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May 12, 2023

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

Dear Patrick Wruck:

RE: Project No. 3698674
British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
John Hart Generating Station Replacement Project (the Project)
Semi-Annual Progress Report No. 19
October 2022 to March 2023

BC Hydro writes in compliance with Commission Order No. C-2-13, to provide Semi-Annual Progress Report No. 19 for the Project.

For further information, please contact Joe Maloney at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Chris Sandve
Chief Regulatory Officer

bh/rh

Enclosure

John Hart Generating Station Replacement Project

Semi-Annual Progress Report No. 19

F2023 Six Month Period

October 2022 to March 2023

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1 Introduction

This is semi-annual Report No. 19. Similar to report No. 18, this report provides information on the John Hart Generating Station Replacement Project (**the Project**) Availability Payments for the six-month period from October 2022 to March 2023.

In accordance with British Columbia Utilities Commission (**BCUC**) Order No. C-2-13, BC Hydro will continue to provide ongoing reporting to the BCUC regarding Availability Payments in semi-annual reports. The report structure and content are compliant with BCUC Order No. C-2-13, are similar to report No. 18, and include:

- Section [3](#) of this report, including [Table 1](#), which provides information on Availability Payments made to date to InPower BC General Partnership (**Project Co**); and
- Appendix A provides definitions of Key Contractual Terminology.¹

The Project achieved Total Completion in May 2020, which marks completion of construction, decommissioning, and asset performance verification testing, excluding allowable deficiencies and trailing costs. Project completion, which includes completion of deficiency work was achieved in December 2021. BC Hydro submitted the Project Completion and Evaluation Report (**PCER**) to the BCUC in June 2022. In a letter dated September 2, 2022, the BCUC acknowledged receipt of the PCER and confirmed the reporting requirements set out in Directive 5 of Order No. C-2-13 were met.

2 Background

The Project was built under a Design-Build-Finance-Rehabilitate (**DBFR**) procurement model where the successful proponent, Project Co, was responsible for

¹ Capitalized terms are either defined within this report, are included in [Appendix A](#), or are provided in earlier reports, unless otherwise noted.

design and construction and is now responsible for asset management, which involves planning and managing the maintenance of the new assets during the 15 years of the Services Period, ending 2033. BC Hydro remains the operator of the assets during the Services Period and BC Hydro Operations' staff performs maintenance prescribed by Project Co.

The Project Agreement between BC Hydro and Project Co is a fixed price contract, prescribed by a Financial Model. During the Project construction period, Project Co billed BC Hydro monthly for work progressed. The payments for the construction period scope of work were called Progress Payments (**Progress Payments**). The Progress Payments were subject to deductions for impacts from events during Construction and Commissioning to the Existing (original generating) Units' availability and for unavailability, de-rates and any monthly test failures of new Generating Unit / Low Level Commercial Assets (**GU/LL Assets**). With the completion of construction and the full John Hart Generating Station Facility (**Facility**) in operation,² the Services Period is now underway, along with the associated monthly Availability Payments as described below.

Availability Payment Description and Reporting

Under the DBFR procurement model, Project Co financed 40% of their direct construction costs and all of their management costs during construction. These Project Co costs are being paid back to Project Co via monthly Availability Payments (**Availability Payments**) over the Services Period (discussed below). There are two components to the Availability Payments: the first component is debt repayment of the costs financed by Project Co during construction (non-indexed fixed capital cost repayment amount), and the second component is for asset management services

² Service Commencement was June 2019, per the Semi-Annual Report No. 16. Refer to [Appendix A](#) for definitions of Key Contractual Terminology.

that Project Co will provide during the Services Period (indexed fixed asset management amount).

The Availability Payments started in May 2018 when the first new GU/LL Asset came in-service and will end in October 2033. This repayment period is called the Availability Term (**the Availability Term**).

There are two periods in the Availability Term: The Bridging Period and the Services Period. The Bridging Period started at the beginning of the Availability Term, with the first GU/LL Asset coming in service as noted above and ended at Service Commencement (**Service Commencement**) in June 2019. Service Commencement, which is a contractually defined term, marks the transition point from construction to the Services Period. After Service Commencement, BC Hydro Operations' staff began performing the Project Co prescribed maintenance of the Facility. The Services Period ends at the end of the Availability Term in October 2033. BC Hydro remains the owner and operator of the assets throughout the Services Period.

The Project Agreement includes a schedule of Maximum Availability Payments for each month of the Availability Term. During the Services Period of the Availability Term, these maximum payments are subject to deductions for asset unavailability, non-performance events, or variances from labour or Project Co insurance baselines in the Project Agreement. Other maintenance activities not meeting specified requirements/thresholds are also deducted monthly from the indexed portion of the Availability Payment.

3 Progression of Availability Payments

This section provides information on the progress of Availability Payments. As explained in section [2](#) of the report, there are two distinct periods in the Availability Term: 1) the Bridging Period; and 2) the Services Period. [Table 1](#) below shows the Availability Payments paid to Project Co to March 31, 2023. Amounts for the period

from May 2018 to June 2019 are for the Bridging Period, while amounts for periods thereafter are for the Services Period.

Table 1 Availability Payments to Project Co^{3,4,5} (\$M)

A Date	B Non-Indexing (Debt Repayment) Portion				C Indexing (Asset Management Fee) Portion				D Total Availability Payments Net of Deductions
	B1	B2	B3	B4	C1	C2	C3	C4	
	Maximum	Cost of Delays to In-Service Dates	Availability Deductions	Actual Net Non-Indexing Portion	Maximum	Cost of Delays to In-Service Dates	Immediate Callout Billable Hours & Insurance Adjustments	Actual Net Indexing Portion	
May 2018 – Sep 2021 ⁶	118.8	(3.5)	(0.3)	115.0	24.1	(0.8)	(0.0)	23.3	138.3
Oct 2021 – Mar 2022	18.5	N/A	(0.1)	18.4	4.0	N/A	(0.0)	4.0	22.4
Apr 2022 – Sep 2022	18.5	N/A	(0.4) ⁷	18.1	2.9	N/A	(0.0)	2.9	21.0
Oct 2022	3.1	N/A		3.1	1.7	N/A	(0.0)	1.7	4.8

³ Minor addition errors occur due to rounding.

⁴ '-' means zero deductions that billing period. Where '0.0' appears instead of '-', it means there were minor deductions under \$0.05 M.

⁵ Columns B2, B3, C2 and C3 reflect deductions to the maximum availability payments (except Insurance Adjustments in C3, which are increases). For the period May 2018 to September 2021 deductions reflect amounts deducted during the Bridging Period and were due to the target Commercial Operation Dates and availability of GU/LL Assets not being met. See Semi-Annual Progress Report No. 16, Appendix E for additional information.

⁶ Amounts include Bridging Period and Services Period Availability Payments. Bridging Period Payments ended at Service Commencement in June 2019.

⁷ Availability Deductions in August 2022 are largely attributed to complex maintenance that is to be expected every four years. Actual amounts will vary, depending on scope of work, length, and timing of outages.

A	B				C				D
	Non-Indexing (Debt Repayment) Portion				Indexing (Asset Management Fee) Portion				
	B1	B2	B3	B4	C1	C2	C3	C4	
Date	Maximum	Cost of Delays to In-Service Dates	Availability Deductions	Actual Net Non-Indexing Portion	Maximum	Cost of Delays to In-Service Dates	Immediate Callout Billable Hours & Insurance Adjustments	Actual Net Indexing Portion	Total Availability Payments Net of Deductions
Nov 2022	3.1	N/A	(0.0)	3.1	0.5	N/A	0.0	0.5	3.6
Dec 2022	3.1	N/A	-	3.1	0.5	N/A	(0.1)	0.4	3.5
Jan 2023	3.1	N/A	-	3.1	0.5	N/A	(0.0)	0.5	3.6
Feb 2023	3.1	N/A	(0.0)	3.1	0.5	N/A	(0.0)	0.5	3.6
Mar 2023	3.1	N/A	(0.0)	3.1	0.5	N/A	(0.0)	0.5	3.6
Total	174.4	(3.5)	(0.8)	170.1	35.2	(0.8)	(0.2)	34.2	204.3

The adjustments in columns B2, B3, C2 and C3 are not included in the Project actual costs, but are included in BC Hydro's statement of accounts as follows:

- Section B shows the deductions to the non-indexing (debt repayment) portion of the Availability Payments. These deductions represent the write-off portion of the debt provision on BC Hydro's balance sheet, for amounts owing to Project Co regarding the financed portion of the construction costs. There are two types of non-indexing deductions: the first is for delays in the Asset In-Service Dates, and the second is for Assets not being available during the Services Period; and
- Section C shows the adjustments to the indexing (asset management fee) portion of the Availability Payments. The budget for the indexing portion of the Availability Payments is held by BC Hydro Operations, and adjustments to

these payments are reflected in the Operations' costs. To date, Indexing Payment adjustments have occurred for the following events:

1. Delays in the Asset In-Service Dates (No further deductions for this item can occur);
2. Increases in insurance premiums in accordance with the Project Agreement; and
3. Minor deductions for BC Hydro crews being called out for forced outages and priority alarms in excess of the contractual allowance, and for any annual excess of labour hours utilized (BC Hydro recovers these costs at fixed labour rates under the Project Agreement).

John Hart Generating Station Replacement Project

Semi-Annual Progress Report No. 19

Appendix A

Key Contractual Terminology

Below are explanations of Key Contractual Terminology used in the Project Agreement, and acronyms used in this report.

- **Availability Payments** are the payments from BC Hydro to Project Co during the Availability Term to repay the costs financed by Project Co during the Implementation (construction) Phase and for asset management fees. These payments started when the first commercial asset attained Commercial Operation in May 2018 and they will end in October 2033;
- The **Availability Term** is the period when Availability Payments are made, and it encompasses both the Bridging and the Services Periods. It started in May 2018 and ends in October 2033;
- **Bridging Period** is the duration between; 1) the time that the first GU/LL (**GU/LL**) Asset attains Commercial Operation; and 2) the time that the last GU/LL Asset is in Commercial Operation and all Conditions Precedent to Service Commencement have been met. During the majority of the Bridging Period, both the Existing and the new Facility were in operation;
- **CPCN** – Certificate of Public Convenience and Necessity;
- **DBFR** (Design-Build-Finance-Rehabilitate) is the Procurement Model for the Project. Under this model, BC Hydro holds one contract with the consortium InPower BC (Project Co) which then has subcontracts with the suppliers and vendors. Under this model, Project Co is financing part of the construction costs and will only be paid for these costs in the 15 years after the date of construction. The ‘Rehabilitate’ component of this model is related to Project Co retaining a significant amount of the asset quality risk during the first 15 years and must meet specific asset condition assessment criteria every four years. Project Co will also provide asset management services during this 15-year period;

- **Effective Date** means the date of the Project Agreement between BC Hydro Power Authority and InPower BC General Partnership. The Effective Date was February 25, 2014;
- **Existing Facility** means the original John Hart Generating Station, including the Existing Powerhouse, Existing Penstocks, Existing Intake, Existing Surge Towers, Existing Tailrace, Existing Intake Control Building (Concrete), Existing Intake Control Building (Steel), Existing Intake Gates, Existing Site Office Building, Existing Units, Substation, Dams, Spillway and all associated buildings, structures, facilities, systems, monitoring instruments and other infrastructure, as it existed on the Effective Date;
- **Existing Units** are the old generating units in the Existing Facility;
- **Facility** means the new hydro-electricity generating facilities, including the Power Intake, Water Conveyances, Generating Units, Powerhouse, any modifications to the Dams, any modifications or improvements to other portions of the Existing Facility (to the extent incorporated into the design of the Facility), and all associated buildings, structures, tunnels, shafts, roads and infrastructure and all other civil, structural, mechanical, electrical, instrumentation and other equipment and systems to be designed, constructed, procured or otherwise provided by Project Co pursuant to the Project Agreement;
- **Generating Units** are the new units in the new powerhouse. This term refers to all machinery and equipment making up a new complete and independent hydro-electric generator including the water passages, Turbine, Generator, Unit Transformer, protection and control system and replacements thereof;
- **GU/LL Asset** means any one of the three Generating Units (**GUs**) or the Low Level Outlet (**LLO**) (including the Environmental Flow Release System and manual operability of the bypasses);

- **Progress Payments** are the payments for progression of Implementation works;
- **The Project** is the John Hart Generating Station Redevelopment Project;
- **Project Co** means InPower BC General Partnership;
- **Service Commencement** is when the Bridging Period ends, and the Services Period begins, and was achieved in June 2019. This occurred when all of the GU/LL assets were in Commercial Operation and all of the Conditions Precedent to Service Commencement were met. The Facility was handed over to BC Hydro operations and BC Hydro's crews are used in maintenance and operation of the Facility;
- **Services Period** starts at Service Commencement and ends on October 9, 2033. During this period, Project Co provides asset management services and retains asset quality risk. The other key difference at Service Commencement is that BC Hydro's crews will be used in maintenance and operation of the Facility; and,
- **Total Completion** marks completion of construction, decommissioning, and asset performance verification testing on the Project, with deficiencies or trailing costs as allowed under the Project Agreement. Total Completion was achieved in May 2020.