial disabling injury in 2017.

In this reporting period, there were eight serious safety incidents consisting of seven near misses with the potential for a serious injury and one serious incident with a moderate medical injury requiring treatment. The worker involved in the serious incident was on modified duties and had fully recovered as of March 31, 2022. There were 169 non-serious incidents reported, including 52 near misses and 117 low-grade injuries that required first aid or medical attention treatment such as stitches or prescriptions. A near miss is defined as an incident that could have resulted in an injury but did not because of effective hazard barriers or the person was out of harm's way/missed. BC Hydro considers near miss reporting as indicative of an effective and transparent safety culture and strongly encourages all Site C contractors and employees to report near misses.

To encourage active learning from significant safety incidents across all work fronts and contractors, the Project held 27 safety incident reviews during the quarter, which included reviews with senior BC Hydro and contractor leaders (serious safety incident investigations) and reviews with construction management and safety teams from BC Hydro and contractors (less-serious incidents). Safety incident review themes were hot work, confined space, working at heights and object falls from height.

Table 2 reflects safety performance results for the Project, including all contractors and all sub-projects.

Table 2 Summary of Site C Safety Metrics

	Reported January 1, 2022 to March 31, 2022[1]	Reported Since Inception (July 27, 2015 to March 31, 2022)[1]
Fatality[2]	0	0
Permanently Disabling Injury[3]	0	1[4]
Serious Incidents[5]	8	113
Lost Time Injuries[6]	1	39
All-Injury Incidents[7] (Lost Time Injuries[6] and Medical Attention Requiring Treatment[8])	15	275

1 Numbers are subject to change due to timing of when data is retrieved and when injury is categorized.

2 Excludes any non-occupational incidents.

3 A permanently disabling injury is one in which someone suffers a probable permanent disability.

4 In June 2018, an injured worker received a permanent partial disability award from WorkSafeBC due to a lost time injury incident in August 2017. The worker was attempting to unload a light plant (tower) from a flatbed truck. The worker stepped on the light plant (tower) outrigger to gain enough height to reach the lifting attachment when the worker lost balance and fell approximately 7.5 feet to the ground. BC Hydro reclassified this incident as a permanent disabling injury after receiving an update on the WorkSafeBC award in June 2018. The incident is identified as a serious injury in the BC Hydro Incident Management System.

5 Serious incidents are any injury or near miss with a potential for a fatality or serious injury.

6 Lost time injuries are those where a worker (employee or contractor) misses their next shift (or any subsequent shift) due to a work-related injury/illness. If a worker only misses work on the day of the injury, it is not considered a lost time injury.

7 All-injury incidents are work-related medical attention requiring treatment, lost time injuries, and fatalities.

8 Medical attention requiring treatment is where a medical practitioner has rendered services beyond the level defined as “diagnostic or first aid” and the worker (employee or contractor) was not absent from work after the day of the injury. Services beyond diagnostic/first aid include (but are not limited to) receiving stitches, a prescription, or any treatment plan such as physiotherapy or chiropractic.

2.1.9 Safety Performance Frequency Metrics

To assess safety performance over time, the Project considers key safety metrics in the context of the total amount of hours worked (frequency), which corrects for the volume of work. Table 3 summarizes these key safety frequencies by quarter, for a rolling 12-month average.

Table 3 Summary of Safety Performance Frequency Metrics

	January – December 2021 (Rolling 12-Month Average)				January – December 2022 (Rolling 12-Month Average)			
	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2[9] Apr-Jun	Q3[9] Jul-Sep	Q4[9] Oct-Dec
Serious Incident Frequency	0.51	0.49	0.59	0.67	**0.70**	n/a	n/a	n/a
Lost Time Injury Frequency	0.12	0.09	0.13	0.11	0.11	n/a	n/a	n/a
All Injury Frequency	1.14	1.19	1.41	1.24	**1.29**	n/a	n/a	n/a

The serious incident frequency (adjusted for work hours) for January to March 2022 quarterly reporting period was 0.70, compared to 0.51 for the same period in 2021. This can be attributed in part to an earlier return of workers, changing construction conditions on the Project, and an increase in work activities involving more hazards such as working at heights and confined space. Similarly, all-injury frequency was 1.29 this quarter, an increase compared to 1.14 for the same quarter last year. Lost time injury frequency during this quarter was 0.11, down from 0.12 the same quarter last year. Managing lost time injuries and return to work programs has remained a priority for contractors. Refer to Appendix C, Figure C-1 for safety performance frequency metrics in graphic format.

[9] Key safety frequencies for Q2, Q3 and Q4 for calendar year 2022, will be provided in subsequent progress reports.

2.1.10 Regulatory Inspections and Orders

WorkSafeBC, under the authority of the *Worker's Compensation Act*, is the primary regulator with jurisdiction over safety for the Project. WorkSafeBC oversees worker safety (employee and contractor) for the Project, both on the dam site and off the dam site. The Ministry of Energy, Mines and Low Carbon Innovation is the regulatory authority for worker safety on any work fronts subject to the *Mines Act*, specifically West Pine Quarry, Portage Mountain Quarry, and Wuthrich Quarry.

As shown in Table 4, from January to March 2022, WorkSafeBC issued ten regulatory inspection reports and five regulatory orders. Of the ten inspection reports, seven were 'clean sheets' with no orders. There were no regulatory inspection or orders from the Ministry of Energy, Mines and Low Carbon Innovation during this reporting period.

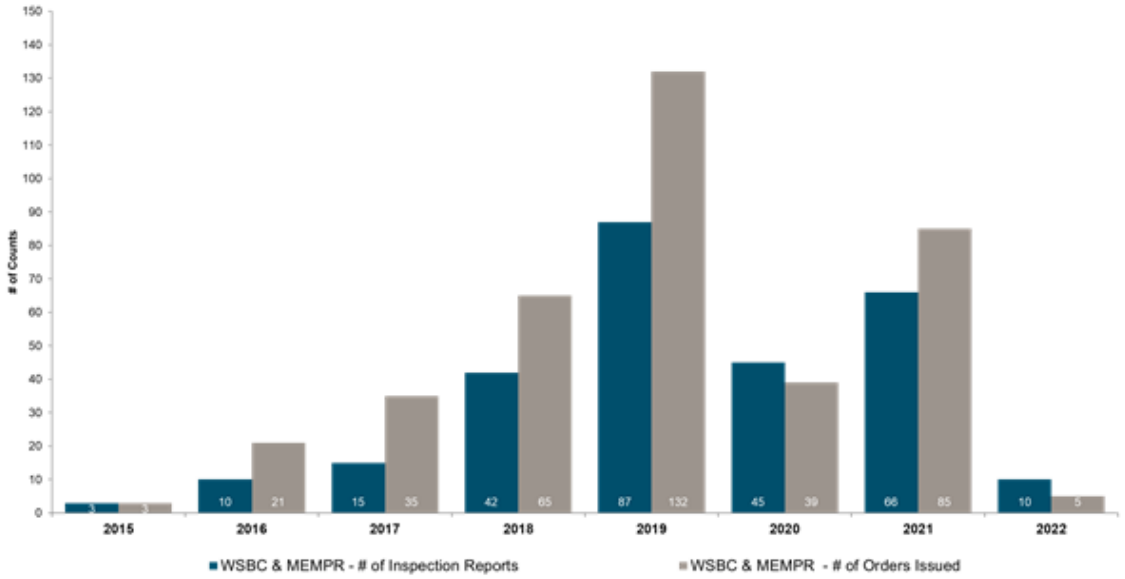
Table 4 Safety Regulatory Inspection and Orders

	Reported January 1, 2022 to March 31, 2022[10]	Reported Since Inception (July 27, 2015 to March 31, 2022)[10]
Regulatory Inspections	10	278
Regulatory Orders	5	385

Figure 1 shows the number of regulatory inspections and orders issued for the Project since 2015. The reduction in the regulatory activity in 2020 and 2021 can be partially attributed to COVID-19 restrictions. Refer to Appendix C, Table C-1 for a new, summarized version of the listing of regulatory inspection reports.

[10] Numbers are subject to change due to timing of when data is retrieved and when injury is categorized.

Figure 1 Regulatory Inspections and Orders, July 2015 to March 2022



3 Construction, Engineering and Quality Management Major Accomplishments, Challenges and Work Completed

3.1 Construction

Despite the ongoing challenges of the COVID-19 pandemic, construction of the Project continued to advance during the winter months, including achieving the significant construction milestone of placing the second 500 kV transmission line into service ahead of schedule. BC Hydro and Site C contractors continue to schedule work and explore strategies to complete work delayed by the COVID-19 pandemic as efficiently as possible. Main Civil Works

The scope of the main civil works contract includes the construction of the following major components:

- Diversion works, including two concrete-lined, 10.8-metre-diameter tunnels. Tunnel no. 1 is 700 metres in length and tunnel no. 2 is 790 metres in length;

- Diversion tunnel inlet and outlet portals, and approach channels;
- Excavation and bank stabilization;
- Relocation of surplus excavated materials (including management of discharges);
- Dams and cofferdams (including a zoned earth embankment dam 1,050 metres long and 60 metres above the present riverbed, and stage 1 and 2 cofferdams);
- Roller-compacted concrete (including a powerhouse, spillways and dam buttress approximately 800 metres long made up of approximately 1.7 million cubic metres of concrete); and
- Haul roads.

Construction activities took place on the approach channel, right bank, earthfill dam and conveyor belt system, and are described below.

Approach Channel

The main civil works contractor continued approach channel excavations with approximately 1.5 million cubic metres excavated during this reporting period. The work is now substantially completed except for approximately 100,000 cubic metres of material, which will be completed at a later date. The remaining material will remain as part of access for other contractors and will be removed once the scope is complete. On April 1, 2022, construction commenced on the approach channel lining, starting with excavation and foundation preparation for the concrete grouting plinth.

Right Bank

The activities currently underway or completed for the quarter ending March 31, 2022, on the right bank include:

Right Bank Drainage Tunnel

The final concrete slab placement in the right bank drainage tunnel is progressing, along with the drilling of drain holes from the roller-compacted concrete drainage gallery to the right bank drainage tunnel, and from the top of the roller-compacted concrete to the roller-compacted concrete drainage gallery.

Dam and Core Roller-Compacted Concrete

Capping of the roller-compacted concrete with conventional concrete was completed in February 2022. Final installation of drains will continue through the 2022 season.

Earthfill Dam

With the cold temperatures at site during this reporting period, the construction of the dam shell (other than Zone 8 material) ramped down for the season but resumed at the end of March 2022. Placement of excavated Zone 8 (random fill) material from the approach channel continued to progress with approximately 500,000 cubic metres placed on the upstream berm area of the dam and to a stockpile location on the right bank. The upcoming 2022 dam construction season will see placement of core, filter, shell material, and additional Zone 8 material once dam construction has advanced to a higher elevation.

Conveyor Belt System

During this reporting period, the conveyor system that transports till material being used in the construction of the dam core was on seasonal hold. Operations resumed in late March 2022.

3.1.1 Infrastructure and Site Operations

The infrastructure and site operations section of this report includes updates on the construction and operations of the worker accommodation and debris management for the reporting period.

Worker Accommodation

The total capacity of the worker accommodation, including camp operations staff, is 2,350.

Since January 2020, BC Hydro and the camp operator have implemented numerous measures to protect employees, contractors and facilities as a result of the COVID-19 pandemic. In collaboration with Northern Health, BC Hydro and the camp operator have eased several COVID-19 measures in the camp including making masks optional within the facility, reducing the frequency of enhanced cleaning, and returning the dining and lounge to previous occupancy limits.

BC Hydro has also updated the screening process for people accessing the site. BC Hydro continues to use COVID-19 screening questions when workers access the site, however temperature scanning was discontinued at the end of January 2022.

BC Hydro continues to implement the protocols mandated by the Provincial Health Authority and the British Columbia Centre for Disease Control for the worker accommodation lodge.

Debris Management

There are up to four debris retention structures on the Moberly and Peace Rivers that provide coverage for all head pond elevations to capture and prevent debris from entering the diversion tunnels. Debris management is seasonal with activities from approximately April to November each year and no activities over the winter season (approximately December to March).

During the quarter, the debris management contractor inspected the Peace River debris boom in preparation for the boom to be returned to service April 1, 2022. The current contract to manage debris at both the Peace River and Moberly River is in place until the end of 2023, with an option to extend to 2024.

3.1.2 Generating Station and Spillways

The generating station and spillways scope of work includes the construction of the following major components:

- Generating station and spillways civil works, including:
  - Powerhouse: Concrete placements, installation of structural steel, and installing hydraulic gates;
  - Inlet headworks: Concrete placements, construction of the penstocks, and installing hydraulic gates; and
  - Spillways: Concrete placements and installing hydraulic gates.
- Cranes, which includes the supply and commissioning of the powerhouse cranes, tailrace gantry crane, and headworks gantry crane; and
- Hydromechanical equipment, including the supply of all gates.

Construction progress is taking place on the generating station and spillways civil works, cranes and hydromechanical equipment as described below.

Generating Station and Spillways Civil Works

The generating station and spillways civil works contract includes the delivery of civil works associated with the powerhouse, intakes, penstocks, and spillways.

In March 2022, BC Hydro reached an agreement with the generating station and spillways contractor for the costs and schedule impacts for the work in the stilling basins impacted by the right bank foundations enhancements, described in

section 3.1.4. Under the terms of the agreement, the work will be completed in accordance with the current Project milestones.

By concrete volume, the generating station and spillways civil works sub-project is approximately 70% complete as of March 31, 2022.

Powerhouse

By concrete volume, the powerhouse is approximately 82% complete as of March 31, 2022. The second stage concrete (concrete that embeds the turbines and forms the floors) is advancing at a pace to match the turbines and generators contractor's schedule. The contractor removed its infrastructure from the downstream adjacent area (the tailrace) to enable the tailrace pile work to proceed on schedule.

Intakes Headworks

Intakes first stage concrete is more than 80% complete. Intakes first stage concrete is essentially complete for units 1, 2, 3, and 6. Intake 4 is approximately 25% complete and intake 5 is approximately 60% complete. The intakes work is behind plan, however, the contractor has added resources to the work to ensure the intakes will be complete by the milestone date.

Penstocks

Penstock steel for all penstocks is more than 90% complete. Penstocks production is on plan. The contractor has placed 85 penstock sections out of a total of 90 sections.

Spillways

The contractor has completed approximately 60% of the spillways concrete. The spillway is on the critical path for the generating station and spillways civil works sub-project. The spillways are forecast to be complete by mid-2023.

Cranes

The headworks gantry crane has been delivered to site and will be erected in the summer of 2022. The tailrace gantry crane is scheduled to be shipped to the site in May 2022 and crane erection will start in June 2022.

Hydromechanical Equipment

Gates and components are being shipped to site as they are completed. Gates supply is being closely monitored to ensure that equipment is available as needed by the installation contractor.

3.1.3 Right Bank Foundation Enhancements

During the reporting period, the construction work associated with the installation of 48 large diameter vertical steel piles within the spillways was completed.

Additionally, during the reporting period, work commenced on the required excavations for the installation of 48 large diameter vertical steel piles in the powerhouse tailrace.

To reduce the extent of the required excavations downstream of the powerhouse that are necessary to provide access for pile installations, the powerhouse tailrace piling scope has been divided into four phases. Each phase consists of completing bedrock excavations to provide access and a level working surface for the piling equipment to work. Once access is established, the piling equipment will be mobilized into position to drill and install steel piles. After installation, the steel piles will be backfilled with concrete to secure the steel piles into the bedrock foundation below the powerhouse. Once a group of steel piles are concrete backfilled, the tops of the piles will be encased in a large concrete block called a pile cap, which is affixed to and abuts against the powerhouse concrete foundation.

Phase one is located at the west end of the powerhouse with phase four located at the east. The powerhouse piles will be installed from west to east, with the final piles scheduled for completion in the spring of 2023.

3.1.4 Balance of Plant

The balance of plant procurement was split into six separate contracts and the schedule for the balance of plant work is being aligned with the turbines and generators schedule. The six contracts include: (1) mechanical; (2) electrical; (3) architectural; (4) permanent upstream fishway and other out structures (5) heating, ventilation, and air conditioning (**HVAC**); and (6) fire detection and protection.

The balance of plant mechanical and electrical contracts were awarded in 2021 and the remaining four contracts were awarded during this reporting period. The six balance of plant contracts are being delivered by a total of three contractors. All contractors have mobilized to site and work has commenced on the electrical and mechanical scopes in the powerhouse.

3.1.5 Turbines and Generators

The scope of work for turbines and generators includes the complete design, supply, installation, testing and commissioning of six turbines, generators, governors and exciters.

The manufacturing and installation for the turbines and generators are on schedule; however, there have been some delays to the work, due to the COVID-19 pandemic, which has used up some of the float in the schedule. To mitigate these delays, and to ensure work is being completed by the contracted in-service date, BC Hydro directed a night shift be added to ensure the contractor completes spiral case welding ready for pressure testing, as close to schedule as is achievable for this

component of the work. In addition, BC Hydro has daily production meetings with the contractor.

The contractor's factory in São Paulo, Brazil will supply most of the turbine and generator components. There are some impacts due to the COVID-19 pandemic, but work is continuing. Meetings regarding manufacturing progress of the turbine and generator components in the São Paulo factory are continuing and have been held concurrently with visits by BC Hydro's subcontracted inspection agencies to many of the contractor's subcontractors in the São Paulo area and Europe.

Manufacturing of all remaining components is being closely monitored to avoid any interruption to the turbine and generator installations. Three of six turbines have arrived at site and the fourth turbine runner is being stored off-site. The remaining two runners will likely be delivered next winter when road conditions allow.

3.1.6 Transmission

The transmission sub-project connects the Site C substation to the BC Hydro transmission system. The scope of work includes the following major components:

- Two 75-kilometre-long, 500 kV transmission lines from the Site C substation to the Peace Canyon generating station;
- Three one-kilometre-long, 500 kV transmission lines from the Site C generating station to the Site C substation;
- A new 500 kV Site C substation; and
- Expansion of the existing Peace Canyon 500 kV gas-insulated switchgear to incorporate the two new 500 kV transmission line terminals.

The following reflects progress to March 31, 2022:

Transmission Lines

Construction of the second 500 kV transmission line was completed and the line was energized on March 3, 2022, ahead of schedule. The overall transmission sub-project (including the three future transmission lines connecting the Site C generating station to the Site C substation) is expected to be completed within budget.

3.1.7 Highway 29 and Hudson's Hope Shoreline Protection Berm

The creation of the Site C reservoir requires realignment of six segments of Highway 29 totalling approximately 32 kilometres. The scope of the highway realignment includes relocation of existing 25 kV distribution lines adjacent to the highway and the decommissioning of approximately 30 kilometres of the existing highway. BC Hydro is working with the Ministry of Transportation and Infrastructure on Highway 29 construction.

The Highway 29 sub-project also includes the construction of a shoreline protection berm within the District of Hudson's Hope to protect against bank erosion due to reservoir wind waves and water table rise, and the development and operation of the Portage Mountain Quarry, which will supply riprap and filter materials for highway and berm construction.

The permanent highway realignment is planned to be completed by summer 2023 to ensure the highway remains accessible once the reservoir is inundated and the dam is operational.

The Highway 29 sub-project is divided into the following components:

- Cache Creek highway realignment and bridge;
- Halfway River highway realignment and bridge;
- Farrell Creek East highway realignment;

- Farrell Creek highway realignment and bridge;
- Dry Creek highway realignment and bridge;
- Lynx Creek highway realignment and bridge;
- Portage Mountain Quarry development and operation; and
- Hudson's Hope shoreline protection berm.

The following reflects progress to March 31, 2022:

Cache Creek

The Cache Creek highway segment has been divided into the Cache Creek East (8.6 kilometres) and Cache Creek West (4.1 kilometres) segments.

Cache Creek East

Construction continued on the Cache Creek East segment during the reporting period. At the end of the reporting period, the bridge foundation was 100% complete and the bridge steel girders were 100% complete. Overall, construction on this segment was 68% complete at the end of the reporting period.

Cache Creek West

Construction of the Cache Creek West segment was completed in August 2020.

Halfway River

The Halfway River segment includes the realignment of 3.7 kilometres of highway and the construction of a new one-kilometre long bridge crossing the Halfway River, approximately 500 metres north of the current structure.

There was no activity on the segment during the reporting period as the site was shut down for the winter.

Farrell Creek East

The Farrell Creek East segment includes the realignment of 8.4 kilometres of highway. Geotechnical studies in 2019 concluded that 5.7 kilometres of this segment could be removed from the scope of work and monitored following the creation of the Site C reservoir, reducing the length of Farrell Creek East realignment work to 2.7 kilometres.

There was no activity on this segment during the reporting period as the site was shut down for the winter.

Farrell Creek

The Farrell Creek segment includes the realignment of 1.9 kilometres of highway, including the construction of a new 411-metre-long bridge.

At the end of the reporting period, the contractor had completed 100% of the concrete bridge and bridge abutment foundations and 85% of the bridge steel girder installations. Overall, construction on this segment was 68% complete at the end of the reporting period.

Dry Creek

The Dry Creek segment includes the realignment of 1.4 kilometres of highway, including the construction of a new 192-metre-long bridge.

There was no activity on this segment during the reporting period as the site was shut down for the winter.

Lynx Creek

The Lynx Creek segment includes the realignment of 9.1 kilometres of highway and the construction of a 169-metre-long bridge.

During the reporting period the Lynx Creek contractor remobilized to site following the seasonal shutdown and resumed bridge and grading work. At the end of the reporting period, the Lynx Creek work was 56% complete.

Portage Mountain Quarry

Portage Mountain Quarry supplies riprap and berm filter materials for various segments of the Highway 29 realignment and the construction of the shoreline protection berm in the District of Hudson's Hope.

All production of riprap for Highway 29 and the Hudson's Hope berm was completed and focus is now on the development and implementation of quarry reclamation.

Hudson's Hope Shoreline Protection Berm

The Hudson's Hope shoreline protection scope of work includes a 2.6 kilometre shoreline protection berm along the Peace River that will protect the slopes adjacent to the town of Hudson's Hope from shoreline erosion due to impacts from the Site C reservoir.

As of the end of the reporting period, the contractor had completed 100% of the berm stripping and vegetation clearing, placement of 96% of 70 kilogram riprap, 82% of 250 kilogram riprap as well as 80% of berm filter production and placement. The slope above the berm experienced some small, localized sloughing, which has been assessed and stabilized and communicated to the District of Hudson's Hope. The decommissioning of the Hudson's Hope water intake was 100% complete.

Construction of the Hudson's Hope shoreline protection berm is on schedule for completion in July 2022.

Highway 29 Decommissioning

Procurement of the Highway 29 decommissioning work was issued in November 2021 and is expected to be awarded in 2022.

3.1.8 Reservoir

The reservoir clearing scope of work is divided into two main regions:

- Lower reservoir, Moberly River drainage and eastern reservoir including Cache Creek drainage; and
- Middle reservoir including Halfway River drainage and western reservoir.

Clearing in the lower reservoir, Moberly River drainage, eastern reservoir including Cache Creek drainage and middle reservoir up to Halfway River was required to support river diversion. All other clearing is scheduled for completion by summer 2023.

The following reflects progress to March 31, 2022:

Lower Reservoir, Moberly River Drainage and Eastern Reservoir including Cache Creek Drainage

All clearing and burning activities are complete for these areas. Progress for this quarter included minor waste wood disposal on the north bank of the Peace River and nearby islands between the dam site and Cache Creek.

Middle Reservoir, Halfway River Drainage and Western Reservoir

Clearing activities in the Western Reservoir, including burning of waste wood, continued throughout the reporting period. Works included continuing to clear the two new contract areas and removing trees that were outstanding from last season (e.g., wildlife buffers). By March 31, 2022, clearing was substantially complete, though some helicopter waste wood piling, burning and road deactivation activities remain. These activities are planned to be completed next fall/winter.

Planning for new clearing contract packages for Watson Slough and a final reservoir sweep for the 2022/2023 clearing season began during the reporting period.

The 2022/2023 clearing season will contain approximately 100 hectares of clearing and will be direct award contracts to First Nations-designated businesses.

Other Reservoir Work

The scope of other reservoir work includes infrastructure relocations as well as environmental mitigation and enhancements works, which are required as part of reservoir filling.

BC Hydro's existing 1L364 transmission line crossing of the Halfway River drainage needs to be relocated prior to inundation. Construction of the pole foundations occurred during the reporting period. Minor foundation construction activities remain and are scheduled for early summer 2022. Pole fabrication is complete, and the installation and overhead stringing is planned for late summer/fall 2022.

The construction of one fish habitat site situated within the Western Reservoir occurred as part of the clearing activities as it was located within the work area. The procurement for the two remaining fish habitat sites began within the reporting period. Construction of a spawning shoal in the Western Reservoir is scheduled for summer 2022 and the construction of shallow water habitat in the Eastern Reservoir is scheduled for fall/winter 2022.

3.2 Engineering

The Site C engineering team is responsible for defining the Project's design requirements, preparing the Project designs and contract specifications, and ensuring the safety and quality of the assets. The team consists of in-house design specialists from BC Hydro and a range of external consultants from engineering firms who are responsible for the various design components.

Through the reporting period, substantial effort was given to engineering supervision at the construction site for both the main civil works and the generating station and spillways civil works contracts, as well as advancing the selection, design and

construction of required foundation enhancements to the structures on the right bank.

3.2.1 Main Civil Works

Support for the main civil works contract continued during the reporting period supporting excavations, foundation mapping, dam fill placements, grouting, and instrumentation reading interpretation. Dam fill placements finished for the 2021 season in October 2021, with the placement of till and filters in the core trench reaching an elevation of 410 metres. Grouting of the right and left abutments as well as excavation of the approach channel and placement of Zone 8 materials between the main dam upstream shell and upstream cofferdam continued in the first quarter of 2022. Instrumentation monitoring in the reporting period has indicated positive results with respect to dam stability and has confirmed that the dam foundation is responding to dam fill placement as predicted.

Detailed geological mapping of the excavations will continue in the approach channel in the next reporting period as excavations shift to this work front. This geological information will continue to be used to update the design parameters for the site geology and foundations.

3.2.2 Right Bank Foundation Enhancements

During the reporting period, value engineering activities continued in support of improvements to the design of the approach channel. Work included advancing the design of the channel's lining, drainage, and additional instrumentation.

BC Hydro continued to engage the independent dam experts, Technical Advisory Board and other subject matter experts to provide oversight of activities associated with the design of the foundation enhancements and construction of the Project. Refer to section 3.2.7 for a summary of the Technical Advisory Board meetings and

Appendix E for the report issued by the independent dam experts during this reporting period.

3.2.3 Large Cranes, Hydromechanical and Turbines and Generators

Engineering support to construction, manufacturing and vendor submittal reviews and integration, continued throughout the reporting period for the large cranes, hydromechanical equipment and turbines and generators contracts.

3.2.4 Generating Station and Spillways, Balance of Plant and Equipment Supply

During the reporting period, work focused on the production of record drawings for the powerhouse, along with supporting construction with review of submittals for the powerhouse, intakes, penstocks, and spillways.

For the balance of plant scope of work, the engineering team continued to support the procurement process for the permanent upstream fishway, fire detection and protection and heating, ventilation, and air conditioning request for proposal packages through responding to requests for information, proposal evaluations, negotiations and other requests. Work also continued on preparation and issuance of the issued-for-construction drawings for the balance of plant mechanical, electrical, and permanent upstream fishway contract packages and support to construction activities under these contracts including review of the technical submittals and contractor design drawings. The balance of plant team also continued to support the review of the technical submittals and design drawings, factory acceptance testing, and virtual factory visits for the seven outstanding equipment supply contracts, including the generator terminal equipment, generator circuit breakers, generator step-up transformers, AC station service, DC station service, 500 kV motor-operated disconnects, and diesel generators contracts.

Engineering design and fabrication continued to be advanced on the protection and control systems and integrated testing is also progressing on fabricated equipment.

Overall, the detailed engineering on the generating station and spillways is complete. This excludes the foundation enhancements design, for which the detailed engineering is approximately 90% complete.

3.2.5 Transmission

During the reporting period, engineering support was provided to complete substation and transmission line record drawings and the powerhouse transmission line issued-for-construction drawings for the three transmission lines that will connect the Site C substation to the Site C powerhouse.

3.2.6 Highway 29

The issued for tender design was completed for the highway decommissioning work and the Halfway River boat launch intersection. Engineering support is being provided to the various highway segments and the Hudson's Hope berm as required to progress construction activities.

3.2.7 Technical Advisory Board

A series of video conferences occurred from January to March 2022. There were no reports issued by the Technical Advisory Board during the reporting period. Refer to Appendix E for the report issued by the independent dam experts in February 2022.

3.3 Quality Management

The Project has a quality management plan that outlines activities to ensure materials, equipment and the constructed works meet contract quality requirements. The plan identifies resources and procedures necessary for achieving the quality objectives, roles and responsibilities, and is the framework document for the quality management program.

During the reporting period, the Project team continued its activities to support the Project quality plan, including:

1. Ongoing meetings with the quality management teams of key manufacturers;
2. Ongoing meetings with the quality management teams of the site contractors to address quality issues;
3. Performing quality audits of the site contractors; and
4. Continuing with monthly quality performance indicator assessments for the engineering, manufacturing and construction activities across each sub-project.

3.3.1 Quality Nonconformance Management

The identifying and reporting of nonconformances is an important part of quality management on construction projects like Site C.

The number of nonconformances can vary through the different phases of the Project and will fluctuate depending on the amount and type of work underway, the number of contractors on site, and the number of work locations.

The Project team continues to track and manage quality nonconformances. Table 5 summarizes quality nonconformity instances during the reporting period.

Table 5 Quality Management Nonconformity Report (NCRs) Metrics Reporting Period – January 2022 to March 2022

Contract	NCRs Reported January 1, 2022 to March 31, 2022	NCRs Closed January 1, 2022 to March 31, 2022	NCRs Reported as of March 31, 2022	NCRs Closed as of March 31, 2022	NCRs Open as of March 31, 2022
Main Civil Works	15	26	1,980	1,926	54
Turbines and Generators (total = manufacturing + installation)	51 (=25+26)	55 (=28+27)	708 (=554+154)	609 (=487+122)	99 (=67+32)
Generating Station and Spillways Civil Works	147	133	1,104	1,021	83
Large Cranes	0	1	27	27	0
Hydromechanical Equipment	3	2	42	41	1
Transmission	3	1	119	116	3

BC Hydro's ability to travel to participate in equipment inspections and final acceptance tests continues to be restricted due to the COVID-19 pandemic. As part of the ongoing measures to mitigate the quality risks associated with these restrictions, BC Hydro continues to meet with contractors in affected areas to plan upcoming inspections and to coordinate with local quality assurance representatives. For critical components, such as the turbines and generators, hydromechanical equipment and electrical equipment, BC Hydro continues to have local inspectors maintain a regular presence in the manufacturing facilities to perform quality surveillance, participate in quality witness points and hold points, and issue field reports. With the implementation of these measures, BC Hydro continues to ensure that quality requirements are satisfied prior to equipment being shipped.

During the reporting period, there were no significant quality issues to report on the main civil works sub-project as work generally slowed down due to winter conditions. The main civil works contractor focused its efforts on planning its inspection and

testing resources for when the main dam construction resumes in spring 2022. BC Hydro and the contractor continue to meet weekly to discuss and resolve open nonconformity reports as well as discuss broader topics related to the contractor's quality performance.

The quality of the constructed works in the generating station and spillways and intake structures continues to be good. BC Hydro continues to meet with the contractor daily to discuss the thermal control performance of concrete placements under cure, and to push for timely corrective actions when excursions are noted. BC Hydro notes that during the reporting period, the thermal control performance of the contractor was generally good. The quality of the penstock welding continues to be good and Powertech Labs remains onsite to assist with BC Hydro's quality assurance program. The penstock coating operations are now underway and specialists from Powertech Labs are onsite to assist BC Hydro with the quality assurance activities for the preparation and application activities.

Following the failed hydrostatic pressure test of the Unit 1 penstock flexible coupling in November 2021, the generating station and spillways civil works contractor and its flexible coupling supplier have determined that a re-design of the coupling is required. Engineering work by the contractor is underway and regular meetings are held with BC Hydro to provide updates on progress. BC Hydro and the contractor continue to meet weekly to discuss and resolve open nonconformity reports as well as discuss broader topics related to the contractor's quality performance.

For the turbines and generators contract, the quality of the components manufactured as of this reporting period continues to be good. While the overall quality of the turbine embedded parts installation and welding work at the site continues to be good, the contractor has had recent challenges during the Unit 3 spiral case pressure test with the temporary sealing elements between the stay ring and the stay ring bulkheads. Investigations are ongoing into the root cause and

corrective actions. BC Hydro continues to meet with the contractor on a weekly basis to discuss upcoming inspections, quality issues and the overall quality assurance program.

In January 2022, BC Hydro awarded two contracts to provide civil, electrical and mechanical quality assurance personnel at the site to support BC Hydro's resident engineering team with quality assurance activities on each of the major sub-projects. Onboarding of personnel under these contracts is ongoing.

3.4 Assets In-Service

Prior to the first generating unit coming into service, there are several construction activities that need to be substantially completed both on the dam site and off the dam site.

The first generating unit is scheduled to be in-service approximately one year before the sixth and final generating unit goes into service. Before the first generating unit is put into service, diversion tunnel conversion must be completed to allow for reservoir filling. In order to complete the diversion tunnel conversion and proceed with reservoir filling, each of the following key construction activities on the dam site must be substantially complete:

- Completing the earthfill dam, approach channel, powerhouse and spillways;
- Having the first generating unit ready for commissioning;
- Connecting the powerhouse to the substation via transmission lines;
- Removing the right bank cofferdam; and
- Watering up the powerhouse and spillways tailraces.

Activities required to be completed off the dam site include clearing the reservoir, realignment of Highway 29, and the Hudson's Hope shoreline protection berm.

Before all major pieces of equipment and assets are placed into service on the Project, inspecting, testing, and commissioning activities are completed to ensure that all components are fit for service and safe to transition to operations.

The pre-commissioning testing includes testing of individual pieces of equipment. The offline testing leads up to the signing of a Commissioning Notice to Energize, which states that the asset is safe to connect to the BC Hydro grid to commence the online testing. At the conclusion of the online testing, the signing of a Commissioning Notice to Operate formalizes the handover of the asset to the BC Hydro Operations group to operate. The commissioning process undertaken for the earthfill dam and associated assets will form part of the comprehensive dam safety and reservoir inundation plan.

Once assets are placed in-service, BC Hydro Operations is responsible for the long-term operations and maintenance of the equipment and assets.

As of March 31, 2022 the following permanent assets have been placed into service on the Project:

- Site C substation;
- 500 kV gas-insulated switchgear expansion at the Peace Canyon substation; and
- Two new 500 kV transmission lines that connect Site C to the Peace Canyon generating station.

4 Project Schedule

4.1 Project In-Service Dates

In June 2021, Treasury Board approved the revised Project in-service date of 2025, which was announced in February 2021. The Project's revised schedule reflects the delays and impacts of the COVID-19 pandemic.

BC Hydro is currently on track to achieve the approved in-service date; however, BC Hydro continues to actively monitor and assess risks with potential cost, schedule, and scope implications, including the continuation of the COVID-19 pandemic; commercial negotiations with contractors; design changes due to unknown field conditions; the availability of skilled craft workers; and obtaining remaining authorizations for the completion of the Project.

BC Hydro and Site C contractors continue to schedule work and explore strategies to complete work on the Project delayed by the COVID-19 pandemic as efficiently as possible.

Table 6 shows the status of key Project milestones in relation to the approved in-service date of 2025.

Table 6 In-Service Dates

Description	In-Service Dates based on Approved Budget and Schedule (June 2021)[11]	Status
5L5 500 kV transmission line	October 2020	Complete
Site C substation	October 2020	Complete
5L6 500 kV transmission line	July 2023	Complete
Unit 1 (first power)	December 2024	On track
Unit 2	February 2025	On track
Unit 3	May 2025	On track
Unit 4	July 2025	On track
Unit 5	September 2025	On track
Unit 6	November 2025	On track

[11] In-service dates based on Treasury Board's approval of the revised budget in June 2021.

5 Project Governance, Costs and Financing, and Risk

5.1 Project Governance

During the reporting period, activities supporting Project governance included:

- The Project Assurance Board continued to meet monthly to provide oversight to ensure that the Project can successfully meet cost, schedule and scope and that risks to these objectives are appropriately identified, managed and reported on an ongoing basis.
- The commercial sub-committee of the Project Assurance Board continued to meet monthly to provide oversight on schedule, cost reporting, claims management, commercial strategy and other commercial matters.
- The Technical Advisory Board continued to provide technical expertise and guidance and support to the Project team.
- EY Canada continued to provide independent oversight for the Project, including budget oversight, schedule and commercial management evaluation and risk assessment analysis.
- BC Hydro and EY Canada worked collaboratively to complete the quarterly update of the cost risk analysis and schedule risk analysis for the Project.
- Special advisor Peter Milburn continues to work with the Project to review that his recommendations, which have been implemented, continue to be sustained.

5.2 Project Budget Summary

With the Project approximately 60% complete, BC Hydro continues to actively manage potential cost, schedule and scope risks.

As of March 31, 2022, the life-to-date actual costs are $8.8 billion, which results in an estimated $7.2 billion of remaining costs. The Project remains on track to be completed within the $16 billion budget and meet the Project in-service date in 2025.

5.3 Project Expenditure Summary

The Project Budget in Table 7 reflects the Project budget of $16 billion approved in June 2021 by key work area, life-to-date actual expenditures to March 31, 2022, and the remaining budget.

Table 7 Project Budget by Key Work Area ($ million)

Description	Project Budget[12]	Actuals, Life-to-Date (as of March 31,\ 2022)	Remaining Budget (as of March 31, 2022)
Dam, Power Facilities and Associated Structures and Transmission[13]	8,258	4,923	3,335
Offsite Works, Direct Construction Supervision and Site Services[14]	2,895	1,774	1,121
Total Direct Construction Cost	**11,153**	**6,697**	**4,456**
Indirect Costs[15]	2,082	1,214	868
Total Construction and Indirect Costs	**13,235**	**7,911**	**5,324**
Interest During Construction and Contingency	2,765	898	1,867
Total	**16,000**	**8,809**	**7,191**

Table 8 provides a summary of the approved total Project budget, the current forecasts, and related variances. The table also presents the cumulative plan and actual costs to March 31, 2022 and the related variances.

12 The total Project budget was approved in June 2021 by Treasury Board.

13 Key items included are river diversion infrastructure, earthfill dam and related works, spillways, powerhouse, generation equipment and transmission and substation work.

14 Key items included are highway re-alignment and reservoir related work, direct construction supervision, and site services such as worker accommodation.

15 Key items included are mitigation and compensation programs, development and regulatory costs, project management, engineering and other support services such as Project controls, contracts management, environmental, and Indigenous relations.

Table 8 Total Project Budget Compared to Forecast Amounts to Completion and Life-to-Date Plan Compared to Actuals to March 31, 2022 ($ million Nominal)

	Total Project			Life-to-Date (LTD) to March 31, 2022		
Description	**Budget**	**Forecast to Completion**	**Variance**	**Plan**	**Actual**	**Variance**
Total Construction & Indirect Costs	13,235	13,235	0	8,949	7,911	1,038
Interest During Construction and contingency	2,765	2,765	0	1,082	898	184
Total	**16,000**	**16,000**	**0**	**10,031**	**8,809**	**1,222**

Details of the variances between actual and plan are in Appendix H.

Table 9 provides a Fiscal 2022 year-to-date (**YTD**) summary as of March 31, 2022, for the plan, actual cost and related variance based on the 2021/22 to 2023/24 Service Plan.

Table 9 2021/22 to 2023/24 Service Plan Compared to Actuals to March 31, 2022 ($ million Nominal)

Description	2021/22 to 2023/24 Service Plan (March 31, 2022)	Actuals, YTD (March 31, 2022)	Variance
Total Project	3,151	1,942	1,209

The Project expenditures were lower than planned as a result of the Fiscal 2022 plan being set while the new Project Budget was still being finalized (i.e., preliminary annual cashflow estimates) and timing differences for certain Project areas. The Site C Project cost forecast remains within the approved budget of $16 billion and the Project full in-service date of calendar 2025, as approved in June 2021.

Details of the variances between actual and plan are in Appendix H.

5.4 Site C Project Financing

Most of BC Hydro's capital projects, including the Site C Project, are debt financed. The Site C Project costs are included as part of BC Hydro's overall borrowing and included in the Province of British Columbia's budget and fiscal plan. The debt and related interest costs are managed corporately by BC Hydro.

5.5 Material Project Risks and Opportunities

Material project risks and opportunities are identified and reviewed by BC Hydro management and the Project Assurance Board on an ongoing basis. Project risks are uncertain events that, if they occur, could result in a negative impact or loss to a project. Similarly, opportunities are uncertain events that, if they occur, could result in a positive impact, or benefit, to a project.

As the Project progresses through implementation phase, the Project risks and opportunities will continue to evolve.

In response to recommendations from the independent review of the Project by Mr. Milburn, the criteria for selecting those risks and opportunities to include in internal and external reporting were updated, to include both objective and subjective measures, and these criteria, have been utilized to select the risks and opportunities included in the list below.[16]

[16] The list does not include risks that are subject to confidentiality obligations or solicitor-client privilege, or that disclose commercially sensitive information relating to matters that are currently outstanding, including procurements and negotiations that are in progress at the time of this report, the disclosure of which would be harmful to BC Hydro's commercial interests.

Refer to Table 10 and refer to Table 11 for a list of the material Project opportunities as of March 31, 2022.

Table 10 Material Project Risks

Risk Description	Impact and Response Plan Summary
Risk that COVID-19 event impacts continuation of construction activities at site or in Vancouver.	**Impact**: BC Hydro and contractors do not have access to the required labour for daily construction and Project management activities. BC Hydro and contractor costs increase to respond to COVID-19 and schedule delay impacts; camp capacity reduction and/or shutdown due to COVID-19 outbreaks. **Response:** Minimize non-essential travel to site. Screen workers before they travel to site and at site before entry; implemented camp mitigation measures (additional cleaning, closed cafeteria self-serve stations, establish isolation wings); put in place BC Hydro and contractor worker proof of vaccination policies and protection exposure protocols and plans.
Risk that the Project contractors cannot attract and retain sufficient skilled craft workers.	**Impact:** Contractors may not be able to adequately source, supply, attract, and retain sufficient project labour due to workforce demographics, increased competition for labour from other major projects, the requirement for specialized workers, and the effects of COVID-19. This may result in potential impacts to schedule, safety, productivity and cost. **Response**: Contractors provide labour sourcing and supply plans, provide advance notice of foreign workers, and participate in local job fairs. BC Hydro encourages and facilitates capacity building initiatives and monitors employee turnover rates and labour conditions on other projects.
Risk of contractor claims.	**Impact**: Increased construction management and contract management effort required to respond to and investigate claims; settlement of claims may result in increased costs. **Response**: Ensure sufficient commercial management resources in place, proactively resolve claims as received, and ensure commercial management procedures are in place and are being followed.
Risk of a safety incident resulting in a fatality or disabling injury.	**Impact:** Serious worker injury or fatality; project delays and associated costs. **Response**: Continue with BC Hydro and contractor safety steering committee to address shared safety issues and opportunities; BC Hydro and contractors have implemented safety cultural leadership training; increase BC Hydro executive involvement and engagement with site safety leadership; regularly hold on-site safety conferences; continue to include safety in BC Hydro and contractor onboarding orientations; and continue to promote a strong safety culture.
Risk of erosion along the outlet channel.	**Impact**: Cost of remediation; schedule delay and potential generation flow restriction on G.M. Shrum and Peace Canyon generation stations. **Response**: Complete both temporary and permanent solutions to prevent erosion. Monitor outlet area for any signs of erosion.

Risk Description	Impact and Response Plan Summary
Risk of right bank foundation enhancement interface conflicts.	**Impact**: Existing contractors' scopes of work and schedule impacted by potential new right bank foundation enhancements contractor interfaces. **Response:** Rely on change schedule terms of existing contracts to proceed with change orders for the right bank foundation enhancements work scope.
Risk that regulatory approvals are not available by the date required for construction.	**Impact:** Schedule delay to the Project while regulatory approvals are acquired, and Project cost increases. **Response:** Ongoing engagement with contractors, regulators, and First Nations.
Indigenous Nations burial site management and community support take longer than planned	**Impact:** Schedule delays and/or cost implications to recover schedule, and obtain necessary regulatory approvals. **Plan:** Work closely with affected Indigenous Nations to develop and implement appropriate burial site management options. Ensure sufficient amount of time, including schedule float, is available in the Project schedule.
Risk of tunnel conversion delay due to constructability, condition, safety or operational issues.	**Impact:** Schedule delay, Project cost increases; damage to structure requiring repairs, and acceleration needed to recover. **Plan:** Continue implementation of operations, maintenance, and surveillance programs to ensure successful installation of the diversion outlet stoplogs. Conduct joint detailed constructability and planning exercises with the contractor, continuously monitor the performance of the diversion tunnels, complete inspections of accessible tunnel areas prior to tunnel conversion. Work jointly with contractor and WorkSafeBC to ensure all hazards and mitigations have been identified and executed. Develop and execute process with BC Hydro Operations team to condition the upstream facilities to be ready to support the conversion works.
Risk that the Project compensate contractors for new sick leave pay requirements for contractor's craft labour.	**Impact**: BC Hydro compensates contractors for the new provincial sick leave pay requirement under the B.C. *Employment Standards Act*. **Plan:** BC Hydro ensure contractors have a sick leave policy or attendance management plan in place to monitor employee sick days. If any worker (craft or non-craft) already receives sick leave that meets or exceeds this benefit, they are not eligible for this as an additional benefit.

1 **Table 11 Material Project Opportunities**

Opportunity Description	Impact and Response Plan Summary
Lower interest during construction due to timing of Project contingency expenditures.	**Impact**: Lower Project interest costs than the amount budgeted. **Response:** Monitor Project contingency expenditure timing. Where feasible, delay contingency expenditures.

6 Key Procurement and Contract Developments

6.1 Key Procurements

The Site C 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. The remaining procurements on the Project are summarized in Table 12.

Table 12 Remaining Major Project Contracts and Delivery Models

Component	Contract	Procurement Model	Anticipated Timing
Reservoir/ Transmission Clearing	Multiple reservoir clearing contracts to be awarded over seven to eight years	Design-Bid-Build	Fifteen contracts completed (Reservoir 13, transmission two). Two remaining access and clearing packages are expected to be procured in 2022 or 2023.
Generating Station and Spillways	Balance of Plant – Architectural contract	Design-Bid-Build	Awarded in January 2022.
	Balance of Plant – Permanent upstream fishway and other structures	Design-Bid-Build	Awarded in January 2022.
	Balance of Plant – Fire detection and protection contract	Design-Build	Awarded in March 2022.
	Balance of Plant – Heating, ventilation and air conditioning contract	Design-Build	Awarded in March 2022.
Reclamation Program	Multiple seeding supply contracts and reclamation contracts to be awarded over three to four years	Design-Bid-Build	Under the pilot program • three seeding supply contracts awarded; and • three reclamation contracts will be awarded in mid 2022. For the full program • packaging of work will be determined once the pilot program is completed in summer 2023.

6.2 Major Construction Contracts Exceeding $50 million

Since inception of the Project, 13 major construction contracts have been awarded that exceed $50 million in value, as shown in Table 13. The contract values reflect the current value including executed approved changes to the end of the reporting period.

All construction contracts have been procured and awarded in accordance with BC Hydro procurement policies.

Table 13 Major Project Construction Contracts Awarded

Contract	Contract Value at March 31, 2022[17] ($ million)	Contract Execution Date
Site Preparation: North Bank	60	July 2015
Worker Accommodation	677	September 2015
Main Civil Works	2,963	December 2015
Turbines and Generators	466	March 2016
Transmission and Clearing	93	October 2016
Quarry and Clearing	131	February 2017
Generating Station and Spillways Civil Works[18]	2,147	March 2018
Hydromechanical Equipment	70	April 2018
Transmission Line Construction	139	May 2018
Highway 29	378	October 2019
Balance of Plant Mechanical	71	July 2021
Balance of Plant Electrical (includes balance of plant architectural, HVAC, and fire detection and protection contracts)	222	September 2021
Balance of Plant Permanent Upstream Fishway and Other Structures	87	January 2022

17 Contract value reflects the current value including executed change orders to the end of the reporting period.
18 Includes some of the scope of work for the right bank foundation enhancements.

6.3 Contracts Exceeding $10 million

For open contracts procured and awarded in excess of $10 million, refer to Appendix F.

6.4 Contract Management

6.4.1 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 $1.19 billion to reflect approved changes to March 31, 2022. This increase in contract value is primarily the result of a number of contract amendments since contract award in 2015, including three large contract amendments, the first in 2018, the second in 2020 and the third in 2021.

The generating station and spillways contract is also a unit price contract and, as such, variations in quantities and design are expected over the term of the contract. Since contract award in March 2018, the generating station and spillways contract value has increased by $543 million to reflect approved changes to March 31, 2022.

Request for proposals procurement processes were conducted for the balance of plant heating, ventilation and air conditioning contract and the fire detection and protection contract. BC Hydro received proposals for both contracts from the same contractor who had previously been awarded the Electrical contract. In addition, BC Hydro received one other proposal for the fire detection and protection contract. Following evaluation, BC Hydro determined it would be more cost effective to combine the balance of plant heating, ventilation and air conditioning contract and the fire detection and protection contract with the existing balance of plant electrical contract. A $65.2 million heating, ventilation and air conditioning and fire detection and protection amendment was issued to the contractor in March 2022. As a result of the scope additions, the Electrical contract has been restated in BC Hydro’s

contract management systems to reflect a revised “initial” contract price for the combined electrical, architectural, fire detection and protection and heating, ventilation and air conditioning scopes and values.

The balance of plant permanent upstream fishway and other out structures contract was also awarded during the reporting period.

The worker accommodation contract is comprised of camp construction and camp operation and maintenance. A contract amendment was executed in January 2022 via a change order to increase the contract value by $108 million and cover a term extension of two years to December 2024 and related operating costs. Further changes valued at $3 million were processed this reporting period mainly for COVID-19 rapid testing services.

7 First Nations Consultation

Pursuant to the Environmental Assessment Certificate and Federal Decision Statement, BC Hydro is required to consult with 13 Indigenous Nations with respect to the construction stage of the Project. This consultation includes the 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 10 First Nations communities. Seven agreements have been fully executed and are in various stages of implementation. Impact Benefits Agreements with McLeod Lake Indian Band, Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and Saulteau First Nations, and Project Agreements with Dene Tha’ First Nation and Duncan’s First Nations have been publicly announced.

In February 2019, the Government of British Columbia, BC Hydro, West Moberly First Nations and Prophet River First Nation agreed to enter into confidential

discussions to seek alternatives to litigation related to the Site C Project. West Moberly First Nations withdrew from the discussions in August 2019 and filed an amended Notice of Civil Claim in September 2019. The Government of British Columbia and BC Hydro have since negotiated an agreement with Prophet River First Nation to settle this litigation, which was publicly announced in August 2020. As of January 21, 2022, the trial that was scheduled to begin in March 2022 for the treaty infringement claim filed by West Moberly First Nations in January 2018, as amended, has been adjourned. The parties to the litigation are continuing confidential discussions to seek to settle this litigation.

Engagement on Project construction activities has continued through regular Project update meetings with First Nations. The Environment Forum and Culture and Heritage Resource Committee have also continued to meet regularly, primarily through virtual means. Through the Environmental Forum, BC Hydro collaborates with Indigenous Nations on a number of Project-related environmental programs to combine traditional knowledge with western science. The Culture and Heritage Resource Committee has implemented a number of cultural recognition projects, such as a travelling exhibit, commemoration videos, a cultural, curation and archaeology training program, and signage at the Site C viewpoint describing the culture and history of Treaty 8 First Nations communities. The Committee has recently agreed to focus their efforts on a proposed Cultural Centre Development Project. The design and content for this facility are Indigenous led. This quarter, 12 Nations participated in the Cultural Centre Working Group, and contributed to the visioning process to develop a conceptual design for the proposed Cultural Centre. A committee of Chiefs and Elders from the communities will make the final decision on a conceptual design, to facilitate a cost estimate and advance to the detailed design phase.

The Environment Forum met to discuss key topics including reservoir filling, highway construction updates, and Project reclamation planning. Participants also discussed

work on a multi-Nation project funded through the Site C Indigenous Traditional Use Fund to study ungulate crossings and corridors in the area of the future reservoir, and a habitat enhancement program.

Consultation is ongoing with impacted First Nations regarding options and site specific plans for the management of identified burial and cultural sites impacted by reservoir inundation, in particular in the Halfway River and Cache Creek Bear Flats areas. Based on consultation and field investigations undertaken by BC Hydro and Indigenous Nations, two burial sites were identified in the future reservoir area, which have been registered as heritage sites under the *Heritage Conservation Act*. BC Hydro is working closely with affected Nations to develop the most appropriate management options and any community support needs. BC Hydro will require permits from the Archaeology Branch under the *Heritage Conservation Act* prior to undertaking any activities that may impact the registered burial sites.

The cultural monitoring program continues with First Nations monitors observing Project construction at Highway 29 locations as well as environmental enhancement and mitigation programs. Due to COVID-19 safety measures, cultural monitors will not be on the dam site until further notice.

The Project's Cultural and Heritage Resources Committee met in March 2022 to discuss ongoing projects, including signage commemorating Indigenous history at the Site C viewpoint and planning for 13 artifact cases, which are being fabricated to store and display Indigenous communities artifacts that have been uncovered during Project construction.

BC Hydro continues to advance economic opportunities for Indigenous Nations through capacity building and procurement opportunities. Approximately $618 million in Site C procurement opportunities have been awarded to Indigenous-designated companies since the beginning of the Project. Working on the Site C Project has helped Indigenous-designated businesses to build and solidify their reputations,

expand the scale of their operations, and develop new expertise to compete in the regional economy.

8 Litigation

The details of open proceedings as of March 31, 2022, are summarized in Table 14.

Table 14 Litigation Status Summary

Description		Date
B.C. Supreme Court: Treaty Infringement Claims		
West Moberly First Nations	Civil claim filed.	January 15, 2018
	Injunction application filed.	January 31, 2018
	Injunction hearing date.	July 23 to August 3, 2018 and September 4 to 7, 2018
	Injunction denied (no appeal filed).	October 24, 2018
	Amended civil claim filed.	September 25, 2019
	Scheduled trial date.	Adjourned on January 21, 2022
B.C. Supreme Court: Civil Claims		
Building and Construction Trades Council	Civil claim filed.	March 2, 2015
	Response to claim filed.	April 10, 2015
	No steps have been taken in litigation that require a response from BC Hydro.	
Michael Acko, etal (residents of Old Fort community)	Civil claim filed.	January 18, 2021
	Application for particulars hearing date.	June 25, 2021
	Response to claim filed.	September 8, 2021

Description		Date
Allianz Global Risks US Insurance Company, etal	Civil claim filed. Claim was filed by BC Hydro to preserve BC Hydro's rights to claim under Site C property insurance for losses related to left bank tension crack events	February 5, 2021
Allianz Global Risks US Insurance Company, etal	Civil claim filed. Claim was filed by BC Hydro to preserve BC Hydro's rights to claim under Site C property insurance for losses related to rockfall event near a diversion tunnel inlet portal.	July 13, 2021
Vezer Industrial Professionals Canada Ltd.	Civil claim served	March 29, 2022
B.C. Supreme Court: Civil Claims – Expropriation Act		
Lloyd Stewart Bentley and Katheryn Lynn Bentley	Civil claim filed Response to claim filed	April 23, 2021 November 9, 2021
Joy Eileen Ross	Notices of claim filed to keep open plaintiffs' rights to claim further compensation under the *Expropriation Act.* Further appraisal and other reports are required prior to commencing settlement negotiations. No requirement for BC Hydro to file responses at this time.	July 22, 2019
Chipmunk Holding Ltd., *et al*		July 22, 2019
Samuel James Mahood and Judy Edith Mahood		July 22, 2019
Gordon Roy Kelly and Heather Marie Kelly		May 13, 2020
Kenneth Victor Boon and Arlene Lois Boon (aka Arleen Lois Boon)		January 15, 2021
Lois Caroline Bentley		January 15, 2021
Dale Alvin London and Clara Anne London		January 15, 2021
Carla Jane Salmond		January 15, 2021
Lloyd Stewart Bentley, *et al*		January 15, 2021
Hudson's Hope Historical Society		March 18, 2021
Hudson's Hope Holdings Ltd., Robert Edward Bach and Beverly Jean Bach		March 26, 2021
Butler Ridge Energy Services (2011) Ltd.		April 23, 2021
Gwen Lillian Johansson		August 19, 2021
Robert Edward Bach and Beverly Jean Bach		September 20, 2021

9 Permits and Government Agency Approvals

9.1 Background

Before the Site C Project could start construction, an extensive environmental assessment process was undertaken, resulting in the issuance of the Provincial Environmental Assessment Certificate and the Federal Decision Statement in support of the Project. In addition, the Project is required to apply for multiple provincial permits, water licences, leaves to commence construction and federal authorizations. 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. Permitting approaches and requirements are also determined through regular meetings with regulatory agencies and are subject to change throughout the Project.

BC Hydro continues to be issued permits and authorizations in accordance with its construction timelines. As of March 31, 2022, 550 of the estimated 640 provincial and federal permits and authoizations required throughout the life of the Project had been obtained and are actively being managed. During the reporting period, the Project received the order-in-council temporarily excluding a designated quarry area (referred to as Area E) and the access road from the Agricultural Land Reserve for the purpose of supplying dam construction materials.

Multiple conditions are attached to each permit or authorization, which cover subjects such as air quality, water quality, fish and aquatics, wildlife, heritage, health and safety, construction environmental management and First Nations consultation. As of March 31, 2022, all required conditions and submissions have been met in accordance with the schedule and requirements of the conditions.

9.2 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. As of March 31, 2022, one additional *Fisheries Act* authorization is anticipated for the temporary placement of fill material immediately downstream of the downstream cofferdam. Additional *Canadian Navigable Waters Act* (formerly *Navigation Protection Act)* approvals and notifications 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. As of March 31, 2022, a total of 114 federal approvals had been received and are actively being managed. Eighteen future approvals are planned.

9.3 Provincial Permits

Site C requires provincial permits primarily under the *Land Act, Water Sustainability Act, Forest Act, Wildlife Act, Heritage Conservation Act,* and *Mines Act*. These permits include investigative permits, licences to occupy land, water licence approvals, leaves to commence construction and leaves to construct, and licences to cut vegetation, among others.

As of March 31, 2022, 427 of the estimated 499 provincial permits and approvals that are required throughout the life of the Project had been obtained and are actively being managed. These include permits for the dam site area, worker accommodation, Highway 29 realignment, transmission line and eastern, middle, and western reservoir. Future provincial permits are being planned for the remainder of the generating station and spillways construction, fish habitat enhancement sites, reservoir filling and operations as well as decommissioning the existing Highway 29.

9.4 Environmental Assessment Certificate

Compliance with the Project conditions in the Environmental Assessment Certificate is regularly monitored, and evidence is collected by various federal and provincial regulatory agencies, the Independent Environmental Monitor, BC Hydro and contractors.

On March 16, 2021, BC Hydro submitted a draft Environmental Assessment Certificate amendment request to the Environmental Assessment Office regarding the use of haul trucks on a contingency basis to transport till material from 85th Avenue Industrial Lands to the dam site area. Prior to submitting the final submission in June 2021, BC Hydro engaged with local governments, Indigenous Nations and local residents on the proposed activity and responded to concerns. Hauling will comply with all requirements for the use of public roadways. The amendment request is currently under review by the Environmental Assessment Office. Obtaining the amendment decision is behind schedule as it was intended to be in place prior to April 1, 2022, when the conveyor resumed operation.

On June 14, 2021, BC Hydro submitted a request to amend Condition 40 of the Environmental Assessment Certificate, proposing that BC Hydro amend one of three boat launch locations required by the Certificate from Cache Creek to a location close to Halfway River. The amendment request is currently under review by the Environmental Assessment Office. A decision on this amendment is expected in May/June 2022.

All amendments and amendment requests are posted on the Environmental Assessment Office website.

As with any large construction project, refinements to the design are expected. There are no material impacts to the cost of the Project as a result of the proposed amendment requests.

10 Environment

10.1 Mitigation, Monitoring and Management Plans

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

Focus remains on minimizing sediment and erosion across the dam site, care of water, including water that contacts potentially acid generating rock, hydrocarbon management and invasive weed control. Given the size of the Project and the length of construction, wildlife is becoming less wary of the site. As such, wildlife attractant management continues to be a focus.

Another focus during the reporting period was the transition of dam site potentially acid generating rock sources and contact water management as the site progressed bulk excavation of the approach channel.

Field monitoring for noise and dust continued in the Hudson’s Hope area related to works within the berm and along the truck haul route, as needed; however, there were fewer dust and noise related public concerns over the same reporting period last year. Monitoring has not identified air quality or noise exceedances coming from the Site C works. The Site C Project team continues to monitor the area and work with inspectors from the Environmental Assessment Office.

BC Hydro is preparing for fish habitat enhancement works downstream of the dam site this season, within the main channel of the Peace River. As these works are closer to the Old Fort community, notification has been provided to the community and dust, noise and light monitoring will be initiated.

The Environmental Assessment Office completed one physical inspection during the quarter and issued four separate inspection reports from prior periods at the end of the prior quarter. Refer to section 10.2 for further information.

BC Hydro is advancing design works in response to an order from the Environmental Assessment Office requiring BC Hydro to repair ditch erosion within the Ministry of Transportation and Infrastructure's ditch line along Old Fort Road and into BC Hydro lands.

BC Hydro is also engaged with the Environmental Assessment Office on issues pertaining to the Project's overall approach to managing potentially acid generating rock, which is prevalent throughout the Peace Region, including at the dam site.

10.2 Project Environmental Compliance

During the reporting period, 11,280 environmental compliance inspections were completed by environmental professionals, with a compliant or partial compliant result of 97% across all contractors and works areas.

Between January and March 2022, BC Hydro responded to four separate Environmental Assessment Office inspection records (based on four inspections completed between August and December 2021). A further Environmental Assessment Office inspection and an Impact Assessment Agency of Canada inspection were completed. The regulators have yet to provide the resulting inspection records. BC Hydro expects to report on the inspection records in the next reporting period.

During the reporting period, the Project received an Environmental Assessment Office order directing repair of ditch erosion within the Ministry of Transportation and Infrastructure's ditch line along Old Fort Road and into BC Hydro lands. Although the erosion originates outside the Project boundaries, the Environmental Assessment Office has directed BC Hydro to resolve the issue as it occurs on a portion of road

modified as a result of Project activities. BC Hydro is working with the Ministry of Transportation and Infrastructure to obtain approval to repair their ditch.

During the reporting period, the Project responded to a draft inspection record from the Environmental Assessment Office regarding the Project's approach to managing potentially acid generating rock. The Project submitted evidence of the management of potentially acid generating rock through a variety of industry-recognized practices developed by qualified environmental professionals. Additionally, the Project took action where localized improvements were warranted, such as improving containment direction ditching.

The Impact Assessment Agency of Canada inspection represented the first inspection by that agency in more than two years due to COVID-19 related travel restrictions.

10.3 Environmental Compliance Inspections and Enforcement

During the reporting period, the Independent Environmental Monitor performed more than 280 hours of inspections on the Project. Throughout the course of the onsite inspections, environmental compliance was focused on the following areas:

- Slope stabilization on the transmission line, immediately south of the substation. Works include slope stabilization, drainage controls and stability pile installations.
- Clearing works in the area along the southern bank across from the Hudson's Hope berm. This includes hand and machine falling, road building, and crossing construction.
- Merchantable wood removal from the island at the western end of the site. The import of riprap will be used for construction of fish habitat.
- Equipment spill/leak monitoring. BC Hydro continues to promptly identify the presence of leaks and spills on equipment and report the findings in daily logs.

Further actions to address issues include continuing to utilize spill pads and drip trays, and monitoring of equipment with appropriate storage and disposal.

On February 3, 2022, the Environmental Assessment Office issued a Section 53 Order regarding erosion prevention and sediment control in front of the Gate B chain-up area within the Ministry of Transportation and Infrastructure's ditch line along Old Fort Road and leading into BC Hydro lands. Although the issue falls within the Ministry of Transportation and Infrastructure's mandate, BC Hydro is assuming responsibility to ensure it is addressed in order to comply with Environmental Assessment Office direction. The Site C Project team is working with the Ministry of Transportation and Infrastructure to obtain access permission and ensure adequate design.

The Site C Project team will continue to meet with provincial regulators to ensure ongoing focus and attention to the areas of most importance and concern for the regulators, and to proactively address any environmental or regulatory issues that may arise.

A recent inspection by the Environmental Assessment Office has continued to focus on care of water, hydrocarbon management, waste management and sediment and erosion management. The Environmental Assessment Office has included targeted focus on the management of potentially acid generating rock, which is prolific throughout the Peace Region and the Project areas. BC Hydro has a well-established potentially acid generating rock management plan that employs a variety of recognized techniques to identify, test, monitor and treat, if necessary, during construction. Any potentially acid generating rock sites located within the reservoir will be rendered inert once inundated. Any potentially acid generating rock sites remaining outside the reservoir post construction will be addressed through location-specific prescriptions provided by qualified environmental professionals.

During the reporting period, the Project responded to a draft inspection record from the Environmental Assessment Office regarding the Project's approach to managing potentially acid generating rock. The Project submitted evidence of the management of potentially acid generating rock through a variety of industry-recognized practices developed by qualified environmental professionals. Additionally, the Project took action where localized improvements were warranted, such as improving containment direction ditching.

The Site C Project team completed 11,280 environmental compliance inspections in the reporting period, with a compliant or partial compliant result of 97% across all contractors and works areas.

The Site C Project team continues to meet with provincial regulators bi-weekly to ensure ongoing focus and attention to the areas of most importance and concern for the regulators, and to proactively address any environmental or regulatory issues that may arise.

Additionally, the Project has engaged both an Independent Environmental Monitor and an Independent Engineer that report directly to provincial regulators. The Independent Environmental Monitor provides weekly reports that have also demonstrated substantial compliance across the Project while continuing to identify areas of focus for sediment and erosion control, water management and spill prevention. The Independent Engineer works directly with site personnel to proactively identify design issues that may impact the environment and develop mitigation plans to avoid or minimize impacts.

10.4 Heritage

In accordance with 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.

During the reporting period, the heritage program focused on summarizing and reporting on work from prior reporting periods for pre-construction archaeological impact assessments at selected locations, as well as providing Project construction support.

10.5 Temporary Fish Passage Facility

The temporary fish passage facility was in winter shut-down mode during the reporting period. In 2021, the facility passed more than 2,400 fish from 11 different species. Fourteen mortalities were observed in 2021, representing 0.6% of all fish sorted in the facility; this figure is in-line with the anticipated levels of mortality during operations.

During the shut-down period a minor modification was made to the facility to improve its biological performance and another improvement is planned for next quarter. These improvements are based on lessons learned and observations from the 2021 operating year. The facility was preparing for the commencement of operations on April 1, 2022.

10.6 Agricultural Mitigation and Compensation Plan Framework

As part of the Site C Agricultural Mitigation and Compensation Plan, BC Hydro has established a $20 million BC Hydro Peace Agricultural Compensation Fund to support agricultural production and related economic activity in the Peace Region. The fund is governed by a regional decision-making board 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. Northern Development Initiative Trust is the fund administrator and manages the investment of the funds.

In March 2022, 19 Peace Region agricultural projects received over $400,000 in funding through the BC Hydro Peace Agricultural Compensation Fund. More

than $1.6 million had been distributed to 72 projects as of March 31, 2022. The fall 2022 grant intake will close on September 30, 2022, with application review to take place in November 2022.

11 Employment and Training Initiatives and Building Capacity Initiatives

11.1 Labour

Since the beginning of the Project, unions that have participated in the construction of Site C are listed in Table 15.

Table 15 Participating Unions

Union
Construction Maintenance and Allied Workers (CMAW)
Christian Labour Association of Canada (CLAC), local 68
Canada West Construction Union (CWU)
Construction and Specialized workers Union (CSWU), local 1611
International Union of Operating Engineers (IUOE), local 115
Millwrights Union local 2736
Ironworkers, local 97
International Brotherhood of Electrical Workers (IBEW)
MoveUP, local 378
Pile Drivers Union, local 2404
Boilermakers, lodge 359
United Association of Journeymen & Apprentices of the Plumbing & Pipefitting Industry of the U.S. & Canada, local 170
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 labour approach for the Site C balance of plant contracts is for the contractors to retain the Construction Labour Relations Association to enter into an agreement,

with the Bargaining Council of B.C. Building Trades Unions or another consortium of Building Trades Unions that covers an agreed set of labour requirements.

11.2 Labour Update on Scaled Back Activities at Dam Site due to COVID-19 Pandemic

BC Hydro continues to provide updates to key Project unions on site regarding information that is being shared with workers, including BC Hydro's COVID-19 proof of vaccination policy, that came into effect on January 10, 2022.

The latest number of people in camp in isolation, and applicable Northern Health Orders, are available on the Site C website.

11.3 Employment

Contractors submit monthly workforce data electronically to BC Hydro. Table 16 presents the monthly number of construction contractors, non-construction contractors, engineers, and Project team workers for this period. 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.

Table 16 Site C Jobs Snapshot Reporting Period – January 2022 to March 2022

Month	Number of B.C. Primary Residents[19]	Total Number of Workers[20]
January 2022	2,824	3,991
February 2022	2,917	4,153
March 2022	3,124	4,430

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

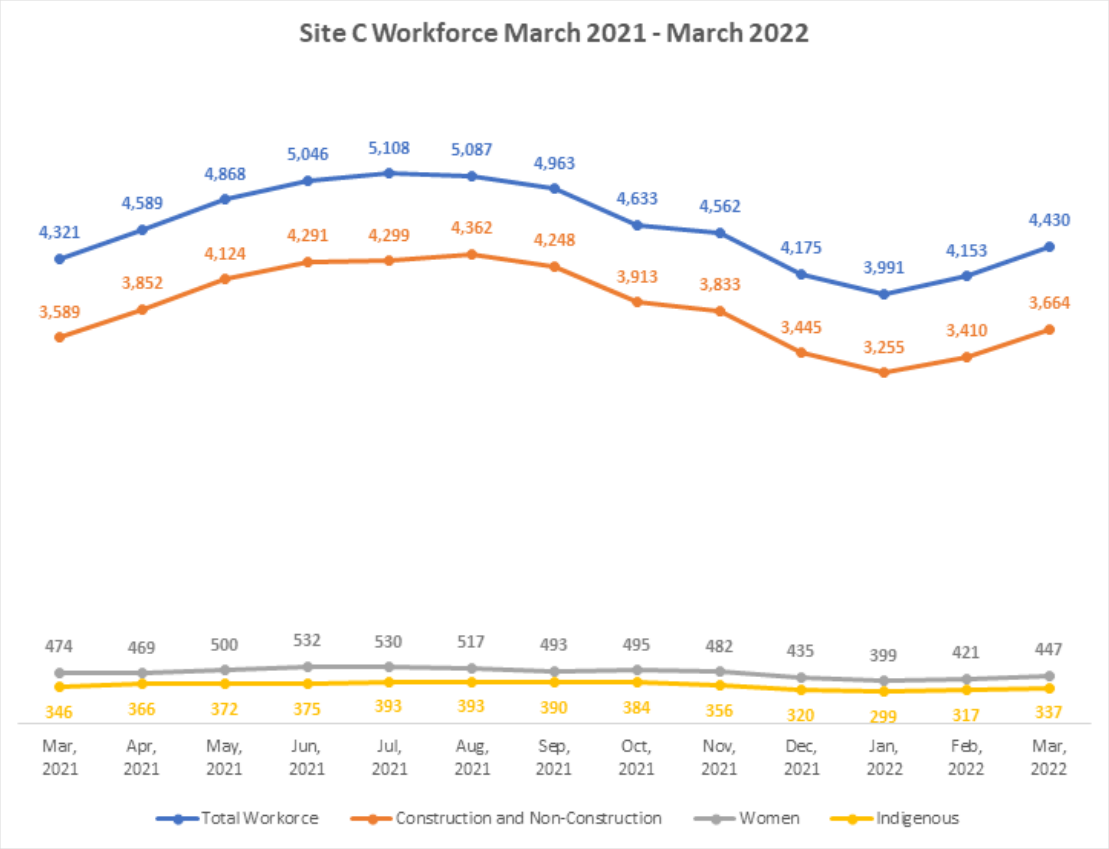
[20] Total workers include:

- Construction and non-construction contractors performing work on Site C dam site, transmission corridor, reservoir clearing area, public roadwork, worker accommodation and services.
- Engineers and Project team that is comprised of both onsite and offsite workers.
- The Project team, which includes BC Hydro construction management and other offsite personnel. An estimate is provided where possible if primary residence is not given.

In March 2022, there were 4,430 total workers on the Site C Project. Seventy-one% (3,124 workers) of the workforce was made up of residents of British Columbia, while 22% (798 workers) of the workforce lived in the Peace River Regional District. The onsite contractor workforce number also includes 12% women (447 workers) and 172 workers who are working for various contractors as apprentice carpenters, electricians, millwrights, ironworkers, mechanics, boilermakers and plumbers.

Figure 2 shows the monthly Site C workforce over the period from March 1, 2021 to March 31, 2022. The *Industrial Projects Restart Order*, which limited workers returning to site in January and February 2021, continued to impact the construction and non-construction workforce during the reporting period.

Figure 2 Site C Workforce March 2021 to March 2022[21]



11.4 Training and Capacity Building Initiatives

The Contractors Labour Committee, through its Indigenous labour subcommittee, continues to support Indigenous training, labour and employment on Site C through communications, consultation, coordination and cooperation among contractors on the Project.

The committee meets quarterly, or on an as-needed basis. All major Site C construction contractors currently attend this meeting.

[21] The Indigenous and women numbers are a subset of the construction and non-construction contractors workforce number.

BC Hydro has included apprentice targets in the generating station and spillways civil works contract, the transmission lines and the substation contracts, the balance of plant contracts and the Highway 29 work procured by BC Hydro, as appropriate.

Northern Lights College Foundation continues to distribute the BC Hydro Trades and Skilled Training Bursary Awards, established in 2013. As of March 31, 2022, a total of 287 students had received bursaries, including 134 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 WorkBC website as well as on the Fort St. John Employment Connections website.

Contractor Indigenous Employment and Training information Session

In February 2022, BC Hydro facilitated the seventh Indigenous Employment and Information session with Site C contractors and employment and training representatives from the Treaty 8 First Nations (the session was held virtually due to COVID-19). In attendance were six site contractors, and representatives from seven different Nations, as well as the North East Native Advancing Society and BC Hydro. The purpose of these meetings is to assist in building relationships between employment and training professionals from the Indigenous communities and key Site C contractors, as well as to share employment and training opportunities.

Site C contractors have noted that certain trades will continue to be in high demand during peak Project construction periods. As such, in early 2020, major on-site contractors started exploring new opportunities for apprentice and other training to take place on-site. BC Hydro worked with Northern Lights College and Site C contractors to develop several on-site pilot programs, which have been successfully

delivered at site and virtually over the past few years. Additional pre-skills training plans are being developed for 2022.

12 Community Engagement and Communication

12.1 Local Government Liaison

There are a number of Environmental Assessment Certificate conditions that are relevant to local communities in the vicinity of the Project. BC Hydro is implementing some of these conditions through community agreements offered to five local governments. Through these agreements and discussions, BC Hydro has, in some instances, agreed to additional measures to address concerns about local community impacts from construction and operation of the Project. BC Hydro continues to provide weekly COVID-19 email updates to the Regional Community Liaison Committee and Indigenous community representatives providing up-to-date COVID-19 information, including cases and vaccination numbers.

BC Hydro has concluded four community agreements with respect to the Project: the District of Taylor (2013), the District of Chetwynd (2013), the City of Fort St. John (2016) and the District of Hudson's Hope (2017). BC Hydro and the Peace River Regional District advanced negotiations through exchanging supporting information during this period and staff have worked to implement some of the mitigation measures for the Charlie Lake Wastewater outfall.

The Regional Community Liaison Committee, which is comprised of local elected officials and local First Nations communities, most recently met virtually for its regularly scheduled quarterly meeting on March 16, 2022. Eight local governments and four local First Nations communities (McLeod Lake Indian Band, Doig River First Nation, Saulteau First Nations and Blueberry River First Nations) as well as the two MLAs for Peace River North and Peace River South, are invited to participate as

committee members. Representatives from the Project's major contractors may also attend the meetings as invited guests.

As part of the Site C Project, BC Hydro is working with communities to provide lasting benefits for residents of the Peace Region. In 2016, BC Hydro launched the Generate Opportunities (**GO**) Fund, an $800,000 fund to support Peace Region non-profit organizations. The GO Fund is being distributed over an eight-year period to organizations that provide services to vulnerable populations including children, families and seniors.

The GO Fund is administered by Northern Development Initiative Trust on behalf of BC Hydro. During this reporting period, more than $12,000 was distributed to two non-profit organizations in the Peace Region and as of March 31, 2022, 67 projects had received $585,025 since the fund was launched in 2016.

12.2 Business Liaison and Outreach

No procurement notifications were sent out in the first quarter of the year.

12.2.1 Community Relations and Construction Communications

BC Hydro continued to implement its construction communications program throughout the reporting period. The program includes updating and maintaining the Project website (www.sitecproject.com) with current information, photos and videos of construction activities, as well as providing information to local and regional stakeholders as required.

BC Hydro participated in a virtual open house hosted by the Peace River Regional District on March 14, 2022, to discuss BC Hydro's application to the Agricultural Land Commission to develop a fish habitat enhancement area at Wilder Creek.

Construction Bulletins

Bi-weekly construction bulletins continued to be issued throughout the reporting period. These bulletins are posted on the Project website and sent by email to the web-subscriber list. There were six construction bulletins and one quarterly construction notification letter issued in the first quarter of 2022.

Public Enquiries

In total, BC Hydro received 118 public enquiries between January 1 and March 31, 2022. Table 17 shows the breakdown of some of the most common enquiry types.

In total, BC Hydro has received more than 13,300 enquiries since August 2015.

Table 17 Public Enquiries Breakdown

Enquiry Type[22]	January 1 to March 31, 2022
Employment Opportunities	52
Business Opportunities	7
General Information	36
Construction Impacts[23]	13
Other[24]	10
Total	**118**

12.2.2 Communications Activities

Based on a search using the media database Infomart, there were 51 stories about the Site C Project in B.C. news media between January 1 to March 31, 2022.

12.3 Labour and Training Plan

In accordance with an Environmental Assessment Certificate condition, a Labour and Training Plan was developed and submitted to the Environmental Assessment

[22] This table is a sample of enquiry types and does not include all enquiry types received.
[23] The nature of the construction impact enquiries are primarily air quality, noise, traffic conditions and safety.
[24] "Other" accounts for enquiries related to a variety of other topics, such as property owner correspondence and environment.

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, July 2017, July 2018, July 2019, September 2020 and July 2021. The next report will be issued in July 2022.

12.4 Human Health

12.4.1 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, 24 hours a day. Since opening the health clinic, there have been a total of 38,825 patient interactions. During the reporting period, there were 2,988 patient interactions, of which 256 were occupational and 2,732 non-occupational. Several preventive health themes were promoted to workers including quitting smoking, options for reducing the risk of cancer as February 4, 2022, was World Cancer Day, and a focus on hearing loss attributed to both occupational and recreational activities that are preventable with awareness and appropriate protection.

12.5 Property Acquisitions

With all required land rights for the Highway 29 realignment now acquired, BC Hydro continues to focus on land acquisitions to enable upcoming reservoir clearing and inundation. Thirty-four remaining private landholdings are required for reservoir inundation. All of the remaining properties can be characterized as "partial acquisitions" whereby only a portion of an overall property will be acquired.

12.6 Plans During Next Six Months

Table 18 shows the key milestones for activities planned during the next six months, April 2022 to September 2022.

Table 18 Key Milestones for Activities Planned During the Next Six Months (April 2022 to September 2022)

Milestone	Performance Measurement Baseline (June 2021)	Plan Date (Control Date[25])	Forecast[26]	Status[27] (Measured by Month)
Generating Station and Spillways				
U1 - Spiral case embedded and generator 2nd stage concrete complete; pit free	January 2022	January 2022	June 2022	Late
Main Civil Works				
Earthfill dam placement to elevation 433 metres complete	September 2022	September 2022	August 2022	On track
Turbines and Generators[28]				
Unit 4 – Stay ring and spiral case assembled and handover of generator embedded parts	January 2022	January 2022	April 2022	Late
Unit 5 – Stay ring and spiral case assembled and handover of generator embedded parts	March 2022	March 2022	June 2022	Late

25 Control date reflects plan, adjusted for approved changes to milestone dates.

26 As of March 31, 2022.

27 As of March 31, 2022.

28 The identified status reflects a comparison of the current forecast for each milestone relative to the contractual date for that milestone. All contractual milestone dates in Table 18 include substantial schedule float relative to the approved in-service date.

Milestone	Performance Measurement Baseline (June 2021)	Plan Date (Control Date[25])	Forecast[26]	Status[27] (Measured by Month)
Unit 6 – Stay ring and spiral case assembled and handover of generator embedded parts	May 2022	May 2022	August 2022	At risk
Highways				
Contract awarded - grading, paving and bridge decommissioning	March 2022	May 2022	May 2022	On track
Construction finish Hudson's Hope Berm	July 2022	August 2022	August 2022	On track
Construction finish Highway and Bridge Halfway River	August 2022	August 2022	August 2022	On track

13 Impacts on Other BC Hydro Operations

During the reporting period, the operation of system storage at Williston Reservoir (including G.M. Shrum and Peace Canyon generating stations) was planned to meet flow releases necessary for Site C construction, and this operation continues. Water releases from Peace Canyon Generating Station were maintained at or below the levels necessary for Project construction. BC Hydro maintained adequate vacant storage in Williston Reservoir to protect Site C construction works from flows that could otherwise exceed the capacity of the diversion works.

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Appendix A

Site Photographs

Figure A-1 View of the powerhouse and spillways (January 2022)

Figure A-2 Construction on the spillways including foundation enhancement work in the west bay (January 2022)

Figure A-3 The first girder is lifted onto a pier on the Farrell Creek Bridge (January 2022)

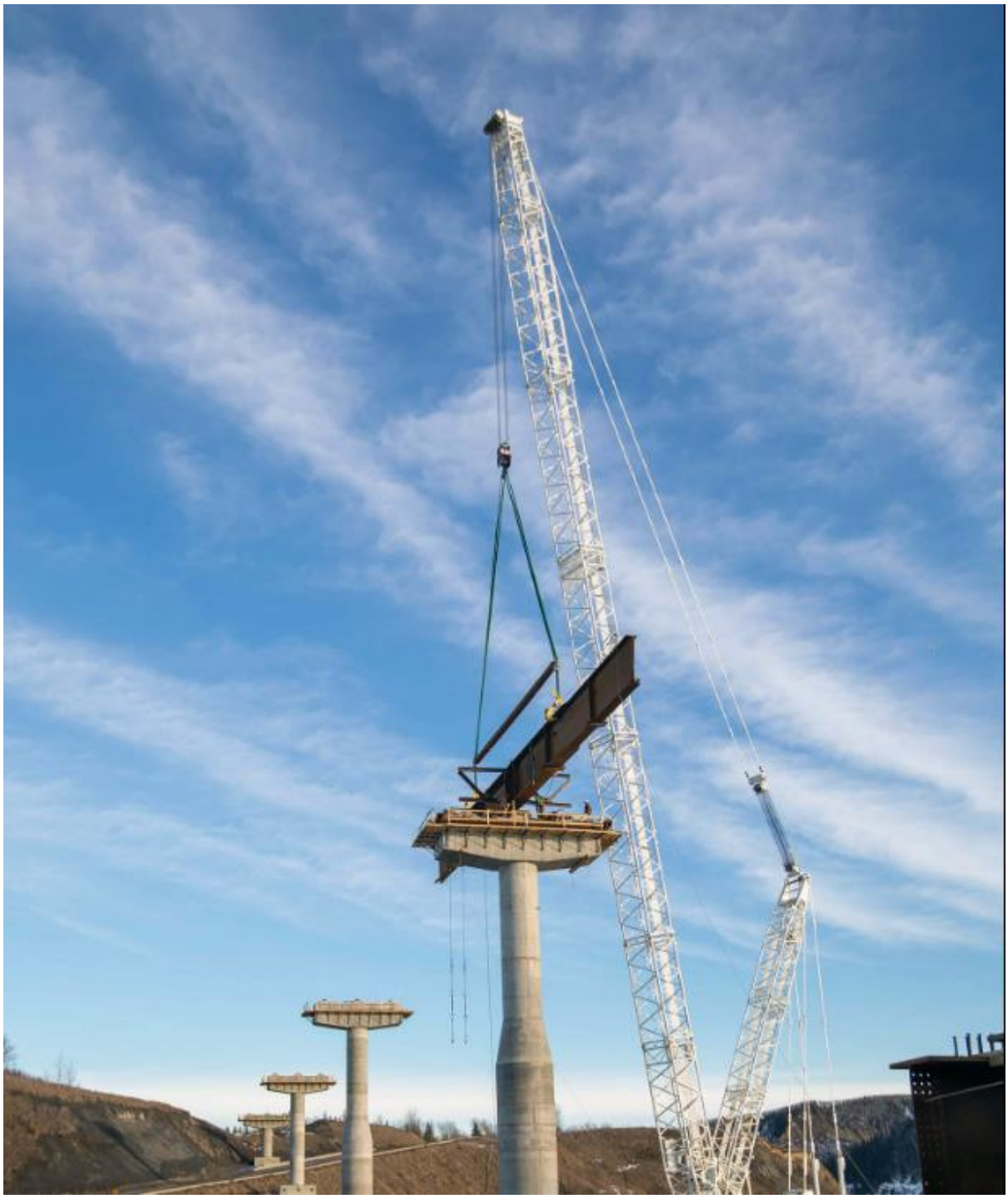


Figure A-4 Pile installation for foundation enhancement on the west spillway stilling basin (February 2022)

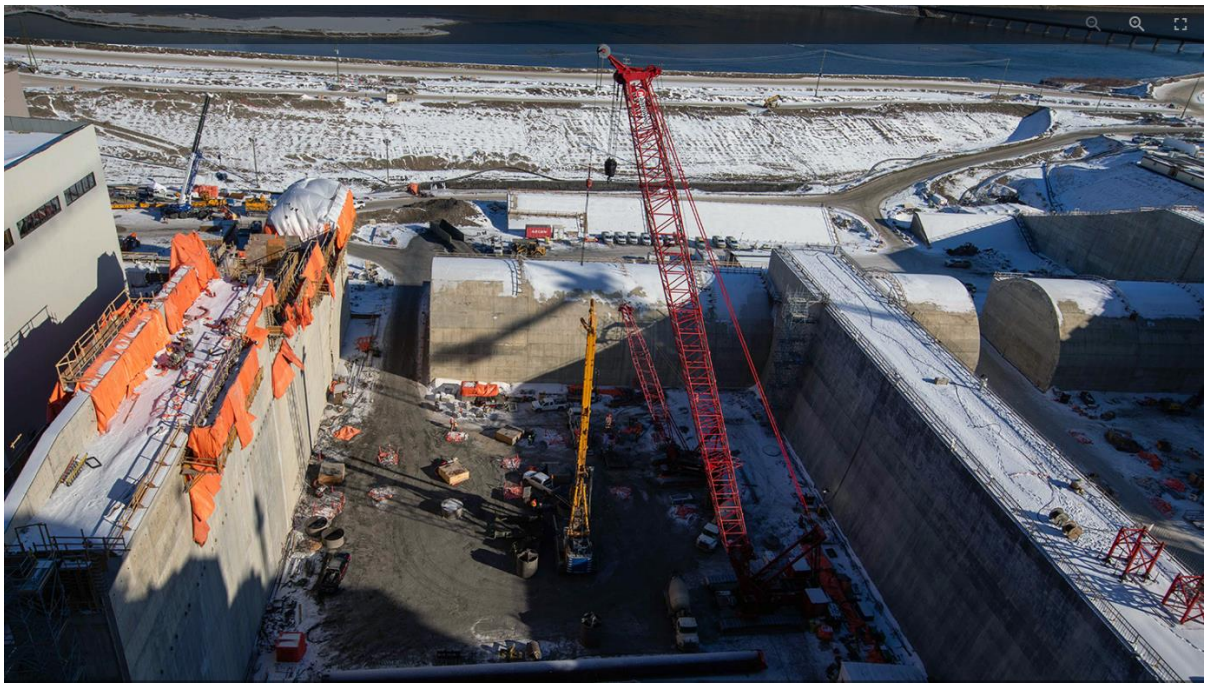


Figure A-5 **Inside the powerhouse are six spiral cases at various stages of completion with this photo showing Units 4, 5, and 6 (February 2022)**

Figure A-6 A winter view of the spillways, penstocks, powerhouse, operations building and tail race (February 2022)

Figure A-7 Penstock Units 4 and 5 (February 2022)

Figure A-8 Preparing embedded piping for a second lift of concrete on spiral case Unit 1 (February 2022)

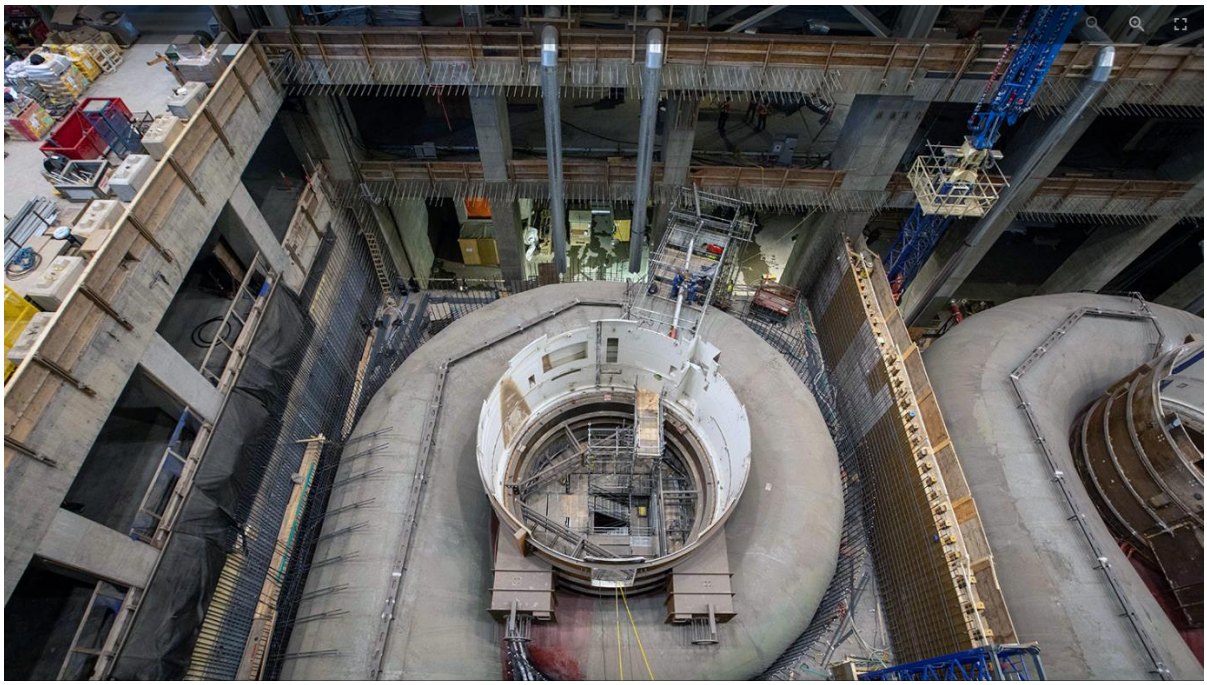
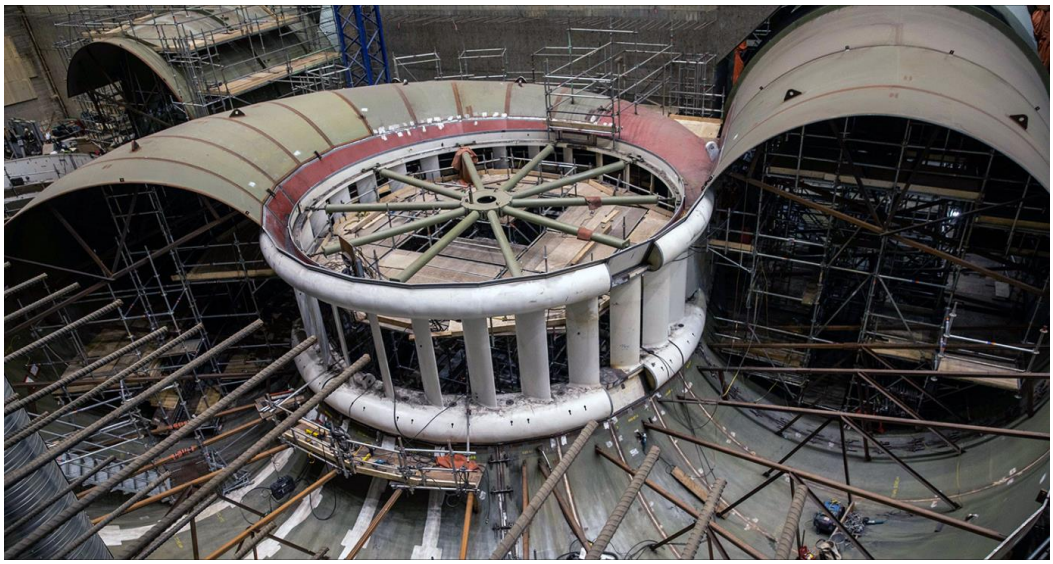


Figure A-9 Attaching the centre-phase conductor and installing corona rings on a transmission tower (February 2022)

Figure A-10 Dry Creek bridge is complete (March 2022)

Figure A-11 The Hudson's Hope shoreline protection berm in winter (March 2022)

Figure A-12 Progress of a spiral case and stay ring installation (March 2022)



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Appendix B

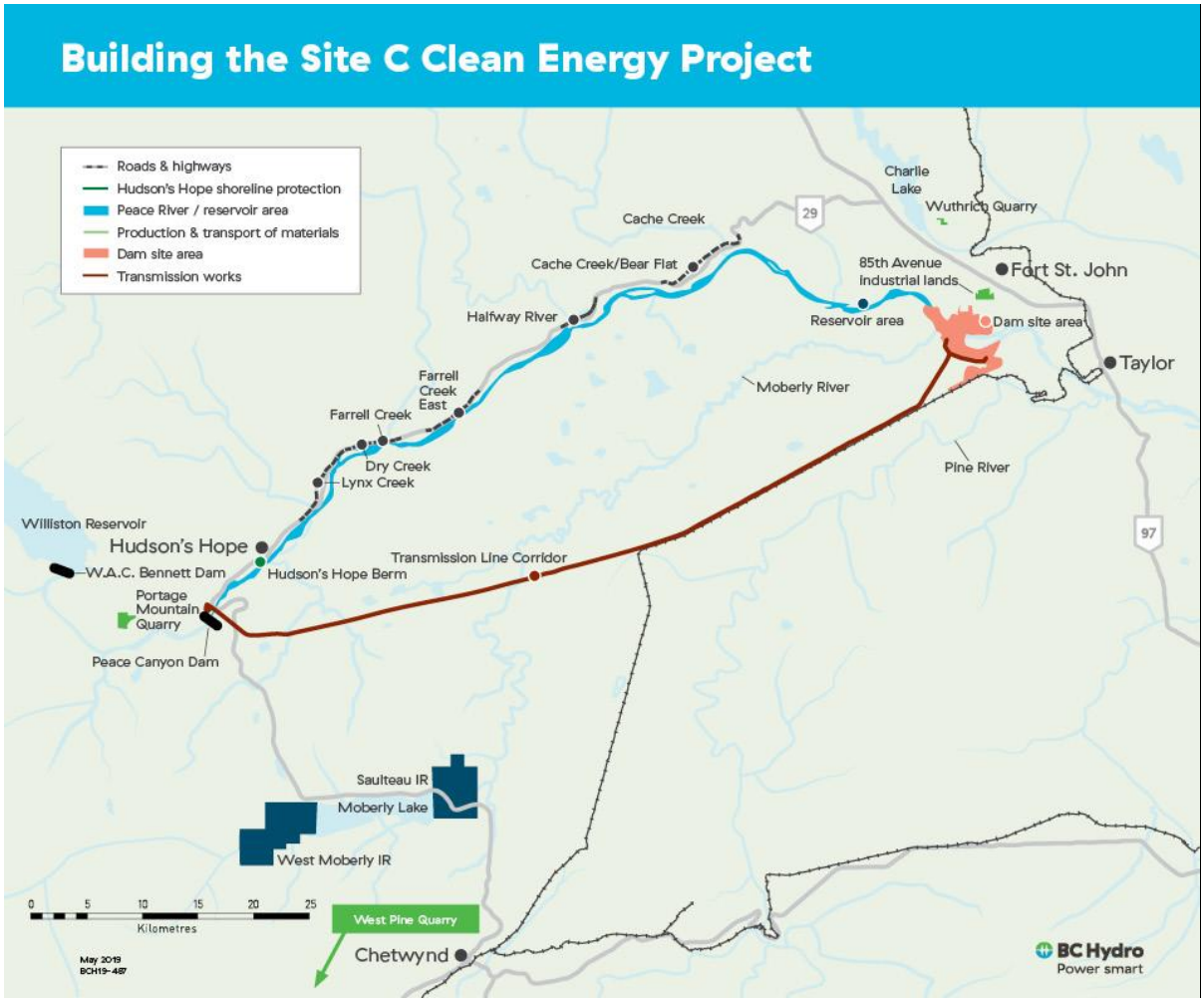
Work Completed Since Project Commencement in 2015

Construction began on July 27, 2015 and is ongoing. Since the commencement of construction, the following work has been completed:

- Site preparation, including onsite access roads;
- Clearing of the left and right banks at the dam site and clearing of the lower reservoir area;
- Construction of the worker accommodation lodge and Peace River construction bridge;
- Powerhouse excavation, and the placement of 650,000 cubic metres of roller-compacted concrete in the powerhouse buttress;
- Spillways excavation, and the placement of 600,000 cubic metres of roller-compacted concrete in the spillways buttress;
- Construction of dam site access public roads;
- Construction of the Site C viewpoint;
- Construction of 50 affordable housing units in Fort St. John;
- Fish habitat enhancements downstream of the dam site;
- Excavation of the diversion tunnel inlet (upstream) and outlet (downstream) portals, allowing for the commencement of diversion tunnel excavations;
- Excavation of the right bank drainage tunnel, which will be used to monitor and drain the water from within the foundation under the powerhouse, spillways and dam buttresses and will eventually be connected to services within the powerhouse;
- Clearing activities in the lower reservoir;

- Completion of two river diversion tunnels, which are used to reroute a short section of the Peace River to allow for the construction of the main earthfill dam;
- Completion of the upstream and downstream cofferdams;
- Construction and commissioning of the temporary fish passage facility;
- Diversion of the Peace River around the Site C construction site;
- Completion of the Peace Canyon 500 kV gas-insulated switchgear expansion to enable connection of Site C to the BC Hydro electrical system;
- Completion of the Site C substation and first of two new 500 kV transmission lines;
- Completion of the finishing concrete work inside the 454-metre-long left bank drainage tunnel;
- Dam and core excavation, and the placement of 450,000 cubic metres of roller-compacted concrete in the dam and core buttress, marking the completion of the Project's overall roller-compacted concrete placement program. In total, nearly 1.7 million cubic metres of roller-compacted concrete has been placed since 2017;
- Completion of the steel super-structure for the powerhouse; and
- Completion of the second of two new 500 kV transmission lines that connect Site C to the Peace Canyon generating station.

Figure B-1 Site C Project Components



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Appendix C

Safety and Security

Safety Incidents

The following safety incidents occurred during the quarter ending March 31, 2022:

Serious Safety Incidents

The eight serious incidents that occurred during this reporting period include:

1. A worker was hoisting their lunch in a tower crane, slipped on the steel platform and fell through the ring gear, landing on their back on the lower level and fracturing their ribs.
2. Hot work (welding) being performed on the exterior of a penstock, caused the uncured paint in the interior of the penstock to smoke and burn while three workers were inside of the penstock.
3. A nine-foot 4x6 piece of lumber fell from height and contacted a worker's hand. This was a near miss, no injuries.
4. Two workers were directed to delineate and dewater a pile hole to prepare it for concrete completion. Protective barriers around the pile hole were removed to access the area. While placing delineation near the pile hole, a worker slipped into the unprotected pile hole. The pile hole was three metres deep full of water. Another worker working in the area helped the worker out of the hole.
5. An excavator operator was tasked to build a berm and improve access to the east end of a frozen pond as preliminary work prior to proceeding with dredging operation. The excavator travelled too far into the pond from its intended work area.
6. A four-foot aluminum ladder (five pounds) fell 100-feet to the ground from the turret section of a concrete placing boom.
7. A six-pound slick line securement metal plate fell approximately 20-feet in the powerhouse, landing near a worker.

8. A 16-foot 2x4 piece of lumber slid through an opening of the shoring tower and fell approximately 30-feet, landing on the auxiliary spillway steps.

All Injury Incidents

The 15 injury incidents that occurred during this reporting period include one lost-time injury and 14 medical attention requiring treatment injuries. Note that serious incidents resulting in an injury will be listed under both serious incidents and all injury incidents.

Lost time injuries:

1. A worker slipped on ice and fractured their ankle which required surgery.

Medical attention requiring treatment injuries:

2. A worker was hoisting their lunch in a tower crane, slipped on the steel platform and fell through the ring gear, landing on their back on the lower level and fracturing their ribs.
3. A worker injured their hand while using a power tool.
4. A piece of slickline pipe slipped and the worker suffered a laceration to their finger.
5. A worker slipped on ice and injured their ankle.
6. A worker injured their foot while using a pressure washer.
7. A worker injured their back while completing surveying work.
8. A worker injured their finger while working with metal hardware components.
9. A panel slid off a pile and contacted a worker’s knee.
10. A worker was using a bristle blaster and debris entered their eye.
11. A worker was drilling anchor points and metal debris entered their eye.

12. A worker slipped on snow and injured their ankle.

13. A worker was unhooking rigging on a work platform and pinched their hand between two parts of the platform when the platform shifted.

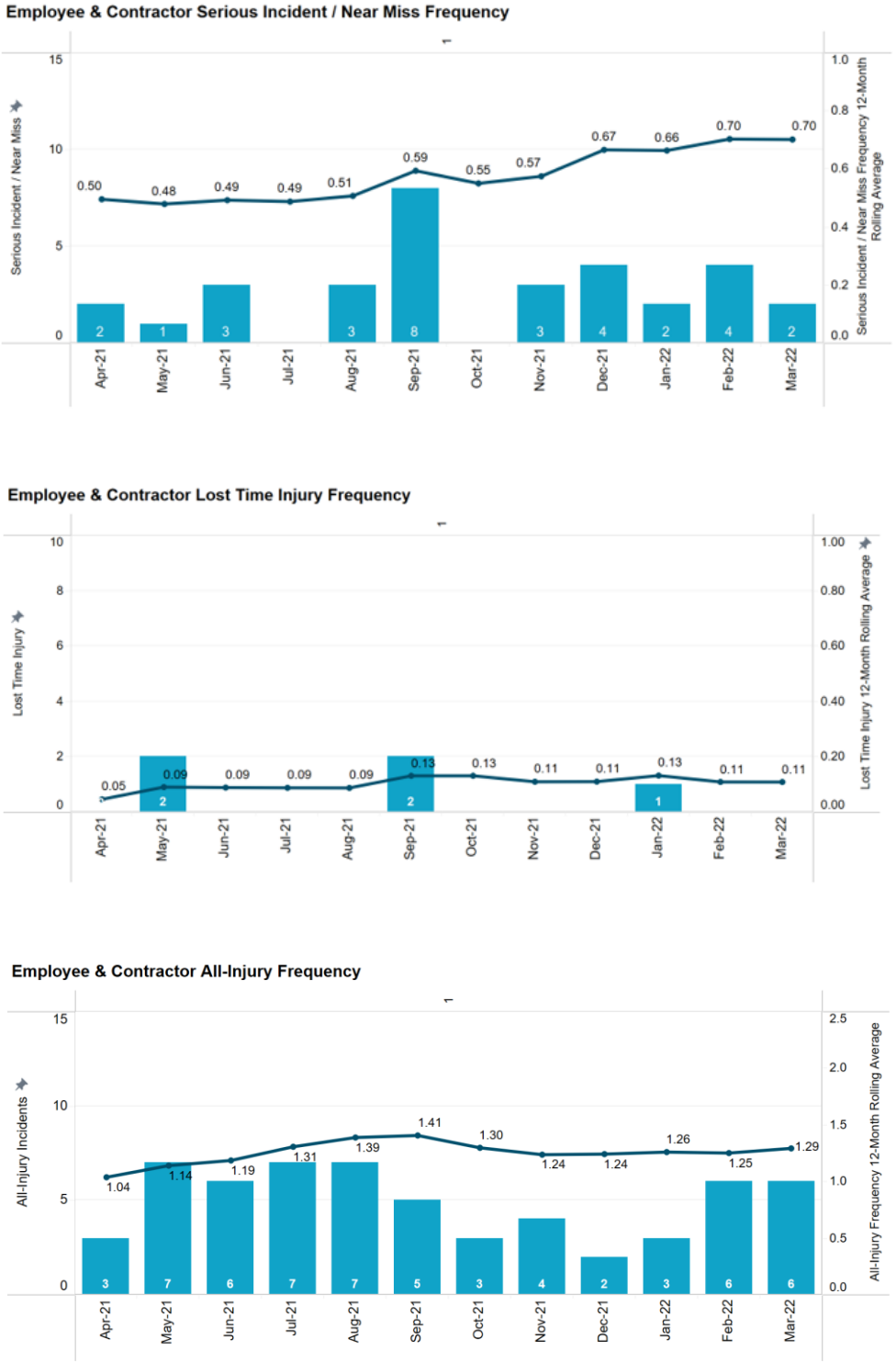
14. A worker was using a utility knife to cut a hose when the knife slipped. The worker suffered a laceration on their hand that required stitches.

15. A worker injured their elbow while stripping coil rods.

Safety Performance Frequency Metrics

Figure C-1 provides information on employee and contractor serious incidents/near miss frequency, lost time injury frequency and all-injury frequency from April 2021 to March 2022.

Figure C-1 Employee and Contractor Serious Incident / Near Miss Frequency, Lost Time Injury Frequency and All-injury Frequency



Regulatory Inspections and Orders

Table C-1 lists the safety regulatory inspections and orders received from WorkSafeBC and Ministry of Energy, Mines and Low Carbon Innovation from January 1, 2022 to March 31, 2022.

Table C-1 Safety Regulatory Inspections and Orders

#	Date of Inspections	Regulatory Agency	Site C Subproject	Inspection Report #	Inspection Report Type	Inspection Report Status	Number of Orders Issued	Subject of Orders	Regulation Order / Reference
1	January 25, 2022	WorkSafeBC	Main Civil Works	202217876003A	Acknowledgement Notice - slip, trip, fall	Closed	0	-	Reference: WCA69(1)(b); OHS4.39(1)
2	January 31, 2022	WorkSafeBC	Main Civil Works	202217876005A	Acknowledgement Notice - chemical splash	Closed	0	-	References: WCA69(1)(b); OHS5.85; OHS5.90(1); OHS8.14(3)(b)
3	February 3, 2022	WorkSafeBC	Main Civil Works	202217876006A	Accepted Investigation - slip, trip, fall	Closed	0	-	Reference: WCA72(2)
4	February 25, 2022	WorkSafeBC	Reservoir	202217791016A	Site Inspection - forestry clearing (Contractor 1)	In Progress	3	MSI Risk Assessment Inspection Records (x2)	Orders: OHS4.47; OHS26.65(5); OHS26.66(8.1) References: WCA88(1); WCA88(2)
5	February 25, 2022	WorkSafeBC	Reservoir	202217791017A	Site Inspection - forestry clearing (Contractor 2)	In Progress	1	Inspection Records	Orders: OHS26.66(8.1) References: WCA88(1); WCA88(2); OHS26.65(5); OHS26.67(2)
6	February 25, 2022	WorkSafeBC	Reservoir	202217791020A/B	Site Inspection - forestry clearing (BC Hydro)	Closed	1	Safe Work Practices	Orders: OHS26.2(1) References: WCA88(1); WCA88(2)
7	February 28, 2022	WorkSafeBC	Main Civil Works	202217876017A	Incident Investigation - vehicle collision (Contractor)	Closed	0	-	References: WCA69(1); WCA71(2)(c); WCA72(2)(b)
8	March 10, 2022	WorkSafeBC	Main Civil Works	202217876018A	Incident Investigation - vehicle collision (BC Hydro)	Closed	0	-	References: WCA69(1); WCA71(2)(c); WCA72(2)(b)
9	March 14, 2022	WorkSafeBC	Main Civil Works	202217876024A	Acknowledgement Notice - slip, trip, fall	Closed	0	-	References: WCA69(1)(b); OHS8.22(1); OHS8.22(2)
10	March 14, 2022	WorkSafeBC	Main Civil Works	202217876025A	Acknowledgement Notice - rock truck loading	Closed	0	-	References: WCA69(1)(b); OHS16.20(3); OHS7.11(b); OHS7.13
						Total	**5**		

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Appendix D

Workforce Overview

Table D-1 Current Site C Jobs Snapshot (January 2022 to March 2022)[29]

	Number of B.C. Workers and Total Workers	Construction and Non-construction Contractors[30] (including some subcontractors). Excludes Work Performed outside of B.C. (e.g., Manufacturing)	Engineers and Project Team[31]	Total
January 2022	BC Workers	2,140	684	2,824
	Total Workers	3,255	736	3,991
February 2022	BC Workers	2,231	686	2,917
	Total Workers	3,410	743	4,153
March 2022	BC Workers	2,418	706	3,124
	Total Workers	3,664	766	4,430

Employment numbers provided by Site C contractors are subject to revision. Data not received by the 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 March 2022, there was one worker in a specialized position working for a Site C construction contractor, which were subject to the Labour Market Impact Assessment process under the Federal Temporary Foreign Worker Program. Additionally, there were 28 management and professionals working for Site C construction and non-construction contractors through the Federal International Mobility Program.

29 Employment numbers are direct only and do not capture indirect or induced employment.

30 Construction and non-construction contractors total workforce employment number includes work performed on the Site C dam site, transmission corridor, reservoir clearing area, public roadwork, worker accommodation and services.

31 Engineers and Project team are comprised of both onsite and offsite workers. The Project team includes BC Hydro construction management and other offsite personnel. An estimate is provided where possible if primary residence is not given.

Table D-2 Preliminary Site C Apprentices Snapshot (January 2022 to March 2022)

Month	Number of Apprentices
January 2022	140
February 2022	159
March 2022	172

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

Table D-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	Cement Masons	Crane Operators
Ironworkers						

Table D-4 Indigenous Inclusion Snapshot (January 2022 to March 2022)

Month	Number of Indigenous Workers
January 2022	299
February 2022	317
March 2022	337

The information shown has been provided by BC Hydro's onsite[32] construction and non-construction contractors and their subcontractors that have a contractual requirement to report on Indigenous inclusion in their workforce.

[32] Onsite includes work performed on Site C dam site, transmission corridor, reservoir clearing area, public roadwork, worker accommodation and services.

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 Table D-4.

As with any construction project, the number of workers, and the proportion from any particular location will vary month-to-month and 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

In March 2022, there were 447 women working for Site C construction and non-construction contractors. The number of women was provided by onsite 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 E

Independent Experts Report

Site C Technical Review Panel
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REPORT NO. 5
February 28, 2022

EXECUTIVE SUMMARY

This report presents an update to the Technical Review Panel's (Panel's) findings subsequent to Panel Reports Nos. 1, 2, 3, and 4, issued on January 22, 2021, February 15, 2021, April 6, 2021, and August 12, 2021, respectively.

The Panel's opinions expressed in the previous reports remain unchanged. The work associated with the right bank design enhancements, the design of the approach channel, and the earthfill dam has been progressing as anticipated at the time of preparation of Panel Report No. 4.

The right bank enhancement work has been proceeding well.

The pile installations for the spillway are nearing completion, which is expected in early March 2022. These pile installations have proceeded without significant issues. Pile installations in the powerhouse tailrace are scheduled to be completed in four phases, commencing in March 2022 and ending in March 2023. The last steel pile casing deliveries are expected by June 2022. With the last steel deliveries scheduled, and pile construction procedures now well established and understood, the Panel expects that the pile construction can be completed according to the current estimated schedule.

Design of the approach channel is nearly complete, and the approach channel excavation is scheduled for March 2022. The principal design work item remaining for the approach channel is the finalization of design of the center berm in Region 1, near the spillway. The Panel has provided some comments and questions on the Engineering Design Team (EDT's) preliminary analyses of that section of the center berm, and the Panel looks forward to further information on the analysis and design configuration. The foundation preparation and liner installation are scheduled to begin in March 2022 and be completed in June 2023, with an interruption in construction over the winter of 2022/2023. The estimated approach channel construction schedule seems reasonable, but the actual schedule will depend upon actual productivity, particularly for the liner installation. The appropriateness of the estimated schedule should become clearer by this summer.

Plinth and gallery construction and foundation grouting for the approach channel are scheduled to begin May 2022 and be completed in April 2023. As for the approach channel liner, the estimated schedule seems reasonable, but the actual schedule will depend on actual productivity. Neither the approach channel liner, nor the plinth/grouting are currently on the critical path.

The EDT is currently working toward completion of the final design of the right bank drainage features, with construction of these features scheduled to commence later this year.

A bottom slab and drainage gutter are being constructed in the invert of the right bank drainage tunnel (RBDT), which will provide access to complete improvements to the existing RBDT, in

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light of several local shotcrete liner failures that previously have occurred in the tunnel. The RBDT must be made safe, as it is indispensable for the future drainage work.

There have been no changes to the earthfill embankment design since early 2021. Both foundation grouting and earthfill dam embankment placement progressed well in 2021. Reported foundation grouting records and earthfill dam quality control/quality assurance testing results indicate high-quality construction, meeting the design expectations.

The instrumentation at the earthfill dam is being carefully monitored, and this effort will need to continue during further embankment construction to verify that pore water pressures in the foundation remain within limits to ensure dam stability and that there are no unexpected movements.

Although the earthfill dam construction remains the critical path item for the project, the progress of earthfill construction to date suggests that it may be possible to begin Tunnel #2 conversion and reservoir filling in 2023, rather than 2024.

INTRODUCTION

At the request of BC Hydro, the Technical Review Panel (Panel) has prepared this report as an update to the Panel's previous Reports Nos. 1, 2, 3, and 4, dated January 22, 2021, February 15, 2021, April 6, 2021, and August 12, 2021, respectively.

Since August 12, 2021, the Panel has attended briefings to the Technical Advisory Board (TAB) by the EDT on September 10, October 29, and December 11, 2021 and January 7 and February 11, 2022, during which the EDT updated the TAB on activities related to the right bank enhancements, the approach channel, and the earthfill dam. The Panel has also reviewed project information provided by BC Hydro.

Based on the information provided to date, the Panel provides updated findings concerning the proposed right bank enhancements, including the approach channel, and the earthfill dam.

FINDINGS

Right Bank Enhancements

The Panel has been regularly updated on the various activities related to the right bank enhancements through the TAB briefings. In the Panel's opinion, the project team has been proceeding well with the implementation of the right bank enhancements. The principal activities completed since August 12 have been early contractor engagement, steel pile casing procurement, spillway pile construction, pile cap designs, advancements of designs and details for the approach channel, and excavations for the approach channel. Work remaining to be done includes finalization of designs for the tailrace pile caps downstream of the powerhouse, the

tailrace erosion slab, the approach channel, and the foundation drainage system. A detailed schedule has been established for the remaining activities.

Pile System Design – Subsequent to our Report No. 4, steel pile casings have been procured and most of the piles downstream of the spillway have been completed. The remaining spillway piles are expected to be completed by early March 2022. The work for construction of the tailrace piles is scheduled to begin in March 2022. This work will be completed in four phases, with the installation of all piles scheduled for completion by March 2023. The last steel pile casing deliveries are expected by June 2022. The EDT is still finalizing some details of the pile cap design for the powerhouse tailrace piles, but this should not affect the overall schedule.

The spillway pile construction to date has been proceeding without significant issues. Pile construction procedures are now well established and understood. Based on available information, the Panel expects that the pile construction can be completed according to the current estimated schedule.

Approach Channel – Final selection of materials and configuration of the approach channel and approach channel liner are nearly complete. The principal design work item remaining is the finalization of design of the center berm in Region 1, near the spillway. Final approach channel excavation began in October 2021 and is expected to be complete in March 2022. Approach channel foundation preparation and liner installation are scheduled to begin in March 2022 and July 2022, respectively, and continue into October 2022, when the work will be paused for winter. The foundation preparation and liner installation will resume in March 2023, with estimated completion in June 2023. The estimated approach channel construction schedule seems reasonable, but the actual schedule will depend upon actual productivity, particularly for the liner installation. The appropriateness of the estimated schedule should become clearer by this summer.

The Panel is pleased that the EDT adopted the horizontal liner configuration, as favored by the Panel in Report No. 4, rather than a configuration over the top of the center berm.

In the February 7, 2022 TAB briefing, the EDT presented its preliminary analyses for center berm configuration options for Region 1. The Panel has provided some comments and questions on those analyses and looks forward to further information on the analysis and design configuration. Instrumentation in the approach channel will include piezometers, inclinometers, vertical and joint extensometers, and temperature sensing cables to monitor and ensure the performance.

Right Bank Drainage Features – Plinth and gallery construction and foundation grouting for the approach channel are scheduled to begin May 2022 and be completed in April 2023. As for the approach channel liner, the estimated schedule seems reasonable, but the actual schedule will depend on actual productivity.

The schedule for neither the approach channel construction, nor the plinth and gallery work, is currently on the critical path.

The EDT is currently working toward completion of the final design of the right bank drainage features, with construction of these features scheduled to commence later this year.

A bottom slab and drainage gutter are being constructed in the invert of the RBDT. Completion of this slab will allow access for construction of improvements to the RBDT, which are required in light of several local shotcrete liner failures that previously have occurred in the tunnel. As the Panel has stated previously, the RBDT provides access for some of the contingency actions for the right abutment, if such contingency actions are found to be needed. The RBDT also provides access for observation of right bank drainage and for conveyance of collected drainage. As such, the RBDT must be made safe and functional, as it is indispensable for the future drainage work.

Earthfill Dam

There have been no significant changes in the earthfill dam design or stability analyses since Panel Report No. 2 issued on February 15, 2021. The Panel's findings remain basically unchanged from those stated in Report No. 2.

Foundation grouting for the earthfill dam progressed well in 2021. Reports of grouting results presented at the TAB briefings indicate an effective and high-quality grouting program.

Placement of earthfill also progressed well in 2021. Records of QC/QA test results for the embankment fill indicate that the fill is being placed and compacted in accordance with the project specifications.

The instrumentation at the earthfill dam is being carefully monitored, and this effort will need to continue during further embankment placement to verify that pore water pressures in the foundation remain within limits to provide stability and that there are no unexpected movements. Numerical modelling and analyses are being prepared to predict movements and pore pressures during construction and impoundment and to make comparisons with the observed performance.

The earthfill dam construction remains the critical path item for the project, but the progress of embankment placement to date suggests that it may be possible to begin Tunnel #2 conversion and reservoir filling in 2023, rather than 2024.

STATEMENT OF LIMITATIONS

The Panel functioned as independent reviewers of the methodologies used by the EDT for analysis and design of the right bank enhancements, the approach channel, and the earthfill dam, based on information provided by the EDT. Given the large amount of work being completed by the EDT and the associated voluminous documentation, it was not possible for the Panel to perform a detailed review of all of the material in the available time. In particular, the Panel has

not performed detailed checks of calculations and designs completed by the EDT. Such detailed checks are provided by the quality control/quality assurance programs for the Project. The Panel provides its opinions concerning the methods and approaches being used based on information provided by the Project Team. However, the ultimate decisions and responsibilities for the designs remains with BC Hydro.

Our review services were performed within the limits prescribed by BC Hydro in a manner consistent with the level of care and skill normally exercised in the current standard of professional engineering practice. No other representation to BC Hydro, expressed or implied, and no warranty or guarantee is included or intended.

Respectfully submitted,

John W. France

Kaare Hoeg

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Appendix F

Summary of Individual Contracts Exceeding $10 Million

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Appendix G

Project Progression

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Appendix H

Detailed Project Expenditure

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