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March 20, 2020

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

Dear Mr. Wruck:

RE: Project No. 1598990
British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Fiscal 2020 to Fiscal 2021 Revenue Requirements Application

BC Hydro writes to provide its responses to the following undertakings resulting from the Oral Hearing of February 24 to March 4, 2020:

Exhibit B-58	Responses to Undertaking Nos. 44, 54 and 62 (Public Version)
Exhibit B-58-1	Responses to Undertaking Nos. 44 and 54 (Confidential Version)

BC Hydro also writes to provide supplemental responses to the following undertakings resulting from clarification requests from the Association of Major Power Customers (**AMPC**).[1]

Exhibit B-50-1	Supplemental Response to Undertaking No. 37
Exhibit B-51-2	Supplemental Response to Undertaking No. 39
Exhibit B-53-1	Supplemental Response to Undertaking No. 35
Exhibit B-57-2	Supplemental Response to Undertaking No. 58

[1] As discussed further in Transcript Volume 15, page 2903, line 26 to page 2905, line 5.

For further information, please contact Chris Sandve at 604-974-4641 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,

(for) Fred James
Chief Regulatory Officer

cs/rh

Enclosure

BC HYDRO SUPPLEMENTAL UNDERTAKING NO. 35

HEARING DATE: February 28, 2020

REQUESTOR: AMPC Mr. M. Keen

TRANSCRIPT REFERENCE: Volume 12, Page 2120, line 15 to Page 2121, line 10 and Page 2123 line 8 to Page 2125 line 4.

TRANSCRIPT EXCERPT:

MR. KEEN: Q All right, I guess Mr. Kumar then, if I could ask you to undertake to provide us with a description of how those labour rates are derived? I understand that there are labour rates and they vary by level. But if you could explain how those are derived in written form I would appreciate that.

MR. KUMAR: A We can do that.

MR. KEEN: Q And then Ms. Holland, I don't know if this is an undertaking for Mr. Kumar or for yourself. In any event, if you could undertake to provide how the overhead amount that you've referred to is calculated?

MS. HOLLAND: A If Ms. Daschuk is in agreement, I think what we would like to do is combine the undertaking where we would discuss the rates, the internal rates, and the mark-up, and I would propose we would do it all in one undertaking.

MS. DASCHUK: A I would agree.

MR. KEEN: Q And just to be clear, not lost on that, if you could break out and show the level of loading for that overhead amount?

MS. HOLLAND: A Understood.

MR. KUMAR: A Yeah, so the study cost would be driven by the actual resources that are working on the study. So if it is s a Hydro resource working on the study, it will be reflective of the cost that hydro resources are charging. And if it is an external service provider then it will be a flow-through of what those costs are.

THE CHAIRPERSON: Thank you.

MR. KEEN: Q Are those third party costs a pure flow-through? Or are they loaded when they reach the customer? And by loaded I mean do you have a BC Hydro overhead applied to those third party costs that the customer then sees?

MR. KUMAR: A We will provide that answer as part of the undertaking.

MR. KEEN: Q And in terms of proportions, when you are dealing with a system impact study, what proportion right now in calendar year 2020, would you expect would be undertaken by third party engineering firms?

MR. KUMAR: A This is an estimate based on what my understanding is of the studies. I would say almost 95 to 98 percent of the studies I have done internally for system impact statements. So very rarely do we outsource a system impact study, unless it is an area that we don't have expertise when we have to do some transient analysis or some of the large loads LNG related, we may undertake to engage with some boutique technical firms but generally a system impact is done all internally.

MR. KEEN: Q And has that been the case over the past five years?

MR. KUMAR: A Yes.

MR. KEEN: Q And, Ms. Holland, turning to facility studies, is there any divergence from what we've heard about system impact studies?

MS. HOLLAND: A There is a divergence. We do have a number of facility studies that are undertaking either one or -- we have two service providers that do work on our load interconnection facilities studies. I do not know what the breakdown is as between the work that is down internally and by those service providers but I would say it's certainly more than 5 percent goes external.

MR. KEEN: Q If you could undertake to provide that estimate in terms of current practices and what the practice has been over the past five years, we would appreciate that.

ORIGINAL QUESTION:

Please provide the following:

- Please explain how the labour rates applied to interconnection studies are calculated and how loading (overhead) costs are assigned, including whether loading costs are assigned to external service provider rates. Further, please provide the percentage of facility studies done internally versus externally over the last five years.
- the percentage of facility studies done internally versus externally over the last five years.
- details on whether BC Hydro loading costs are attached to external service provider rates.

ORIGINAL RESPONSE:

The labour costs associated with interconnection studies are based on the total hours worked on the study, multiplied by BC Hydro's standard labour rates. There are standard labour rates for each job level within the three affiliations (Management and Professional, IBEW and MoveUp). Standard labour rates are

developed each year as part of the annual budgeting process, as described further in BC Hydro's response to BCUC IR 1.42.2. The weighted average standard labour rates by affiliation are provided in Table 5-15 of Chapter 5 of the Application.

Overhead loading costs are applied to these base rates to include both direct costs (e.g., tools and supplies, training, travel, office supplies, direct management and administrative support) and indirect costs (e.g., management and administrative support functions such as human resources and finance, safety, information technology and properties). Interconnection studies primarily involve planning and engineering functions and internal labour for those functions has an overhead loading rate of 57 per cent.

BC Hydro also applies an overhead loading rate of 10 per cent to external service provider rates to recover administration costs related to procurement and accounts payable support functions.

Over the past five years, 33 per cent of Facility Studies have been completed internally and 67 per cent have been completed by external service providers.

SUPPLEMENTAL RESPONSE:

In response to a request from AMPC, BC Hydro confirms that the overhead loading rate of 10 per cent to external service provider rates applies to facility studies as well.

Further, BC Hydro provides the following additional information:

As stated in the response above, the overhead loading rate applied to BC Hydro's labour costs is 57 per cent for interconnection studies. Base labour costs are calculated using an average standard labour rate for engineering and planning roles. The 57 per cent overhead to that calulation has four inputs:

1. **Direct overhead – Examples of direct overhead costs include tools and supplies, training, travel, office supplies, direct management and administrative support. The amount of loadings per hour is determined by dividing the total direct support costs of the planning and engineering functions by the total charge out labour hours to work. Direct overhead makes up 27 per cent of the 57 per cent;**
2. **Corporate overhead – Examples of corporate overhead costs related to employing staff including human resources, properties, safety and technology. The amount of loadings per hour is determined by dividing total corporate costs by the engineering and planning headcount. Corporate overhead makes up 24 per cent of the 57 per cent;**

3. **Business group overhead – Examples of business group overhead costs include management and administrative support functions at business group level. The amount of loadings per hour is determined by dividing the total business group overhead by the total hours charged to work. Business group overhead makes up 5 per cent of the 57 per cent; and**

4. **Fleet overhead – Fleet overhead costs are allocated based on the cost of vehicles assigned to the engineering and planning functions. Fleet overhead makes up 2 per cent of the 57 per cent.**