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October 20, 2017

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: British Columbia Utilities Commission (BCUC or Commission)**
**British Columbia Hydro and Power Authority (BC Hydro)**
**Response to Commission Request for Comment on Ms. Noble's Correspondence**

BC Hydro writes in response to the British Columbia Utilities Commission's email request dated September 18, 2017 to review and provide comment on Ms. Noble's correspondence. Much of the material provided by Ms. Noble has been considered and reviewed in previous submissions on this matter to the Commission. BC Hydro has reviewed Ms. Noble's report (the **Report**) and provides further comments below.

## Background

On July 16, 2015, Ms. Noble filed a complaint with the BCUC alleging that smart meters installed by BC Hydro and FortisBC Inc. are fire safety hazards. On October 29, 2015, the Commission staff requested information from FortisBC Inc. and BC Hydro related to the safety of smart meter implementation, indicating the information would be used to address customer concerns or would be used for Commission staff reporting to the Government. We provided our responses on November 30, 2015 and upon Commission staff clarification of question numbers 2 and 3, provided a further response on February 9, 2016.

The Commission concluded its review and forwarded a draft report to BC Hydro for comment on February 12, 2016. BC Hydro responded with corrections and requests for clarification and further comment on March 4, 2016. BC Hydro further amended its November 30, 2015 response in a March 18, 2016 letter to the Commission following a review of two BC Safety Authority reports received from the Commission on March 10, 2016.

The Commission issued a decision on July 28, 2016 (the **Decision**) and ordered BC Hydro and FortisBC Inc.to report all incidents where a meter and/or meter base is reasonably assessed to be the possible or likely source of a high temperature or fire event that results in the meter and or meter base requiring replacement. The reporting was to begin immediately and continue until December 31, 2020 on a semi-annual basis. BC Hydro has submitted two reports in compliance with the order, Compliance Report No.1 submitted on January 30, 2017 for the period July 1, 2016 to December 31, 2016, and Compliance Report No.2 submitted on July 28, 2017 for the period January 1, 2017 to June 30, 2017.

## BC Hydro Comment

BC Hydro notes most of Ms. Noble's contentions and assertions in the Report have been the subject of, and addressed in, previous submissions and responses. BC Hydro declines to provide any further comment on information that has already been provided, and reviewed and addressed by the Commission in its draft staff report or its Decision. BC Hydro also declines to provide comment on assertions made by Ms. Noble that are directed towards other agencies.

As noted above, the Commission has established a process for the ongoing reporting of incidents on a semi-annual basis over a three-year period that should provide sufficient information to the Commission to find that smart meters are a safe and reliable means of measuring electricity use. BC Hydro is of the view that the Commission's Decision addresses Ms. Noble's concerns, and that no further process than that already directed by the Commission is required at this time.

Ms. Noble's report is structured around four contentions. Contentions No. 1 to No. 3 primarily relate to Mr. Garis' Study, so BC Hydro reached out to Mr. Garis for comment. Mr. Garis provided a letter, which BC Hydro includes as Attachment A.

With respect to other issues raised within the Report, BC Hydro adds the following brief comments and clarifications:

(i) Under contention No. 1, Ms. Noble refers to BC Hydro's attendance and actions at the site of a fire incident. For clarification, when called to a fire and/or electrical incident site, BC Hydro crews work with the emergency personnel to ensure the site is safe. The incident is recorded in the applicable reporting systems with descriptions of the incidents and pictures, if possible. Any meter that is involved in a fire and/or electrical incident is only removed from the site if permitted by a fire incident commander. The meter may be retained by the fire department and recovered by BC Hydro at a later date. Removal of the meter, or recovery of the meter, follows a process where the meter is tagged, boxed, and transported to the meter shop for testing and/or recycling, quarantining, or disposal. As noted in Compliance Report No. 1, in July 2016 BC Hydro formalized its longstanding

process for the handling of meters involved in a fire and/or electrical incident by introducing a chain of custody process for tracking returned meters.

Ms. Noble suggests in her Report that meters involved in fire and/or electrical incidents are sent to BC Hydro's Powertech Lab[1]. It is not BC Hydro's policy to send meters involved in fire and/or electrical incidents to Powertech Labs for testing. The use of the term "labs" in the context of Ms. Noble's comments refers to BC Hydro's meter shop;

(ii) Throughout contention No. 4, Ms. Noble raises general safety concerns. BC Hydro has installed nearly two million Itron smart meters since 2011. In addition to providing billing registers, smart meters provide benefits that improve safety. For example, in a one-year period, smart meters helped identify 258 potentially overloaded services and 192 voltage anomalies, which allowed BC Hydro to take appropriate action;

(iii) Ms. Noble has identified 104 incidents included as Appendix W of the Report. BC Hydro has done a review and identified that of the 104 incidents:

(a) 69 incidents were considered in the data addressed in the November 30, 2015 BC Hydro response and BC Hydro's Compliance Report No. 1;

(b) Nine incidents are not within BC Hydro's service territory;

(c) Two incidents have no corresponding records in any of our systems, therefore we cannot comment; and

(d) For the remaining 24 incidents, all of which occurred prior to July 1, 2016, we conducted a review of the available information and applied the same criteria used for current compliance reporting. The results are presented in the following table:

| Number of Incidents | Explanation |
|---|---|
| 17 | The meter and/or meter base were not the possible or likely source of the fire or heat event. |
| 5 | Heat at the meter base |
| 2 | Overvoltage on one phase of a 480V Delta service (industrial) exceeded 480V meter rating, causing it to fail. |

(iv) Under contention No. 4, Ms. Noble discusses the industry standards applicable to smart meters. BC Hydro provides the following comments and clarifications:

[1] See Point 7 (fourth bullet) on page 7 of the report

**ANSI C12 Certification**

All meters, regardless of technology, have been and continue to be, designed, manufactured, and tested in accordance with the same American National Standards Institute (**ANSI**) C12 series of standards. All smart meters, electronic meters, and electromechanical meters must meet the same standard. BC Hydro has met the ANSI C12 series of standards for every Itron smart meter type that has been installed. BC Hydro also has documents signed by a Canadian registered Professional Engineer confirming compliance with the ANSI C12 series of standards.

In 2010, to confirm the integrity of the smart meter service disconnect switch, BC Hydro (in conjunction with other utilities) sponsored an independent evaluation of the entire competitive, commercially available smart meter service disconnect switch. This evaluation was performed by the National Electric Energy Testing, Research & Applications Center and confirmed the performance capability of the Itron smart meter service disconnect switch.

**Underwriters Laboratories (UL) 2735 Meter Safety Certification**

Due to requests from regulators and consumer groups, the Underwriters Laboratories published the UL 2735 Meter Safety Certification Standard in 2013. The standard was described in a press release as containing: "requirements for the electric shock, fire, mechanical and radio-frequency (**RF**) emissions safety aspects of all electric utility meters, including smart meters, and is the foundation for both the UL product safety certification service and the product safety testing service". Smart Meter Service Disconnect Switch certification requirements are included in the UL 2735 certification standard.

Itron has received UL 2735 certification for the energy only smart meters used by BC Hydro (see link). In order to achieve certification, **no modifications** were required to the energy only meters that BC Hydro began purchasing in 2011. As a result, all of BC Hydro's C2SOD and CN2SOD smart meters now have a UL 2735 meter certification by an independent third party. BC Hydro is working with Itron to indicate this UL 2735 certification on the energy only meter nameplate.

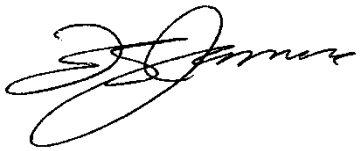
A Canadian version of the standard, UL 2735C is being developed and is currently posted for public consultation (proposed UL 2735C standard). BC Hydro is a founding voting member of the UL 2735C committee;

(v) With respect to comments in the Report about the location of meter sockets, the Canadian Electrical Code permits customers to install their meter socket on the line-side of their service disconnect box. The choice on where their meter socket is physically located is up to the customer. BC Hydro's safety design requirements are that the customer meter socket be installed on the load side of the customer's service box where the available fault current exceeds 10,000 Amperes; and

(vi) With respect to a request in the Report for the Commission to order the removal of the Itron smart meters and replace them with analog meters, BC Hydro notes that electromechanical (analog) meters have not been manufactured in North America since 2010 and have not been purchased by BC Hydro since 2002.

For further information, please contact Geoff Higgins at 604-623-4121 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Fred James
Chief Regulatory Officer

cu/rh

Enclosure

Copy to: Ms. Sharon Noble
dsnoble@shaw.ca.

BC Hydro
Power smart

# BC Hydro Response to Commission Request for Comment on Ms. Noble's Correspondence

## Attachment A

## Letter from Mr. Garis

UNIVERSITY OF THE FRASER VALLEY

Via email

BC Hydro
333 Dunsmuir Street, 16th Floor
Vancouver BC V6B 5R3

Attention: BC Hydro Regulatory Group

Dear Sir,

Re: BCUC & Smart Meter Fires: The Failure to Protect, By Sharon Noble, "The Report"

This report has recently come to my attention and has made reference to a number of studies I have conducted including the entitled; "Safety of Smart Meter Installations in British Columbia: Analysis of Residential Structure Fires in BC between July 2010 and June 2015." The analytical study(s), five in total have been conducted for five consecutive years commencing in 2012 and ending in June 2016.

The report by Ms. Noble provides commentary on some of the methodological aspects in the study(s) that I have conducted which are misleading.

Ms. Noble is stating that the sole source for the study(s) is the Fire Commissioners Annual Statistical Fire Report ("the Statistical Report"), and *"made serious error by not reviewing the actual incident reports and learning that fires that were reported fit his definition of a like smart metre fire: fires on exterior walls, involving panels: fires where the igniting object was Electrical Distribution Equipment, Fuel was electricity, Form of Heat was Electrical."* Stating the information is incomplete and erroneous. 394

The Study(s) in fact examined 39,928 records in its last publication and retained 12,208 that were residential fires in nature, these records contain a complete description of the fire, nearly 78 fields of information such as date, time, location (community name) nature, fuel or energy , source of ignition etc. or as referenced, used the Fire Commissioners raw data. Further the records obtained represent 394 separate communities' submissions. The demographic included Aboriginal Bands, Municipal areas, Non-municipal areas with fire support and Non-municipal areas without fire support.

The BC Government fire reporting system is designed to provide a methodology for the determination of the cause of the fire. In this study the approach was developed to isolate the aspects most likely to capture electricity as a source of heat and fuel then isolate the location of the fire to the electrical distribution equipment (panel and or exterior wall).

Ms. Noble is stating that exemptions are allowed for reporting purposes, for fires that occurred on Aboriginal or Federal Land and that any such fires are not included in the report.

The study included reports from aboriginal lands; Table 1 (Frequency of Fires from reporting Area) titled First Nations Band Area.

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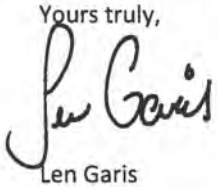
Ms. Noble is stating despite a legal requirement, a significant portion of the incident reports were not submitted to the Fire Commissioner.

The current study makes reference *"In September 2016, the dataset from July 2010 to June 2012 was revisited, capturing an additional 1,102 fires previously not reported at the time of the initial review."* I believe there are reports that have lagged in reporting that in subsequent years have been captured as lagging reports and are filed as noted in the observation contained in the studies.

There are numerous references and characterizations that deserve a more detailed review and comment to correct inaccurate statements, however the core aspects of this study impacted are addressed but note, I have not concluded closure to my comments, which may occur at another time.

Finally, the methodology used in this study conducted for the five consecutive years has not been able to demonstrate evidence that electricity or electrical distribution equipment has been a source of ignition or an area of fire origin resulting in fires that have showed to be increasing in British Columbia.

Yours truly,



Len Garis
Adjunct Professor, University of Fraser Valley
Fire Chief, City of Surrey