



July 16, 2020

Sent via email

Letter L-47-20



Re: British Columbia Hydro and Power Authority – Complaint filed by [REDACTED] – British Columbia Utilities Commission Review

Dear [REDACTED]

Thank you for your emails to the BC Utilities Commission (BCUC). The BCUC staff have completed its review of your Complaint. As outlined in the BCUC Complaints Guidelines, BCUC staff review all submitted information using the criteria of whether the utility reasonably responded to the customer's concern(s) and whether the utility followed its Electric Tariff (Tariff) and the *Utilities Commission Act* (UCA). The Tariff contains the approved terms and conditions of service between BC Hydro and its customers and can be found at the following link: <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/tariff-filings/electric-tariff/bchydro-electric-tariff.pdf>.

Review of the Complaint

Review Process

The BCUC received your Complaint on February 17, 2020, offering a timeline of events leading up to your Complaint and stating that “I have lived in this home since September 20, 2019. After 3 or 4 weeks I noticed a buzzing sound, which I characterized as “high pitched.” I hear it at all times of the day and night, in the house, and outside in the local area. I also experience changing pressure on my ear drums. The volume varies over a 24-hour period from quite subtle but still present, through periods of impossible to ignore, all the way up to painfully loud.”

After receiving your Complaint, BCUC staff provided British Columbia Hydro and Power Authority (BC Hydro) an opportunity to respond to your Complaint:

- BC Hydro provided responses on March 20, and April 30, 2020; and
- You provided additional comments on March 24, April 16, and May 1, 2020.

Summary of the Complaint

When the BCUC received your Complaint, you requested BCUC staff to review a noise disturbance you were experiencing in your neighborhood and within your premises. You noted that you made several efforts to locate

the source of the noise and “It is clearly located at a Hydro pole which has all the usual attachments and an Itron 100 Repeater, a device which receives and forwards information from Hydro Smart Meters in the area.”

To further investigate your Complaint, you contracted a third-party company, BKL Consultants Ltd. (BKL), stating “I recognized that regardless of who I would have to deal with on this issue, some form of proof about the existence and nature of the sound would be required /useful. It would not be enough for me to have walked the neighbourhood for hours, listening and observing what was around me, looking for any possible source of the sound, noting where it grew louder and where it faded. I approached BKL, a noise measurement consulting firm, in mid/late December with a request that they investigate the matter for me.”

BKL focused on four locations:

- 1) at the base of utility pole;
- 2) at a location about ½ mile from the utility pole;
- 3) at a location about ½ mile in the opposite direction from the utility pole; and
- 4) within a room in your home that faces the utility pole.

To which you stated in your Complaint, “BLK Reported no “high frequency” noise was detected” and further stated “BUT the graph of their data...indicates that there is a noise source in the vicinity of the utility pole.”

In your Complaint, you asked the BCUC to address the following concerns/questions:

- When was this Itron 100 installed?
- Does it need to be reprogrammed NOT to look for information from my now-unsmart meter, and if Yes has this been done?
- If, as Hydro claims (app.bchdro.com), smart meters communicate for a total of 3 minutes a day, why is the Itron Repeater functioning for 24 hours/day? Is this a situation caused by Frequency Hopping? My understanding is that collisions of transmitted packages can take place and then the device(s) have to restart the process until it is successful. Is there a problem with any or all of the Smart Meters in this loop? Are there too many incoming?
- If as Hydro claims (app.bchydro.com) “our Repeaters... are active for minutes a day,” why is the Itron Repeater active 24 hours/day? Is the transmitter and receiver on at the same time, but insufficiently isolated, desensitizing the receiver and causing repeat transmissions? Are the input and output frequencies separated enough to avoid repeat transmissions?
- Have you checked for failed parts, bad cables, incorrectly installed components, mistuned filters, or other physical issues?
- Are there system or equipment design issues which would lead to transmission (incoming and/or outgoing) for 24 hours/day?
- Is it normal for the Itron 100 to emit sound waves?

Review of issues

In a review of the evidence offered by both parties, the BCUC staff note that professionals from BC Hydro as well as [REDACTED] independently hired firm, BKL, performed tests near [REDACTED] residence to obtain evidence of noise emissions from the CGR. The hardware was assessed for compliance and confirmed by BC Hydro to be in good working order.

With respect to your concern regarding noise emissions from a Hydro pole near your home BCUC staff note BC Hydro stated in their response to your complaint, dated April 30, 2020:

“[REDACTED] asked a number of related questions and we provide the following responses:

- When was this Itron 100 installed?

The BC Hydro router was installed on June 13, 2012. (BC Hydro does not have any device called an Itron 100. We believe that [REDACTED] is referring to our connected grid router, CGR1240, which is mounted on the pole.)

- Does it need to be reprogrammed NOT to look for information from my now-unsmart meter, and if Yes has this been done?

As a Meter Choices Program customer, [REDACTED] has chosen to have a BC Hydro radio-off smart meter, with the associated monthly fees. The radio-off meter’s communication component, the part that transmits the signal, is disabled and the meter can’t send or receive any radio frequency. The connected grid or smart meter router securely passes the meter data from the smart meters to BC Hydro’s data center via the cellular network. The router is not looking for the meter at [REDACTED] residence.

- If, as Hydro claims (app.bchdro.com), smart meters communicate for a total of 3 minutes a day, why is the Itron Repeater functioning for 24 hours/day? Is this a situation caused by Frequency Hopping? My understanding is that collisions of transmitted packages can take place and then the device(s) have to restart the process until it is successful. Is there a problem with any or all of the Smart Meters in this loop? Are there too many incoming?

Smart meters communicate across a 24 hour period in a randomized manner, including the three times a day it sends back meter electricity usage. The total cumulative time of this communication is equal to three minutes. The smart meter router operates similarly, but with a total cumulative time equal to 35 minutes per 24 hour period. The smart meter router at this location was replaced in December 2019 because the previous device failed. However, both the previous and current devices have communicated well with our systems.

- If as Hydro claims (app.bchydro.com) “our Repeaters... are active for minutes a day”, why is the Itron Repeater active 24 hours/day? Is the transmitter and receiver on at the same time, but insufficiently isolated, desensitizing the receiver and causing repeat transmissions? Are the input and output frequencies separated enough to avoid repeat transmissions?

Please see the answer above for the answer to the first question. Smart meters and the smart meter routers are built by their manufacturer to operate according to the communication and health regulatory requirements for radio emissions as stipulated by Innovation, Science, and Economic Development (ISED), previously called Industry Canada, and [Health Canada’s Safety Code 6 \(2015\)](#).

- Have you checked for failed parts, bad cables, incorrectly installed components, mistuned filters, or other physical issues?

When a smart meter router is not functioning properly, our Smart Meter Operations centre will receive a message and there will be a decline in the device’s ability to send meter data to BC Hydro. As stated above, in December 2019 when the router on the pole [REDACTED]
[REDACTED]

- Are there system or equipment design issues which would lead to transmission (incoming and/or outgoing) for 24 hours/day?

No. Please see above for our explanation of how the smart meter routers work.

- Is it normal for the Itron 100 to emit sound waves?

No. The router does not have that capability.”

Further, BC Hydro stated in its response to your Complaint, dated April 30, 2020:

“On January 24th our Engineer attended and conducted multiple tests using a sound level meter calibrated to International Electrotechnical Commission sound measurement standards. Testing was performed near the CGR and in the vicinity of [REDACTED] home. We’ve attached our Engineer’s Report which concludes no significant noise levels at or near the CGR. This information was provided to [REDACTED] on January 27th.

We analyzed the testing results by BKL. The BKL results are consistent with the analysis from our Engineer’s Report and show no significant high frequency sounds.

To ensure the entire range of frequency was tested and confirmed, BC Hydro stated: “The typical total sound pressure level in the audio spectrum was near 58 dB at every spot BC Hydro tested. Note that noise was measured with the typical “A-weighted frequency filter” removed, so that all sound frequencies were included equally in the measurements. This was done to ensure that even the highest and lowest frequencies were captured in the measurements as these frequencies are often perceived to be annoying, even if they are not as impactful in causing hearing damage.”

BKL and BC Hydro have assessed the area for noise violations and both parties found consistent data that point to a barely audible pressure level, for example the BKL observations of pressure level are no higher than a “whisper” (30 dB) at the source and a “pin drop” (10 dB) in the attenuated environment of [REDACTED] home while BC Hydro found that the outdoor sound pressure level was near 20 dB or “rustling leaves.” BC Hydro also noted that the smart meter routers are built by their manufacturer to operate according to the communication and health regulatory requirements for radio emissions as stipulated by Innovation, Science, and Economic Development (ISED) and Health Canada’s Safety Code 6 (2015).¹

The BCUC has approved BC Hydro’s Electric Tariff including the associated terms and conditions of service between BC Hydro and its customers. The BCUC notes that BC Hydro’s actions have been consistent with its duties and responsibilities as set out in its approved Electric Tariff and that BC Hydro reasonably responded to all concerns raised regarding safety and reliance of their equipment. As the BC Hydro equipment in question complies with the Electric Tariff there is nothing further the BCUC can do regarding your Complaint because the BCUC does not have jurisdiction over noise complaints. Issues regarding noise complaints are dealt with at the municipal level.

Summary

Based on the above, BCUC staff are satisfied that BC Hydro have reasonably responded to your concerns and acted in accordance with the Tariff.

¹ BC Hydro complaint response, April 30, 2020.

BCUC staff recommend that any outstanding noise complaints and nuisance caused by noise should be directed to your local Bylaw office.

Accordingly, your file is now closed.

Office of the Ombudsperson

If you have concerns about how the BCUC handled your complaint, you may wish to contact the Office of the Ombudsperson. The Office of the Ombudsperson receives inquiries and complaints about the practices and services of public agencies within its jurisdiction. Their role is to impartially investigate complaints to determine whether public agencies have acted fairly and reasonably, and whether their actions and decisions were consistent with relevant legislation, policies and procedures.

If you decide to file a complaint with the Ombudsperson, they will review the BCUC's process to ensure it was fair. Though this may not result in a different outcome for you, the Office could request that the BCUC reopen its investigation.

Provided is a link to the Office of the Ombudsperson's website: <https://www.bcombudsperson.ca/>. You can also call their Office toll-free at 1-800-567-3247. An employee at the Office will be able to assist you and inform you of your options.

Thank you again for contacting the BCUC.

Sincerely,

Original signed by:

Marija Tresoglavic
Acting Commission Secretary

DD/dg

cc: British Columbia Hydro and Power Authority
customer.relations@bchydro.com