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November 24, 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)
BC Hydro Response to Commission Questions re: S. Noble Smart Meter
Safety Complaint**

BC Hydro writes to provide its responses to Commission questions issued via email on November 10, 2017 regarding the above noted complaint. The Commission has requested that BC Hydro respond to additional questions arising from its October 20, 2017 response to S. Noble's report (issued September 18, 2017). BC Hydro's responses are as follows:

1.0 Reference:

Contention 4 - Point 3 states:

"[W]hen the product (ITRON Smart Meters) has the potential to cause harm, the due diligence process must determine if the product is safe...

In the case of ITRON smart meter, it appears that due diligence did not include BC Hydro's independent determinations that the smart meters are safe...

Over the last 5 years I have asked BC Hydro several times for proof that a professional electrical engineer has certified these meters to be safe. Each time I've been told that certification is not necessary for these devices which are owned by a utility and are not "regulated" under terms of the BC Safety Standards Act. This seems to full latitude for BC Hydro to put anything on our homes without ensuring safety...

BC Hydro is relying on industry standard protocols. Instead of having one of their professional engineers inspect the meters to determine if they will perform safely, BC Hydro accepted ITRON's statements that the meters meet ANSI C12 standards...

Since no confirmation of certification has been forthcoming after years of asking, the only logical conclusion is that no one at BC Hydro or ITRON determined, prior to installation, that the Openway meters... are not fire hazards."

Please confirm the following:

- 1.1 Does BC Hydro still rely on external electrical contractors to install ITRON Smart Meters?

RESPONSE:

BC Hydro uses both internal and external qualified resources to install and exchange meters. All external resources are qualified "red seal electrical workers", who have been field tested by a qualified BC Hydro Meter Technician.

- 1.1.1 If so, what is BC Hydro's QA/QC process for post installation of ITRON Smart Meters?

RESPONSE:

BC Hydro's procedure for all meter installations or exchanges is as follows:

- **On the day of install/exchange, make concerted efforts to inform customers there will be a power interruption;**
- **Visually check the meter, sealing ring and service entrance for signs of tampering or irregularities;**
- **Ensure meter at site is the same meter identified on the work order, and the replacement meter is of the same meter type;**
- **Record meter reading for meter being replaced. Where possible, take digital image of existing meter and final reading;**
- **Remove sealing ring and meter;**
- **Check customer's meter socket for signs of tampering or irregularity;**
- **Check voltage in the customer's meter socket and record cases where it doesn't match expected voltage. Complete a full meter socket inspection;**
- **If meter base irregularities are found: contact BC Hydro for a power disconnect, make the site safe, and notify customer in person or leave a notice, and notify a BC Hydro representative;**
- **Confirm new meter is the correct meter form to put in the customer's meter socket;**

- **Check new meter to ensure it is in good working condition (no breaks or misalignment of parts);**
- **Check potential links on back of new meter are closed (if applicable), and Measurement Canada meter seal is intact;**
- **Install new meter ensuring it is seated properly into meter socket;**
- **Replace sealing ring and install new BC Hydro meter seal;**
- **Record new meter information, and initial reading; and**
- **Check display and scroll through meter screens and validation checks to ensure meter is functioning correctly (as per Metering System manufacturer specifications).**

In addition to requiring internal and external resources to follow the steps above, external contractors are also required to have their own Quality Control Program for work they do on BC Hydro's behalf, as below:

- 1. Documented Quality Control Process for Meter Installs and Exchanges and Non-Communicating Network Devices;**
- 2. Documentation of Quality Control steps for Site Safety Inspections;**
- 3. Meter Exchanges – Digital images taken with a minimum 10 mega pixel camera and date stamped - a minimum of three images per site. One of old meter with reading if energized, one of new meter with reading once energized, one of the meter base to confirm meter base inspection; and**
- 4. Network Equipment Exchanges – Digital images taken with a minimum 10 mega pixel camera and date stamped - a minimum of four images per site. One of pole tag, one old device nameplates, one new device nameplates, one of site ID.**

ALL meter exchange work orders (internal or external resources) are completed using an electronic tablet with an automated work flow that requires the installer to capture all data identified in the procedures above. When a field work order is completed, it is sent to BC Hydro where it's stored in a database for future reference. BC Hydro randomly audits work orders and digital images of meter installs and exchanges for both internal and external resources.

- 1.2 Does BC Hydro Meter Shop conduct QA/QC sample testing when receiving ITRON Smart Meters?

RESPONSE:

Yes. A sampling of every shipment of meters will be put through acceptance testing to ensure the shipment meets the Revenue Metering requirements, which includes measurement validation, and physical and visual inspection.

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- 1.3 Has BC Hydro reviewed ITRON's Factory Acceptance Testing processes for smart meters?

RESPONSE:

Yes. As part of the original procurement process, BC Hydro reviewed factory acceptance procedures advanced by proponents. During the SMI project implementation, BC Hydro subject matter experts attended Itron's manufacturing facility, and reviewed testing and acceptance processes. Now, in sustainment, BC Hydro reviews the testing certification reports and documents provided by Itron to confirm contractual compliance with the specified ANSI standards prior to installing a new meter type.

- 1.4 Has BC Hydro Engineers reviewed and accepted ITRON's testing/commissioning reports and engineering drawings of smart meters?

RESPONSE:

Yes. Prior to installing a new meter type, a BC Hydro professional engineer reviews and accepts the testing certification reports provided by Itron which includes dimension drawings and electrical schematic interfaces.

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

Yours sincerely,



Fred James
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