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BCUC & Smart Meter Fires:

The Failure to Protect

Part 1

The Report

Sharon Noble

July 2017

BCUC & SMART METER FIRES:

THE FAILURE TO PROTECT

©

By

Sharon Noble

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EXECUTIVE SUMMARY

The BCUC has asserted that the evidence I provided in March 2016 to support my complaint regarding the lack of smart meter safety was "not persuasive". Apparently, the fact that engineering experts who provided statements in support of my charges would not provide their names was enough to cast a shadow on any evidence they had to offer.

A bit irksome to hear but, admittedly, a somewhat defendable position.

Then, couple the problem of the unsourced experts with the fact that I provided eight examples of fires started by smart meters. Eight examples, BCUC tells me, is insufficient. One would think that even one example should have alerted BCUC to enlist the aid of an independent forensic engineer to ferret out the truth of my allegation. And if numbers were really an issue, then the BCUC would have requested more. Which it didn't.

Again, a bit irksome to hear especially when, by ignoring the evidence, BCUC arrived at a very questionable conclusion.

The onus is on me, BCUC challenges, to provide evidence that it considers compelling. And, further, that I provide that evidence that is persuasive with no indication of what would be sufficient and of a proper nature in order to persuade.

If only it had been so forthright in the first place.

I have met that challenge. And I have done so by making clear why the Len Garis Report that the BCUC considers sacrosanct is totally devoid of even a scintilla of credibility, while at the same time offering FOI documents, sworn testimony, eye witness accounts, expert evidence, as well as photos, et al, to support my contention that the safety of smart meters is highly suspect. And because this evidence will far exceed, in quality and quantity, that of the compromised material contending the opposite, it will be patently obvious that there is a need

for a detailed examination of the meters by independent experts. And should the meters be found wanting, as I have every reason to expect, I contend that they should be removed at once from the walls of our homes and replaced by safe, reliable, cost-effective analog meters.

To that end I have included in this report not only a copy of my response to BCUC's draft that includes details of the design flaws identified by the electrical engineers referenced above but confirmation of the existence of flaws by other highly qualified, independent, and respected engineers. Not only have these additional engineers actually disassembled the Itron meter in order to examine it in minute detail, they have allowed their names and curricula vitae to be published.

As well, I have added to the number of fires started or highly suspected to have been started by smart meters. The total is now 47. Whether BCUC will find this number sufficiently persuasive is moot.

It should be noted here that while the number 47 above is firm, the reporting system is in such a mess, so profoundly, disturbingly, embarrassingly chaotic, that the actual number of smart meter fires will never be known. It should also be noted that despite the thousands of incidents that occurred during the period covered by the Len Garis Report, I was limited in my knowledge of possible electrical fires by a lack of direct access. I had to rely on reports from the media and alerts from the public. It was only at that point that I was able to request information from the Office of the Fire Commissioner (OFC). I managed to focus on 104 incidents. But, even then, of the 104 incidents, I was provided with only 78 Incident Reports from the OFC. The 47 figure, then, represents almost 50% Now, if we were to extrapolate….

I realize that the amount of material is initial intimidating, but the report itself is only the first 37 pages. The rest, the bulk of the material, is supporting data, which, I believe to be more than “persuasive” to the unbiased reader.

Nevertheless, to help out, I'm sending this report to various governmental agencies and media outlets. With this assistance, I'm sure the entire report will be quite adequately digested.

BACKGROUND:

On July 16, 2015, I submitted a complaint charging that smart meters are fire hazards, providing 8 examples of fires and failures that have occurred in BC. (Appendix A)

On Feb. 10, 2016 BCUC sent me a draft response and allowed me to comment.

On March 3, 2016 I provided a detailed response which included comprehensive information from 3 engineers, describing the design flaws that they had identified in ITRON smart meters and practices by BC Hydro that fell short of that required by professional electrical organizations. (Draft and response Appendix B)

On July 28, 2016 the BCUC advised that my complaint was being closed because I had not provided "persuasive evidence" and putting the onus on me, a private citizen, to provide more information to substantiate my charges. They justified their decision by relying exclusively on a report by Len Garis who had been commissioned and paid by BC Hydro. (Appendix C)

On Aug. 28, 2016 I responded, challenging the decision and promising to respond with evidence that even BCUC could not ignore. (Appendix D). BCUC did not respond.

Throughout this process, BCUC erred:

- in its failure to investigate fully the information that I provided and to ask for more if, in its opinion, what I provided was insufficient;

- in its failure to consider the expert evidence presented by these engineers (who wished to remain anonymous for fear of retribution) and neglecting to engage an independent forensic electrical engineer to inspect the smart meter to determine the accuracy of the information;

- by basing its decision on one source and one source only – the Len Garis report, believing that Mr. Garis was an academic who had followed rigorous standards in reaching his conclusion that there had been no smart meter fires.

I contend and, In the following, will prove that

1) Mr. Garis's report was based entirely on a sole source that used incomplete and erroneous information.

2) Not being steeped in the traditions of scrupulous research of academia, Mr. Garis failed to do what any true academic would do: he did not research raw data which would have led him, as it did me, to recognize that the reporting and tracking system is dysfunctional, and that, in fact, there have been many meter failures and fires.

3) The BCUC is accountable for the type of atmosphere in which such an academically substandard and error-prone report could be accepted as being a credible source for such an important investigation.

4) The BCUC is neglecting its duty, under the Utilities Commission Act, to protect the public.

The BCUC put the onus on me to prove that there are problems with ITRON smart meters that put life and property at risk. I will meet that challenge and. by so doing, expect that BCUC will do its job which is to protect the citizens of British Columbia. It must demand that the ITRON smart meters be removed from the walls of our homes and replaced by safe, reliable analog meters.

PLEASE NOTE:

In preparing this report I was limited by the availability of crucial information. I was able to learn of fires only through media reporting and alerts provided by the public. The sources of my data have been incident reports obtained from the Office of the Fire Commissioner (OFC), incident reports obtained from the Ministry of Justice (JAG), the Ministry of Transportation and Infrastructure (TRA), BC Safety Authority (BCSA), BC Hydro, fire departments, and from victims and witnesses.

Contention #I. GARIS'S ERROR IN DEPENDING ON OFC'S ANNUAL STATISTICAL FIRE REPORT

In preparing the report, "Assessing the Safety of Smart Meter Installations in British Columbia: Analysis of Residential Structure Fires in BC between July 2010 and June 2015" (https://www.surrey.ca/files/AssessingtheSafetyofSmartMeterInstallations.pdf) Mr. Garis used as his sole source the Fire Commissioner's Annual Statistical Fire Report "(the Statistical Report") http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/fire-safety/fire-reporting/annual-reports . He failed to consider that the information in that statistical summary might not be complete or accurate.

LEN GARIS MISSED CONSIDERING that the Report had major limitations and inaccuracies.

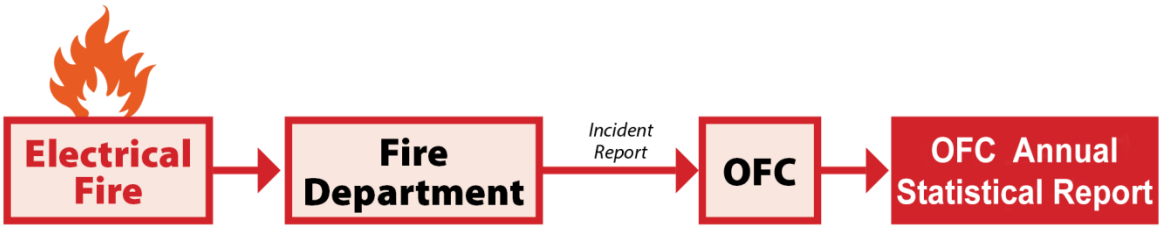
Documentation will follow to substantiate the following:

- 1. The incident reports completed and submitted by the fire departments to the Fire Commissioner are used for statistical purposes only. (Reference #1)
- 2. Exemptions are allowed for reporting purposes for fires that have occurred on Aboriginal or Federal Land. Any such fires are not included in the Report. (References 2 & 3)
- 3. BC Hydro and FortisBC were exempted from reporting any electrical incident or fire which they alone attended until my complaint. Now, for a temporary period, new reporting procedures were implemented). (Appendix C)
- 4. Despite it being a legal requirement, a significant proportion of the incident reports were not submitted to the Fire Commissioner.

- 5. Some incident reports were submitted too late to be included in the annual report.
- 6. A significant proportion of the incident reports were submitted so late after the incident occurred that the information in the report may not be credible.
- 7. If the smart meter has been removed or destroyed and cannot be inspected, even if all other causes have been ruled out, the cause of the fire is given as “cannot be determined” and may not be included in the Statistical Report. (Reference #4)
- 8. Any fire which, for one reason or another, has aspects related to electricity coded as "cannot be determined", are excluded from the Statistical Report. (Appendix E)
- 9. If the fire department decides that the damage was “insignificant”, no incident report is filed and, therefore, this fire is not included in the Statistical Report. (Reference #5)

I arrived at the above conclusions regarding the material that Len Garis missed, to the detriment of his report, by focusing on 104 fire incidents. Complete details of requests and reports are summarized on a spreadsheet in Appendix W. The reports themselves are available in Appendix X.

The information available at the OFC that Len Garis neglected to use.

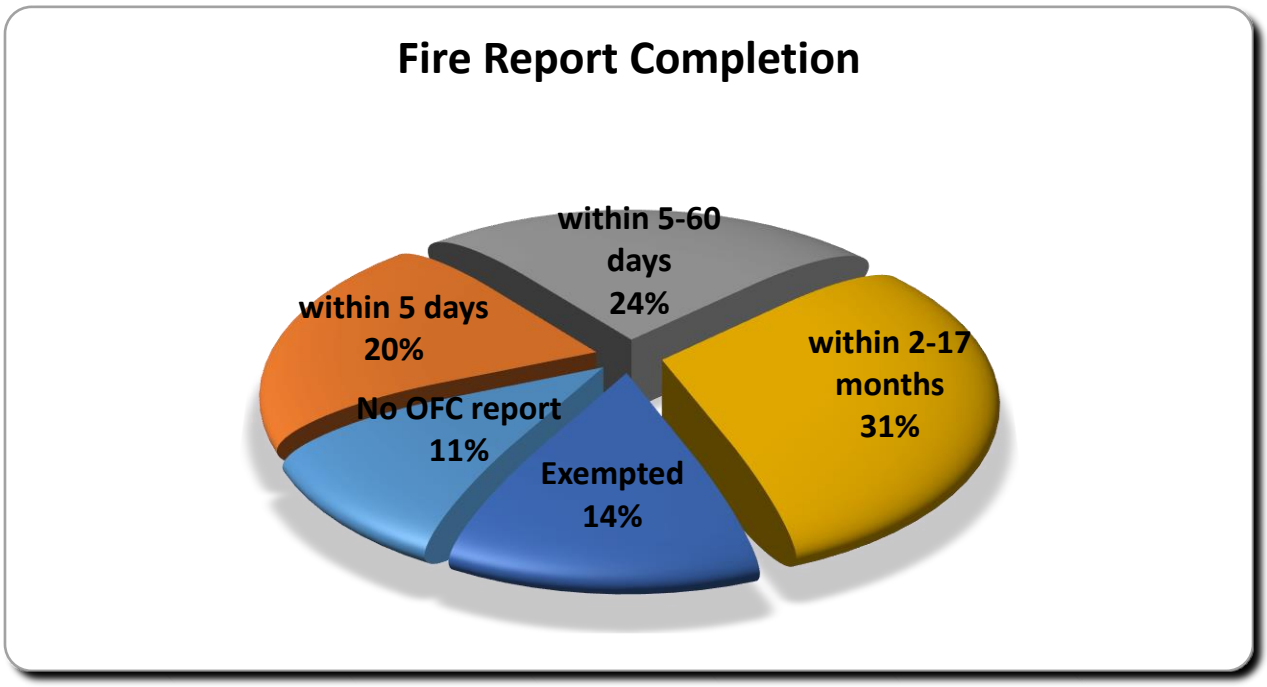


Obviously, the OFC can use only those incident reports that have been submitted in time for inclusion in the annual report. The evidence shows that many are excluded in the Annual Statistical Report.

DOCUMENTATION:

Point 1 -- Incident reports used by OFC for statistical reporting only

- The Fire Commissioner's Annual Statistical Report does not include or consider any comments that provide more detailed information about the fire or its cause. (Reference #1)



Points 2-6 -- Exemptions and violations of reporting requirements

Of the 104 fires and incidents I reviewed, **15 did not require official incident reports:**

- 12 were incidents where either Hydro alone attended or, if fire departments attended, the damage was considered "insignificant" (Reference #5, Appendices F and G)
- 2 were on Aboriginal Land (Reference #2)
- 1 was on DND land (Reference #3)

Leaving 89 incidents which I attempted to investigate as fully as possible.

- Of the 89 incidents requiring incident reports, 11 reports still have not been submitted to the OFC, even years after the fire, even after several requests by the OFC. (see Appendix H)

- Out of the 89 reports requested, only 21 (23%) were completed by the fire department within the 3 days mandated by the BC Fire Services Act. (Assuming 5 calendar days)

  - Out of these 21, **14 had not been submitted to the OFC at the time of my request.** (Appendix I)

  - Out of the 89 reports, 32 (25%) were completed by the fire department 2-17 months after the fire.

  - Out of these 32, 14 were completed by the fire department **only after** I requested them. (Appendix J)

  - Of the 89 reports requested, 52 were not on the OFC system by the end of the calendar year in which they occurred.

Why is the above data important? Because the evidence upon which Mr. Garis depended came entirely from the Fire Commissioner's Annual Statistical Fire Report. If that evidence didn't reach the OFC by the end of the year or not at all, as far as the Garis report was concerned, the incident didn't occur. Because the fire reporting is not consistent and thorough, the Fire Commissioner's Annual Statistical Report is not credible. And because the Statistical Report is not credible neither is Mr. Garis's report upon which it is based.

The BCUC Panel couldn't dispute the above evidence that was presented in my initial complaint, so it decided to ignore it.

"***The Panel relies on the OFC data reported in the Garis Report because, in the view of the Panel, the fire reporting data from the OFC under the authority of the Fire Services Act is authoritative for BC. Despite the allegations made by S.N. that some fire reports are never submitted to the OFC and that some reports are submitted late the Panel considers that the reporting requirements of the Fire Services Act provide a legal requirement which supports the credibility of the data. As well, the Panel finds that the Garis Report is credible because it reports***

the OFC data and Mr. Garis, a Fire Chief and academic, is a credible author for such a report." (page 6 of the July response Appendix C)

And where it couldn't ignore the evidence, it decided to deny it, arguing, in part, that since the reporting of incidents and the schedule of that reporting was mandated by law --- the Fire Services Act, Sec. 9 --- then of course the law must have been heeded.

With all due respect to BCUC, this is a blatant non sequitur: that because it is the law, therefore the law is followed. That trifle aside, let us not forget that sanctions are a vital component of all Law. And in this case that component is missing. So, no, this law is not followed. And it is not followed simply because there is no penalty for ignoring it

Point 7 -- Meters have been removed prior to an inspection.

According to the BC Fire Safety Standards Act, Section 36, nothing is to be removed from the scene of a fire prior to the completion of an inspection by a fire inspector. In the case of an electrical fire, this inspection is supposed to be done by the BC Safety Authority or electrical inspectors in the 8 jurisdictions. (see "Raw Data Point #2" pp. 13-14.)

Despite assurances to the contrary by BC Hydro and the BCUC, this Act is being violated with impunity, making it impossible in many instances for the cause of the fire to be determined and reported:

- Out of the 104 incidents and fires, BC Hydro or FortisBC removed 16 meters in violation of the Act. (Appendix K)
- Of the 16 removals, 9 were reported by the fire officials or BCSA inspectors
- Of the 16, 7 were documented by photo and/or reported by the victims or witnesses
- In 3 instances, BC Hydro told the victim or media that the meter was being sent to its lab for inspection. Powertech (BC Hydro's lab) stated in response to an FOI request that it has never inspected a smart meter. (Reference #6) Contradicting its own statements to victims and the media, BC Hydro confirmed that it does not inspect any failed meter. (Reference #7)

- In 7 of the incident reports where meters had been removed, the 3 significant codes related to “electrical fires” (Ignited object, Fuel, and Act/Omission) were all marked as “Cannot be determined”. Items so marked are excluded from the Statistical Report upon which Len Garis depended. 10% of the incident reports that I requested fall into this category and were excluded from their relevant annual report. (Appendix L)

This is part of the significant raw data that Len Garis missed by not researching his sources.

Point 8 -- Incident reports with electrical categories reported as “Cannot be determined” are excluded from OFC Statistical Report

The OFC Statistical Report does not accommodate or report on categories where the code is “Cannot be Determined.” The lack of tracking of such coding means that no comparison from one year to the next, or from pre-smart meters or post-smart meters can be made. (Appendix E)

In the incident reports that I obtained, many had categories relevant to electrical fires coded as “cannot be determined” even when, in the comment section or in the electrical report, an electrical cause was noted or suspected. All of these fires were excluded from the Statistical Report.

In the July 2016 response to my complaint, BCUC said that when the “igniting object” is coded as being the “electrical distribution equipment”, this coding will capture smart meter related fires.

This coding, “electrical distribution equipment” as the “igniting object” is the only indication of a possible smart meter fire in the Statistical Report because comments and additional information by fire inspectors are not captured.

Out of the 78 incident reports received, the following significant factors were reported as “Cannot be determined” (CbD): (See the Spreadsheet, Appendix W)

- Ignited Object 45 (56%)
- Fuel or energy 37 (47%)
- Form of Heat 38 (48%)

- Act or omission 38 (47.5%)
- All categories 34 (43.6%)

With the high percentage of “igniting objects” being undetermined, especially for electrical fires, it is impossible for anyone to say how many electrical fires have occurred let alone how many of these were caused by smart meters. This alone proves that the Fire Commissioner’s Annual Statistical Report is inaccurate and unreliable for determining if smart meters are safe. It is irresponsible to base such serious conclusions on information with such serious gaps.

Point 9 -- If the fire department decides that the damage was “insignificant”, no incident report is filed and, therefore, this fire is not included in the Statistical Report.

Fires in which little or no damage has occurred are not reported by fire departments. (Reference #5) Normally this might not be of significance, but when a review of smart meter safety is being done, this missing information is critical. Smart meters catch fire, are extinguished by the victims or bystanders, or burn only a small portion of the building before being extinguished, and these incidents are not reported or tracked. Even though lives and property are put at risk, such incidents are excluded from the most important report – the Fire Commissioner’s Annual Statistical Report.

Among the 104 incidents and fires investigated, 4 electrical fires involving smart meters were attended by a fire department but no report was filed due to there being “insignificant damage”. (Appendix G).

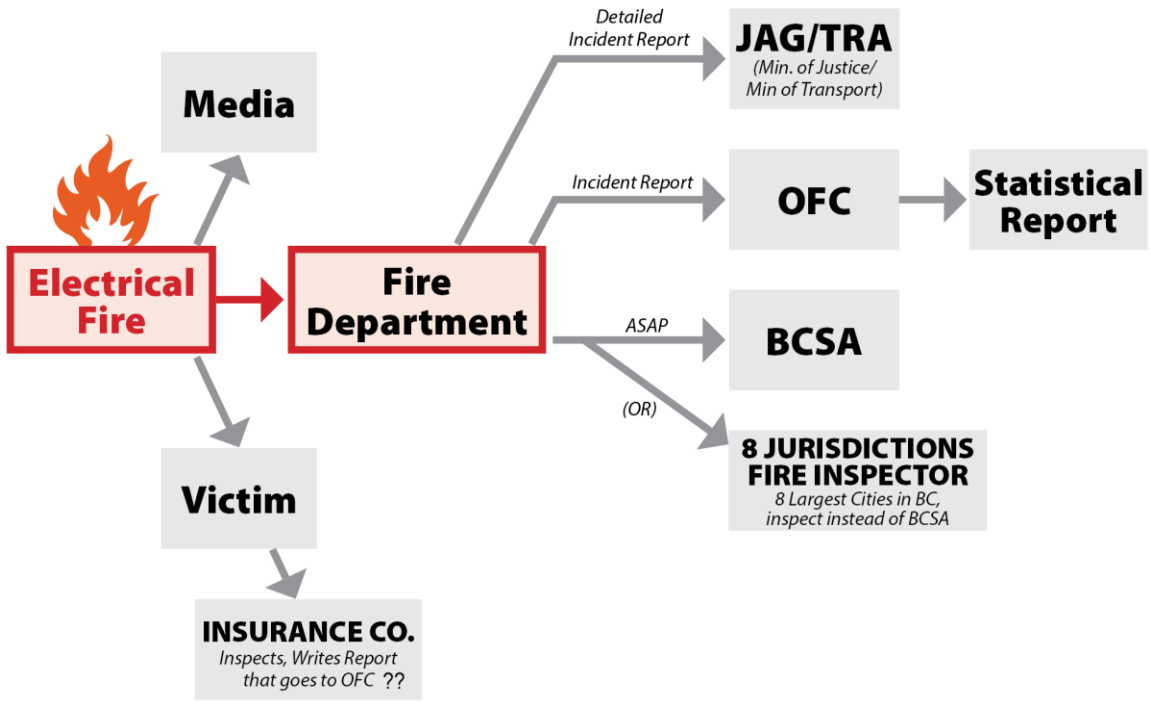
Contention # 2. LEN GARIS FAILED TO RESEARCH AVAILABLE RAW DATA

Available data was not considered in Mr. Garis's report.

Documentation follows:

- 1. Significant information in a more detailed version of the incident report provided to Ministry of Justice (JAG), which later became the Ministry of Transportation and Infrastructure (TRA)
- 2. Significant information obtained through electrical fire inspections e.g. BC Safety Authority (BCSA), including evidence that laws are being violated and that smart meters were involved in fires.
- 3. Insurance companies' fire inspection reports which are often completed by forensic experts.
- 4. Victim, witness observations and reports by the media.
- 5. Mr. Garis made a serious error by not reviewing the actual incident reports and learning that fires were reported that fit his definition of a likely smart meter fire: fires on exterior walls, involving panels; fires where the igniting object was Electrical Distribution Equipment, Fuel was Electricity, Form of Heat was Electrical.
- 6. Len Garis would have discovered by review of the raw data that many smart meter fires and failures have occurred.

Sources of Raw Data Available but Ignored by Len Garis



Raw Data Point 1 -- Significant information provided to JAG/TRA in a more detailed version of the incident report.

The OFC requires the incident reports for statistical purposes only. If there is a substantive comment, it is not tracked. Often the incident report that is received by the OFC does not have the critical comments that are on the incident report submitted to the JAG/TRA. Even if there were important information such as the smart meter having been removed or having been the cause of the fire, there is no method for reporting this in The Report. (example: Appendix M)

Mr. Garis would have had easy access to this material, if he had looked, and it would have shown clearly that his assumptions that were based solely on the high level statistics in the Statistical Report were faulty.

Raw Data Point 2 -- Significant information obtained through electrical fire inspections

- BC Safety Authority (BCSA) is the body with the expertise and responsibility to investigate electrical incidents and fires. According to the BC Safety Standards Act, electrical incidents and fires, arc flash occurrences, or fires that have a reasonable suspicion of being caused by some electrical equipment or infrastructure are to be reported to the BCSA immediately, no later than 24 hours after the incident.
- There is a duty for the local fire authorities to preserve the incident site with nothing removed or disturbed until the inspection has been completed.
- Information vital to the determination of the safety of smart meters is available in the inspection reports, **but these are never submitted to the OFC** and, therefore, are not included in the Statistical Report. And, certainly, this is raw data that should have been investigated as part of any thorough research into the safety of these devices.

Review of the raw data on the 104 incidents and fires found that the regulation to notify BCSA immediately of an electrical fire is not being followed by BC Hydro or, in many instances, by the fire departments. This failure to obtain electrical inspections consistently or in a timely manner as required by the Act has the potential to allow many smart meter-caused fires to go unidentified.

- Of 23 fires with Igniting Object coded as "Electrical Distribution Equipment", I requested 20 electrical inspection reports. Of those 20, 13 (65%) were not inspected by BCSA or the other inspectors (Appendix N). **According to the BCUC and the Len Garis report, these are the fires that would most likely involve a smart meter**.
- Of 29 fires with Fuel coded as "Electricity", 26 electrical inspection reports were requested. Of those 26, 18 (69%) were **not inspected** by BCSA or other agencies. (Appendix O)
- In total, out of the 54 requests made to the BCSA or other agencies for an electrical inspection report, only 19 (35%) **were available.**

+ Of the 19 inspection reports received 10 reported smart meter involvement (Appendix P)

In this random review of information, 53% of the electrical inspection reports indicated a fire associated with failure or possible failure of the smart meter. This information is not reported to any agency and seems to be maintained only at BCSA. It is available upon request, but neither Len Garis nor BCUC obtained it.

There are major exemptions to electrical incidents reportable to BCSA.

The BCSA has jurisdiction in the majority of BC's municipalities, but the 8 largest population bases are responsible for inspecting electrical fires independent of BCSA. In fact, electrical incidents that occur in the 8 largest municipalities are not even reported to the BCSA. (Reference 8)

The municipalities responsible for inspecting electrical fires and incidents are:

- Burnaby,
- Maple Ridge
- North Vancouver (city)
- North Vancouver (district)
- Surrey
- Vancouver
- Victoria
- West Vancouver

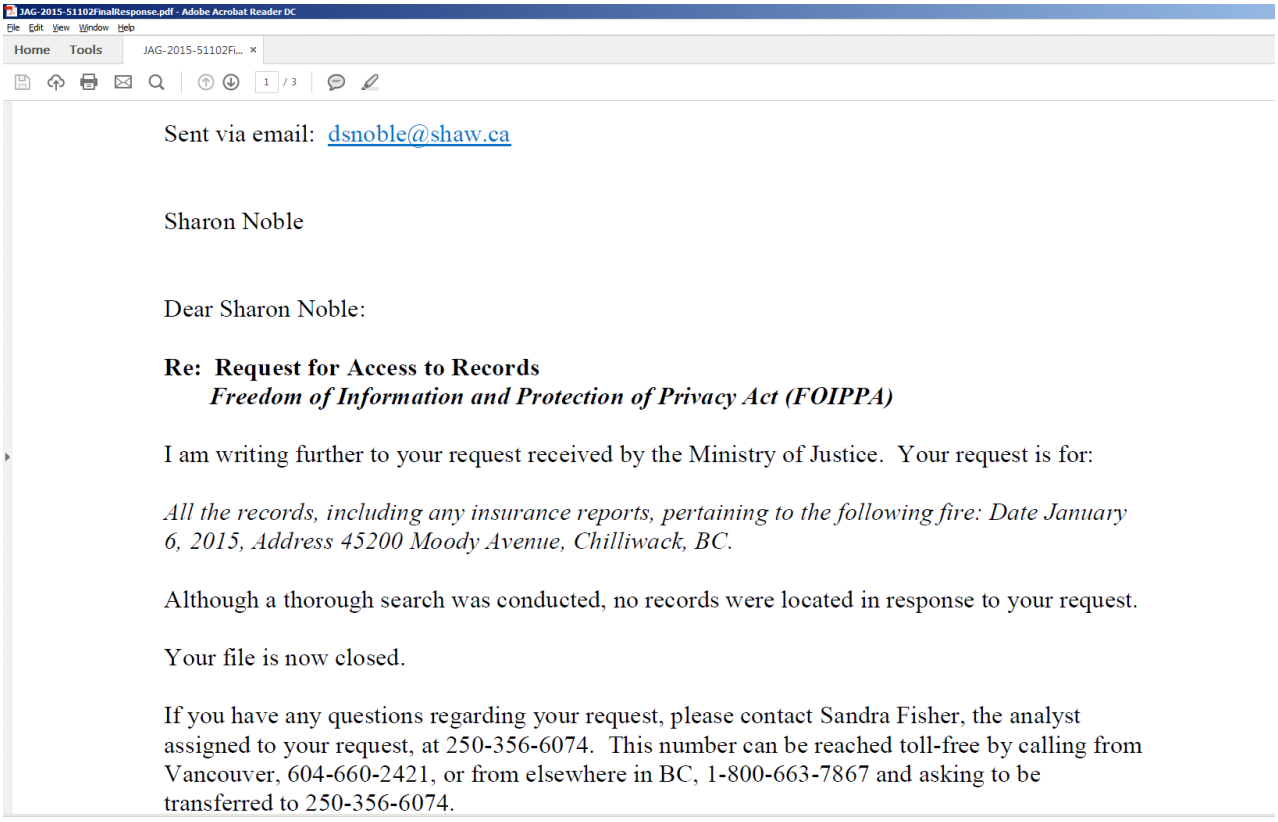
The inspection reports are available to the general public but the costs for these reports are prohibitive. (Reference 9) I could not readily access them, but Mr. Garis could have, and should have.

Raw Data Point 3 -- Insurance companies' fire inspection reports

In many cases fire departments and municipalities do not have easy access to forensic fire inspectors, and, therefore, depend upon the inspection report from the insurance companies.

According to the BC Fire Services Act, Section 19 (http://www.bclaws.ca/civix/document/id/complete/statreg/96144_01#section19) every month each insurer must provide the Fire Commissioner with information about every fire occurring in British Columbia during the past month.

The OFC told me that this information would be available to the public via a Freedom of Information request, (reference 10) but not one of dozens of requests resulted in my getting an insurance report. Here is a sample response:



JAG-2015-51102FinalResponse.pdf - Adobe Acrobat Reader DC

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Sent via email: dsnoble@shaw.ca

Sharon Noble

Dear Sharon Noble:

Re: Request for Access to Records
Freedom of Information and Protection of Privacy Act (FOIPPA)

I am writing further to your request received by the Ministry of Justice. Your request is for:

All the records, including any insurance reports, pertaining to the following fire: Date January 6, 2015, Address 45200 Moody Avenue, Chilliwack, BC.

Although a thorough search was conducted, no records were located in response to your request.

Your file is now closed.

If you have any questions regarding your request, please contact Sandra Fisher, the analyst assigned to your request, at 250-356-6074. This number can be reached toll-free by calling from Vancouver, 604-660-2421, or from elsewhere in BC, 1-800-663-7867 and asking to be transferred to 250-356-6074.

Even victims have been refused access to the insurance reports regarding fires at their homes. Insurance companies have justified the refusal by saying the information is needed for potential lawsuits, presumably against BC Hydro in many instances.

Mr. Garis, without doubt, would have been given access to such records which would have confirmed that smart meters have caused fires, destroying property and endangering lives.

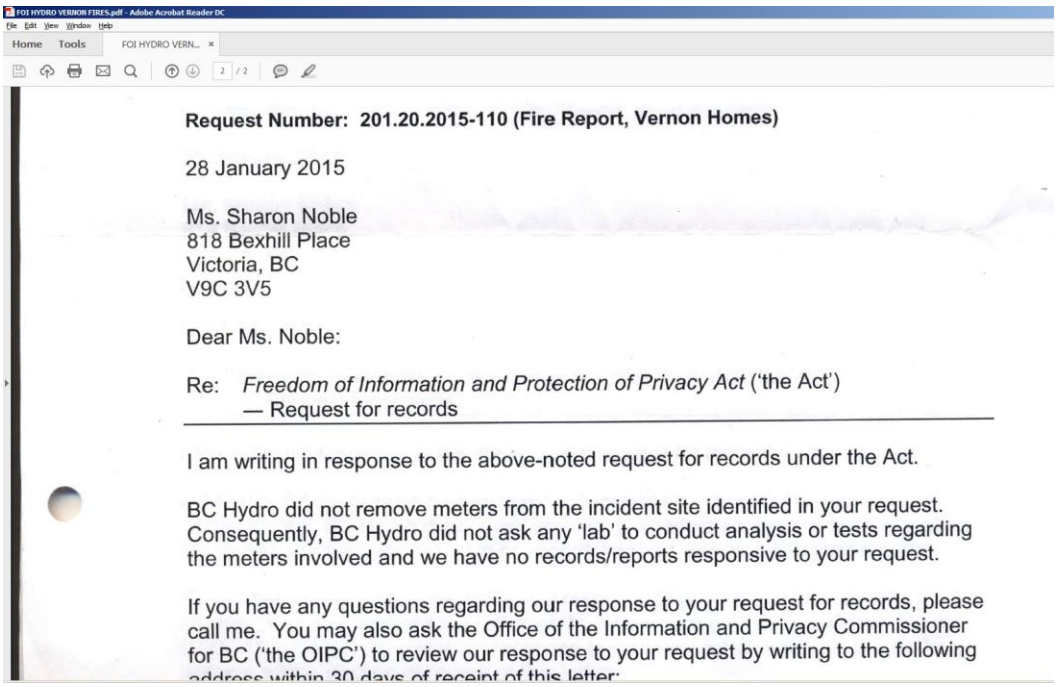
Raw Data Point 4 -- Victim, witness observations and reports by the media

Many fires incident reports say the details “cannot be determined” or have no comments but media reports have information of an essential nature that was obtained from a witness, the victim or even the fire department at the scene. For example this Global TV report on a fire which burned 2 homes in Vernon, 2200 53rd Ave., April 27, 2014.

http://globalnews.ca/video/825052/smart-meter-sparks-fire

In this video Dep. Chief Skolrood says that BC Hydro had taken the meter from a possible smart meter fire scene and was sending it to a lab for inspection to determine causation.

Yet, BC Hydro said, in response to an FOI, that its lab, PowerTech, never inspects failed smart meters. (Reference #6) and refutes Dep. Chief Skolrood’s statement.



Request Number: 201.20.2015-110 (Fire Report, Vernon Homes)

28 January 2015

Ms. Sharon Noble
818 Bexhill Place
Victoria, BC
V9C 3V5

Dear Ms. Noble:

Re: *Freedom of Information and Protection of Privacy Act* (‘the Act’)
— Request for records

I am writing in response to the above-noted request for records under the Act.

BC Hydro did not remove meters from the incident site identified in your request. Consequently, BC Hydro did not ask any ‘lab’ to conduct analysis or tests regarding the meters involved and we have no records/reports responsive to your request.

If you have any questions regarding our response to your request for records, please call me. You may also ask the Office of the Information and Privacy Commissioner for BC (‘the OIPC’) to review our response to your request by writing to the following address within 30 days of receipt of this letter:

In other instances, victims saw the fire starting at the smart meter, or saw the meter being removed from the scene of the fire. This is essential information that should cause concerns for anyone investigating the safety of the meter and the practices being employed in violation of BC laws.

Raw Data Point #5 -- not reviewing the actual incident reports

> ***"…As well, the Panel finds that the Garis Report is credible because it reports the OFC data and Mr. Garis, a Fire Chief and academic, is a credible author for such a report."*** BCUC's decision, G-124-16, July 28, 2016.

On page 3 of his commissioned report, Len Garis stated:

> ***"… where the form of heat was electrical...and where electrical distribution equipment was the igniting object...it is likely that these types of fires are most closely related to the meter base, which is directly relevant to the smart meters. To further examine any potential negative impact of the smart meters for fire safety, the frequency of fires that occurred on an exterior wall where the igniting object was the electrical panel/switchboard was examined. At the time of the 2014 August review and data extraction, only 1 incident was recorded in this category and was subsequently corrected after further review. Therefore, for the pre-meter and post-meter periods reviewed, the revised data shows no fires occurred on an exterior wall where the igniting object was the electrical panel/switchboard."***

What Mr. Garis is contending is that if the fire started on an exterior wall and the panel/switchboard was the igniting object, then the smart meter would have been the cause of the fire. He further implies that since he found no such incidents, there have been no smart meter fires.

A review of the raw data proves that there are incident reports that fit Mr. Garis's parameters.

Among the 78 incident reports received, 3 reported that the fire started on an exterior wall and the panel/switchboard was the Igniting Object. These are listed in Appendix Q-1. In addition, 6 fires that occurred on an exterior wall had "Electrical" as the Form of Heat and the Igniting Object "Electrical Distribution Equipment. (Appendix Q-2) Taking duplicates into consideration, 7 fires, or nearly 10%, fall into this category.

Furthermore, in the above quotation, Mr. Garis states that there are 4 codes used in incident reports that would be related to smart meter/base related fires. These codes are “Form of Heat – Electrical” in conjunction with “Igniting Object -- Electrical Distribution Equipment”, “Fire Origin – Exterior Wall” in conjunction with “Igniting Object – Panel/Switchboard.”

When he said that there was no indication that smart meters had caused fires because no or few fire reports had these combinations of codes, he relied on the Statistical Report only. If he had looked at the raw data, he would have found this assumption to be incorrect.

Furthermore, I believe there is another factor that is vital in identifying potential smart meter fires: “Fuel or energy – electrical”.

“Fuel or energy” according the coding manual, “denotes the energy or fuel used in conjunction with the igniting object.” In reviewing the raw data, I found that many smart-meter-related fire incident reports had “Fuel = electricity” and “Igniting Object – Electrical Distribution Equipment” and the “Form of heat – Could not be determined.”

Nevertheless, using Mr. Garis’s parameters, there were 14 fires where the Igniting Object was “Electrical Distribution Equipment” and the Form of Heat was “Electrical”. It is likely that these were smart meter/base associated fires, which Mr. Garis failed to investigate or report. (Appendix R-1)

7 other incident reports reported that fires started on the exterior wall and gave the Igniting Object as Electrical Distribution Equipment and the Fuel as Electricity. In my opinion, after having reviewed significant raw data, “Fuel/energy – electricity” also are indicators of possible smart meter fires. (Appendix R-2)

In several other incidents occurring at the exterior wall, it was impossible for causes to be determined because either no incident report was filed (3 incidents) or the meter had been removed (6 incidents), resulting in the cause not being determined.

Mr. Garis, presenting himself as an expert, had the duty to review all the available data in making this important determination, not just the high level Statistical Report. Lives depend on these meters being safe – and Mr. Garis has not obtained the information necessary to state, categorically, as he has, that they are.

Raw Data Point #6 -- failure to review raw data led Mr. Garis to arrive at an erroneous conclusion

As quoted above, Mr. Garis said that "where the form of heat was electrical … and where electrical distribution equipment was the igniting object… it is likely that these types of fires are most closely related to the meter base, which is directly relevant to the smart meters."

Mr. Garis concluded that because the number of REPORTED fires in these 2 categories had declined that it followed that there had been no smart meter fires.

First this is an amazing jump in logic, a complete non sequitur that no academic would make.

But in addition, as proven earlier, many incident reports are not being completed, are submitted too late to be included in the annual report, or for one reason or another are excluded.

The operative word seems to be "reported". Why were fewer electrical fires reported? Was it because fewer reports in general were being submitted? Was it because, as per a couple of fire chiefs, budgets were cut, resulting in small payment for completing the report? Was it because the fire departments were told to rule out arson and not spend time on anything else? Is this why more reports might be "inconclusive" with more factors coded as "cannot be determined"?

Based upon my research, I assert that many smart meter fires and failures have occurred and have not been tracked or researched.

Of the 104 incidents investigated, 47 (45%) were confirmed or suspected to have been related to the smart meter.

- 22 fires were reported to have Electrical Distribution Equipment as the Ignited Object and Electricity as Fuel. 14 of these 22 fires also had incident reports with "Electrical" as the "Form of Heat." As noted above, it is likely that these types of fires are closely related to the meter. (Appendices R-1, S)

- Of the 47 incidents, BC Hydro was the only attendee at 8 incidents and made no report to any agency, including the BCSA. (Appendix F)

BC Hydro refused to provide copies of “trouble reports” citing Sec. 22 (privacy) of the Freedom of Information and Privacy Act, even after I provided all personal information pertaining to the victim or asked specifically for information pertaining solely to BC Hydro’s smart meter. Following is an example for the fire that was determined to have been caused by a smart meter at 6110 Russell Place, Port Alberni.

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: December 2, 2015 1:48 PM
To: FOI Officer Scott MacDonald (scott.macdonald@bchydro.com) <scott.macdonald@bchydro.com>
Cc: 'John.Horgan.MLA@leg.bc.ca' <John.Horgan.MLA@leg.bc.ca>; 'adrian.dix.mla@leg.bc.ca' <adrian.dix.mla@leg.bc.ca>; 'don.mcrae.mla@leg.bc.ca' <don.mcrae.mla@leg.bc.ca>
Subject: FOI Smart meter fire in Port Alberni.

Dear Mr. MacDonald,

Please find attached a report on a fire that occurred in Port Alberni, July 18, 2015. As you can see, it is attributed to a failure of the mechanical/electrical equipment, specifically the meter.

The BC Safety Authority was not advised of this fire so it was not called in to investigate it. I am requesting the reports BC Hydro has on this fire, and specifically any regarding any investigation that was done on the meter itself after the fire to determine the fault.

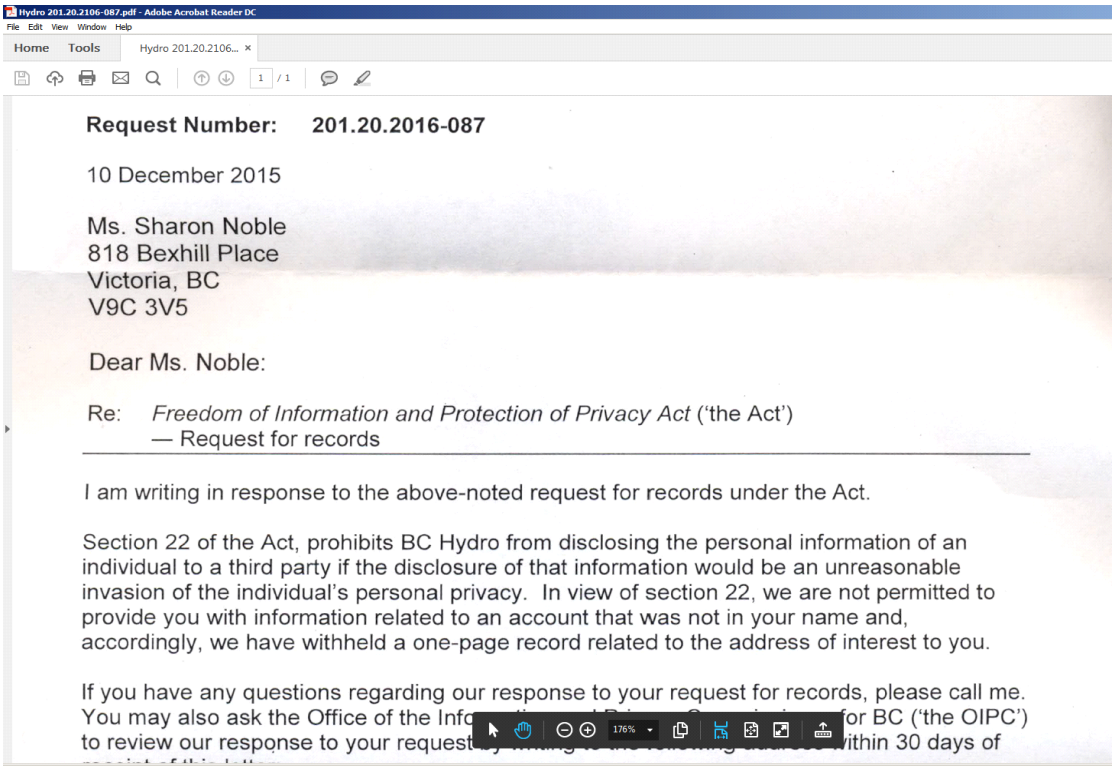
Please note that I am not asking for any personal information about the homeowners, but rather I am asking only for information about BC Hydro’s equipment that caused this fire.

I look forward to receiving this information at your earliest convenience.

Regards,

Sharon Noble

BC Hydro's Response



Hydro 201.20.2106-087.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools Hydro 201.20.2106...

Request Number: 201.20.2016-087

10 December 2015

Ms. Sharon Noble
818 Bexhill Place
Victoria, BC
V9C 3V5

Dear Ms. Noble:

Re: *Freedom of Information and Protection of Privacy Act* ('the Act')
— Request for records

I am writing in response to the above-noted request for records under the Act.

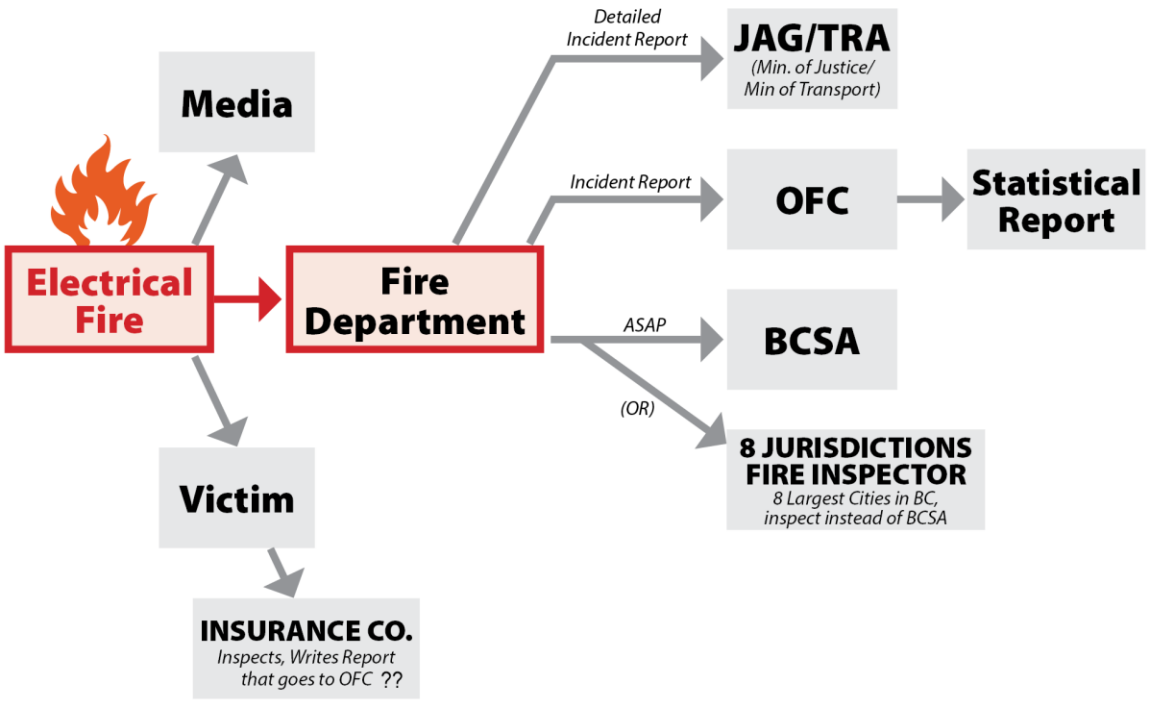
Section 22 of the Act, prohibits BC Hydro from disclosing the personal information of an individual to a third party if the disclosure of that information would be an unreasonable invasion of the individual's personal privacy. In view of section 22, we are not permitted to provide you with information related to an account that was not in your name and, accordingly, we have withheld a one-page record related to the address of interest to you.

If you have any questions regarding our response to your request for records, please call me. You may also ask the Office of the Info for BC ('the OIPC') to review our response to your request within 30 days of

- Of the 47 incidents, the OFC had not received a report on 5 fires even though 1 of them had been investigated by BCSA. (Appendix T)
- 4 of the 47 incidents were attended by a fire department but no incident report was filed because the damage was insufficient to warrant one. (Appendix G)
- In 8 cases, all the relevant codes were "Cannot be determined" because the meter was not available for inspection. (Appendix L)
    - 4 meters were destroyed in the fire
    - 4 meters were removed from the scene by BC Hydro

Full details of these incidents are available both on the spreadsheet (Appendix W) and in Appendix X where individual reports are provided. Clearly these meters are serious fire hazards but Mr. Garis would only discover this from the raw data, which he did not research.

Len Garis based his report on only one source, the Fire Commissioner's Annual Statistical Report. Here, again, is a visual representation of all the sources he failed to utilize.


Media
Electrical Fire
Fire Department
Victim
INSURANCE CO.
Inspects, Writes Report that goes to OFC ??
Detailed Incident Report
JAG/TRA
(Min. of Justice/ Min of Transport)
Incident Report
OFC
Statistical Report
ASAP
BCSA
(OR)
8 JURISDICTIONS FIRE INSPECTOR
8 Largest Cities in BC, inspect instead of BCSA

Contention #3 THE BCUC'S COMPLICITY IN FOSTERING AND USING FALSE NARRATIVE

Until mid 2015, BCUC consistently failed to acknowledge its responsibility under the BC Utilities Act to ensure that BC Hydro's equipment is safe. (Reference 11) It was only after continued pressure on this point that BCUC agreed to consider my complaint.

In response to that complaint, the BC Utilities Commission has

- 1. failed to review the raw data that was available to determine if there is evidence that there have been smart meter fires.
- 2. based its decision that smart meters are safe solely on a single source, the Len Garis Report, apparently without any scrutiny.
- 3. misled the public by use of false, incorrect information.

Complicity Point #1 – failure to review the raw data that was available to determine if there is evidence that there have been smart meter fires

Both before and after my formal complaint in July 2015, BCUC has been provided with evidence and opinions by electrical experts that ITRON smart meters pose a serious fire hazard. Never have I been asked any questions about the information nor have I been asked to provide more. In essence, my formal complaint and the detailed response I provided regarding the draft were ignored.

Both before and after my formal complaint, BCUC has been provided with incidents of fires and failures of ITRON smart meters in various places such as Texas as well as with general information about safety concerns regarding the design flaws that exist in most smart meters. (Reference 12) BCUC, in its review of my complaint, ignored this information which pertains directly and specifically to the safety of **ITRON** smart meters.

Neither did BCUC perform its due diligence by asking that an independent forensic engineer investigate the information provided by the electrical engineers, to determine if in fact these devices are dangerous and prone to failure and causing fires.

If BCUC had seriously considered the available information, they would have found reason for major concerns, and, hopefully, would have taken measures to ensure the safety of the customers of BC Hydro and FortisBC.

Complicity Point #2 -- basing its decision that smart meters are safe solely on a single source, apparently without any scrutiny

BCUC used only one source as the basis for its decision that there is no reason for concern about the smart meter's safety. It considered only Len Garis's report which, as I've demonstrated, is not credible. Never did the BCUC question Mr. Garis's credentials, his potential bias, or his lack of academic diligence. To an independent observer it appears that BCUC looked to Mr. Garis's report, which was commissioned by and paid for by BC Hydro, as an unbiased source that agreed with BCUC's assumption – that smart meters are safe.

In defending Mr. Garis's report, BCUC made major assumptions which were not based on fact:

- That because a law exists, e.g. incident reports are to be filed with the OFC immediately after a fire, it is being followed consistently.

  "***Despite the allegations made by S.N. that some fire reports are never submitted to the OFC and that some reports are submitted late the Panel considers that the reporting requirements of the Fire Services Act provide a legal requirement which supports the credibility of the data.***"

- That "***As well, the Panel finds that the Garis Report is credible because it reports the OFC data and Mr. Garis, a Fire Chief and academic, is a credible author for such a report.***" Any "academic" report is reviewed by independent peers who assess the evidence by which a conclusion is reached. No such review was done yet BCUC was willing to accept Mr. Garis's report with no questions asked.

- That Mr. Garis's sole source, the OFC data, was correct , credible and sufficient to make any determination. It appears that BCUC made no attempt to confirm the validity of the source material or Mr. Garis's interpretation of it.

Even while acknowledging that information I provided to substantiate my complaint identified gaps in reporting and shortfalls in tracking by both BC Hydro and FortisBC, BCUC saw no need to investigate my allegations, saying my evidence “was not persuasive”.

Complicity Point #3 – misleading the public by use of false, incorrect information

Despite all of the above, BCUC continues to assure the public that there is no reason to believe that the smart meters are more fire prone than are analogs, this being the Commission’s only criteria for safety.

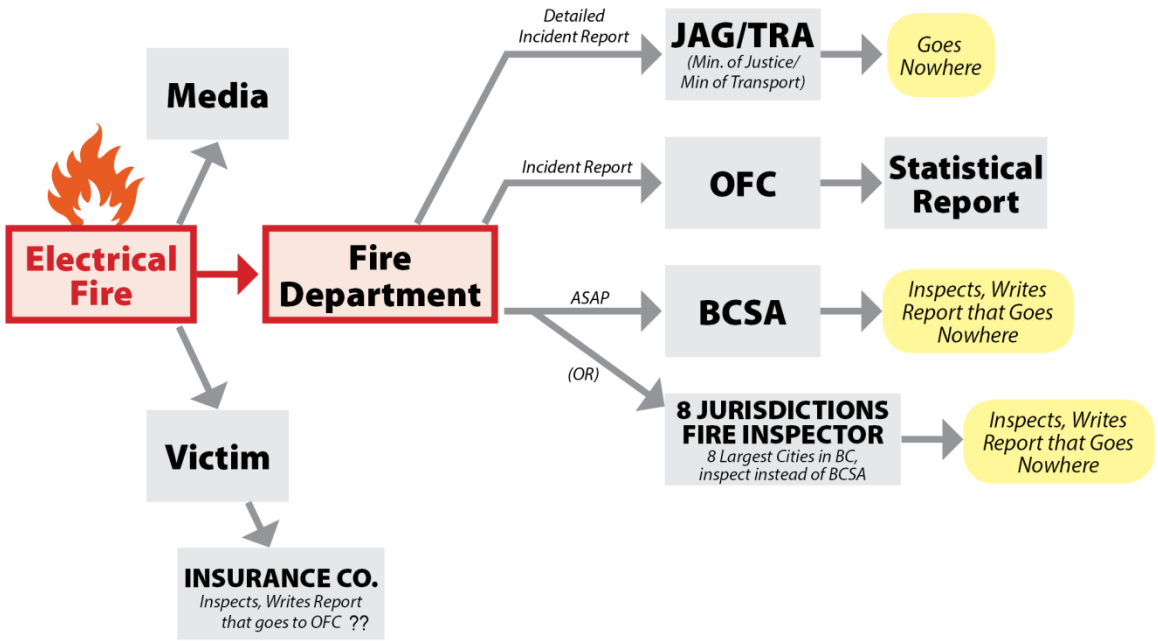
The BCUC is referencing its response of July 2016 in a manner which is totally misleading and untrue – implying that an investigation has settled the question: “"The Commission further examined whether smart meters were a fire hazard in Smart Meter Safety Complaint (Order G-124-16), available at: http://www.ordersdecisions.bcuc.com/bcuc/orders/en/168896/1/document.do”

Contention #4 BCUC's FAILURE, UNDER THE BC UTILITIES COMMISSION ACT, TO PROTECT THE PUBLIC

The BCUC is neglecting its duty by:

- 1. defining the question of whether smart meters are safe in a manner which is completely irrelevant;
- 2. failing to require an independent inspection of the ITRON smart meter by a qualified forensic electrical engineer when design flaws were identified by electrical specialists;
- 3. failing to require BC Hydro to do its due diligence prior to, or even after, the installation of smart meters on homes and businesses;
- 4. failing to recall the smart meters when warranted under the Precautionary Principle;
- 5. refusing to coordinate with overlapping jurisdictions when shortcomings in reporting, tracking and monitoring were documented; ignoring the loopholes in current legislation that allow BC Hydro liberties that endanger the public.

The current DYSFUNCTIONAL fire inspection/reporting system that exists today.



BCUC's FAILURE Point #1 -- defining the question of whether smart meters are safe in a manner which is completely irrelevant

In its declination of the complaint, BCUC said that rather than consider whether smart meters are safe, it "more precisely defines the issue as whether smart meters materially increase the risk of fires in BC over analog" meters.

After many requests, no evidence has been provided that an analog ever caused a fire. In fact, electrical engineers have advised that given the design of analogs and the fact they are made of non-combustible metal and glass, an analog meter itself (separate from its lugs) is highly unlikely to cause a fire.

This means that if any fire has been caused by a smart meter, and many have, then BCUC must acknowledge that smart meters are more dangerous than analogs.

Once again I challenge BCUC to prove that analog meters have caused fires, or, following BCUC's basis for determining safety, that analogs have caused as many fires as smart meters.

BCUC'S FAILURE Point #2 -- failing to require an independent inspection of the ITRON smart meter by a qualified forensic electrical engineer when design flaws were identified by electrical specialists

The BCUC has been advised about serious design flaws several times, most recently in the response to the Panel's draft, March 3, 2016. In its July 28 response in which my complaint was discarded, there was no mention that these warnings had been taken seriously. BCUC decided to ignore the input by 3 engineers regarding a matter involving a technically complex public infrastructure, with significant uncertainties, that is universally implemented, without choice, throughout the province. The professional engineers who contributed to the March 3 document find this a serious deficiency.

As further evidence of design flaws I now include statements from electrical engineers who are licensed in various states in the US, both of whom are intimately familiar with ITRON smart meters, having inspected them thoroughly

by dismantling them. As a clear demonstration of their concerns they are willing to provide their names.

Mr. Tony Simmons's and Mr. William Bathgate's curricula vitae can be found in Appendix U.

From Mr. Tony Simmons

Mr. Simmons has worked with, inspected, and refused to certify ITRON Openway smart meters because of their design flaws.

> ***"I am a retired Electrical Engineer licensed in Nevada and California. I have 11 years' experience in electric utility meter operations. I have a BS degree in Electrical Engineering from the University of Nevada, Las Vegas."***
>
> ***"The problem is meters and sockets are NOT known to be properly protected with the correct fuse.***
>
> ***The three safety instructions below were copied from page 9 (19th page) of the ITRON manual and indirectly point out the problem.(see manual at http://www.stopsmartmetersbc.com/wp-content/uploads/2017/04/Itron-OpenWay-Riva-CENTRON-Singlephase-Electricity-Meter-Technical-Reference-Guide-Aug.15-2016.pdf)***
>
> ***All electrical equipment is expected to fail eventually. The question is not "does it create a hazard If it fails"; the question is "does it create a hazard when it fails". The answer depends on the rating of the fuse protecting the meter and socket.***
>
> ***The third instruction is most fundamental. ITRON acknowledges that meters may fail in a manner that could cause death, injury, or fire. Two ways to accomplish this are to restrict access to the meter or to instantaneously remove power when the meter fails. The first instruction is to use fuses. The second instruction is to not use the meter (as) a protective device – don't rely on the remote switch as a safety feature.***

(from the manual)

"All voltage paths (measurement and auxiliary) must be fused.

Do not use any meter functions or features for primary protection purposes.

Do not install the meter where failure of the device could cause death, injury or release sufficient energy to start a fire." (highlighting is mine)

Restricting access is impractical because customers have the right to read the meter and the meter is normally near main switch, which has to be "readily accessible" to first responders. The more practical solution is use the correct fuse to protect the meter and socket as ITRON indirectly instructs. This is where the electric utility industry went wrong. Big time. The utilities failed to perform the industry standard Protective Device Coordination Study. This study is also called the Short Circuit Coordination Study or mostly commonly, the coordination study.

The study is necessary anytime a question about fuse or circuit breaker size exists. There are several software packages that perform the calculations. The engineer can ask the meter manufacturer what is the recommended fuse or for the meter damage curve and then select the recommended fuse or a fuse based on the coordination study.

The utilities failure to check for the proper fuse was professional negligence in meter selection. The characteristic that some consider design flaws would not be an issue if the correct protection scheme were selected. I can design a meter socket that would survive any meter design. The meter cannot be blamed if used in the wrong application."

From Mr. William S. Bathgate

"I hold an electrical engineering and mechanical engineering degree and previously was employed through late 2016 for 8 years at the Emerson Electric Company. While at Emerson Electric I was the Senior

Program Manager for Power Distribution Systems and in charge of RF and IP based digitally controlled high power AC power switching system product lines in use in over 100 countries and I was also directly responsible for product certifications such as UL, CE, PSE and many other countries electrical certification bodies. I am very familiar with the electrical and electronic design of the AMI meters in use because I was responsible for very similar products with over 1 million units installed across the world. I have done this analysis due to my own curiosity without conflict of interest of this new technology."

From his Powerpoint presentation "Evaluation of the ITRON Open Way AMI meter" Dec. 2, 2016, slides 41 and 42 of 43, http://www.stopsmartmetersbc.com/wp-content/uploads/2017/02/Evaluation-of-the-ITRON-Open-Way-AMI-Meter-PowerPoint-by-William-S.-Bathgate-Jan.12-2017-.pdf

in which, after having inspected an ITRON Openway meter in detail, Mr. Bathgate concluded:

"After a hard look at the design and construction of this ITRON meter there are the following observations

- The biggest weakness is the power disconnect, it suffers from a small surface area for the disconnect contact and would be prone to excessive heating and likely result in contact pitting and carbon deposits that are not readily visible by the customer and there is not a sensory circuit that could detect it and report it to the customer or the utility. The design would be prone to creating unpredicted fires.

- The fact that there is a set of circuit boards in a power meter at all is a large risk. The circuit boards would not be able to withstand a lightning strike or a power surge without an explosive reaction and likely melting of the circuits. This would lead to total destruction of the unit and lead to a possible fire."

In conclusion Mr. Bathgate said:

"I currently have an Analog meter and will not give it up until they physically disconnect me at the pole. Based on my analysis I will never

let an ITRON meter on my home. Besides all the health issues, it is a major fire hazard. If I am forced to have a meter due to letter of occupancy issues with the local zoning board I will mount it exterior to the home with a power disconnect both coming into the meter and out of the meter."

It is BCUC's responsibility to immediately call for an independent investigation of the ITRON smart meter's design to determine if the flaws as identified in this report and the draft response of March 3, 2016 are valid. To do anything less will constitute harmful negligence in the highest degree.

BCUC'S FAILURE Point #3 -- failing to require BC Hydro to do its due diligence prior to, or even after, the installation of smart meters on homes

Whenever the purchase of a product or service is considered, it is the responsibility of any agency to consider if the benefits justify the costs and to determine if the product/service will be as promised. But when the product has the potential to cause harm, the due diligence process must determine if the product is safe beyond all doubt.

In the case of the ITRON smart meter, it appears that due diligence did not include BC Hydro's independent determination that the smart meters are safe, that they could not put lives and property at risk. And why didn't they? These meters had been in use in California for several years prior to the contract being finalized in 2010. Concerns were raised in California, Ontario, Texas and elsewhere about the design flaws that exist in all smart meters, and in ITRON smart meters specifically.

Over the last 5 years I have asked BC Hydro several times for proof that a professional electrical engineer had 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 allow full latitude for BC Hydro to put anything on our homes without ensuring safety.

Under the BC Utilities Commission Act, BCUC has the duty to ensure that the devices put on homes by any utility are safe. What has it done? Nothing, as far as can be determined.

Because I have found evidence that many meters have failed and burned, I continue to ask for evidence that BC Hydro has done its duty. BC Hydro fails to respond to FOI requests, providing information that does not apply and even misleading about the test data for a critical element of the meter – the remote disconnect switch which has been responsible for many fires in many jurisdictions. (Appendix V)

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 statement that the meters meet ANSI C12 standards. (reference 13)

According to several electrical engineers who are quite familiar with ANSI C12, this protocol pertains to accuracy and compatibility only – it does not confirm safety.

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 that are on our homes are not fire hazards**. This is negligence on the part of BC Hydro and I believe this calls for a full and complete recall of this device.**

Why didn't BCUC ensure that BC Hydro did its job, did its due diligence prior to installing these meters on our homes? Why, even after being given evidence that these meters are not safe and have major flaws, did BCUC fail to investigate the procedures taken by BC Hydro during its procurement period?

BCUC's FAILURE Point #4 -- failing to recall the smart meters when warranted under the Precautionary Principle

According to the BC Utilities Commission Act:

"**Commission may order improved service**

25 If the commission, after a hearing held on its own motion or on complaint, finds that the service of a public utility is unreasonable, unsafe, inadequate or unreasonably discriminatory, **the commission must**

(a) determine what is reasonable, safe, adequate and fair service, and

(b) order the utility to provide it."

Without question, the BCUC has the duty and responsibility, under law, to determine if service is being provided in a safe manner and, if it isn't, to order the problem to be fixed immediately.

After several years of receiving reports, evidence and documentation showing that smart meters are causing harm, the BCUC has done nothing.

The **Precautionary Principle** applies to new technology or new services and denotes a duty to prevent harm, when it is within an agency's power to do so, even when all the evidence is not in. The onus rightly is on the producer/provider to prove the product or technology is safe, rather than on the user to prove it is dangerous.

Certainly, with this report there is enough evidence that lives and property are being put at risk by these meters to warrant implementation of the Precautionary Principle. The Precautionary Principle requires that these meters be removed from homes.

BCUC'S FAILURE Point #5 -- refusing to coordinate with overlapping jurisdictions when shortcomings in reporting, tracking and monitoring were documented

In response to my formal complaint, BCUC acknowledged the existence of major gaps in reporting, tracking, and coordination of information, with no ramifications

for violations of current laws. This includes loopholes in the current legislation that allow BC Hydro liberties that result in unsafe products and practices.

A prime example is BC Safety Standards Act, Electrical Safety Regulation, sec. 21 (4) which says in part that a utility does not need to have its equipment certified by the CSA if a professional engineer has certified it is safe to use. Certified equipment will have a label or mark confirming this status.
http://www.bclaws.ca/civix/document/id/complete/statreg/100_2004#section21

This applies unless it doesn't! If a device or equipment is "not regulated", the Act does not apply. No proof of safety is required.

Sec. 21 (3) says --

"(3) Electrical equipment that does not require approval under the B.C. Electrical Code does not require a label or mark." Equipment not requiring certification by either CSA or a professional engineer is "not regulated."

According to the BC Safety Authority, smart meters fall into this category of not requiring certification by any body, agency, or professional engineer because it is "not regulated". By definition? By act of the government? We are not told why but rather have been told only that this is the way it is.

To summarize this loophole in the BC Safety Standards Act:

1) BC Hydro and FortisBC equipment does not have to be certified by CSA.

2) **Regulated** equipment owned by BC Hydro or FortisBC must be certified by a professional electrical engineer licensed in British Columbia.

3) **Unregulated** equipment owned by these utilities does not have to be certified by a professional electrical engineer.

4) According to BC Safety Authority and BC Hydro smart meters are unregulated equipment and, therefore, do not have to be certified by a professional engineer. Because they are owned by a utility, they do not have to be certified by CSA.

5) The purpose of certification is to ensure that an electrical product is safe.

6) **Therefore, smart meters have not been and, by law, do not need to have been, certified to be safe by any independent agency or professional engineer, resulting in potentially dangerous equipment on our homes that could lead to loss of life and property**.

Under the Utilities Commission Act, BCUC must ensure that equipment that is put on our homes, distributing electricity – an extremely dangerous product – is safe. BCUC has consistently taken the stance that it does not have jurisdiction to do anything regarding other agencies or legislation. If this is so, then what is the purpose of BCUC?

According to the BC Safety Authority the responsibility for ensuring that utilities provide service safely rests solely with BCUC and no one else.

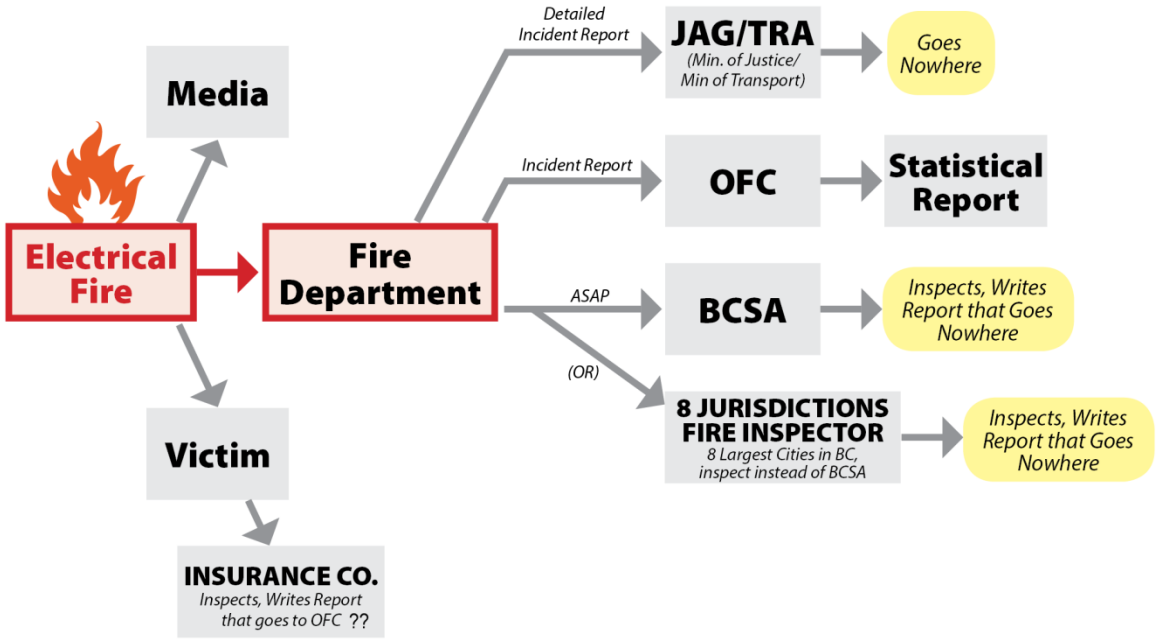
But BCUC argued that it lacks the legislative mandate to do anything and, instead, it was up to me to inform and work with the other agencies.

Without cooperation between and among the various agencies and jurisdictions, BCUC is unable to fulfill its duty to protect the public. Therefore, in order to fulfill its mandate, BCUC must take the initiative to require a full overhaul of the current system, which is obviously completely broken and unreliable.

In the documentation provided in this report and the various appendices there is more than enough evidence to prove that there is a major problem in the tracking and investigation of fires. The safety of British Columbians is being put at risk by this failure.

The BCUC knows about this problem. It would be irresponsible and potentially legally negligent for this Commission to continue to dismiss it or to fail to take action.

Here, in graphic form, is the current broken system that exists today in fire reporting:



The current system, as documented through this report, is dysfunctional.

- There is no central agency with oversight responsibility, no communications between and among the various bodies inspecting and reporting on fires.
- Valuable information is being gathered and filed away, serving no purpose.
- Reports that are shared cannot be verified to be correct or complete.
- Laws are being broken and disregarded without consequence.
- Dangerous products or services cannot be identified. Actions to protect the public cannot be initiated.

CONCLUSION:

Smart meters have caused fires in BC.

BC Utilities Commission is complicit in putting the lives of British Columbians and their property at risk.

BCUC has blundered by basing its conclusion that smart meters are safe on one imperfect source, a source that is academically substandard and error-prone, Len Garis's report.

BCUC has blundered by allowing and fostering an atmosphere in which such a substandard, inaccurate report could be produced, supporting its credibility, and, thereby, violating the first, and most important, condition of its mandate – to ensure the safety of the public.

BCUC has blundered by ignoring and failing to investigate evidence that has been provided by independent experts about the fire hazards posed by smart meters.

BCUC has blundered by allowing BC Hydro to fail in its duty to ensure the safety of its equipment that every home must have in order to have an essential service – electricity.

BCUC has blundered by allowing loopholes in regulations to exist for BC Hydro, loopholes that allow dangerous devices and practices to put lives at risk.

BCUC has blundered by refusing to coordinate with various agencies with overlapping jurisdictions to record and track electrical fires. The current system is profoundly chaotic and totally dysfunctional, preventing any identification of fire risks whether due to smart meters or otherwise.

For various reasons, no one is willing to rock the boat even if the status quo puts lives and property at risk. The government has decided every home will have a smart meter and no questions are being asked.

The systemic problems that exist, that I identified in my initial complaint, have been substantiated by this report and shown to be major, requiring immediate attention. I maintain my initial 4 recommendations are valid and must be

addressed – and the BCUC is the body that must take the initiative. Without so doing, it cannot fulfill its duty under the BC Utilities Commission Act – to ensure the service provided to the public is safe.

- Require that an immediate and complete investigation by independent qualified forensic experts of the safety of ITRON smart meters currently on homes in BC be undertaken.

- Establish one agency that has the responsibility for coordination of the various reporting agencies to ensure regulations are followed and that tracking/reporting of all fires are done as per those regulations.

- Establish meaningful penalties (e.g. firing) for those who disregard or allow others to disregard regulations, e.g. removing smart meters from the scene of an electrical incident before the scene has been corrupted.

- Amend the BC Electrical Safety Regulation which currently exempts utilities from any and all safety regulations, ensuring that any utility equipment that is put on private residences and businesses is certified by a qualified agency (CSA) or a professional electrical engineer licensed in BC.

Given the lack of oversight and due diligence by any of the agencies, it must be considered that other fire hazards might exist that are not being reported or addressed. The problems are systemic and are putting lives and property of British Columbians at risk. If it were not for members of the public who devoted much time and effort to investigating and documenting the problems, it is likely that they never would have come to attention. This failure must be investigated by an independent body with the authority to enforce recommended changes.

Last and foremost:

WHEN independent professional engineers licensed to work in British Columbia confirm that ITRON smart meters are capable of causing fires, these smart meters must be removed from homes as quickly as possible.

REFERENCES

#1

From: Anderson, Gordon A JAG:EX [mailto:Gordon.A.Anderson@gov.bc.ca]
Sent: April 7, 2015 1:34 PM
To: Dennis and Sharon Noble
Cc: Simpson, Farrah JAG:EX; Cooper, Robert JAG:EX
Subject: Meters removed from scene of fire prior to inspection being completed.

Dear Ms. Noble,

In response to your questions below I can share the following. I cannot comment on the specific incidents that you have cited, however it is up to each individual fire investigator to determine the handling of the scene and any potential evidence. It is not unusual for fire departments to call upon Hydro and/or BC Safety Authority for their investigative assistance when dealing with electrical type fires as most fire investigators do not have the specific knowledge and expertise in this area. The examination or removal of a meter for that purpose would be the call of the investigator at each scene depending on what he or she requires for their investigation.

The official fire reports to the OFC may include information about specific aspects of the actual fire investigation to the degree the submitting LAFC determines the relevance of that information. For example if the investigator is satisfied that the smart meter was not the cause of the fire then its status may not be discussed in the final report. This may be the case where either the cause is 'undetermined' or if for example, the point of origin is determined to be something other than the meter itself (e.g. meter base).

The OFC does not normally receive copies of the actual fire investigation, only the statistical reporting data which you have received in your requests for information. Any questions regarding investigative techniques or practices would have to be directed to the local fire authority or investigating LAFC for each specific incident.

Regards,

Gordon Anderson CFO, MIFireE
Fire Commissioner
Province of British Columbia
Block A - Suite 200
2261 Keating Cross Road
Victoria BC V8M 2A5 CANADA
Phone 250.952.5048 Fax 250.952.4888

#2

From: England, Elizabeth TRAN:EX [mailto:Elizabeth.England@gov.bc.ca]
Sent: August 9, 2016 3:36 PM **To:** 'Dennis and Sharon Noble' <dsnoble@shaw.ca>
Subject: RE: 259457 FW: Fire report request

Hi Sharon,
Our Fire Safety Advisor spoke with the Fire Chief in Enderby and while he did attend the fire, it was on Aboriginal Land. He was not required to submit a report to the Office of the Fire Commissioner.
Liz

#3

From: Nieman, Tammy-Lou JAG:EX [mailto:TammyLou.Nieman@gov.bc.ca]
Sent: September 26, 2014 1:39 PM
To: 'Dennis and Sharon Noble'
Cc: Simpson, Farrah JAG:EX
Subject: Fire Commissioner Request #6

Hello Sharon,
Some major fires may still be under investigation with either the fire department or the RCMP/police

I have a couple updates for you on this #6 request list.

Attached is a one page printout of the Fire Incident Report, which outlines the circumstances surrounding the fire incident:

6-2) DEL 2014 06 02 07 01. This material provides you with a summary of the noted incident and is in accordance with the Freedom of Information and Protection of Privacy Act.

6-1) This report was not submitted to our office, as it occurred on federal land.

A contact at DND Fire is: Michael McLean michael.mclean2@forces.gc.ca

Previously sent and completed:

6-3) CCQ 2014 04 21 05 02

The following reports are still not available on the Fire Reporting System at this time. We are following up with the fire departments to confirm attendance and investigation. Your request is on file and we will issue out the reports to you as soon as they are submitted to our office.

6-4) and
6-5)

Tammy-Lou J

Reference #4

Sent: Sunday, October 25, 2015 7:29:23 PM
Subject: Notes from discussion with fire inspector

Spoke with anonymous fire inspector:

Legally nothing is to be removed from the scene of a fire before inspector approves.

Hydro takes meters from fires all the time, always has. Takes them before cutting power at the pole. Often firemen left waiting for power to be cut so they can safely fight fire, not knowing the meter has been taken.

Fire Commissioner should be insisting this practice be stopped. He doesn't understand why it is allowed. I told him the Fire Commissioner initially told me meters were never removed before the inspector had a chance to inspect. When I quoted fire reports to the contrary, he said that the meters are "hydro's equipment" and therefore they have a right to take them.

It's against the law, but not being enforced. Why? He doesn't understand. Unable to determine possible involvement or actual cause of fires.

BC Safety Authority is the one to enforce but doesn't. I told him BCSA told me that they had been told not to get involved with smart meter program.

Firemen should be pushed to complain, to protect meter from Hydro so that it can be inspected.

Arcing on meter bases not uncommon.

From sloppy installation by corix?

From meter not fitting right?? I told him about the Texas brief. Will send him a copy.

I asked if there were a provincial or fed. union or group of inspectors who could raise as an issue. There is but they haven't broached this subject. He seemed interested in this idea.

Re. reports. He said fire inspector always files a report to the fire commissioner. Should be available via FOI.

Best info probably from fire dept. directly but they may not provide to me if they have heard that I am trying to "cause problems". Perhaps others could ask, people living in community.

Not aware that insurance reports not being filed. Thought they were required to do so.

Not aware that fire reports are not being filed. Thinks they are always done at the dept. level.

He said electrical devices always fail. Shouldn't have electrical meters. Suggested I get industry failure rate of electrical devices generally. Then get failure rate of ITRON meters. If higher, would be strong evidence that they could cause fires.

Concerned to hear that the meters are not CSA approved. Ask why more pressure isn't being put on CSA.

Suggested that people in Coalition should be putting pressure on the fire depts. in their areas to demand that the meters be left for the inspectors.

I told him about the Quebec firefighters asking for this. I told him that an anonymous fireman had told me that they were told to refer to Len Garis's report if they were asked about the smart meters.

Told him about Hydro returning meters to ITRON for replacement under warranty, They say they are not inspecting for damage or cause. In some cases Hydro has told firemen they are taking the meter to their labs to be inspected. But Powertech (Hydro's lab) told me they had never inspected a smeter.

He believes we have enough info for a court case.

Unless an inspector has definite proof of cause of fire he must say "undetermined." But in notes he might say suspects meter, or meter had been removed. Always files report. When I said I have seen few if any reports from fire inspector, he was surprised. Fire Commissioner has and I should be able to get via FOI.

Electrical distribution equipment on house involves meter. When I said many say electrical distribution equipment but cause unknown, he said this is probably because the meter was gone and therefore could not be inspected to determine definite cause. I told him Hydro refused to give info about the "equipment" that was involved, quoting FOIPPA, protecting 3rd party. He was upset that Hydro would use FOIPPA to protect ITRON.

He had read Len Garis's "study" for which he was paid $15,000 by Hydro, which was a summary of the fire commissioner's statistics, nothing else. Because few electrical fires reported à smart meters are safe. He thought the report was a total waste and found many things wrong with it. Surprised to hear that firemen and Hydro use it as a basis to assure people no fires had occurred.

I told him that there were other design flaws that had been identified, ones that could lead to fires or failures. He seemed unaware of this – saying he'd never been able to look at a smart meter.

Reference #5

#5

From: Roberts, Amanda JAG:EX [mailto:Amanda.Roberts@gov.bc.ca]
Sent: April 9, 2014 12:00 PM
To: 'Dennis and Sharon Noble' <dsnoble@shaw.ca>
Subject: Fire Report

Good afternoon Ms. Noble,
The event on August 1st, 2012 at 126 Aspen, Sparwood BC did not require a fire report to be made and submitted to the fire commissioner's office. This incident had no flames, no damage, and the fire department was there on standby as a precaution. If there is no flame, and little or no damage at an incident, no fire report is required.

Thank you,

Amanda Roberts
Fire Reporting Systems Officer
Emergency Management British Columbia

#6

From: Smart Meters [mailto:SmartMeters@bchydro.com]
Sent: January 27, 2015 2:09 PM
To: 'dsnoble@shaw.ca'
Subject: BC Hydro Smart Metering Program

Dear Ms. Noble,

BC Hydro acknowledges your December 18, 2014 regarding laboratories used by BC Hydro to investigate failed meters.

BC Hydro's smart meters are currently under warranty. On the rare occasion that a meter fails, BC Hydro sends the meter back to the manufacturer, Itron, and they are replaced free-of-charge. BC Hydro's smart meters are under warranty for 66 months from the date they leave the Itron factory.

Fires in British Columbia are investigated by the appropriate authorities and BC Hydro fully cooperates with these investigations as required. To date, no fire in B.C. has been attributed to BC Hydro's new meters.

In the event of a fire, if an electricity meter is not located near the area affected by the fire, BC Hydro may remove the meter for future use. In the event that a fire occurs in proximity to an electricity meter, the area would be secured by the fire inspector and BC Hydro would cooperate with their investigation fully.

Sincerely,

Fay

From: "Dennis and Sharon Noble" <dsnoble@shaw.ca>
To: "Smart Meters" <SmartMeters@bchydro.com>
Sent: Monday, December 1, 2014 7:44:42 PM
Subject: BC Hydro Smart Metering Program

Dear Fay,

Thank you for responding to my request. Could you please tell me then what laboratory does test smart meters? In several incidents BC Hydro has removed failed smart meters, telling inspectors that they were being sent to their laboratory to determine the reason for the failure.

All the best –

Sharon

From: Smart Meters [mailto:SmartMeters@bchydro.com]
Sent: December 1, 2014 10:22 AM
To: 'dsnoble@shaw.ca'
Subject: BC Hydro Smart Metering Program

Dear Ms. Noble,

BC Hydro acknowledges your November 4, 2014 email regarding the Smart Metering Program.

Powertech is a wholly owned subsidiary of BC Hydro. It is a multidisciplinary testing, research and development facility that supports the power utility industry, equipment manufactures and other industries such as automotive.

Powertech has not had a role in testing or investigating anything related to smart meters other than their telecom performance.

Warm regards,

Fay

#7

From: Smart Meters [mailto:SmartMeters@bchydro.com]
Sent: May 20, 2015 10:48 AM
To: 'dsnoble@shaw.ca'
Subject: BC Hydro Smart Metering Program

Dear Ms. Noble,

BC Hydro acknowledges your March 3, 2015 email regarding BC Hydro meters. I apologise for the delay replying.

As with any new electrical equipment, a small number of meters have stopped working due to component failures. This has always been the case with electrical equipment, including the digital meters BC Hydro used for over a decade.

These meters are currently being replaced under the manufacturer's warranty. They are returned to the meter manufacturer, Itron, and inspected and repaired. Itron then issues a report to BC Hydro explaining the failure.

As previously explained, in the event that a fire occurs in proximity to an electricity meter, the area would be secured by the fire inspector and BC Hydro would cooperate with their investigation fully. BC Hydro has no further information to share with you regarding the process of fire investigation in B.C.

Sincerely,

Fay

#8
From: Mark Guiton [mailto:Mark.Guiton@safetyauthority.ca]
Sent: September 22, 2016 9:03 AM
To: 'dsnoble@shaw.ca' <dsnoble@shaw.ca>
Cc: Sarb Dhut <Sarb.Dhut@safetyauthority.ca>
Subject: FW: Freedom of information request

Dear Ms. Noble,

Please find below our response to your latest series of inquiries. As you note there was a significant delay in responding, to avoid this in the future we are also setting out a process to ensure your inquiries are centrally managed which will also appropriately limit the strain on BCSA resources.

Single Point of Contact

To ensure that your inquiries are brought to the attention of the appropriate BCSA personnel in timely fashion, please do not send multiple inquiries to different individuals in the organization and instead send all requests or correspondence of any sort to this address:

Foi@safetyauthority.ca

Our Records, Information and Privacy Analyst can then determine whether the request requires processing under freedom of information or otherwise and involve the necessary personnel.

Please note that we will not respond to requests for information sent to other than this address, or to requests for information that have already been provided to you.

Categories of Requests

As you are aware, freedom of information laws require BCSA to process genuine requests for existing documents subject to certain limitations. In many cases however your requests are not for existing documents but rather advice or explanations, often relating to matters that are not administered by BCSA.

To balance your ongoing desire for information with our duty to allocate resources fairly across safety system participants, please take note of the following which takes immediate effect:

1. All requests for documents that fall within freedom of information will be processed accordingly. We note that the volume of requests has declined following your previous correspondence with Sarb Dhut and appreciate your focus on achieving this.

2. All requests which are beyond the scope of freedom of information will be processed, if resources allow, in accordance with our Release of Information for Use in Legal Proceedings policy as applicable, and subject to fees under the Electrical Fee Schedule

(both linked below for your convenience). Note these fees will apply regardless of whether your request is directly linked to ongoing litigation or other legal proceedings, and will be applied to other individuals that are reasonably determined by BCSA to be part of the Coalition to Stop Smart Meters or any group related in interest.

The applicable hourly rate (administrative, safety services or professional at the bottom of the schedule) will be determined by the nature of your request and the expertise required to answer. Any information requested within this category, to the extent BCSA is able to provide it, will be released to you upon payment of the invoice and no further requests will be processed while any invoice is outstanding.

http://www.safetyauthority.ca/sites/default/files/release_of_information_for_legal_proceedings-_policy_pol-3060-00.pdf

http://www.safetyauthority.ca/sites/default/files/electrical_fee_schedule_2016_-_2017_fsel-919-01.pdf

Response to Current Request

In the interests of fairness BCSA will not apply fees for the current request given that it has been outstanding for some time as you note. Going forward however this type of request does not seek documents in BCSA's possession or control and would accordingly be subject to the fees discussed above.

The response is: while BCSA may become aware of incidents investigated by fire authorities or local governments that administer the Electrical Safety Regulation in some cases, BCSA has no way of knowing to what extent these entities forward information and accordingly you are encouraged to pursue any requests directly with the investigating agency.

Going Forward

As mentioned above, we acknowledge your efforts to reduce the volume of requests but remain concerned that resources which are required to serve the safety needs of all British Columbians cannot be diverted to your interests. We will continue to work with you collaboratively as we have in the past subject to these limitations, however please be clear that nothing in this message prevents BCSA from re-evaluating its approach if the volume or nature of requests is considered to pose an undue burden on resources or is otherwise incompatible with our mandate to enhance public safety.

Regards,

Mark Guiton | Director, Legal Services

#9

Information Requests for Incidents Attended by the Surrey Fire Service –
City of Surrey:

- http://www.surrey.ca/city-services/14400.aspx
(....Fire Incident Investigation Reports and Photos (if applicable) $112.16 per incident - See more at: http://www.surrey.ca/city-services/14400.aspx#sthash.hLG28MYM.dpuf

#10

From: Simpson, Farrah JAG:EX [mailto:Farrah.Simpson@gov.bc.ca]
Sent: November 4, 2014 8:56 AM
To: 'Dennis and Sharon Noble' <dsnoble@shaw.ca>
Subject: RE: FOI information

Good Morning Sharon,

Apologies, I had a chance to ask our FOI analyst, I had just forgot to put it in writing to you.

To answer your question, Insurance Reports are 'FOI 'able', therefore you would have to put through a formal request to be submitted to Government's Information Access Operations at the following email address: FOI.Requests@gov.bc.ca.

I hope this is helpful to you, have a great day!

Farrah Simpson
Fire Reporting Officer | Office of the Fire Commissioner

#11

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: March 12, 2015 11:31 AM
To: 'Complaints BCUC:EX'; 'Commission Secretary BCUC:EX'
Cc: John Horgan. Leader NDP; 'Dix, Adrian'; 'Holman.MLA, Gary'; 'Shin, Jane Jae Kyung'; 'maurine.karagianis.mla@leg.bc.ca'; CKNW Mike Smyth (msmyth@theprovince.com)
Subject: BC Hydro refuses to provide answers re. failed meters. FINISH

Dear Mr. Wruck,

Re: Basis for BCUC's refusal to investigate charges of smart meters posing fire risk.

Thank you for your response, but I wasn't advising you that I am having difficulty with a Freedom of Information request. I was alerting the BCUC, as the agency responsible for protecting us against abuse or endangerment by BC Hydro, that regulations are being broken that could lead (and perhaps have led) to lives and property being put at risk.

I also wanted you to know that BC Hydro is misleading the public when it says that no smart meter has failed or has been associated with a fire. In the past, when I've sent you evidence that no one is tracking fires, you responded that under Directive 4 the BCUC is forbidden from performing its duty should it, by so doing, interfere with the smart meter program..

You now know that no one is inspecting failed meters. This is clearly an attempt for BC Hydro to say that there is no evidence that a smart meter has failed. "If you don't look, you won't find."

I believe that the BCUC can no longer ignore its responsibility under the BC Utilities Commission Act, paramount of which is to protect the public. I would appreciate a statement explaining the basis, under law, for BCUC's refusal to investigate the charges that I am making.

Regards,

Sharon Noble

From: Complaints BCUC:EX [mailto:Complaints@bcuc.com]
Sent: March 17, 2015 1:29 PM
To: 'Dennis and Sharon Noble'
Subject: BC Hydro refuses to provide answers re. failed meters.

Dear Ms. Noble,

Your concerns related to smart meters cannot be dealt with by the Commission as these matters are outside of the jurisdiction of the Commission. This is the case

because the Commission is not authorized to interfere with the smart meter program in accordance with the *Clean Energy Act* (section 7).

For more information, the *Clean Energy Act* is available online at:https://www.leg.bc.ca/39th2nd/1st_read/gov17-1.htm

I understand you have concerns about this program, however, in accordance with the *Clean Energy Act*, the Commission does not have the authority to take any action to intervene in BC Hydro's smart meter program.

As there is no further information to provide regarding your concerns about smart meters, no further correspondence will be provided to you.

Regards,

Patrick Wruck

Customer Relations Analyst

British Columbia Utilities Commission

#12

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: December 18, 2015 11:37 AM
To: 'Complaints BCUC:EX' <Complaints@bcuc.com>
Cc: 'Commission Secretary BCUC:EX' <Commission.Secretary@bcuc.com>
Subject: RE: Smart meter fire

Dear Mr. Wruck,

I now have more information for you and your staff to consider regarding smart meters as fire hazards.

Underwriters Laboratory, an agency that certifies electronics as I am sure you know, now acknowledges that smart meters have design flaws that raise serious concerns about their being fire hazards. As well, UL states that utilities and manufacturers know about this.

"… design flaws in smart meter units have been known to cause serious fire hazards and spotty performance. This has caused a lot of concern for utilities and manufacturers of smart meters."

http://www.metlabs.com/blog/meters/new-ul-2735-electric-utility-meter-standard-ensures-safety-and-performance/

It is doubtful that the “voluntary” certification will address all of the fire-causing features of these devices which are mandated by the BC Liberals for every home and business. For example, legal testimony in Texas stated that the smart meters do not fit properly into the meter base, a base that was certified to hold an analog and nothing else. The smart meters’ blades leave a gap which causes arcing and fires.

“Childers explained that part of the problem was a loose connection between the meter and the meter base because the smart meters had thinner "blades" than the previous analog meters. (JD slip op. at 12, LL 36-38; Tr. 265, LL. 3-6). Childers told Reed that the loose connection caused heat, which, in turn, caused an electrical arc, which resulted in "two pallets of burned up meters" in CenterPoint's meter shop. (Tr. 265, LL. 13-22).”
(http://www.stopsmartmetersbc.com/wp-content/uploads/2015/05/Reed_Answering_Brief-1.pdf pg. 8)

The meters used by Houston’s CenterPoint Utility are the very same model, ITRON Openway, used by BC Hydro and FortisBC.
(https://www.itron.com/na/newsAndEvents/Pages/CenterPoint-Energy-Completes-Itron-Smart-Meter-Roll-Out.aspx

I am not suggesting or asking that BC Hydro submit the ITRON meters to UL for certification because that would not prove anything, or ease my concerns. After several fires and failures of Sensus meters, Saskatchewan authorities submitted their meters to UL and they were certified to be safe. This seems very odd given the fact the meters were being recalled because they had proven to be unsafe. It would appear that UL is applying standards that are not adequate or applicable to smart meters. This in no way invalidates their contention that smart meters pose fire hazards.

Rather, I am submitting this information to BCUC as yet another piece of evidence to support my contention that these meters are defective and should be recalled.

I look forward to receiving your response.

Happy holidays.

Sincerely,

Sharon Noble

#13

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: June 14, 2017 9:22 PM
To: 'Macdonald, Scott' <Scott.MacDonald@bchydro.com>
Cc: 'Stewart, Bob' <Bob.Stewart@bchydro.com>
Subject: Noble S. (June) RE: Question re certification

Dear Mr. Macdonald,

I am requesting, via a Freedom of Information request, a copy of the documentation that was sent to BC Hydro prior to contracting with ITRON, with the name of the professional engineers at ITRON and BC Hydro who verified that the meters were safe to install on homes,

Thank you.

Regards,
Sharon Noble

From: Customer, Relations [mailto:customer.relations@bchydro.com]
Sent: Friday, June 9, 2017 9:05 AM
To: dsnoble@shaw.ca
Cc: Customer, Relations <customer.relations@bchydro.com>
Subject: Noble S. (June) RE: Question re certification

Dear Ms. Noble,

Thanks for your emails to Mr. Stewart regarding the BC Hydro Itron smart meters which has been forwarded to me for response. I apologize for the delay.

Meters are required to be in accordance with ANSI C12 series of standards which is the industry standard for quality control and electrical safety. Documents demonstrating compliance certified by a professional engineer were provided by Itron to BC Hydro. A BC Hydro engineer assessed the documents and verified their compliance to the standards.

Sincerely,

Pattie Fromyhr
BC Hydro Customer Relations

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: 2017, May 31 1:04 PM
To: Stewart, Bob
Subject: RE: Question re certification.

Dear Mr. Stewart,

It is now 2 ½ months since my initial request which, on the surface, seems to be such an easy one to answer.

I realize, Mr. Stewart, that this is not your area of responsibility, so could you please tell me to whom I address my consternation at not being able to even find out if at any point in time some independent electrical engineer inspected the ITRON smart meter and found it to be safe?

Thank you for your assistance and patience.

Regards,
Sharon Noble

From: Stewart, Bob [mailto:Bob.Stewart@bchydro.com]
Sent: April 4, 2017 8:02 AM
To: Dennis and Sharon Noble <dsnoble@shaw.ca>
Cc: Stewart, Bob <Bob.Stewart@bchydro.com>
Subject: RE: Question re certification.

Mrs. Noble: All I know is that my colleagues in the Smart Metering area are working on several quests like yours and that they are awaiting input from others. Please be patient. RPS

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: 2017, March 31 10:33 AM
To: Stewart, Bob
Subject: RE: Question re certification.

Dear Mr. Stewart,

Could you please tell me if you have been able to get an update?

Thank you.

Regards,
Sharon Noble

From: Stewart, Bob [mailto:Bob.Stewart@bchydro.com]
Sent: March 28, 2017 10:15 AM
To: Dennis and Sharon Noble <dsnoble@shaw.ca>
Cc: Stewart, Bob <Bob.Stewart@bchydro.com>
Subject: RE: Question re certification.

Dear Mrs. Noble: I will ask for an update. RPS

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: 2017, March 28 9:48 AM
To: Stewart, Bob
Subject: RE: Question re certification.

Dear Mr. Stewart,

Could you please tell me when I might hear from the person who can answer my questions about smart meter safety sign-off?

Thank you.

Regards,
Sharon Noble

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: March 20, 2017 12:44 PM
To: 'Stewart, Bob' <Bob.Stewart@bchydro.com>
Subject: RE: Question re certification.

Dear Mr. Stewart,

Thank you for your very prompt response and for your offer to find someone who can answer my questions. I look forward to hearing from this person.

Regards,
Sharon Noble

From: Stewart, Bob [mailto:Bob.Stewart@bchydro.com]
Sent: March 20, 2017 9:23 AM
To: Dennis and Sharon Noble <dsnoble@shaw.ca>
Cc: Stewart, Bob <Bob.Stewart@bchydro.com>
Subject: RE: Question re certification.

Dear Mrs. Noble:

Thank for the email on BC Hydro's Smart Meters. This equipment is outside of my field of expertise and therefore I have not been involved with it. I will find you a contact person to address your concerns. RPS

Bob Stewart, P. Eng.
Principal Electrical Engieer
Generation Engineering

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: 2017, March 19 5:29 PM
To: Stewart, Bob
Subject: Question re certification.

Dear Mr. Stewart,

I am writing to you as one of the, if not the, chief electrical engineer at BC Hydro.

An electrical engineer who works for a major utility in the US told me that as part of the due diligence process, all equipment is inspected prior to procurement to ensure that it will do all that it is supposed to do and will do it safely. It was this engineer's job to "certify" the safety of equipment, and he told me that he believed that all utilities would have someone in a similar position to do this job.

Mr. Stewart, could you please tell me if you inspected the ITRON smart meter on behalf of BC Hydro before the contract was finalized? If you didn't, could you please tell me who did? If you did, could you please tell me if you certified that these meters were safe and would not pose a risk of fire to BC Hydro customers?

Thank you very much for your time and for any information you are able to provide.

Regards,
Sharon Noble

APPENDIX A

INITIAL COMPLAINT JULY 2015

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: July 16, 2015 6:09 PM
To: 'complaints@bcuc.com' <complaints@bcuc.com>; 'commission.secretary@bcuc.com' <commission.secretary@bcuc.com>
Subject: BCUC's responsibility re. safety -- incidents.
Importance: High

Dear Mr. Wruck,

Thank you for your response of July 14, 2015.

I agree that Fortis acknowledged that fires had been associated with poor installation practice and determined to address this. I would note that no such discussion took place with regard to BC Hydro's program. Damages did occur due to the fact that Corix installers were poorly/inadequately trained.

But during the Fortis application process there was no debate about the fact that the smart meters have design flaws and that they were being installed into a meter base that was designed, tested and certified to hold an analog -- not a digital or smart meter. This area was neglected even though ITRON had experienced many failures in years prior to Fortis (or BC Hydro) having signed any contract. It would appear that either ITRON mislead those attempting to perform due diligence, or efforts to ensure the smart meters were safe fell short.

There have been quite a few incidents of burned, melted, or failed meters. Because BC Hydro often removes the meter (or what is left of it) from the scene of the fire before an investigation can be completed, evidence is difficult to obtain. Despite this I have obtained evidence and below are some examples. I believe these are sufficient to demonstrate that these meters are dangerous and to warrant the BCUC's attention because lives are being put at risk.

1) Images 1 and 3 burned meter from 1240 Glen Abbey Dr, Burnaby, BC V5A 3Y4 Jan. 2015

2) Image 2c and 3595 Triumph melted meter from 3595 Triumph St., Vancouver, BC V5K 1V2 Nov. 2014

3) Images 2781, 2777 and 2774 burned meter from 256 45th Ave. W., Vancouver Oct. 2014

4) Photos 2 and 3 burned meter from 1108 Duchman Dr., Revelstoke, May, 2014

5) FOI #2014-188 from BC Safety Authority regarding a fire in the meter base at 3466 Darwin, Coquitlam, Aug. 2012. BC Hydro paid for repairs.

6) http://www.cloverdalereporter.com/news/176510271.html No reports have been filed to BC Safety Authority even though electricians are required to do so about any such event. BC Hydro refuses to provide the trouble report about this incident even though I provided the owner's name, address and date. They claimed that the Freedom of Information and Privacy Act allows them to refuse to divulge this information based on "third party privacy". I spoke with the owner and he had been told it fault of the meter base which is his responsibility. BC Hydro did not include this on their annual "incident report".

Mr. Wruck, will you please confirm that BCUC will complete a thorough investigation into the safety of these meters, both in British Columbia and elsewhere? If these meters are causing fires in Texas, Ontario and California, this is reason enough to determine that these meters are defective and should not be on homes in BC.

There are other design flaws in addition to the lack of compatibility of the meter base that cause these devices to pose serious fire hazards. If you would like information about these features, please let me know.

Regards,
Sharon Noble

From: Complaints BCUC:EX [mailto:Complaints@bcuc.com]
Sent: July 14, 2015 1:52 PM
To: 'Dennis and Sharon Noble'
Subject: RE: BCUC's responsibility re safety.

Dear Ms. Noble,

Thank you for your email to the BC Utilities Commission regarding your concerns about the safety of BC Hydro's Smart Metering Program.

While the Commission has not had any involvement in the planning or implementation of the Smart Metering Program due to the *Clean Energy Act*, the Commission does have general supervision of all public utilities including safety. Accordingly, if we receive a complaint, with evidence about an actual safety incident, Commission staff or the Commission may investigate the incident. However, without evidence of an actual incident the Commission has no reason to undertake an investigation.

In your email you state that "the ITRON Openway meter has design flaws that can cause and has caused fires" and you provide a legal brief from Texas regarding this matter. However, you have not provided any evidence of an actual incident; therefore no investigation will be undertaken at this time.

Regarding your concern that the risk of fires was not considered during the FortisBC hearing, please note this issue was discussed and the Commission found "there is a low-risk of fires

resulting from installation of the new meters" (please refer to pages 143-145 of the decision for more information about fire risks. The decision is available here: ***_Decision**).

Thank you for contacting the Commission.

Regards,

Patrick Wruck
Customer Relations Analyst
British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, B.C. V6Z 2N3
Website: www.bcuc.com
Phone: 604.660.4700 | Fax: 604.660.1102 | Toll Free: 1.800.663.1385

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: Monday, July 13, 2015 11:33 PM
To: Wruck, Patrick BCUC:EX; Commission Secretary BCUC:EX
Subject: BCUC's responsibility re safety.

Dear Mr. Wruck and Secretary Hamilton,

Attached is a form letter that has been sent to many people who have raised concerns about various aspects of BC Hydro's and Fortis BC's smart meter program. I would appreciate having some clarification please.

I am fully aware that the Clean Energy Act says that the BCUC cannot interfere with any aspect of BC Hydro's smart meter program. Could you please tell me if that includes where the safety of the public is directly involved?

With reference to concerns about Fortis BC's program, you, Mr. Wruck, have stated that BCUC has determined the meters to be safe. Never was the fire issue discussed or investigated during the application process. At the time, we didn't realize that that there were many design flaws that caused the smart meters to pose a fire hazard.

According to the BC Utilities Commission Act, a major duty of the Commission is to safeguard the public's safety and to ensure that service is provided in a safe manner.

General supervision of public utilities

23 (1) The commission has general supervision of all public utilities and may make orders about

(a) equipment,

(b) appliances,

(c) safety devices,

(d) extension of works or systems,

(e) filing of rate schedules,

(f) reporting, and

(g) other matters it considers necessary or advisable for

(i) the safety, convenience or service of the public, or

(ii) the proper carrying out of this Act or of a contract, charter or franchise involving use of public property or rights.

(2) Subject to this Act, the commission may make regulations requiring a public utility to conduct its operations in a way that does not unnecessarily interfere with, or cause unnecessary damage or inconvenience to, the public.

Public utility must provide service

38 A public utility must

(a) provide, and

(b) maintain its property and equipment in a condition to enable it to provide,

a service to the public that the commission considers is in all respects adequate, safe, efficient, just and reasonable.

Independent evidence is available that confirms that the ITRON Openway meter has design flaws that can cause and has caused fires. A legal brief from Texas is attached. Testimony in the brief states ITRON Openway meters used by Centerpoint Energy in Houston, the very same

model being used by BC Hydro and Fortis BC, have failed in large numbers. I refer you specifically to the following statements and pages:

1) Those testifying had confirmed fires and failures with other linesmen and trouble-shooters prior to making the statements. Pg. 25

2) The linesmen reported that the utility had “two pallets of burned up (Itron) meters”. Pg. 8

3) The linesmen reported problems with “meters’ communication with the remote site control and many issues with meters melting and burning up.” Pg. 8

4) Linesmen determined that “part of the problem was a loose connection between the meter and the meter base because the smart meters had thinner "blades" than the previous analog meters” (emphasis added) Pg. 8 This gap could cause arcing leading to fires.

5) Concerns were raised about the ITRON smart meters “creating arc flashes, which could burn the customers’ wiring and create ‘hazardous conditions.’ …These hazardous conditions include potentially causing arc flashes, which could result in anything from minor to third degree burns to technicians who remove the meters.” Pg. 8

6) An experienced trouble-shooter for a utility reported that he had “responded to more fire calls once the smart meters were deployed and these often involved heating problems at the meter base.” Pg. 13

7) “ Reed's testimony concerned products used by Respondent. Landis + Gyr is the manufacturer of the AMS meter used by Respondent and Itron is the manufacturer of he meters used by CenterPoint Energy in Houston.” Pg. 25

#4 is particularly relevant because the meter bases on our homes were designed, tested and certified to be used only with an analog meter, and nothing else. Despite many requests, no certification by a professional electrical engineer licensed in BC has been made available. Such certification would confirm the meter bases to be compatible with the smart meters (or digital meters) and the meters themselves to be safe. We have been told by BC Hydro that there is no certification document, as is required by the BC Electrical Safety Standards Act.

Can you please confirm for me that the Clean Energy Act and Direction 4 preclude the BCUC from taking action even where lives and property of British Columbians are concerned because the equipment being used by BC Hydro is unsafe?

Can you please explain why the BCUC is not taking action with regard to Fortis BC’s smart meters?

Thank you for your time.

APPENDIX B

Response to BCUC Draft Response to my Complaint

March 4, 2916

Dear Mr. Wruck,

Re: Meter Safety Jurisdiction Draft Report BCUC

I would like to thank the BCUC for considering my complaint and for allowing me the opportunity to comment on this draft report.

Because of the importance of this and with your agreement, I have asked 3 professional engineers (one of whom is retired) to provide comments on the technical aspects. Their comments are included in the report in highlighted yellow. As well they have submitted their comments in a separate document which they call Exhibit A.

My comments (in red) are based on information relating to more than 100 incidents that I have gathered over the last 2-3 years from several government agencies including the Fire Commissioner's office, the Ministry of Justice and Attorney General (who maintains information that is supplementary to the Fire Report submitted by the local fire authorities), BC Hydro, local fire authorities, the BC Safety Authority and others. Because this information has been requested on more or less a random basis, I believe the problems I identify in the draft demonstrate the need for a serious review of the various reporting systems that are maintained to ensure the safety of the BC public in general.

This draft report is certainly a mixed bag. It encompasses admissions that are warranted - along with conclusions that are not. The admissions are long in coming. The conclusions are based on no evidence at all or, at times, on evidence that is weak, controversial or even contradictory.

What follows is a detailed analysis of this draft report in which the points above will be developed, perhaps more than was anticipated. There will be no reliance on evidence that is faith-based.

Much of the evidence that BCUC has relied on in this draft report comes from Len Garis's fire report. That is an unfortunate dependence. Garis's report suffers from a lack of objectivity as well as incomplete and poorly researched data, and arrives at conclusions based on insufficient and questionable evidence. The BCUC must be aware of the severe limitations of this study and yet, by depending on it, gives it credence it obviously doesn't deserve. The inadequacies of the Garis report will be

made manifest in my comments.

A significant failing that is obvious in the BCUC draft report is the absence of a competent independent authority determining whether the smart meters placed on the walls of our homes are safe. That shortcoming has been addressed by the 3 independent engineers who have provided commentary on the significant design flaws and other problems inherent in the digital (electronic) meters that are being installed under the BC Hydro Smart Meter Program.

As for the rest, comments, some quite detailed, are inserted into the text of the draft report to ensure that claims and counterclaims are easily distinguished and contrasted.

My summary of the draft is that the system is fraught with problems:

- There is no overall authority responsible to ensure that information is accurate and complete, and is gathered and reported consistently in a timely manner.
- There are regulations that are illogical and inadequate, e.g. allowing a utility's electrical equipment that is put on homes to be exempted from the BC Electrical Standards Act.
- Regulations that do pertain to BC Hydro and its equipment are not being enforced, e.g. the removal of smart meters from the fire scene before the fire inspector has been able to complete his investigation.
- There is absolutely no basis for the conclusion that there have been no fires or serious incidents involving smart meters. Rather there is evidence to the contrary which, inexplicably, is being disregarded.

I submit these comments, many of which are premised on information that I have circulated widely over the last 2-3 years, and look forward to being able to share the completed document with the many thousands of members of the Coalition.

Sincerely,

Sharon Noble

2) Image 2c and 3595 Triumph melted meter from 3595 Triumph St., Vancouver, BC V5K 1V2 Nov. 2014

3) Images 2781, 2777 and 2774 burned meter from 256 45th Ave. W., Vancouver Oct. 2014

4) Photos 2 and 3 burned meter from 1108 Duchman Dr., Revelstoke, May, 2014

5) FOI #2014-188 from BC Safety Authority regarding a fire in the meter base at 3466 Darwin, Coquitlam, Aug. 2012. BC Hydro paid for repairs.

6) http://www.cloverdalereporter.com/news/176510271.html No reports have been filed to BC Safety Authority even though electricians are required to do so about any such event. BC Hydro refuses to provide the trouble report about this incident even though I provided the owner's name, address and date. They claimed that the Freedom of Information and Privacy Act allows them to refuse to divulge this information based on "third party privacy". I spoke with the owner and he had been told it fault of the meter base which is his responsibility. BC Hydro did not include this on their annual "incident report".

Mr. Wruck, will you please confirm that BCUC will complete a thorough investigation into the safety of these meters, both in British Columbia and elsewhere? If these meters are causing fires in Texas, Ontario and California, this is reason enough to determine that these meters are defective and should not be on homes in BC.

There are other design flaws in addition to the lack of compatibility of the meter base that cause these devices to pose serious fire hazards. If you would like information about these features, please let me know.

Regards,

Sharon Noble

From: Complaints BCUC:EX [mailto:Complaints@bcuc.com]

Sent: July 14, 2015 1:52 PM
To: 'Dennis and Sharon Noble'
Subject: RE: BCUC's responsibility re safety.

Dear Ms. Noble,

Thank you for your email to the BC Utilities Commission regarding your concerns about the safety of BC Hydro's Smart Metering Program.

While the Commission has not had any involvement in the planning or implementation of the Smart Metering Program due to the *Clean Energy Act,* the Commission does have general supervision of all public utilities including safety. Accordingly, if we receive a complaint, with evidence about an actual safety incident, Commission staff or the Commission may investigate the incident. However, without evidence of an actual incident the Commission has no reason to undertake an investigation.

In your email you state that "the ITRON Openway meter has design flaws that can cause and has caused fires" and you provide a legal brief from Texas regarding this matter. However, you have not provided any evidence of an actual incident; therefore no investigation will be undertaken at this time.

Regarding your concern that the risk of fires was not considered during the FortisBC hearing, please note this issue was discussed and the Commission found "there is a low-risk of fires resulting from installation of the new meters" (please refer to pages 143-145 of the decision for more information about fire risks. The decision is available here: *** Decision**).

Thank you for contacting the Commission.

Regards,

Patrick Wruck

Customer Relations Analyst

British Columbia Utilities Commission

6th Floor, 900 Howe Street

Vancouver, B.C. V6Z 2N3

Website: www.bcuc.com

Phone: 604.660.4700 | Fax: 604.660.1102 | Toll Free: 1.800.663.1385

P Please consider the environment before printing this email.

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: Monday, July 13, 2015 11:33 PM
To: Wruck, Patrick BCUC:EX; Commission Secretary BCUC:EX
Subject: BCUC's responsibility re safety.

Dear Mr. Wruck and Secretary Hamilton,

Attached is a form letter that has been sent to many people who have raised concerns about various aspects of BC Hydro's and Fortis BC's smart meter program. I would appreciate having some clarification please.

I am fully aware that the Clean Energy Act says that the BCUC cannot interfere with any aspect of BC Hydro's smart meter program. Could you please tell me if that includes where the safety of the public is directly involved?

With reference to concerns about Fortis BC's program, you, Mr. Wruck, have stated that BCUC has determined the meters to be safe. Never was the fire issue discussed or investigated during the application process. At the time, we didn't realize that that there were many design flaws that caused the smart meters to pose a fire hazard.

According to the BC Utilities Commission Act, a major duty of the Commission is to safeguard the public's safety and to ensure that service is provided in a safe manner.

General supervision of public utilities

23 (1) The commission has general supervision of all public utilities and may make orders about

(a) equipment,

(b) appliances,

(c) safety devices,

(d) extension of works or systems,

(e) filing of rate schedules,

(f) reporting, and

(g) other matters it considers necessary or advisable for

(i) the safety, convenience or service of the public, or

(ii) the proper carrying out of this Act or of a contract, charter or franchise involving use of public property or rights.

(2) Subject to this Act, the commission may make regulations requiring a public utility to conduct its operations in a way that does not unnecessarily interfere with, or cause unnecessary damage or inconvenience to, the public.

Public utility must provide service

38 A public utility must

(a) provide, and

(b) maintain its property and equipment in a condition to enable it to provide,

a service to the public that the commission considers is in all respects adequate, safe, efficient, just and reasonable.

Independent evidence is available that confirms that the ITRON Openway meter has design flaws that can

cause and has caused fires. A legal brief from Texas is attached. Testimony in the brief states ITRON Openway meters used by Centerpoint Energy in Houston, the very same model being used by BC Hydro and Fortis BC, have failed in large numbers. I refer you specifically to the following statements and pages:

1) Those testifying had confirmed fires and failures with other linesmen and trouble-shooters prior to making the statements. Pg. 25

2) The linesmen reported that the utility had “two pallets of burned up (Itron) meters”. Pg. 8

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many requests, no certification by a professional electrical engineer licensed in BC has been made available. Such certification would confirm the meter bases to be compatible with the smart meters (or digital meters) and the meters themselves to be safe. We have been told by BC Hydro that there is no certification document, as is required by the BC Electrical Safety Standards Act.

Can you please confirm for me that the Clean Energy Act and Direction 4 preclude the BCUC from taking action even where lives and property of British Columbians are concerned because the equipment being used by BC Hydro is unsafe?

Can you please explain why the BCUC is not taking action with regard to Fortis BC's smart meters?

Thank you for your time.

Sincerely,

Sharon Noble

made manifest in my comments.

A significant failing that is obvious in the BCUC draft report is the absence of a competent independent authority determining whether the smart meters placed on the walls of our homes are safe. That shortcoming has been addressed by the 3 independent engineers who have provided commentary on the significant design flaws and other problems inherent in the digital (electronic) meters that are being installed under the BC Hydro Smart Meter Program.

As for the rest, comments, some quite detailed, are inserted into the text of the draft report to ensure that claims and counterclaims are easily distinguished and contrasted.

My summary of the draft is that the system is fraught with problems:

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> There are regulations that are illogical and inadequate, e.g. allowing a utility's electrical equipment that is put on homes to be exempted from the BC Electrical Standards Act.
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> There is absolutely no basis for the conclusion that there have been no fires or serious incidents involving smart meters. Rather there is evidence to the contrary which, inexplicably, is being disregarded.

I submit these comments, many of which are premised on information that I have circulated widely over the last 2-3 years, and look forward to being able to share the completed document with the many thousands of members of the Coalition.

Sincerely,

Sharon Noble

RESPONSE TO "BCUC's Staff Report on Smart Meter Fire Safety Concerns"

KEY: **Green Text = Qualified Independent Experts' Observations** **Red Text = Sharon Noble's Comments**

Introduction

On July 13, 2015, the British Columbia Utilities Commission (BCUC) received a complaint from a concerned citizen with regards to safety concerns with smart meters supplemented by evidence of fires and thermal incidents originating in the vicinity of recently installed smart meters. A staff investigation into the complaint was initiated as the BCUC is mandated to provide general supervision of provincial public utilities including the oversight of equipment and public safety1 pursuant to the Utilities Commission Act. The smart meter safety concerns addressed in the investigation are summarized in three categories; the potential fire hazard of smart meters, the adequacy of investigation and tracking of smart meter related incidents and the certification of smart meters in British Columbia (BC)

(please provide a list of the qualifications and experience levels of the BCUC staff, and if B.C. Professional Engineers were part of the investigation, since the topics and the investigation would fall within the definition of Engineering.)

Note that this BCUC investigation appears to be the FIRST review of smart meter system safety.

A preamble paragraph is required: "The original mandate to the BCUC from the *Utilities Commission Act* was responsibility for the safety oversight of the Utilities. When the CEA was passed and the Orders-in-Council issued, the BCUC stepped back from its monitoring task of the Utilities. The Smart meter implementation program therefore lacked an active oversight by the BCUC throughout its schedule, from planning through installation and operation. The minimal role was demonstrated by BCUC responses to complaints as being a semi-passive role which appeared to take BC Hydro data at face value. This role did not include the verification by the BCUC of the veracity of data supplied by the Utilities, since there does not appear to be a mechanism, nor the skills, and this resulted in an acceptance of that data from the Utilities at face value. This is an important issue, since the Public perception is that the BCUC is "monitoring" the Utilities at a detailed level.

Is the BCUC not in a Conflict of Interest when it examines possible failings in the process for which is has responsibility?

This Review needs to be conducted by an independent organization.

BCUC staff conducted the investigation based on the information provided by the complainant and sought further information from BC Hydro, FortisBC, the BC Safety Authority, the Office of the Fire Commissioner and other sources including the Canadian Standards Association (CSA) and publicly available literature and reports. Staff also reviewed the statutory framework governing the entities involved with the installation, incident investigation and safety oversight of smart meters. This draft report constitutes the preliminary findings of BCUC staff.

Electrical engineers and experts in fire forensics need to be involved.

BCUC staff will seek comments from the parties involved in this investigation to ensure that relevant information is not missing and that the information presented in this report is accurate.

Comment: Emails and telephone calls have been exchanged with the CSA in Ontario from December 2013 onwards regarding the meter base, and the disconnect switch. Note that the BCUC "...sought further information from....the CSA." Did the CSA share any of previous concerns with the BCUC?

Investigation Scope

The scope of the investigation, a culmination of allegations made by a concerned citizen, is detailed below.

This investigation addresses the following questions concerning the fire hazard potential of smart meters:

1) Are smart meters compatible with the meter sockets[2] into which they are plugged? Do smart meters have thinner blades than legacy meters?

Comments: The later reference on Page 5 to CSA standard describing compatibility does not mention the meter "stabs" and whether there is adequate quality control or quality assurance during the design, manufacture, testing and installation of the meter and the meter stabs, e.g. Texas Court Case. A serious random check of the meter and the stabs may well have discovered discrepancies. These tests which do not appear to have taken place in Texas, seem to point to delegation of task with limited verification by the Utilities. What is meant by 'legacy' needs to be clarified. In this report it's being used as a synonym for 'analog', which implies non-combustibility, whereas in the Tariff 'legacy' includes first generation 'non-smart' digital meters which are combustible. The two meter categories being considered when investigating fire safety should be 'incombustible' (analog or electro-mechanical) and 'combustible (digital or electronic).

2) Do smart meters have design flaws which result in meters being a fire hazard?

Among other issues, the BCUC questions and answers do not address the design, testing, certification and the operation nor the legality of the meter's built-in disconnect switch. It is being used by the Utilities as a "Service Disconnect Device" at the Customer Service Point, and therefore it must satisfy the all of the Code requirements for such a device. I suspect that the switch will more often be a point of catastrophic failure because of its moving parts, its design and as the meters remain in service, and the switch is being used for un-approved application, its failure rate will increase. Note that Quebec Hydro has issued in 2014 an alert warning that 24,760 smart meters need to be removed and that meters must not be installed closer than 3 metres from a source of natural gas or propane due to the possible ignition from the disconnect switch.

3 Is the meter installation process and/or training of meter installers a factor in the incident rate?

Needs adding: The CSA C22.2 Standard No.115 for the homeowners' meter base specifically prohibits the base from being used as a load current-carrying interruption device, but it is being used for that during the meter change-outs. This was brought to BC Hydro attention by Registered letter dated May 2014, and to the CSA, but BC Hydro (and Fortis) continue to use the homeowner's meter base as a load-current disconnecting device, leading to premature failures and fires. Contractors cannot carry out a safe meter alignment check when the system is energized. The use of non-electricians, granted by the Government to use non-IBEW qualified electrician members, and applying minimal training, guaranteed that the meter base and meter stabs would suffer arcing damage during the hasty meter change-outs. This is so fundamental to the common problem of fires and overheating that it must be examined properly, and the whole methodology of meter change-out must be re-thought.

4) Are the smart meter components and materials more flammable than previous meters and if so does this materially impact their safety?[3]

NOTE: Because of the almost unlimited fault energy available from the Grid, this question needs to be re-framed to address what happens during a meter-related incident. This report does not address the obvious potential for, and actual experiences of, the catastrophic failures exacerbated by unrestricted fault energy, because the primary Utility HV fuse does not provide adequate protection for the failing electronic meter and arcing in the meter base. Whether it is safe to add an unprotected electronic device to the service point downstream of the Utility transformer is an ongoing issue that does not appear to have been examined with adequate diligence. The result has been some catastrophic failures due non-operation of the existing HV electrical protective devices. A specific technical engineering review with peer-reviewed results need to be urgently completed. [1]

This investigation addresses the following questions concerning tracking and investigation of fires and thermal incidents originating in the vicinity of smart meters.

1 See section 23 of the Utilities Commission Act.

2 An enclosure that has matching jaws to accommodate the bayonet-type (blade or stab) electrical terminals of a detachable watthour meter and has a means of connection for the termination of the utility and building circuit conductors.

3 This question was raised by staff and in the interest of completeness included in the scope of the investigation.

5) How are the utilities tracking fires and thermal incidents originating in the vicinity of smart meters?

This report states that BC Hydro is not tracking the after-installation incidents, so BC Hydro/BCUC are not aware of the scale of the problem, nor is BC Hydro able to share data with stakeholders such as IBEW, Homeowners, BCSA, CSA, BCUC, Fire Commissioners, Municipalities and the Public, or anyone else involved in meter problems

6) Are fires and thermal incidents originating in the vicinity of smart meters being adequately investigated?

The answer is NO. See the above comment. The incident data are spread over several different organizations with gaps due to the non-reporting of incidents. What scant information is being gathered is inadequately coded and is not being investigated forensically and is not being shared.

This investigation addresses the following questions concerning the certification of smart meters in BC.

7) Are watthour meters required to be certified safe by a professional electrical engineer licensed in BC and if so, has it been done?

There is a disagreement between BC Hydro/BCUC and the BCSA. The BCSA has stated in writing that BC Hydro should be certifying using a BC Professional Engineer. However, since BC Hydro employs BC Professional Electrical Engineers, the question should be: "What responsibility do the BC Hydro Engineers have in certifying the smart meter system and approving the BC Hydro procedures, and assuring the diligent and consistent application of Engineering Practices? How much of the Engineering of the meter system was delegated to the meter supplier Itron and not supervised by BC Hydro Engineers? Correspondence with BC Hydro suggests that much of the work was delegated to Itron and apparently was not validated by BC Hydro Engineers.

8) What certifications are required for smart meters in BC and are they adequate?

A critical item missing in this Report is any investigation and discussion about the meter's built-in 200 Ampere disconnect switch. The switch is not CSA certified, yet it is being used as a "Service Disconnect Switch" – (CSA Code definition), for which it is not designed. Several requests for technical performance and certification data have been ignored by BC Hydro and by Itron. The switch is a potential failure mechanism, in particular during fault conditions, because as described elsewhere, the electrical protection on the HV side of the transformer does not appear to adequately protect the electronic meter from excessive fault current. This BCUC Report states that BC Hydro meters do not need to be certified under the Electrical Safety Regulations, however it also states that BC Hydro is NOT exempt from the Electrical Safety Act. An immediate investigation into the design, certification, testing, operation and capabilities of this disconnect switch is required.

Note: Over the several years during meter implementation plans the BCUC did not review any of the Utilities' smart meter documentation and practices, including compliance with certifications and questionable practices that violate CSA Certifications, so this report involves the BCUC in failures being studied by its own review.

Smart Meter Background

In 2010, BC Hydro started their smart meter program to replace the existing watthour meter stock. BC Hydro was required to undertake this program pursuant to the 2010 Clean Energy Act and supporting regulations. This program was substantially completed in 2015 with 1.93 million meters replaced.

FortisBC followed with a similar Advanced Metering Infrastructure (AMI) program which was ongoing as of November 2015 having replaced 124 thousand meters. FortisBC's AMI program was approved by the

BCUC in July, 2013 by order C-7-13. Similar initiatives have been undertaken by utilities around the world with over 50 million smart meters having been installed in the United States.[4]

Both BC Hydro and FortisBC have chosen to install the Itron OpenWay CENTRON II watthour meters. As of 2012, Itron's share of the US smart meter market was approximately 45%.[5]

There have been smart meter programs that have been halted **unacceptable incidents and** in other jurisdictions due to fire concerns. After the occurrence of several meter related fires, SaskPower halted its smart meter initiative in 2014 and removed over 100,000 smart meters. The Sensus Generation 3.3 meters installed by SaskPower were found to have design issues that could result in dust and water penetration into the meter leading to electrical shorting within the meter.[6]

Note that SaskPower has initiated a program that recognizes faulty meters that were certified under UL 2735 have failed and are being replaced. SaskPower is working with its meter supplier and the Standards Organization Underwriters Laboratories, to develop a Standard that will improve the UL 2735 requirements.

Quote

" Any new smart meter designed for SaskPower's use must meet more stringent requirements than currently exist. These requirements, as well as current industry standards, will be subject to independent verification prior to acceptance or installation by SaskPower.

SaskPower continues to remove all remaining smart meters in the province with a deadline for completion of March 15, 2015.

SaskPower says it has reached an agreement with U.S.-based manufacturer Sensus to recover the $47 million cost of removing smart meters that were installed across the province.

The Crown utility says it will receive a $24 million cash refund from Sensus for all the smart meters purchased by SaskPower, including the ones that had already been installed.

In an agreement previously announced SaskPower and Sensus specifically agreed to an investment of $5 million toward a next generation meter that meets SaskPower's specific needs.

Any new smart meter designed for SaskPower's use must meet more stringent requirements than currently exist. These requirements, as well as current industry standards, will be subject to independent verification prior to acceptance or installation by SaskPower." Unquote

SaskPower continues to remove all remaining smart meters in the province with a deadline for completion of March 15, 2015."
Unquote.

4 Electric Power Annual 2013, U.S. energy Information Administration, Table 10.10.

5 Global Market for Smart Electricity Meters: Government Policies Driving Strong Growth, U.S. International Trade Commission, 2014.

6 Smart Meter Review, Crown Investments Corporation of Saskatchewan, 2014.

Meter Safety Jurisdiction

In BC, multiple entities have safety mandates which are applicable to watthour meters or meter sockets and the investigation of related incidents.

Office of the Fire Commissioner

The Office of the Fire Commissioner maintains a fire reporting system and database for the province. Their Fire Incident Report form provides a standardized reporting system to assist the local fire departments to meet their reporting duties as required under the Fire Services Act.

Over the last 2 years I have requested over 100 fire and incident reports and have observed several problems with the reporting system in general and as it pertains to the smart meters specifically.

- **There is no code for smart meters so there is no way for the Fire Commissioner to track fires associated with or caused by this device. Any fire that would be caused or exacerbated by a smart meter would be coded under "electrical distribution failure". Unfortunately the smart meters are flammable, unlike analogs that are made of metal and glass. Often the meters are so badly damaged/melted that no inspection is possible, and even in cases where the firemen strongly suspect or witnesses observed the fire starting at the smart meter, the ignition source must be reported as "undetermined". For example a fire in Coquitlam, Dec. 20, 2013.**

- **Fire reports are not put on the system as soon as they are received. A very high percentage of the reports I requested were put on the system only after I made my request, sometimes many months or even years after the report was completed by the local fire authority. As a result any statistics used in the annual report are incomplete and should not be used to draw any conclusions. For example, a fire in Coldstream March 13, 2013. The fire department report was dated April 9,. 2013. I submitted my request Nov. 11, 2014, and the report was put on the Fire Commission system Nov. 24, 2014.**

- **There is no annual counting of fires where the igniting object was "undetermined." 30-35% of the reports that I received fit into this category. Has this number changed over the years? There is no way to know.**

- **Regulations are not being enforced.**

According to the Fire Safety Standards Act,Sec. 36, nothing is to be removed from the scene of a fire. BC Hydro is removing meters and among the reports that I've received, this has happened 15 times or approximately 15% of the time. This seems to be a systemic issue, because I have received statements from both the Fire Commissioner's Office and BC Safety Authority that BC Hydro is allowed to remove smart meters before the fire inspectors are allowed to do their jobs because "it is their equipment."

Fire inspectors have confirmed that smart meters are often removed when they arrive at the scene, and, as a result, even when evidence seems to indicate that the smart meter was involved, they are, by law, required to indicate that that the igniting object was "undetermined."

This practice of utilities removing evidence is not limited to BC Hydro but rather seems to be a common one. Quebec firemen complained about this practice because, without the opportunity to investigate the smart meters, the true cause of fires may be escaping scrutiny.

http://www.cbc.ca/news/canada/montreal/quebec-city-firefighters-ask-hydro-qu%C3%A9bec-to-leave-smart-meters-alone-1.2983309

Under the Fire Standards Act Sec. 9 the local assistant is to inspect the fire scene within 3 days and immediately after the investigation submit a written report to the fire commissioner. This is not happening in many cases, and there is no way for the fire commissioner to know or to follow up when this isn't done. In the relatively few reports that I requested, there were many where the reports were not completed for several months, even years. In some cases the report wasn't completed until after my request. In 6 cases no reports were ever submitted, even after the Fire Commissioner's Office asked for them. An example is a fire that occurred in Langley on April 3, 2013. I submitted a request for the report on Sept. 21, 2014, and no report has been received as of this date.

- **I was advised that only fires that cause "substantial" (undefined) damage must be reported to the Fire Commissioner. That means that fires that were caught early, and otherwise might have been serious, are not reported. In situations where smart meters overheated, melted or even caused minor fires they are not being reported to the Fire Commissioner or to BC Safety Authority. An example was a smart meter catching fire at the Sparwood Post Office on Aug. 1, 2012. This was caught before a fire department was called. BCSA was not informed for several days, so no report was made because no investigation was possible.**

- **Several fire chiefs with whom I spoke told me (in confidence) that, because of budget cuts and reduced staff, they were not to spend time trying to determine the cause of a fire. Ruling out arson or a grow op is their prime concern. If they don't have the time or resources to identify the cause of a fire, how can anyone say that smart meters are not involved?**

Local Fire Departments

Local fire departments are required to investigate and provide reports on all fires as required under the Fire Services Act and to submit these reports to the Office of the Fire Commissioner. If the cause of a fire is suspected to involve electrical equipment, local fire departments are required to notify the BC Safety Authority.

Through my search for information I have found several problems within the reporting system required of and followed by the Local Fire Departments.

- **According to Fire Commissioner Anderson there are 2 reports that the local fire officials complete. First is the fire report that is submitted to the Fire Commission Office and which provides numbers for the annual report, as quoted from Mr. Anderson's email:**

"In order to produce that report the LAFC will have investigated "in a general way" the fire and the information gained from that process is reflected in the codes of the report and sometimes is also reflected in the narrative portion.

The second type of report is a "fire investigation report". This type of report (note: one is not always compiled after an investigation) is done by the local authority and the information contained in such a report is retained by the local authority and is not sent to the OFC. "

Vital pieces of information that would provide evidence regarding causes of fires are not consistently documented, and when they are, the report does not reach the agency responsible for the safety of the BC public.

- **The local fire departments in many instances are not completing and submitting the fire reports immediately after the fire. Of the reports I received with the report completion dates, 57% were completed more than one month after the fire, ranging between 2 months to more than 1 year after the fires. An example is a fire that occurred in Nelson on Jan. 22, 2013. The date on the report was April 1, 2014,**
- **The BC Safety Authority is not being notified in all cases where the fire officials believe the fire might have been caused by an electrical device or problem. I did not request BCSA reports for all fires identified as being "electrical", but of those I did, 13 had no BCSA report. An example is a fire on an exterior wall that occurred at Port Hardy on Feb. 11, 2013. The igniting object was "failed electrical distribution equipment." BCSA had no report on this incident.**

BC Safety Authority

BC Safety Authority is an independent, self-funded organization mandated by the Safety Authority Act to oversee the safe installation and operation of technical systems and equipment. The BC Safety Authority in accordance with the Safety Standards Act and the Electrical Safety Regulation issues required permits to qualified personnel to work on regulated electrical equipment including residential wiring and meter sockets. Electrical equipment owned or in the possession or control of a public utility used directly in the generation, transmission and distribution of electrical energy including residential meters are exempt from the Electrical Safety Regulation including the permit requirement.

I suspect that the exemption for utility owned equipment from the Electrical Safety Regulation made sense when that equipment was distant from homes, or was not flammable. Analogs were difficult to burn, if not impossible. They were tested in conjunction with the meter base which was certified by CSA, and they had a long history of being safe. Given the new technology, this exemption needs to be revisited. Smart meters are digital, flammable, and, in the opinion of experts, not satisfactorily tested for fire safety. untested, being put on to our homes without any oversight.

- **I ask that the Electrical Safety Regulation be reviewed and updated to take into consideration this new technology.**

The BC Safety Authority is also mandated to investigate safety-related incidents7 involving installation and operation of regulated electrical equipment including residential wiring and meter sockets. The BC Safety Authority is not mandated to investigate utility owned meter incidents, though as a practical matter their mandate to investigate meter socket incidents encompasses the meter as the two components are physically attached to each other and an incident damaging one will in all likelihood damage to the other.

- **This is totally inconsistent. They cannot investigate smart meters yet they are supposed to investigate meter socket incidents that may have been caused by improper fitting meters. In other jurisdictions (e.g. Texas), many fires have been caused by ITRON Openway meters not fitting the base that previously held the analog. The experts said that the blades of the meter were thinner than those**

of the analogs leaving a gap which caused arcing and fires. Who is investigating this as a possible cause of fires in BC? I fear no one is.

- **BC Hydro often is the first on the scene when a meter fails, overheats, melts or burns. In many instances BC Hydro does not report the incident to BCSA. An example: Vancouver home Oct. 12, 2014, meter burned but the homeowner extinguished it. BC Hydro removed the meter and told the homeowner it would be inspected at their lab. No report was submitted to the Fire Commissioner because the fire department was not called. BCSA was not notified and has no report. Power Tech, BC Hydro's lab, said they had never received a smart meter to inspect.**
- **Because BC Hydro is exempt from the BC Safety Standards Act, BCSA has limited authority over equipment owned by BC Hydro. If BCSA determines that the smart meters are a fire hazard they have no authority to act. Furthermore, according to BCSA it has limited authority over BC Hydro as well. Should there be a failure to report an incident as required by the Regulation, they have no authority to act. What agency is to determine that smart meters are safe or not? BCSA is a key agency with expertise to investigate electrical fires. If they are not advised and allowed to inspect the smart meter, or if they are allowed to inspect but not allowed to speak out when they see a problem with BC Hydro's smart meters, how can BCUC say that there have been no smart meter fires?**
- **Is it accurate to say that because the smart meter is an unregulated product that should a smart meter cause a death that it would not be considered an "incident", and therefore BCSA would not be able to investigate?**

This statement is confusing, since the BCSA has not, to our knowledge specifically investigated any smart meter incidents to the point where they could identify the cause of failure.

COMMENTS on the BCSA Electrical Safety Reports 2010, 2011, 2012, 2013 PUBLISHED ON THEIR WEB SITE:

The incidents are not identified by ID number, making it difficult to consistently identify and to track each incident. In 2013 report, the BCSA started using dates for each incident.

In 2010 and 2011, the BCSA does not appear to have published any detailed reporting on electrical incidents.

Since there are no incidents listed for those identified Municipalities listed below, we assume that they are not included.

Most incidents extracted here start with the words: "A fire occurred…" We assume that the Fire Fighters reported the incidents to BCSA. There is no documentation identifying the source of the incident report, e.g. Hydro, Fortis, Electrician, Fire Hall etc.

There is no data describing how, and if these incidents were investigated, by whom and how much time had elapsed after the fire before the BCSA arrived.

There is no explanation on whether BCSA intends to improve its methods of investigation, or to obtain expert resources in order to carry out detailed investigations of the backlog and new cases.

There is no reference to cooperation or coordination with Electrical Utilities such as Hydro and Fortis.

There is no explanation whether BCSA is aware of the incomplete reporting system that results in only BCSA incident data being listed in what might be assumed to be Province-Wide oversight. BCSA needs to state that other data sources (e.g. Municipalities, Hydro, Fortis etc.) are not included and should

comment on what is the scale and seriousness of other non-listed incidents.

In 2012 there were 35 incidents listed as "Investigators were unable to determine the causes in these incidents." Note that electrical incidents being investigated are not listed.

In 2013 there were 24 incidents listed in the BCSA Report as "Investigators were unable to determine the causes in these incidents." Note that 52 electrical incidents that are still being investigated are not listed.

The BCSA data in these annual reports must be reviewed with extreme caution, since it is a part of a much larger picture in which the reader is not aware of the scale or severity of incidents not reported or held within Municipalities' files.

The quantity of unresolved incidents is high and needs to be addressed immediately and the users, including the Public, need to be advised.

Utilities

The utilities install and own the meters which are inserted into the meter socket of residential properties. Utilities and their distribution equipment including meters are exempt from the *Electrical Safety Regulation*. However, utilities are not exempt from the *Safety Standards Act* and thus "must not remove, disturb or interfere with anything in, on or about the place" were an incident resulting in damage to property has occurred as a result of a meter socket (or other regulated equipment) until the BC Safety Authority has completed its investigation.

BC Hydro is exempt from most provisions of the Electrical Standards Act and the Electrical Safety Standards, but it is ignoring the provisions in the Electrical Safety Regulations that do apply to it – with impunity. Further, those who are to enforce the Act are condoning Hydro's disregard.

- **BC Hydro is removing meters from the fire scene. A fire inspector and a fire chief told me (in confidence) that this is a regular occurrence. Both the Fire Commissioner and BCSA have said this removal prior to inspection is allowed because it is Hydro's equipment. How is this different from an arsonist being allowed to remove a gas can from the scene of the fire because it belongs to him? An example is a fire in Coquitlam, Aug, 5, 2012. The BCSA report states that cause of fire could not be determined because the meter had been removed before it could be examined.**

Full Description of Incident:
Coquitlam Fire Department reported a fire within a meterbase occurred 2 weeks after existing meter was changed to a SMART meter. Picutres subnitted by the Fire Department show the SMART meter was completely burned out and melted and indicate smoke traces above meterbase on outside wall of northside of house. The emergency repairs were done by a licensed electrical under a valid electrical installation permit before electrical safety officer could do investigation. Fire department, with pictures of incident, believe fire damages were caused from an electrical fire of SMART meter.

Summary of Damages, Injuries, Fatalities:
Damage to meter base, meter and service conductors.

Incident Severity: Level 3 Equipment Damage: Minor Property Damage: Minor

People Involved:
Number of People Injured: 0 Number of People Deceased: 0

Cause Summary:
Unable to determine as damaged electrical equipment was removed and replaced.

- **BC Hydro is not informing BCSA when incidents occur. Repairs are done and BCSA has no opportunity to investigate. Example: Port Hardy, July 10, 2012, smart meter burned, fire extinguished without fire dept. arriving. Hydro attended, replaced smart meter. Trouble report stated "probable meter base. Mechanical, electrical failure/malfunction." No lab report available. BCSA was never informed.**
- **In some instances when a fire chief has confronted BC Hydro and asked about the meter being taken, BC Hydro has said it is taking the meter to its lab for investigation. Yet Power Tech, BC Hydro' lab, has never seen a smart meter. BC Hydro told me that they never inspect a failed or burned meter but rather immediately send it to ITRON for replacement under the warranty. Example: Vernon fire Aug. 13, 2013, appeared to be electrical. BC Hydro removed the meter and when asked by fire chief, he was told that the meter needed to be inspected at Hydro's lab. Power Tech had no report.**
- **Who is holding BC Hydro responsible for following regulations if BCUC has been told to not get involved with the smart meter program?**

Comment: In cases where BC Hydro has removed devices after an incident, what steps do the BCUC intend to take to address this apparent violation of the *Safety Standards Act?*

Please provide a clarification to explain to what specific parts of the *Safety Standards Act* legislation BC Hydro and FortisBC must comply, since the meters, according to BCUC, do not need to be certified to the BC Electrical Safety Regulation. Again the above is a confusing and misleading statement, since it does not address the specifics of the Utilities' legal responsibility under the Safety Standards Act for these incidents initiated by the Utilities' actions.

Comment: MISSING:

MUNICIPALITIES: "Municipalities that Administer the *Electrical Safety Regulation*

The BC Safety Authority oversees electrical safety throughout British Columbia, with the exception of the following municipalities:

City of Burnaby

City of North Vancouver

City of Surrey

City of Vancouver

City of Victoria

Corporation of the District of Maple Ridge

District of North Vancouver

Municipality of West Vancouver"

City of Enderby?

7 An incident is defined in the Safety Standards Act as an event resulting from the use of a regulated product that causes or creates the risk of death, personal injury or damage to property.

The BCUC is mandated to provide general supervision of provincial public utilities including the oversight of equipment and public safety pursuant to the Utilities Commission Act.8

As part of its mandate the BCUC must make examinations and inquiries to keep itself informed. BCUC staff looked at available information both broadly (provincial statistics) and at individual incident investigation reports to assess smart meter safety in the province.

- **What individual incident reports had BCUC reviewed in advance of this recent complaint to assess smart meter safety in BC?**
- **As shown, provincial statistics are not credible. When did BCUC become aware that the provincial statistics are not credible?**

Comment: Please expand upon how the BCUC initiates the "general supervision" and the "examinations and inquiries". Does the BCUC respond only to complaints and to submissions from the Utilities, i.e., a passive approach, or does it independently initiate audits and quality control activities either at random or regularly in order to ensure compliance with the Regulations, i.e., an active approach?

In 2013, the Provincial Government issued Special Direction 4 (Order In Counsel No. 391) to give customers an option to opt out of the smart meter program. The directive also limits the BCUC's mandate with respect to BC Hydro's smart meter program stating that the Commission must not "directly or indirectly prevent [BC Hydro] from installing, operating or providing services in respect of legacy meter, smart meters and radio-off meters." Therefore, BCUC has oversight responsibility of smart meters as it relates to public safety but does not have the authority to prevent BC Hydro from installing or operating smart meters. This limitation in BCUC's mandate does not apply to FortisBC meters.

What, if any, penalty does BCUC suffer if it fails to take responsibility for public safety in regard to the smart meter?

If BCUC has evidence that smart meters are not safe, that incidents have occurred that put lives and property at risk, what can BCUC do to protect the public as is its responsibility under the Utilities Commission Act?

Who can prevent BC Hydro from forcing people to have fire hazards on their homes if both BCUC and the government refuse to take this action?

Comment: During correspondence over the past three years, the BCUC had rejected several written requests to examine smart meter safety issues. The BC Hydro smart meter implementation was therefore carried out without supervision or monitoring by the BCUC.

On what date did the BCUC change its focus to include smart meter safety issues? It seems to date from July 2015, since prior to that date, the BCUC refused to be involved in safety issues to do with the smart meter implementation program, See BCUC correspondences dated around 8th July 2013, below in the Section: Standards and Meter Compatibility.

BCUC's own statement: 21 October 2013, Quote:" As previously stated, Section 7 of the *Clean Energy Act* exempts BC Hydro's Smart Metering Program from Commission regulation under certain sections of the *Utilities Commission Act* – the Act that establishes the Commission's authority. Subsection 7(3) further states, "The commission must not exercise a power under the Utilities Commission Act in a way that would directly or indirectly prevent the authority from doing anything referred to in subsection (1)." In other words, the Commission cannot take any action that would prevent BC Hydro from implementing the smart metering program. As a result, the Commission has not been involved in the planning or implementation of the program." Unquote.

And, October 31, 2013: BCUC Letter:
Quote: "In reviewing BC Hydro's Application (Approval of Charges for Smart Meter Program), the Commission's hearing is limited in scope to the recovery of costs of providing services to customers in relation to their choice of meters. Direction No.4, section 4 establishes limits on the Commission's powers to review the Application." Unquote.

Standards and Meter Compatibility

Concerns have been raised that existing meter bases were not designed for modern electric "smart" meters. The question of compatibility is applicable to manufacturers of both meter sockets and electric meters regardless of the type of meter. For example, existing meters that no longer meet accuracy testing are typically replaced by newer digital or smart meters as the existing vintage may no longer be supported by the manufacturer or procured by the utility. Standards are developed and maintained for this purpose so that for example the receptacle for your home wall outlet will be compatible with the devices you purchase to plug into the outlet now and many years from now until an entirely new standard is created. In the case of electrical meters, there are a number of standards used in North America specific to meter sockets and meters. Some standards cover the performance and accuracy of meters and others cover the physical aspects.

Standard making bodies involved in meter socket and meter standards in North America include the American National Standards Institute (ANSI) and the Canadian Standards Association (CSA). Other testing and certification bodies represent insurers such as Underwriters Laboratory (UL) or Factory Mutual (FM) may have both US and Canadian standard versions (UL and ULC).

Comment: Why are these Meter Standards listed as "Applicable Standards" when the BCUC state in this Report (Page 3, under the BC Safety Authority and Page 3, under Utilities) that BC Hydro is exempt from *Electrical Safety Regulation*. According to this report, we have no way of verifying if the meters actually are Certified to the CSA CAN3-C17, and according to BCUC there is not a requirement for that under the BC Safety Regulations. BC Hydro have repeatedly stated that their equipment does not need to be certified to CSA Standards.

Comment: BC Hydro letter dated 31 January, 2014, Quote:

"I am writing in response to the above-noted request for records under the Act. BC Hydro has reviewed its files and has found no records responsive to your request. Electricity meters are BC Hydro-owned devices and are not subject to the certifications mentioned in your request and, consequently, BC Hydro has no certification documentation of the type you requested." Unquote.

Extracts below are from the Letter to BCUC dated 27 February 2014 requesting that Safety be part of the BCUC mandate:

QUOTE: ABSENCE OF METER TESTING AND CERTIFICATION – Safety, BC Hydro Quote: "I am writing in response to the above-noted request for records under the Act. BC Hydro has reviewed its files and has found no records responsive to your request. Electricity meters are BC Hydro-owned devices and are not subject to the certifications mentioned in your request and, consequently, BC Hydro has no certification documentation of the type you requested." Unquote.

NON-CERTIFIED METERS ARE BEING INSTALLED INTO CSA CERTIFIED METER BASES - Safety. The combination of the meter and its existing base is not certified by CSA for disconnecting or connecting power, so the change-out needs to be carried out with the power switched off at the BC Hydro source (power pole, transformer fuse High Voltage disconnect etc). Whether BC Hydro has always used this "yank-out" method over the years during change-outs raises concerns about miss-use, wear & tear, contributing to failures. Note that there is not a single independent central system in place to report meter problems, so that when contacted, the Insurers, Municipalities, IBEW, Fire Marshals and Safety Authorities advised that they do not have the information to prepare them for the extent of this serious issue.

ABSENCE OF OVERSIGHT ON BC HYDRO - Safety. In the absence of oversight on BC Hydro by any BC Authority or Ministry under the Hydro and Power Authority Act, the B.C. Electrical Safety Regulations 100/2004, British Columbia Safety Authority (BCSA), British Columbia Utilities Commission (BCUC), B.C. Chief Medical Officer, Lieutenant Governor, and the Electricity and Gas Inspection Act, we have to assume that each organization and its key personnel can be held liable for lack of due diligence and any harm that is occurring to consumers, whether due to safety issues, inaccurate and fraudulent billing, health issues, and the unjust and unreasonable cost of the entire system.

The writer has previously written to BCUC more than once to point out that the Safety for consumers should never be removed from any review by BCUC.

These issues have been brought to the attention of BC Hydro, the British Columbia Utilities Commission and a number of other BC Authorities over the past two years, however it appears that none of these issues has been dealt with in a professional manner, nor have they been resolved nor documented in an effective and satisfactory way.

End of letter to BCUC

BCUC Reply 12 March 2014, QUOTE. The submission deadlines for this phase of the process have passed. Because you are not a registered intervener, we are unable to accept your filing in this phase of the reconsideration process; UNQUOTE.

Table 2: Applicable standards for meters and meter sockets

	CSA	ANSI	Other
Meter Socket	C22.2 115-14	C12.7	
Meter	CAN3-C17 – physical and accuracy	C12.10 – physical C12.20 - accuracy	Measurement Canada LMB-EG-07 - accuracy

The current CSA standard C22.2 115-14, covering the meter socket is the sixth edition replacing previous editions published in 1989, 1983, 1971, 1967, and 1963. The BC Safety Authority through the Electrical Safety Regulation requires approved certification marks for non-utility electrical products such as meter sockets. A CSA mark on the product ensures that the Certification Body has confirmed that the product meets the CSA standards applicable to that product for the intended service.

[8] *Section 23, General supervision of public utilities,*

- **The meter socket that currently is on homes was certified by CSA in conjunction with the analog meter. Never has it been certified to hold anything besides the analog, and certainly not a digital meter. There has been no independent certification of these meters except by Measurements Canada to ensure accuracy.**

Comment: At this point it is critical to point out that the CSA Standard governing meter bases specifically prohibits its use as a load-current interrupting device. BC Hydro was advised by Registered letter dated 7 May 2014 that using the meter and base to interrupt load current ("Homeowners do not need to be home when a meter is changed out") violated the CSA Certification of the homeowners' base and causes arcing erosion of the contact stabs. This warning was ignored and BC hydro continues the practice. This practice by the Utilities needs to be critically examined by the BCUC and appropriate action must be taken.

CSA C22.2 115-14, section 5.12 addresses compatibility with the meter.

5.12 Compatibility

To provide compatibility with meters complying with CSA CAN3-C17, the dimensions of the meter socket rings, the envelope of surfaces, and the position of the meter jaws with respect to the central axis of the meter socket and to each other shall comply with Figures 4 to 12 inclusive of this Standard. The meter envelope is derived from figures registered in CSA CAN3-C17.

It is clear that the CSA standards (C22.2 115 and CAN3 -C17) reference each other for the purpose of ensuring physical compatibility. This integration of compatibility into the standard ensures that issues of physical compatibility are being considered by both standard making bodies which would include compatibility of new to older versions. So although the statement that the older meter sockets were not designed (specifically) for new meters may ring true, the fact is that meters and meter sockets installed in BC are designed to a common standard that considers the compatibility of the meter to the meter socket and vice versa.

- **The ITRON Openway meter used in BC is the very same meter that failed and burned "by the palette" in Texas according to legal testimony. It is logical to assume the same "common standards" were used there as in British Columbia. It seems, therefore, that the standards that are being used are inadequate for these meters.**

According to CSA (http://shop.csa.ca/en/canada/electrical-engineering-standards/can3-c17-m84-r2015/invt/27017261984) "1.1.1 This Standard does not provide details pertaining to meter mounting devices."

Comment: Note that it is the responsibility of the Manufacturer and the Purchaser to ensure that the devices meet the physical and performance requirements of the Purchase Order, assuming that there are no Codes and Standards mandated by BC Law. This is usually accomplished by random testing, review of the Quality Control procedures and the Quality Assurance documentation and verification by the Purchaser's Professional Engineer knowledgeable in that field. It also requires follow-up from reported incident cases of, for example hot-sockets so that improvements to practices can be accomplished. This does NOT appear to be the case with the smart meter implementation.

In the absence of any Standards, the BCUC needs to be able to validate and to document the accuracy of the content and veracity of such Utility procedures, since it is presently not done.

From correspondence with BC Hydro, it appears that any failed meters are returned to Itron and are not examined by BC Hydro or its Laboratory, leading to the assumption that any follow-up to improve Hydro Practices does not occur. In addition, it would appear that the quality Control and Quality Assurance steps have been delegated to Itron and do not take place within the BC Hydro Organization, so third-party quality control and assurance has not been demonstrated.

Since the electric meter is the property of the utility and "public utilities" are exempt from the Electrical Safety Regulation, certification marks on the meter are not a requirement in BC. This was explored to some degree in the FortisBC AMI hearing.9 In response to an information request FortisBC stated that CSA CAN3-17-M84 (R2008) is equivalent to Measurement Canada specification LMB-EG-07 and that its electric meters including Itron's meters are required to meet LMG-EG-07.10 A review of both standards confirms similarity in the measurement and accuracy specifications between LMB-EG-07 and CAN3-17- M84 and that LMB-EG-07 refers to CSA C17, however not all the physical specifications of CSA C17 are provided in LMB-EG-07.

- **Measurement Canada, and any similar standards, test for accuracy only. The complaint lodged did not questioned ITRON's meters' accuracy. These standards do not test for safety.**

Comment: Note that the above statement demonstrates that a Canadian Federal Statute requires compliance and verification through testing of the accuracy of the revenue measuring devices (meters). There is no ambiguity for the application of this specific Federal Measurement Standard to energy meters as there is with the CSA Standards and with BC Utilities within Provincial jurisdiction as they are, or are not applied to the meters.

In the FBC hearing, FBC provided a table of all the standards that the ITRON OpenWay CENTRON II meters that it would be purchasing and installing advanced meters it has installed have been designed and manufactured to conform with ANSI 12.1 (2008), ANSI C12.10 (2011) and CSA CAN3 C17 M84 (2014).).

would comply with. Comment: NOTE: This "would comply with" is a common phrase used by Manufacturers to confuse users and does not prove that Certification has been, or will be completed. The statement should read "will be Certified by.. " and that Certification can be verified by an independent third party.

This table was provided as Table IR2 Q83.4 – Applicable Meter Standards. This table included the ANSI C12.10 standard11 for physical aspects among other US and International based standards (ANSI, IEEE, IEC, NEMA) and Canadian standards.

Comment: Again, to which Canadian Standards will the devices be Certified, and documentation supplied to prove that?

In an update provided on January 13, 2016 to its original response, FortisBC stated that the

9 The BCUC conducted a detailed review and hearing on the application by FBC to install Advanced Meters, the Clean Energy Act exempts the Smart Metering Program from sections 45-47 and 71 of the Utilities Commission Act.

10 FortisBC Inc Application for CPCN for the Advanced Metering Infrastructure Project, BCUC IR2 83.2

11 ANSI C12.10-2004 Physical Aspects of Watthour Meters

This standard covers the physical aspects of both detachable and bottom-connected watthour meters and associated registers. These include ratings, internal wiring arrangements, pertinent dimensions, markings, and other general specifications. Refer to the latest version of ANSI C12.1 and ANSI C12.20 for performance requirements.

- **Did ITRON meters in Texas that burned and failed by the palette-load meet ANSI standards? We must assume they did since ITRON installed them, and still they failed demonstrating that UL and ANSI standards are inadequate.**

This doesn't give any assurance that digital electronic meters are safe.

Comment: Once again what are missing are the critical words: To which Canadian Standards will the devices be Certified, and the documentation supplied by the Utility to the BCUC to prove it? As discovered in Saskatchewan, some of the meters meeting the Standards failed and did not perform adequately

Above it is stated these standards are "common" and would be considered basic for all smart meters, including those in Texas where they have failed and burned in large numbers.

- **Who has confirmed that these standards are adequate to ensure safety?**
- **Why are BC Hydro and FortisBC refusing to have CSA or an independent professional electrical engineer licensed in BC certify these meters if they believe they are safe?**

Specific Safety Standards for Meters

Through this investigation and discussions with the Fire Commissioner and BC Safety Authority the BCUC staff was made aware that Underwriters Laboratory (UL) has developed a meter safety standard (UL 2735 - October 6, 2014 edition) and that the Canadian version (ULC) is in development and expected to be published in mid-2016.

Of what significance is this to the meters already installed on homes? Shouldn't electrical devices that are put on homes have been certified before installation?

Why does UL require a Canadian version of its meter standard 2735? Will independent testing confirm that this standard is adequate in all regards?

Comment: As stated earlier, the smart meters in Saskatchewan were tested to UL 2735 and still failed in service due to, among other factors, moisture ingress. Quote: "Any new smart meter designed for SaskPower's use must meet more stringent requirements than currently exist. These requirements, as well as current industry standards, will be subject to independent verification prior to acceptance or installation by SaskPower."

SaskPower continues to remove all remaining smart meters in the province with a deadline for completion of March 15, 2015." Unquote

Meter Related Fire Frequency

BC Statistics

BC Hydro commissioned **and edited** a report in 2013 to look at the residential structure fire frequency before and after the start of their smart meter program. The report was updated in August of 2015 and released as "Fire Report - Assessing the Safety of Smart Meter Installations in British Columbia: Analysis of Residential Structure Fires in BC Between July 2010 and June 2015" authored by Len Garis et al (the Garis Report).

The Garis Report relies on the database of fire incidents maintained by the provincial Office of the Fire Commissioner which all local fire departments are required to report into following a standardized reporting and coding system.

The fact that Mr. Garis depends solely on the database of the fire incidents maintained by the provincial Fire Commissioner's Office for his "research" is the basic problem with the report. As I will demonstrate, the database is incomplete. It is obvious that Mr. Garis should have investigated the validity of the data before using it in several reports to substantiate the safety of smart meters.

- **Despite the requirement that local fire officials complete and file reports with the Fire Commission immediately after a fire, this is a demand that is largely ignored. Of the numerous fire reports I've requested, nearly 50% were completed from 2-3 months up to 2-3 years after the fire occurred. A couple of examples:**

Langley fire on July 10, 2013. Dept. completed report July 11, 2014.

Cumberland fire on Aug. 8, 2013. Dept. completed report June 20, 2014.

- **Because these reports and others were completed so long after the incident, some only after I requested them, it is inevitable that time and expediency will have had an influence on the interpretation of those results. Their accuracy, thus, is put into question.**

- **Mr. Garis depends upon the Fire Commission's statistics alone and has done no other research but, like the reports indicated above and for the same reason, they cannot be trusted. Data input to the system in too many instances occurs one year or longer after the event, often many months after the**

fire report was submitted by the local fire authorities. Of the reports I've gathered, approximately 70% have not been put on the system within 1-2 months of the report having been submitted. And many of those have not even been put on the system in time to be included in that year's annual report...which means that they don't get reported at all. Coupling this discrepancy with the legerdemain required when the Garis Report derives calendar year conclusions from July to July data shows not only that the Garis Report is of no value but it is actually a stumbling block for anyone seeking to gain an understanding of the true nature of fire incidents.

- **Following the path of the two examples above, the examples below would not have been included in the annual report for the year in which the fire occurred.**

Langley fire on July 10, 2013, dept. report completed July 11, 2014. Put on FC system Dec. 15, 2014.

Cumberland fire on Aug. 8, 2013, dept. report completed on June 20, 2014. Put on FC system Oct. 3, 2014

- **Some fire reports are never filed by the local fire authority. even after the Fire Commissioner's office requested the report because I had filed an FOI. 2 examples are:**

  Vancouver fire on April 24, 2014.

  Enderby fire on Feb. 6, 2013

The Garis Report concludes that the available data does not indicate that there has been an increase in frequency of residential structure fires associated with electricity after 2010 when BC Hydro started installing smart meters.

Even a cursory reading of the Garis Report should give rise to the question: Why is this report given such credibility that it is often quoted as the proof that smart meters have not caused fires when there is little or no available data from which to draw conclusions and, therefore, that the conclusions drawn must be highly suspect?

Comment: See the notes added above in the section: BC Safety Authority referring to the sparse reports and unresolved incident descriptions from the BCSA that place Mr. Garis' assertions into context.

More specifically the Garis Report provides statistics in tables that show that roughly 30% of the number of fires reported in BC are residential fires and that the overall percentage of residential fires where the electrical igniting object was found to be "electrical distribution equipment - panel board, switchboard (includes fuse, circuit breakers)" ranged from 0.4% in 2011 to 0.3% in 2014 and 2015 based on the number of residential fires of 7 in 2011, 2 in 2012, 8 in 2013, 6 in 2014 and 5 in 2015.

- **As stated above, the Fire Commission's reporting methodology results in misleading statistics. Further, many fires are omitted from the report entirely by design. For example, there are no statistics for the number of fires for which igniting objects were "Undetermined." Of the reports that I received approximately 40% documented the "igniting object" as being "undetermined.**

- **In instances where the smart meter melted and was so badly damaged that no inspection could occur, the igniting object would be reported as "undetermined."**

- **In instances where the firemen may have believed the smart meter to be involved, but where the meter was removed before the inspection could occur, the igniting object would be reported as "undetermined."**

The zero entries in the bottom line of Table 2 in the Garis Report, "Fires where Fire Origin Area was an exterior wall and the igniting object was an electrical panel board, switch board", should not be interpreted to indicate that there has been no meter related fires as there are multiple ignition source codes that such fires can be classified and evidence has been reviewed of 14 fires originating in the vicinity of meters, the majority of which were provided by BC Hydro.

In the Garis Report, Table 2 states that since the smart meter program began (2011) there have been no fires on an exterior wall where the igniting object was the electrical panel board or switchboard. This does not concur with the information that I've received. Neither does this statement include fires that have occurred in electrical rooms or on electrical panels. Among the reports I've received, there were 8 where the igniting objects were panels, electrical panels in electrical rooms. 2 examples:

- **Victoria (Saanich) fire, Dec. 30, 2014 coded 5900, Failed Electrical Distribution Equipment, fire at electrical panel of home.**
- **New Westminster fire, Dec. 2, 2014 coded 5900, Failed Electrical Distribution Equipment, fire at electrical panel of a large condo building.**

Based on the fires I've investigated, approximately 8% of the fires that occurred since the smart meter program began involved a panel or electrical panels in an electrical room. Mr. Garis did not do sufficient investigation to justify any of his conclusions.

In various Garis Reports, it is stated that fires caused by or attributed to Failed Electrical Distribution Equipment (EDE) would be "most closely related to the meter base, which is directly relevant to the smart meters".. Of the approximately 100 Fire Reports I've received, 15 gave Failed Electrical Distribution Equipment at the ignition source. This is 15% of the random reports I requested, a not insignificant number. The author gives the clear implication that because the number of EDE fires had reduced in frequency, the smart meters had not caused any fires

But not only is this deduction illogical, but because of the many fires that were not on the Fire Commission system the conclusion that there have been fewer EDE fires is not credible. Whether due to the many "undetermined" fires, or the many fires not on the Fire Commission system, the database upon which the Garis Report was predicated is not accurate or credible.

Comment: As is demonstrated above, the reporting of incidents involving electrical service points are imprecise and often unresolved (See the comments in the section: BC Safety Authority,) due to several issues: inadequate coding of the incidents, limited resources to investigate after an incident, involvement of many different entities, and removal of evidence. It is strongly suggested that the Garis Report NOT be relied upon to support arguments, and perhaps should be deleted from the BCUC Report.

Note also that Mr. Garis made a number of written comments which are not supported by technical expertise, for example: Quote "Smart meters can protect up to 575 volts providing further protection for the customer. In rare situations of a high power surge, the meter will stop the surge from travelling into a building." Unquote. The Summerland incident shows how inaccurate and dangerous that assurance is.

And Quote "BC Hydro can remotely de-energize at the meter, allowing for interim access inside the premises." Unquote. This pre-supposes that the meter is not involved in an incident, and shows that BC Hydro is using the built-in disconnect as a Service Disconnect Switch, contrary to its design capabilities. This assurance can cause undue reliance by firefighters on an unproven non-certified disconnecting device.

Mr. Garis was advised by Registered Letter about his comments that were deemed to be outside of his area of expertise. Mr. Garis's comments need to be removed and clarifying explanations provided to B.C. firefighters.

US Statistics

In the United States they have a similar fire reporting system implemented on a national basis. The US has approximately 125 million residential electric meters12 as compared with the approximately 2 million meters in BC. The reporting system categories are slightly different than the BC system and are thus not directly comparable.

Comment: Please explain the term "slightly different" if you are using the statistics in these table. If they are "not directly comparable", then how should the reader interpret them?

12 Electric Power Annual 2013, U.S. Energy Information Administration, Table 2.1

Table 1 shows the average number of fires reported on an annual basis in the US.

Table 1: US electrical fire statistics

	US Annual Average Residential Fires 2007-2011[13]
Electrical distribution or lighting equipment	20,700
Service supply wiring from utility	690
Fuse or circuit breaker panel	1,350
Meter or meter box	610
Wiring from meter box to circuit breaker	530

In the US from 2007 through 2011, there were 610 fires per year where the ignition source was attributed to the electric meter or meter box. From 2007 to 2011 the number of smart meters installed in the US increased from approximately 2.5 million to 37 million.14 From 2002 through 2005, prior to the installation of a significant number of smart meters in the US, there were on average 940 home fires per year where the ignition source was attributed to the electric meter or meter box.15 This data shows that some electrical fires whose ignition source was attributed to the meter or meter box do occur regardless of the type of meter used.

If the US incident rate (610 fires at meter or meter box for 125 million meters) is applied to the number of meters in BC (2 million) the equivalent BC rate is 10 meter or meter box related fires per year.

- **Why should we consider this to be a relevant comparison? Has it been confirmed that the US stats are credible and do not have many of the systemic problems that the BC Fire Commission reports have?**
- **Mr. Norman Lambe, an insurance inspector in the US, has complained that his reports are often incomplete because the utilities are removing the meters from the fire scenes before he can do his job. This fact alone means that these statistics are not credible, and that no one can say that smart meters are not causing fires.**
- **I have asked several agencies for incidents where the analog meter has caused fires, and have never received a response. Because of the construction material of the meter, which is glass and metal, it is highly unlikely that an analog would be as flammable or prone to fire as a smart meter.**

Comment: Again, as commented previously, prior to using any statistics, the author must validate that the numbers are truly representative of the real facts and are complete and appropriate for the situation before basing any decisions on them.

Meter Related Incident Reporting for BC

BC Hydro and FortisBC were requested to provide certain information related to the electrical incidents during and post implementation of their meter replacement programs. The sections below summarize and discuss those results.

Meter Socket Repair Frequency

Meter socket repair frequency numbers need to be viewed with caution as they may be recorded inconsistently. A repair may be as simple as tightening an electrical connector, replacing a jaw or replacing the whole meter socket. A description of meter socket issues is provided in Appendix A.

Given that the frequency of meter sockets repairs is not being tracked consistently, the statistics in Table 3 are meaningless.

Table 3: BC Hydro Socket Repairs (no hot socket gap indicator[16])

13 Home Electric Fires, National Fire Protection Association, 2013.

14 Electric Power Annual 2013, U.S. energy Information Administration, Table 10.10.

15 Home Structure Fires Involving Electrical Distribution or Lighting Equipment, National Fire Protection Association, 2008.

16 TESCO, a private company providing electric meter testing equipment and metering accessories, developed a Hot Socket Gap Indicator which is used to determine if a meter socket jaw has become worn-out and unsafe for

Legacy Meters		Smart Meter	
Meter socket repairs for 54,640 installs	Rate per million installs	Meter socket repairs for 124,409 installs	Rate per million installs
35*	1,000	2,483	1,300

* Anecdotal estimate of annual numbers from Field Metering managers.

BC Hydro reports a similar frequency of meter socket repair prior to and during their smart meter program. .

Comment: This BCUC report states that BC Hydro is not tracking the after-installation incidents, so BC Hydro/BCUC are not aware of the scale of the problem, nor is it able, or willing to share data with users such as IBEW, Homeowners, and the BCSA.

BC Hydro relied on contract installers and its electricians to assess the meter base condition and determine repairs and did not utilize any special tools like the hot socket gap indicator.

Please explain why "anecdotal estimates" are given any credence and how they can be used as the basis for any comparison.

Table 4: FortisBC Socket Repairs (hot socket gap tester used on most installs but not in Trail)

Legacy Meters		Smart Meter	
Meter socket repairs for 54,640 installs	Rate per million installs	Meter socket repairs for 124,409 installs	Rate per million installs
13*	240	768	6,200

* Actual numbers for 2006 through 2011

Comment: Please explain why the numbers "54,640" and "124,409" appear in both of the BC Hydro and the FortisBC Tables? If a sample selection was made, how were the incidents in each of these 54,640 samples chosen? Was the sampling done based on geography or time-based, or other factors?

Prior to the AMI project, FortisBC's meter socket recorded repair rate was approximately 4 times less than BC Hydro's rate. **Please explain why.**

During the AMI project FortisBC's frequency of repairing meter sockets increased to approximately 27 times the prior rate. FortisBC attributes this increased meter socket repair to the use of the hot socket gap indicator tool in conjunction with a "conservative approach." FortisBC described the hot socket gap indicator as helping to identify potential meter base problems by continued use. The Hot Socket Gap Indicator determines unsafe holding force on meter socket jaws. The Hot Socket Gap Indicator was developed as a result of research on detecting hot sockets focused during the installation process.

Mechanical test of the tension on each of the base socket jaws,

Additional time inspecting the jaws using the tool

Exposing cracks in the meter base insulating block (that holds the jaws).

During the AMI project, FortisBC repaired meter sockets at nearly 5 times the rate of BC Hydro.

- **These numbers indicate that BCHydro was careless, resulting in many more incidents than Fortis.**
- **In one incident which was included in BCSA's annual report for 2012, , during live exchange, the meter and meter base were damaged. The Corix installer volunteered that he/she had received only 8 hours training.**
- **During FortisBC's hearing before the BCUC, the issue involving BC Hydro's use of inadequately trained contract help was raised. This may have resulted in more careful installations and the significantly higher rate of repairs being made.**

Comment: The use of the "hot socket gap indicator" or HSGI occurred in the USA over several years and with FortisBC. A question then arises as to why BC Hydro did not apply the same diligence to its operations? What steps does BC Hydro need to take for its ongoing operations?

Meter Incidents

Installation Incidents

Table 5 below shows the number of incidents that caused equipment damage or fire as reported by the utility during meter installation in response to a Commission request.

Table 5: Incidents causing equipment damage or fire during Installation

BC Hydro		FortisBC	
Incidents for 1,930,000 installs	rate per million installs	Incidents for 124,409 installs	rate per million installs
19	10	0	0

- **BC Hydro reports only 19 incidents. In one report obtained via an FOI request, for the period Sept. 11, 2011- Sept 8, 2014, BC Hydro listed 157 incidents that resulted in damage to the meter, to appliances, to the buildings during the meter exchange or shortly thereafter. This report is not complete. I have found incidents that fall into this category but which were not included in this internal document maintained by BC Hydro. BC Hydro is not tracking incidents during installation. None of its statistics can be considered credible.**

- **It is obvious that there needs to be a thorough investigation of this issue by an independent group. Why is there no oversight into this program which puts lives and property at risk?**

Interpretation of the incident rates needs to be done carefully giving consideration to the completeness of the data or lack thereof.

Still it is noteworthy that FortisBC reports no incidents at time of install which indicates that its testing and conservative meter base replacement practice is having a positive effect on reducing installation incidents. .

Comment: OR that its reporting system for field operatives is incomplete. See this Report's comment on BC Hydro in next paragraph.

Of note, FortisBC used the same installation contractor as BC Hydro.

Comment: Here it might be instructive to describe the IBEW agreement to allow non-electricians to carry out meter change-outs, and using an incentive plan for the installers. Were the same incentives in place for the contractors hired by both of the Utilities? How confident is the BCUC that all incidents involving meter change-out were reported? See the next paragraph.

There is evidence that BC Hydro's reporting of the incidents that occurred during installation is not comprehensive. In 2012, the BC Safety Authority previously provided the Commission with its smart meter related incidents reports. The file contains 9 reports, 5 of which relate to incidents that occurred during meter installation. Of these 5 incident reports, 2 have no corresponding event reported by BC Hydro. BC Hydro described the cause of the 19 installation incidents it reported as meter socket or installation error related which is further supported by photographic evidence and the available BC Safety Authority reports. The failures of meter socket components appears as portions of the meter socket breaking away and making contact with the grounded enclosure causing arcing, heating and fire.

Comment: See the notes added above in the section: BC Safety Authority referring to the sparse reports and unresolved incident descriptions from the BCSA.

Post-Installation Incidents

Table 6 shows the number of incidents that caused equipment damage or fire after installation as reported by the utility.

Table 6: Post-Installation Incidents

BC Hydro		FortisBC	
Incidents for 1,930,000 installs	rate per million installs	Incidents for 124,409 installs	rate per million installs
12*	6*	5	40

*BC Hydro states it does not specifically track post-installation incidents. The 12 incidents provided in the attached were identified as a result of internal requests for information to clarify the incidents.

What an amazing admission.

- **How can Hydro or BCUC say there have been no smart meter fires if these are not tracked?**
- **Hydro has said, and I have in writing, that when a meter fails or is burned, they do not investigate its failure but rather send the meter straight to ITRON for replacement.**
- **I suspect that the 12 reports they have indicated were discovered after I reported the incident and asked for information. How many others occurred that I have not asked for?**

Comment: Obvious questions are: Why doesn't BC Hydro track the after-installation incidents? And how representative are the figures supplied by BC Hydro when they do not record incidents?

FortisBC's post-installation event of 40 per million indicates that their installation procedures using the hot socket gap indicator and "conservative approach" does not eliminate the hot socket issue. It should be noted that the 5 FortisBC post-installation events were limited to thermal damage of the meters and did not result in a fire. In comparison, approximately half of BC Hydro's reported post-installation events resulted in a fire.

- **What is "thermal damage" to the meter if it isn't melting or burning?**

So BC Hydro does acknowledge that there were some post-installation fires.

- **To what do they attribute these fires?**
- **Did BC Hydro take full responsibility for these fires or did the insurance company or the individual cover any repair or replacement costs?**

Comment: This Report states that BC Hydro does not track post-installation incidents so that this statement is a gross error and is misleading.

Through BCUC staff's investigation 3 confirmed and 4 unconfirmed post-installation incidents were identified beyond the 12 identified by BC Hydro in its response to BCUC questions. BCUC staff's investigation included review of incidents submitted by a concerned citizen, reported by media, discussion with the BC Safety Authority, the Office of the Fire Commissioner and local fire departments. The identification of additional post-installation incidents was expected as BC Hydro states they do not track post-installation incidents and the 12 post-installation incidents provided were identified as a result of previous internal requests for information to clarify the incidents

- **Why were these internal requests to clarify incidents made?**

Cause of Incidents

A review of the information and photos provided by the utilities, BC Safety Authority reports, available fire commission reports and fire department reports provides the most comprehensive assessment to date to review likely causes of these incidents in British Columbia.. A total of 24 post-installation events have been identified though it is possible there are others. The vast majority of incidents appear to be related to damaged or faulty meter sockets, including hot sockets17. .

- **In the prior section it is said that BCUC staff investigated 3 -7 post installation incidents in addition to the 12 identified by BC Hydro. Now there are 24 that have been identified. Can you please confirm how many were reviewed?**
- **On what basis was the conclusion reached that the "vast majority" appear to be related to damaged or faulty meter sockets? Who reached this conclusion? Please provide his qualifications.**
- **Were the smart meters that were involved in these incidents inspected? If yes, by whom? If yes, how since BC Hydro returns all failed and burned meters to ITRON immediately.**
- **Did the review include incidents where the meters were completely destroyed?**
- **Is the BCUC willing to share the details of the 24 post installation incidents with me?**

Smart meters have not been identified as the likely cause of any of the incidents investigated though they cannot be ruled out with certainty in all cases given the available evidence.

- **What evidence was available and reviewed?**
- **Did the review include the evidence submitted with the complaint which included a local fire report stating that the fire was caused by the smart meter?**

Comment: What information does the BCUC have about the failure mechanisms of smart meters? Many of the meters appear to suffer almost complete destruction during an incident.

The disconnect switch is a potential failure mechanism since it is the only moving part in the meter, and there is not a Certification documentation path for this switch. It is being used as a load-interrupting device in the confined enclosure of the meter baseplate.

The Certification data should include the switch's capability to operate during a short-circuit current flowing through it without damage, the ability of the switch to safely interrupt load current repeatedly, the ability of the switch to continue to operate during a seismic event, the reliability of maintaining absolute electrical isolation between the incoming Utility power and the homeowners' premises without failing, the ability to operate reliably when called upon by software signals transmitted from a remote location, and other requirements defined in the Electrical Code for "Service Disconnect Switches". The failure rate of the disconnect switch needs to be published.

This documentation needs to be reviewed for validity by third-party experienced Engineers.

17 See Appendix A for a discussion on "Hot Sockets"

Observations

The evidence reviewed indicates the safety hazard associated with watthour meters has not materially increased with the introduction of smart meters in BC as further detailed below:

- **Are there credible statistics on the number of fires attributed to analog meters over the 5-10 years prior to the smart meter installations?**
- **What evidence was used to make this assertion?**

Comment: BCUC repeats several assertions in this Report based on a small population of data points. When an inadequate and statistically weak quantity of reliable data points are available, then it would be wise to state that, and not to make assertions based on an unrealistic data base.

1) Are smart meters compatible with the meter sockets into which they are plugged? Do smart meters have thinner blades than legacy meters?

The evidence reviewed suggests there are no issues with smart meter compatibility with the meter sockets. Smart meters installed in BC were designed to a standard that considers compatibility to the meter socket standard.

- **What evidence was reviewed to reach this conclusion?**
- **Who made this determination? What were his qualifications?**
- **What standards were used since these were not certified and such determinations are left up to Hydro?**
- **Who has determined that the standards to which the meters were designed were adequate?**

Comment: there is no documented Certification that the meters meet the Canadian Standard, and BC Hydro repeatedly states that they do not need to meet the Canadian Standards. BC Hydro should, in any event be able to demonstrate that their Quality Control and Quality Assurance procedures show that the meters do in fact have CSA documentation to that effect, and that the meters' physical parameters consistently satisfy the Standards' requirements and that the documentation has been verified by third-party engineers.

This standard specifies the thickness of the meter blades. If there was an issue with blade thickness or compatibility, it would be expected to affect all or a sizable portion of meters in a manufacturing lot and would result in a cluster of incidents in location or time. The incidents investigated appear randomly dispersed in time and location.

- **There were incidents but without tracking how can the determination be made that they are random?**

2) Do smart meters have design flaws which result in meters being a fire hazard?

The evidence reviewed suggests that the Itron smart meters installed in BC do not have design flaws which cause meter fires or thermal incidents.

Comment: There is no evidence supplied in this report, or in other materials available at other times from others, to justify this statement. One obvious component not examined is the built-in disconnect switch. If the Manufacturer's Test data shows normal operating temperatures for each model of meter and its disconnect switch when subjected to realistic test conditions, including weather and overload, overvoltage and transient voltage conditions among others, and the tests results have been reviewed and verified by a BC Professional Engineer and if BC Hydro can provide proof of that, then perhaps

the BCUC can be confident that the operating characteristics will be within acceptable limits for application, and the BCUC assertion might carry some significance.

Although there have been a relatively small number of structural fires whose origin was identified at or in the vicinity of a recently installed smart meter, the available investigations) by fire/electrical experts have not found the meter itself to be the cause. The most likely cause for the majority of these investigations was found to be the meter socket or human installation error. A similar rate of meter socket and human installation error fires would be expected if the replacement meters were not smart meters.

If there was an issue with the design of the meters it would be expected to affect a significant number of the 2 million meters installed in BC. This has not been the case and the occurrence rate of meter and meter socket related fires in BC is consistent with other jurisdictions and with the BC Residential Structure Fires statistics prior to smart meter installation.

- **What were the available investigations? Given that the meters are removed, there are many that could not have been investigated**
- **How is the incident rate determined when no one is tracking?**
- **What evidence was reviewed to arrive at the conclusion that there are no design flaws that have contributed to meter fires or failures?**
- **Who were the experts who determined that the smart meters themselves did not cause fires? What were their qualifications?**
- **Given that meters were destroyed or removed, and that there are a high proportion of "undetermined" ignition sources, it is impossible for any determination to be made regarding the safety of smart meters. No conclusion can be drawn from the information that was considered.**

Comment: The above conclusions are not based on hard evidence, only conjecture, because of the fragmentation of reporting and incident data, and the inability or reluctance for forensic inspection of burned meters.

3) Is the meter installation process and/or training of meter installers a factor in the incident rate?

The evidence reviewed does not suggest that installation procedures or lack of training of meter installers has resulted in materially increasing the incident rate.

Comment: This conclusion is not based on hard evidence, only conjecture, because of the fragmentation of reporting and incident data. From this assertion, one could also conclude that the Utilities no longer need to use any trained and qualified staff to work on their power systems.

Of the evidence reviewed 7 fires were started during smart meter installation, the cause of one of these fires was identified as installer error.. Both BC Hydro and FortisBC reported that no installer lost time injuries occurred during the smart meter installation programs. Fires occurring during installation pose a relatively small risk to residents as they occur in the presence of the installer. However, it is clear installation practices vary somewhat between utilities and have evolved over time. The hot socket gap indicator tool was introduced after the start of BC Hydro's program. On a relatively small sample size, FortisBC who used the hot socket gap indicator tool for most of their installations reported no incidents during installation and no post installation fires.

- **Installations were done under power which is counter to all electrical rules and CSA regulations.**
- **Incidents at installation were not limited to fires. Many homeowners suffered damages to electronics and appliances as a result of the live exchange. Although some were reimbursed by BC Hydro, many**

claims were refused by Corix and BC Hydro, with the homeowner or the insurance company to pay for damages.

- **Poor installations do not necessarily cause "incidents" at the time the installation is done. Damage to the meter and/or the meter base can and did result in fires/failures weeks later. One example is a home fire that occurred in Coquitlam on Aug. 5, 2012. The smart meter had been installed 2-3 weeks prior to the incident which, according to the fire report, was caused by "failed electrical distribution equipment". BC Hydro removed the meter before the BCSA could investigate the incident, but did pay for repairs.**
- **Given the lack of accurate tracking, there is no reason to believe BC Hydro's assertion or BCUC's conclusion that lack of training or poor installation procedures did not result in increased incidents. What was the incident rate of fires and damages to electronics, appliances and homes during installations in the 5 years prior to 2011?**
- **There were any more than 7 fires and major incidents that occurred during installation. A report from BC Hydro obtained via an FOI which included 157 events through Sept. 2014. There is no reason to accept any of the statistics provided by BC Hydro.**

Comment: The hot socket gap indicator tool was introduced by TESCO around 2014. The Manufacturer recommends it be used on de-energized equipment. The Question arises: Why is BC Hydro not using this device?

4) Are the smart meter components and materials more flammable than previous meters and if so does this materially impact their safety?

Some components of the Itron smart meters installed in BC are more flammable than the previous meters. For example the cover of the Itron meters are made of polycarbonate verses analog legacy meter covers which are made of glass. Furthermore, smart meters contain batteries while legacy meters had none. However, the evidence reviewed does not suggest that the flammability rating of smart meter components and materials has resulted in a material increase in the meter related fire incident rate. In the US, the annual number of fires where the ignition source was attributed to the electric meter or meter box dropped from 940 in a pre- smart meter period to 610 during the period when smart meters werebeing installed.

- **None of this is credible because meters are being removed from fires scenes in US and BC.**
- **It has been acknowledged and demonstrated that there is no accurate tracking system in BC, and there is no evidence that the reporting done by the states or utilities in the US is any better.**
- **What evidence was reviewed that led to the conclusion that the flammability of the material used in the smart meter has not increased the meter-related fires?**
- **Who reviewed the evidence and what were his qualifications?**
- **There is no basis for the assertion that smart meter components and materials have not resulted in an increase in meter related fires.**

The evidence reviewed is not sufficient to rule out the fire rating of smart meter materials to be a contributing factor in all fires originating in the vicinity of meters. However, plastic components are commonly used in other electrical equipment **Comment: This Report statement is a gross simplification, not recognizing the science and the rigorous testing that goes into the insulating material careful choices for electrical equipment.** and FortisBC submitted that the plastic components of their AMI meters have a rating of V-0 as specified under UL94, the Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances testing.

Comment: From the UL94C Standard, the ignition source for the material under test consists of a 50W tirrel burner flame ignition source. This does not accurately represent actual unlimited electrical arc energy available from the Grid when the HV Utility fuse does not interrupt a Low-Voltage fault in an adequately short time

The flammability and other smart meter safety concerns prompted Underwriters Laboratories to develop and in 2014 publish UL 2735, the Standard for Safety for Electric Utility Meters. Section 10 of the standard addresses batteries and section 16 addresses flammability. A Canadian version of the UL standard is being developed. There is also a parallel ANSI meter safety standard under development.

- **UL certified 2 meters, Landis & Gyr (Texas) and Sensus (Saskatchewan) as meeting UL 2735 standards after these very same meters caused fires and failed. Obviously this standard is inadequate. Something that is considered safe will not cause fires.**
- **According to industry documents the new standards are being developed as a result of concerns about design flaws that make smart meters fire hazards.**
- **"… design flaws in smart meter units have been known to cause serious fire hazards and spotty performance. This has caused a lot of concern for utilities and manufacturers of smart meters."**

  http://www.metlabs.com/blog/meters/new-ul-2735-electric-utility-meter-standard-ensures-safety-and-performance/

The following observations were made regarding the tracking of fires and thermal incidents originating in the vicinity of smart meters.

5) How are the utilities tracking fires and thermal incidents originating in the vicinity of smart meters?

BC Hydro stated it tracks incidents that occur during installation but does not track post installation incidents. .

FortisBC stated it tracks both installation and post-installation incidents. The review of the BC Safety Authority incident reports suggests that BC Hydro's installation event tacking system has not captured all of the events.

- **Significant evidence has been provided to refute the assertion that BC tracks incidents during installation.**
- **This admission by BC Hydro that it does not track post installation incidents is concerning. Why isn't BC Hydro tracking post installation incidents?**
- **Any competent company would want to know failure rates of products it has purchased. Are they not sharing information that they don't want BCUC or the public to know?**
- **Is BC Hydro allowing ITRON to track so it can say BC Hydro is not aware of any failed meter or one that has caused a fire?**
- **If BC Hydro is not tracking and has no statistics regarding failed, burned and meters that caused fires, then the competence of BC Hydro must be questioned.**
- **Could BCUC please share the details of the post-installation incidents reported by FortisBC?**

Comment: This subject of incomplete statistics for electrical service point-related incidents needs to be examined by third party experts and needs to be rectified before any general conclusions are drawn about the frequency and severity of incidents.

6) Are fires and thermal incidents originating in the vicinity of smart meters being adequately investigated?

Due to the confluence of safety mandates at the meter/meter socket interface there is a risk that safety investigations are missed or interfered with by other parties. . Fire departments are tasked with identifying that electrical equipment may be a cause of a fire and notifying the BC Safety Authority. Likewise, electrical contractors are also required to notify the BC Safety Authority of any incidents of equipment damage involving the meter socket. The evidence reviewed suggests that BC Hydro and FortisBC primarily rely on the investigations of other agencies to determine the cause of incidents. The BC Safety Authority has the expertise including electrical fire forensics to conduct thorough incident investigations of electrical equipment but does not have a direct mandate to investigate meter incidents. However, the BC Safety Authority does indirectly investigate meter incidents through its mandate to investigate meter socket incidents

- **BCUC is allowing BC Hydro to shed its responsibility for knowing if smart meters are safe or not by saying it relies on other agencies. BC Hydro has been given the responsibility for determining what standards. Point 8 (below) says:**

  "BC Hydro determines what physical and safety standards its meters meet and the certification method"

- **It seems that BCUC and BC Hydro believe that BC Hydro should be allowed to have it both ways: it sets its own standards but is not held responsible when its standards are not sufficient to ensure public safety**

- **BCSA -- the agency with the expertise to investigate electrical incidents involving smart meters -- has its hands tied. It has been told it cannot get involved with smart meters or the program. Moreover, it is not called on a consistent basis to investigate incidents, and in many cases instances when it is, the smart meter has been removed. Several regulations are being disregarded leaving no agency to investigate this potentially dangerous device that is put on homes.**

- **Given the acknowledgement that the investigations are not complete, and that there is a systemic breakdown in tracking, reporting and oversight, what does BCUC recommend be done?**

Comment: Correspondence suggests a fundamental shortfall in the reporting methodology and the level of intelligent data produced.

Electricians are required to get a permit from the BC Safety Authority before starting repair work on a meter socket which if the process works as intended prevents them from conducting work before an investigation is completed BC Hydro and FortisBC personnel or contractors are exempt from the *BC Electrical Safety Regulation* and do not require a permit from BC Safety Authority to conduct meter repair work and may be unaware of a pending BC Safety Authority investigation. If a meter involved in a safety incident were to be removed by BC Hydro or anyone else prior to BC Safety Authority completing its investigation the BC Safety Authority investigator would be expected to make note of the removal in the investigation report. Of the 13 BC Safety Authority reports reviewed 4 of them noted the meter was removed prior to BC Safety Authority's investigation. In 2 of these cases the property owner's electrical equipment was also repaired and in 2 cases the meter was removed presumably by BC Hydro without repair work being done on the property owner's electrical equipment.

- **Why are meters being allowed to be removed with impunity? In fact, the Fire Commissioner and BCSA told me that BCHydro was allowed to remove the meters because it was "their equipment". Fire scenes are considered a crime scene until an investigation determines otherwise. Evidence is being removed. And why is Hydro doing this? Why are they preventing an inspector from determining if the meter is a factor in the fire or not.**

- **There is no coordination between and among agencies, and no oversight. No one is in charge, leaving the public with a device that is potentially dangerous on homes without choice, without protection.**

With regards to the certification of smart meters in BC the following observations were made.

7) Are watthour meters required to be certified safe by a professional electrical engineer licensed in BC and if so, has it been done?

In BC, utility owned watthour meters are not required to be certified by a professional electrical engineer. Despite Section 21 of the *BC Electrical Safety Regulation* which requires electrical equipment used in BC to have a mark indicating third party safety certification or alternatively for utility equipment to be certified by an electrical engineer licenced in BC, Section 3 of the *BC Electrical Safety Regulation* exempts utilities and utility distribution equipment, i.e., meters from the regulation.

- **This regulation needs to be amended and updated. When written, analog meters were on homes and were deemed, through experience, to be safe. The fact that a utility owns equipment does not mean per se that the equipment is safe. Given that BC Hydro has expert electrical engineers in its employ, why has none been tasked with testing the meter and certifying its safety?**
- **Given the many issues identified in this report and through comments, does BCUC agree with this exemption?**

Comment: This conclusion by BCUC appears to be at the root of the issue around meter incidents. Reviewing the evidence about meter design, installation, non-certified disconnect switch, questionable test data, lack of follow-up after installation, fragmentation of incident data, the critical interface between the meter and the homeowners' meter base, and other factors described in this report and elsewhere, there is a strong justification to demand that certification of the meters and validation of technical data be introduced as soon as possible, and an improvement in Utility practices, because it certainly appears that a lack of attention and due diligence by several responsible parties continues to occur.

8) What certifications are required for smart meters in BC and are they adequate?

All watthour meters in Canada are required to be certified to LMB-EG-07 which covers meter accuracy. BC Hydro determines what physical and safety standards its meters meet and the certification method. FortisBC determines what physical and safety standards its meters meet and the certification method. Currently there are no requirements other than for accuracy that require third party certification of utility owned smart meters in BC.

- **Who in BC Hydro determines the physical and safety standards for these meters? What are his/their qualifications?**
- **Does any third party review the standards to determine if they are adequate? What are they? Who confirms the standards are monitored and are met?**
- **Third party certification is required for accuracy because the public depends on meters measuring honestly and accurately. The public expects, and rightly so, that the meters put on homes will be safe. Why isn't there a requirement that any electrical device, even if owned by a utility, be certified safe by an independent third party?**
- **Allowing BC Hydro to both set the standards and to determine if it has met those standards is a blatant conflict of interest. And with BC Hydro's obvious inability even to keep accurate records on incidents and to follow regulations, their ability to ensure that even their internal standards are met is dubious, at best.**
- **Is BCUC satisfied with there being no oversight of the standards of smart meters?**

Comment: See the previous comments.

Appendix A – Discussion on Hot Sockets

In British Columbia, both BC Hydro and FortisBC have chosen the Itron OpenWay CENTRON II electricity meters for their smart meter programs. Residential and most commercial meters are owned by the utility while the property owner is responsible for providing the meter socket (also referred to as a meter base or meter box). The meter electrically connects to the meter socket via multiple blades that are plugged into spring tensioned jaws shown in the diagrams below.

If the connecting jaws and blades are not tight or the connection is otherwise compromised, electrical heating can occur. In the utility industry this heating is generally referred to as a "hot socket". Conductor terminations can also be the source of heating. The hot socket issue effects all meter types though it is more likely to result in damage or a fire during or after a meter installation as the meter jaw can be damaged or the electrical connection otherwise compromised during the installation process. Hot sockets are generally a result of a failure of the meter socket, i.e., the home owner's property, as the meter jaws provide the spring tension required to maintain electrical continuity between the meter and the meter socket.

It is difficult to comprehend how a meter that is damaged or otherwise compromised during installation by an employee of the Utility which results in a 'hot socket' is somehow adjudged to be the responsibility of the homeowner. As well, since an uncertified, unregulated digital meter is inserted against the homeowner's wishes into a certified, regulated, analogue meter base and that this inappropriate conjoining results in a hot socket, by what sense of logic and rationality is that somehow the responsibility of a homeowner who never gave permission for (and might have refused) the installation?

During installation of a new meter the utility technician or contractor inspects the meter socket and if it appears damaged may make simple repairs. If the damage is beyond the training of the technician they will either call an electrician to make repairs or replace the meter base or notify the owner that repairs need to be made before a meter will be installed. With the increased rate of meter installations associated with smart meter programs and in part from the opposition to them utilities have been focusing more resources on the hot socket issue.

Comment: But not apparently all of the B.C. Utilities.

This focus has led to improved incident reporting,

Comment: The scattered nature of reporting does not justify this statement.

increased detection, expanded safety standards and basic research.

Comment: The lack of follow-up after installation precludes using this statement.

It would appear that since the hot socket issue has been such a surprise to the Utility company that it would have been appropriate to do the research before the installation program began instead of after. That it has undertaken this research at all is evidence of the seriousness of this issue and the inappropriateness of putting lives and property in jeopardy while the Utility attempts to fix it on the fly.

It is no surprise that the 'hot socket' issue has improved detection and incident reporting. A meter fire does tend to gain one's attention and spur that person to action.

The Electric Power Research Institute (EPRI) conducted research into hot sockets and published the result in a 2013 study that attempts to quantify the internal temperature of a meter under different operating conditions including load, hot socket temperature and ambient temperature. The objective of the research was to determine detection thresholds and "abnormal" temperature differences that could trigger an inspection and prevent damages to the clients' installations. The EPRI also exposed meters to hot sockets for a prolonged period of time in an attempt of determining the damages to different meter models for different hot socket temperatures and the "normal" temperature of a hot socket by comparing with returns from the field.[18]

[18] *Advanced Meters: Hot Socket Effects and Detection, Electric Power Research Institute, 2013*

Comment: The examination by the BCUC of the internal operating temperature of the meters under test and in field conditions is a critical omission from this Report. There are some concerns about the validity of the Manufacturer's test results such as repeated identical test results and incomplete description of the test conditions. (Were the meters carrying full-load current for all of the time during the tests? Were the two internal RF transmitters operating? Was the meter's disconnect switch installed in all tests? Was the steady-state ambient temperature during the tests plus 40 Deg C and minus 40 Deg C as is common in electrical performance tests for outdoor equipment? Were the meters exposed to the spray water tests when subjected to these same testing parameters?

The internal meter coil operating temperatures reported by Itron for some meters reached 90.2 Deg C. These testing variables and the testing results are critical items for examination by independent third parties prior to embarking on a multi-million meter unit installation program. There has been some difficulty in obtaining accurate meter test information from BC Hydro. Note that the Tests must be reviewed for realistic conditions, as demonstrated by the failure of Saskatchewan meters tested to UL Standard 2375, and the Summerland meters that failed catastrophically under surge voltage conditions.

Summary:

To make abundantly clear the problems that now exist with the smart meter investigative process, I would like to present you with a scenario. The premise upon which this scenario is built is a hypothetical. So no admissions are required of you. It is, after all, just a hypothetical.

A home catches fire. The inciting cause of the fire is the smart meter.

That's the hypothetical. What follows is not hypothetical. It's reality.

1. **While the fire is being fought, BC Hydro removes the smart meter.**
2. **BC Hydro immediately sends the meter to ITRON without doing any investigation.**
3. **When the fire department's inspector inspects the scene all the evidence points to the area of the meter as being where the fire started, but with the smart meter gone, he is forced to say that the ignition source is "undetermined".**
4. **The BC Safety Authority is not called so this agency with the electrical experts have no opportunity to view the fire scene.**
5. **The fire report is not completed for 15 months and therefore is not put on the system in time for the fire to be included in the annual report, but even if it had been, there is no accounting for fires with "undetermined" igniters.**
6. **The result is that no one knows the smart meter caused the fire and BC Hydro is able to say it is not aware of any situation where a smart meter was determined responsible for causing a fire.**
7. **BC Hydro commissions and pays Mr. Len Garis to write a report about smart meter safety. Mr. Garis uses only the incomplete, inaccurate Fire Commissioner's annual report, concluding that there have been no smart meter fires.**

It is obvious that no one agency is in charge of this program with regard to safety and oversight. All of the attention has been given to getting smart meters on homes at all costs without regard to the health, safety or desires of BC Hydro customers.

I would ask that BCUC fulfill its role of protecting the public according to the BC Utilities Commission Act by doing the following, at the minimum:

1. **Require that an immediate and complete investigation by independent qualified forensic experts of the safety of ITRON smart meters currently on homes in BC be undertaken;**

2. **Establish one agency that has the responsibility for coordination of the various reporting agencies to ensure regulations are followed and that tracking/reporting of all fires are done as per those regulations;**

3. **Establish meaningful penalties (e.g. firing) for those who disregard or allow others to disregard regulations, e.g. removing smart meters from fire scenes before official inspection has been done, or neglecting to inform the BCSA of an electrical incident before the scene has been corrupted.**

4. **Amend the BC Electrical Safety Regulation which currently exempts utilities from any and all safety regulation, ensuring that any utility equipment that is put on private residences and businesses is certified by a qualified agency (CSA) or a professional electrical engineer licensed in BC.**

Given the lack of oversight and due diligence by any of the agencies, it must be considered that other fire hazards might exist that are not being reported or addressed. The problems are systemic and likely not specific to the smart meter program. If it were not for members of the public who devoted much time and effort to investigating and documenting the problems, it is likely that they never would have come to attention. This failure must be investigated by an independent body with the authority to enforce recommended changes.

The smart meter program is unique in that devices that have been known to have caused problems elsewhere, e.g. in California, and for years before the program began in BC, are mandated to be on every home and business. Lives and property are being put at risk by the very government and agencies who are sworn to protect them. It should not be left to the members of the public to fight the government and BC Hydro to protect themselves and their homes.

OBSERVATIONS by qualified independent experts:

1. **The partial evidence described in this BCUC Draft Report demonstrates the results of an apparent lack of foresight and diligence on the part of the BCUC prior to and during the implementation of the smart meter programs by BC Hydro and FortisBC.**

2. **The BCUC has not been involved in any safety monitoring of the smart meter programs from as early as April 28, 2010, in spite of appeals in writing from the Public, until apparently June 2015.**

3. **The BCUC has claimed in writing its exemption from any safety oversight on several occasions, citing the CEA and Orders-in-Council.**

4. **Minister Bennett's Office did not know that the BCUC was not monitoring the safety of the smart meter programs, evidenced by written requests to that office and telephone conversations with analysts in Minster Bennett's office in 2015.**

5. **Because of the above critical issues, we submit that the BCUC is in a conflict of interest in attempting to assess the safety of the smart meter implementation. The BCUC has not been involved during the critical five year period starting in 2010, so that involvement now in a process for which it suddenly decides to start taking action is inevitably unacceptably biased. An independent third party body must take the lead to use adequate technical expertise to assemble reliable data, assess the critical issues and draw sound conclusions from the data, without**

influence from the Utilities, Fire Chiefs, or Government interference.

6. **The BCUC appears to have changed its position as late as June 2015, to become involved in one specific complaint from one member of the Public and long after the unmonitored implementation of the Advanced Metering Infrastructure program.**

7. **The Draft Report states that BC Hydro is "not tracking after-installation incidents", yet the report uses data and draws conclusions which require a representative data base which cannot exist when incidents are not being properly recorded and there is apparently no formal procedure for assessing and documenting failed meters and related problems.**

8. **A fundamental flaw in this Draft Report is the lack of acknowledgment of the absence of, and fragmentation of incident reporting. Much effort by individuals from the Public has exposed the complicated and the unreliable reporting systems employed by the many organizations who are, or should be formally responsible for accurate and consistent gathering of specific data about electrical failures.**

   The reporting system seems to be characterized by: a lack of adequately specific incident coding; a patchwork of inadequate data collection and enforcement of regulations; a lack of forensic expertise and effort in incident investigation; the removal of evidence prior to qualified, diligent investigation; failure to file legally required reports; and ambiguity about the role of BC organizations (such as municipalities that control their own electrical inspections) in submitting reports on incidents.

9. **The BCUC needs to supply a list of the professional qualifications and experience of the BCUC staff members involved in the review and in the preparation of this Draft Report. Why is there no indication of the authorship of the report?**

10. **Several critical topics which affect the safety of smart meters and their implementation have been omitted by the BCUC, and therefore the completeness and the adequacy of this Draft Report is questionable. These critical topics include:**

    - **There is no adequate over-current protection of the electronic meter, built-in disconnect switch, or meter base in the event of (various likely) failures. The Utility HV fuse is not adequate to detect and handle a low-voltage arcing or other high current fault. This unsafe practice exposes customers to destructive fire on their premises, and consequences over which they have no control.**

    - **There has been no effective regulatory oversight for the implementation of the BC Utilities implementation of the Advanced Metering Infrastructure.**

    - **Of the potential regulatory oversight of the AMI program in BC, that of the BCUC has been passive, rather than actively monitoring the program. A passive role requires input, and the need for this input must be advertised widely in order that the public may participate effectively. It is in any case disingenuous to put the onus for criticism on unqualified members of the public for an assessment of a technically complex program like the AMI program.**

    - **The BCUC appears to accept data from the Utilities at face value, without verifying its authenticity. This suggests a lack of professional expertise.**

- **The questions posed by the BCUC in its Draft Report suggest a lack of depth in the Professional Engineering knowledge of this complex subject, as demonstrated by the many comments/ criticisms that it was necessary to add to the BCUC draft report.**
- **There is no electrical safety certification process in BC for smart meters, though the CSA Standard for smart meters exists. The BCSA appears to differ from the BCUC in its interpretation of the BC Electrical Safety Act which requires certification by a Professional Engineer for non-certified devices used by a Utility. This must be clarified because, if it not enforced, then it is a meaningless part of the Safety Act, and provides false assurance.**
- **Smart meters meeting the UL 2735 Standard have failed in Saskatchewan. Additional and costly efforts are underway to create a more stringent UL Standard. http://www.metering.com/ smart-meter-fires-ul-confirms-sensus-meters-comply-with-safety-standards/.**
- **The BCUC relies upon the false assumption that if a device meets a Standard, then it is safe. This is contrary to sound Engineering practice which requires due diligence to assure that any device is "fit for purpose". This requires rigorous realistic testing which may exceed the test requirements in the Standards, plus verification by Professionals of the veracity of test results.**
- **Utilities are compromising the CSA Certification of the customers' meter base by carrying out meter exchanges carrying live load-current, despite being cautioned by registered letter to ensure that the load is disconnected during meter exchange. The result of this practice is electrical arc erosion of the meter stabs and base contacts. Recent reports from BC hydro state that up to 80,000 smart meters are being replaced over time which indicates more meter change-outs are occurring. The CSA was alerted in 2013 to this practice which contravenes the conditions for which the meter base was certified.**
- **BC Hydro is allowed to avoid using qualified unionized electricians in order to carry out incentive-based meter change-outs, thus adding to quality control short-falls at the customer service points, and affecting reliable data gathering.**
- **The BCUC has omitted mention in this Report of the meter's software-operated built-in 200 Ampere disconnect switch that is being used as a "Service Disconnect Switch" as defined in the CSA Standards and Electrical Code. BC Hydro and Itron has not been able to provide test data on the failure rate, nor on the switch's performance during electrical fault conditions or seismic events.**
- **BC hydro did not use the jaw-tension-test device employed by some USA Utilities to verify soundness of the meter base. The Utility is the only entity using the meter base. The Utilities remove and insert meters, yet they consistently blame the homeowner for the failure of the meter bases. This allows the Utilities to avoid taking responsibility for risk-causing actions.**
- **Despite several FOI requests, BC Hydro has been unable to supply documentation showing the testing, quality control and Hydro engineer sign-off for smart meters, stating that it "does not have files" on the subject. This suggests that all of the quality control, quality assurance, testing and verification of the Manufacturers' data have been sub-contracted to the Manufacturer. Such manufacturer's data as has been seen provides no assurance of safety because of its own serious flaws (duplicated data in different years; lack of meter identification; and documented cases of overheating).**

- **Hydro Québec removed 24,760 electronic meters because they were found to be too close to common sources of ignitable gas such as propane. BC Hydro, BC Safety Authority, CSA and the BCUC were notified of this in May 2015. This safety aspect of electronic meters seems to have been ignored in BC.**

The content and conclusions reached in this Draft Report are based on faulty and incomplete data. It appears that adequate expertise has not been aplied during the preparation of this review as explained above and is demonstrated by the numerous comments added in the Report from technical specialists who have reviewed the Draft Report.

APPENDIX D
MY RESPONSE TO BCUC'S CLOSING OF FILE

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: August 28, 2016 2:23 PM
To: 'commission.secretary@bcuc.com' <commission.secretary@bcuc.com>
Subject: RESPONSE TO G-124-16_BCH-FBC-Smart Meter Safety Complaint (003) --2

Dear Ms. Ross,

Re: British Columbia Hydro and Power Authority and FortisBC Inc.

Customer Complaint - Smart Meter/Advanced Meter Fire Safety July 18, 2015

I received your letter of July 28, 2016 along with the justification for your decision not to finalize the draft report on smart meter fire safety. I must admit to being not only frustrated by your decision but also confused by it and the bases upon which it was made. Rather than write a lengthy rebuttal of the summary you've provided, I will make my observations and comments. You are considering the file closed but I cannot because I have concerns which have yet to be addressed and are too important to be disregarded by the BCUC.

1) "At this time your complaint is closed as the evidence reviewed does not demonstrate an increased fire safety risk related to smart meters. However the Commission has determined that there are gaps in reporting incidents where the meter and/or meter base is the possible source of a high temperature or fire event and is directing BC Hydro and FortisBC to file semi-annual incident reports." Covering letter.

   The BCUC agrees that the reporting of incidents has "gaps", yet believes that there is evidence to support the supposition that smart meters do not increase risk of fires. This is inconsistent and illogical.

2) "The British Columbia Hydro and Power Authority and FortisBC Inc. are directed to report to the British Columbia Utilities Commission 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. All such incidents must be reported to the appropriate authority or authorities for investigation, as appropriate. If no such authority is appropriate, then the utility must conduct its own investigation as to the cause of the incident." Pg 2/2

   Given that evidence shows that BC Hydro and the various agencies have failed to comply with regulations already in place, I have serious concerns that the recommendations made by BCUC will be enforced or followed. The fox-henhouse analogy seems appropriate in this situation.

Digital Utility Meters Have "Voltage Transient Susceptibility"

Although the EPRI document was ostensibly written about meter "accuracy," it reveals a **fundamental safety weakness** with regard to all digital meters (as compared with analog meters) in a section entitled, "Voltage Transient Susceptibility." Quoting the document:

"The electronic circuits of solid state meters connect to the AC line to draw operating power and to perform voltage measurement. … A range of electronic clamping and filtering components are used to protect the electronics from these voltage surges, but **these components have limitations**. The ANSI C12.1 metering standard specifies the magnitude and number of surges that meters must tolerate. … **In any case, surges that exceed the tested limits, either in quantity or magnitude, could cause meter damage or failure**."

"**Electromechanical meters had no digital circuitry. They utilized spark-gaps to control the location of arc-over and to dissipate the energy of typical voltage events. As a result, <u>they were generally immune to standard surge events</u>**. This nature is evidenced in the section of ANSI C12.1 that specifies voltage surge testing, but allows that 'This test may be omitted for electromechanical meters and registers'."

https://smartgridawareness.org/2015/06/29/utility-industry-aware-of-issues-with-digital-meters-for-years/

'

4) "On December 18, 2015, S.N. provided an email to the Commission with two hyperlinks. One hyperlink includes a discussion on a new Underwriters Laboratory (an American safety standard agency) voluntary safety standard for electric utility meters" pg. 6/15

   This letter ignores the relevant and most significant portion of the statement provided in the hyperlink about the new UL standard that acknowledges that smart meters have design flaws that concern utilities and meter companies re. fires. Is this because BCUC has no interest in finding out if these meters are fire hazards? An objective observer might conclude that BCUC has no problem allowing devices on our homes that put property and lives at risk.

5) "second provides an Answering Brief submitted to the United States of America National Labour Relations Board where statements from persons involved in the case regarding smart meters were cited including the following: "part of the problem was a loose connection between the meter and the meter base because the smart meters had thinner 'blades' than the previous analog meters" and "the loose connection caused heat, which, in

turn, caused an electrical arc, which resulted in 'two pallets of burned up meters'." Pg/ 6/15

The report does not mention that linesmen with many years of experience were warning that the smart meters were faulty and were causing fires. Neither does this report acknowledge that the smart meters that did not fit the meter base correctly, as referred to in the Answering Brief, were the ITRON Centron II meters, the same model used in BC. Neither does it mention that the meter bases have not been certified by CSA to hold a combustible smart meter.

6) "4.2.1 Fire reporting in BC Commission staff reviewed the fire reporting system in BC and found that data on reportable fires occurring in BC are collected by the OFC, under the authority of the *Fire Services Act*. Local fire departments must investigate and,report all fires to the OFC. In addition, if the cause of a fire is suspected to involve electrical equipment, the local fire department must notify the BC Safety Authority.6" pg. 6/15

The summary ignores my evidence that in many instances the fires are not being reported to the OFC and the BCSA is not being notified when the fire cause is believed to have been electrical in nature. Saying that this is a legal requirement is one thing, but without oversight and penalties, these laws are meaningless. No one seems to have known before I presented the evidence and no one has confirmed that in fact this is happening. Without accurate data and with those responsible denying there is any problem, no meaningful conclusions can be made. This alone is sufficient to call for an independent investigation into the numerous deficiencies within the system. BCUC has the responsibility and the authority to demand corrective action and is doing nothing.

7) "SN has provided evidence of eight specific incidents. This evidence was used by the Commission to justify conducting this review of the complaint but it is not sufficiently comprehensive to be used directly to refute the OFC data which, as discussed above, is credible data for the whole province. The onus is on the complainant to present persuasive evidence or a persuasive case to support their complaint; in this case, S.N. has not done that." pg. 9/15

A major reason for my complaint is that BCUC is not performing its duties according to the BC Utilities Commission Act and I have provided damning evidence to support this assertion.

I have provided strong evidence to warrant concern and action, yet BCUC is giving credence to OFC data which is incomplete and inaccurate over 8 specific incidents where smart meters have failed and burned. I limited the number I provided to 8 because that was sufficient for the government of Saskatchewan to take action. May I ask how many incidents would be sufficient for you acknowledge there is a problem? 12? 20? Please let me know and I will provide that information.

Even though I am not an expert and am not being paid, as are those reviewing and refuting this information, the onus is being put on me to provide evidence that the smart meters are fire hazards. Rather it is the BCUC and BC Hydro who rightly have the responsibility to ensure that an electrical device that is being put on our homes is safe and I charge that to do otherwise is a failure of duty. This clearly is an indication that duty is not being done by the very agencies responsible for protecting the public.

Why hasn't the BCUC consulted with forensic fire experts and independent electrical engineers? If you don't look, you cannot find. Likewise if you don't want to find, you don't look.

8) "The Panel relies on the OFC data reported in the Garis Report because, in the view of the Panel, the fire reporting data from the OFC under the authority of the *Fire Services Act* is authoritative for BC. Despite the allegations made by S.N. that some fire reports are never submitted to the OFC and that some reports are submitted late the Panel considers that the reporting requirements of the *Fire Services Act* provide a legal requirement which supports the credibility ofthe data. As well, the Panel finds that the Garis Report is credible because it reports the OFC data and Mr. Garis, a Fire Chief and academic, is a credible author for such a report." pg. 12/15

With all due respect, this statement makes no sense.

The BCUC is ignoring the fact that the requirements of the Fire Services Act are not being followed, as I've proven. Reports are not being filed as required yet BCUC is pretending they are, just as Mr. Garis has. These are not my allegations, they are facts. I have proof. I sent you 2 examples. Do you want more? I have many.

Mr. Garis is a fire chief. I have found no evidence that he has credentials that would support the faith that BCUC places in his conclusions. Even though Garis was commissioned by and paid by Hydro for the report, he is considered unbiased.

Even though I am not paid by anyone and I have shown, and the BCUC has acknowledged, that the information the OFC used for annual reports is incomplete (with many fires missing or reported as being "undetermined" due to missing meters, for example), my evidence is ignored. The BCUC finds Mr. Garis's conclusion credible even though it is based on this incomplete, inaccurate data. I submit that an academic has the responsibility to ensure that the data being used is correct, complete, or would make a note should there be some that is not. This is not an academic paper and to present it as such demonstrates a lack of integrity by all involved.

Again, with all due respect, garbage in, garbage out.

9) "This evidence was used by the Commission to justify conducting this review of the complaint but it is not sufficiently comprehensive to be used directly to refute the OFC data which, as discussed above, is credible data for the whole province. The onus is on the complainant to present persuasive evidence or a persuasive case to support their complaint; in this *case*, S.N. has not done that." pg. 12/15

The evidence I gave was as examples to refute the statement in the draft which said that all fires must be reported to the OFC (implying that they were). As I said in my comments, I have documentation that shows that a very high percentage of fire reports are not reported within the timeframe required by law, and many fires are not reported at all. In fact, many of the fires were reported only after I requested the report from the OFC, often many months, even years after the incident occurred. This data is the basis for the OFC annual report that Mr. Garis used for his report upon which the BCUC is depending. It appears that because this is such important information that the BCUC should be following up with the OFC . This is BCUC's job – not mine. The onus is not mine.

.

10) "In regards to S.N.'s further four requests, the Panel has authority over public utilities under the UCA. While the Panel acknowledges that overlapping jurisdictions among various public agencies can be problematic, the Commission does not have the legislative authority to address requests related to other agencies. S.N. may choose to address her concerns with the relevant agencies, including the OFC, discussed in these reasons." 13/15

The BCUC may not have legislative authority to address requests, but certainly it must have the obligation to advise the government when a major problem has been identified. The overlapping of jurisdictions is one thing, but major gaps in reporting that lead to inaccurate, incomplete knowledge or reporting of data about issues that pertain to public safety is another. To suggest that I deal with the OFC is indicative that no one is in charge. I repeat, BCUC is not doing its job.

11) The statements from the electrical engineers were ignored, and attributed to me, a person who admits to having no expertise in the field of electrical engineering, just because the engineers didn't use their names. Does the lack of names make the information invalid, unworthy of being confirmed with electrical experts? Why didn't the BCUC demand that an independent forensic electrical engineer inspect the ITRON smart meter, its design, and the reported flaws to determine if in fact the design flaws could lead to fires? This is major shortfall in BCUC's decision. Pg. 6/15, point 4.5

Bottom line, BCUC admits that the reporting is poor, there are significant gaps in the data gathering, and that regulations are being broken. Despite all of this, BCUC has decided that there is no reason for concern about the safety of combustible devices that are on nearly 2 million homes and businesses in BC. Further BCUC, despite admissions of

major problems with data and monitoring, sees no reason to finalize the draft report. I find it curious that much of the significant information that is in the draft report and the comments that were given as requested were omitted from this summary. Why was this valuable data excised?

It appears to me, and I believe it will appear to anyone who reads this, that the BCUC is abdicating its responsibility under the Utilities Commission Act sections 23 (2) (which was omitted from your description of your legislative authority, page 1/15) and 38, and instead is asking me to continue to monitor and report shortfalls in the system.

General supervision of public utilities

23 (1) The commission has general supervision of all public utilities and may make orders about

(a) equipment,

(b) appliances,

(c) safety devices,

(d) extension of works or systems,

(e) filing of rate schedules,

(f) reporting, and

(g) other matters it considers necessary or advisable for

(i) the safety, convenience or service of the public, or

(ii) the proper carrying out of this Act or of a contract, charter or franchise involving use of public property or rights.

(2) Subject to this Act, the commission may make regulations requiring a public utility to conduct its operations in a way that does not unnecessarily interfere with, or cause unnecessary damage or inconvenience to, the public

Public utility must provide service

38 A public utility must

(a) provide, and

(b) maintain its property and equipment in a condition to enable it to provide,

a service to the public that the commission considers is in all respects adequate, safe, efficient, just and reasonable.

The BC Utilities Commission is obligated under the BC Utilities Commission Act to protect the public. It is failing in this regard and the public deserves to know it. When the next home burns, and should lives be lost, you cannot say you didn't know. You are on notice.

Sincerely,
Sharon Noble

This will be sent widely to every MLA, the media, and 20,000 Coalition members.

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: September 1, 2016 10:55 PM
To: 'commission.secretary@bcuc.com' <commission.secretary@bcuc.com>
Subject: RESPONSE TO G-124-16_BCH-FBC-Smart Meter Safety Complaint (003)

Dear Ms. Ross,

This procedure is new to me, and I would ask for some information.

In your covering letter you state that the complaint is closed. Someone more knowledgeable than I about the BCUC told me that I could appeal the decision. Could you please tell me the process for making such an appeal?

On page 9 one of the reasons for denying my request for an independent investigation was:

> "S.N.has provided evidence of eight specific incidents. This evidence was used by the Commission to justify conducting this review of the complaint but it is not sufficiently comprehensive to be used directly to refute the OFC data which, as discussed above, is credible data for the whole province. The onus is on the complainant to present persuasive evidence or a persuasive case to support their complaint; in this case, S.N. has not done that."

I was never asked to present more evidence that might refute the OFC data. The two examples that I offered were to suggest that the investigation was warranted, that the law was not being followed as was believed. I made it perfectly clear that these were only two of many such cases,

believing, perhaps naively, that if the Commission needed more information to confirm my assertions they would ask. No one did.

I have substantial evidence that proves that the OFC data is incomplete, that the assumption that the smart meters are safe because of this data is incorrect.

Given the seriousness of this issue, and the fact that you found serious gaps in reporting thanks to my complaint, I believe it crucial that the Commission review this decision and additional information which I will gladly provide.

I look forward to receiving your response at your earliest convenience.

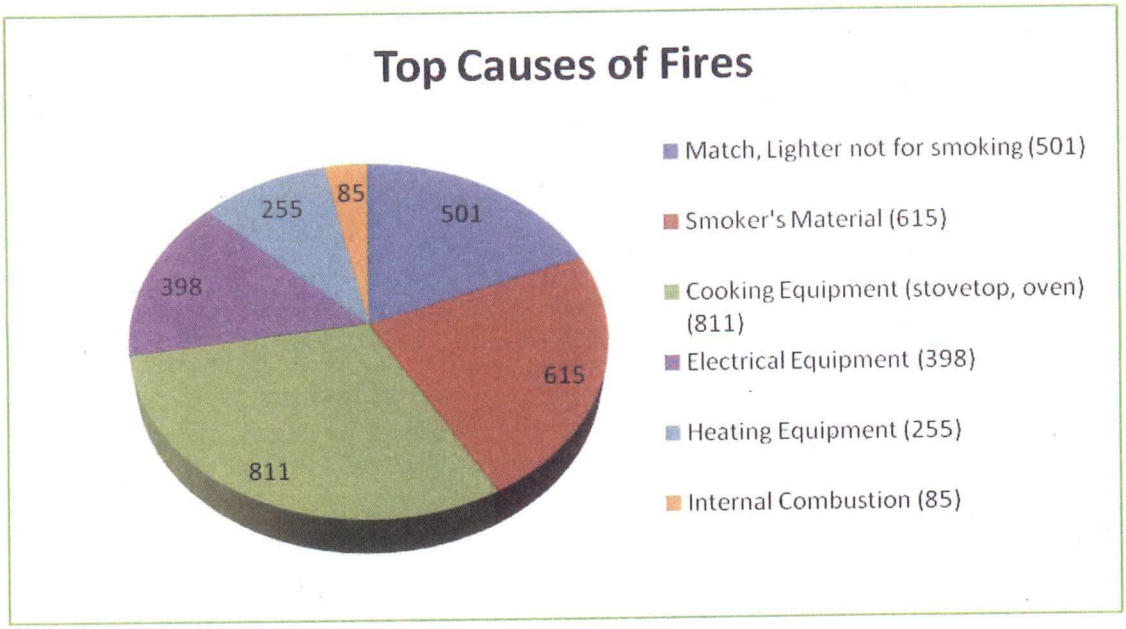
Sincerely,
Sharon Noble

APPENDIX E

Fire Dollar Losses in BC and Top Causes of Fires

Five Year Fire Dollar Losses in BC

Year	Total Number of Fires	All Fires in BC Dollar Loss
2008	8092	$385,910,724
2009	8718	$291,895,609
2010	7306	$227,930,819
2011	6621	$337,184,370
2012	6780	$388,486,994
Totals	**37,517**	**$1,631,408,516**
5 Year Average	**7503**	**$326,281,703**



Breakdown of Fires by Act or Omission with Injury or Fatality

Act of Omission	Percentage	Injured	Fatality	Dollar Loss
Accidental	61%	172	11	$6,650,258
Undetermined	27%	60	21	$88,811,050
Incendiary	12%	34	3	$6,106,801
Natural	0%	0	0	$0
Totals	**100%**	**266**	**35**	**$101,978,109**

APPENDIX F

SMART METER INCIDENTS ATTENDED BY HYDRO ONLY

Abbotsford, 3440 Mierau St., date of incident Nov. 17, 2013. Smoke, melted meter. Not reported to BCSA.

Burnaby, 1240 Glen Abbey, date of incident Jan. 2015. Burned meter, victim called BC Hydro. Photo provided by homeowner. Not reported to BCSA.

Cloverdate, 5764 – 176th St., date of incident Oct. 2012. Burned meter, caused minor damage. Smart meter had been installed several months earlier. Not reported to BCSA.

Port Hardy, 7185 Market, date of incident July 10, 2012. Burned meter. Meter installed 1 year earlier. This was the second such incident. Not reported to BCSA.

Revelstoke, 1108 Duchman Dr., date of incident May 25, 2013. Burned meter. BC Hydro repaired damage. Not reported to BCSA.

Vancouver, 3595 Triumph St., date of incident Nov. 15, 2014. Melted meter. Victim provided photo.

Vancouver, 256 45th Ave. W., date of incident Oct. 12, 2014. Arcing, smoking of smart meter. Burned meter extinguished by victim. BC Hydro told victim smart meter would be sent to its laboratory for inspection. PowerTech said it did no inspection. BCSA not notified.

Willow River, 30828 Upper Fraser Road., date of incident Jan, 2013. Smart meter on pole burned and damaged the pole which BC Hydro said the victim must pay for. Victim, Mr. Luc de Beir, gave interviews with media. No OFC report or notification to BCSA.

APPENDIX G

NO FIRE DEPT. REPORT DUE TO INSUFFICIENT DAMAGE

Nanaimo, 468 Kennedy St., fire Nov. 15, 2011. Fire department attended, notified BCSA but BC Hydro had removed smart meter so no inspection was possible.

Port Alberni, 3273 9th Ave., fire May 15 , 2012. Fire occurred during installation, Corix installer said he'd been given only 8 hours of training. BCSA was notified but BC Hydro had removed the smart meter so no inspection was possible.

Sparwood, 126 Aspen, fire Aug. 1, 2012 on outside of Post Office. Bystanders extinguished before fire department arrived. BCSA notified several days later, after BC Hydro had removed the smart meter.

Vancouver, 1868 W. 15th, incident April 14, 2015. Meter overheated, blackened, fire dept attended, BC Hydro replaced smart meter.

APPENDIX H

NO INCIDENT REPORT SUBMITTED TO OFC

Burnaby, 4356 Venables, fire Feb. 13, 2016.

Burnaby, Copeland Arena, 3676 Kensington, fire Dec. 8, 2014

Campbell River, 500 Colwyn, fire Sept. 25, 2012

Cranbrook, Mesa Grove Trailer Park, Kootenay St., fire Feb. 4, 2014

Delta, 4280 Tamboline Rd., fire July 29, 2014

Duncan, 4985 McLay Rd., fire Nov. 14, 2014

Keremos, 630 6th Ave., fire June 15, 2015

Langley, 5464-203 St., fire April 3, 2013

Lumby, 300 blk. Albers Rd., fire July 26, 2014

Powell River, 1128 Gillies Rd. Bay, fire May 25, 2016

West Vancouver, 830 Mathers, fire April 25, 2014

APPENDIX I

Incident Reports written within timeframe, not on OFC System when requested

Abbotsford, 4020 No. end. Rd., Fire June 28, 2015. Incident report (IR) dated June 29, 2015. IR requested July 8, 2016, IR received July 19, 2016.

Chilliwack, 45200 Moody Ave., Fire Jan. 6, 2015. IR dated Jan 7, 2015. IR requested May 1, 2015, IR received June 15, 2015.

Christina Lake – 1700 Highway 3E. Fire Nov. 21, 2015. IR dated Nov. 23, 2015. IR requested March 21, 2016, IR received March 30, 2016.

Gibson, 993 Fircrest Rd., fire Oct. 26, 2012. IR dated Oct 26, 2012. IR requested Nov. 10, 2014, IR received June 3, 2015

Langford, 2934 Sooke Lake Rd., Fire Aug. 27, 2014. IR dated Aug. 29, 2014. IR requested Nov. 11, 2014, IR received Nov. 24, 2014

Langley, 26675 32nd Ave., Fire March 29, 2012. IR dated March 30, 2012. IR requested Dec. 23, 2014, IR received March 3, 2015.

Oyster River, 2259 Feron Rd. Fire March 17, 2014. IR dated March 21, 2014. IR requested July 2, 2014, IR received July 11, 2014.

Port Alberni, 6110 Russell. Fire July 18, 2015. IR dated July 21, 2015. IR requested Sept. 28, 2015, IR received Oct. 6, 2015.

Port Hardy, 7695 Eagle Cres., Fire Feb. 11, 2013. IR dated Feb. 11, 2013. IR requested Aug. 21, 2014, IR received Oct. 6, 2014.

Port Hardy, 7705 Eagle Cres., Fire Feb. 11, 2013. IR dated Feb. 11, 2013. IR requested Aug. 21, 2014, IR received Oct 6, 2014.

Prince George, 1489 McCullagh Ave., Fire Jan 21, 2012. IR dated Jan 24, 2012. IR requested Nov. 10, 2014, IR received Dec. 11, 2014.

Surrey, 8396 192nd St., Fire July 3, 2015. IR dated July 6, 2015. IR requested May 5, 2016, IR received May 26, 2015.

West Kelowna, 3273 McGinnis. Fire June 24, 2016. IR dated June 24, 2016. IR requested Feb. 10, 2017, IR received March 8, 2017.

West Kelowna, #11-1525 Westside Rd. Fire Apr. 9, 2014. IR dated Apr. 9, 2014. IR requested July 2, 2014, IR received July 28, 2014.

APPENDIX J

INCIDENT REPORTS COMPLETED AFTER MY REQUEST

Blewett (Nelson) – 3371 Cazakoff Rd., fire Jan 22, 2013. Incident report (IR) requested April 7, 2014. IR was dated May 15, 2014.

Cache Creek, Royal Bank, 1047 S. TransCanada Hwy, fire July 28, 2014. IR requested Feb. 1, 2015 and March 15, 2015. OFC never received it. The IR is dated March 26, 2015 and was sent to JAG.

Chilliwack – 44075 Yale, fire Sept 11, 2014. IR requested Dec. 3, 2014. IR report dated Jan. 12, 2015

Coldstream - #1-8508 Clerke Rd., fire May 30, 2014. IR requested Nov. 11, 2014. IR dated Nov. 27, 2014

Elkford – Rocky Mt. Elementary School. Fire June 2, 2014. IR requested July 24, 2014. IR dated Sept. 5, 2014.

Keremos – 639 6th Ave., fire June 15, 2015. IR requested Oct. 3, 2016. IR dated Oct. 6, 2016. OFC never had report. It was obtained from JAG/TRA.

New Westminster – 728 Princess St., fire Dec. 2, 2014. IR requested April 26, 2015. IR dated April 28, 2015.

No. Vancouver – 1370 Redwood St., fire Dec. 28, 2013. IR requested July 2, 2014. IR dated Oct. 28, 2014

Port Alberni – 4683 Margaret St., fire July 31, 2013. IR requested April 7, 2014. IR dated April 14, 2014

Squamish – 37940 Fifth Ave., fire Feb. 24, 2013. IR requested July 24, 2014. IR dated Sept. 29, 2014

Surrey – 8860 146 A St., fire Jan 2, 2014. IR requested April 7, 2014. IR dated April 7, 2014

Thompson-Nicola Reg. District – 2536 Harper-Ranch Rd, Pinantan Lake. Fire, April 16, 2014. IR requested July 7, 2014. IR dated July 11, 2014

Vavenby – 3052 Capostinsky Rd., fire Sept. 9, 2014. IR requested Dec. 3, 2014. IR dated Dec. 4, 2014.

Victoria (Saanich) – 2979 Austin, fire Sept 21, 2014. IR requested Dec. 3, 2014. IR dated Dec. 11, 2014

APPENDIX K

SMART METERS REMOVED PRIOR TO INSPECTION

Castlegar, 3113 4th Ave. Fire Nov. 18, 2015. Cause undetermined. Witness saw Fortis BC take the smart meter at the time of the fire.

Coldstream, 10025 Ricardo Rd., fire Aug. 12, 2014. BCSA wasn't notified for several days so by the time the inspection was done the smart meter had been removed.

Coquitlam, 3466 Darwin Ave. Fire Aug. 5, 2012. BCSA reported that meter had been removed, repairs made and paid for by BC Hydro before the inspection was done.

Cumberland, 2868 Bruce St., Fire Aug. 8, 2013. Cause undetermined. Witnesses reported that BC Hydro had removed the smart meter immediately after the fire.

Enderby, 434 Mabel Lake Rd., Fire Feb. 6, 2013. No Incident report provided due to exemption. BCSA did not inspect. Witness said that the smart meter had been removed at the time of the fire.

Langley, 26675 32nd Ave., Fire March 29, 2012. Fire at meter/base. BCSA arrived within hours but reported that the smart meter had been removed so a full inspection could not be done.

Nanaimo, 361 Albert St., Fire Nov. 30, 2014. A serious fire resulting in one death. BCSA reported that the meter had been removed prior to inspection.

Nanaimo, 458 Kennedy St. Fire Nov. 15, 2011. Fire occurred at the meter. BCSA reported that the meter had been removed prior to inspection.

Port Alberni, 3273 9th Ave., Fire May 15, 2012. Fire at meter. BCSA reported that the meter was removed prior to inspection.

Port Alberni, 4683 Margaret St. Fire July 31, 2013. Fire on exterior wall, igniting object electrical distribution equipment, fuel was electricity. BCSA reported that the meter was gone prior to the inspection.

Port Hardy, 7705 Eagle Cres., Fire Feb. 11, 2013. Igniting object electrical distribution equipment and fuel was fire, and the fire started on an exterior wall. BCSA was not notified. A witness, an RCMP officer, reported that the smart meter was removed before the insurance inspector arrived.

Saanich, 3214 Wetherby St., Fire March 19, 2013. All major categories of the incident report were coded "cannot be determined". Witness reported BC Hydro removed meter immediately and took photo if empty base.

Saanich, 468 Austin, Fire Sept. 21, 2014. Incident report electrical sections are coded as "cannot be determined". Meter removed immediately by Hydro according to witness.

Sparwood, 126 Aspen. Fire Aug. 1, 2012. Fire occurred on exterior wall at smart meter. Witnesses extinguished the fire. BC Hydro removed meter and ordered repairs before the BCSA was notified.

Vancouver, 1598 SE Marine Dr., Fire Jan. 12, 2013. Fire, arcing at panel. Vancouver reported that the smart meter was done prior to their doing the electrical inspection.

Vernon, 2200-106 53rd. Ave. Fire Aug. 13, 2013. Major fire on exterior wall, determined that igniting object was electrical distribution equipment and fuel was electricity. Hydro said on media that it was taking the smart meter to its lab to be inspected. Yet when asked for the lab report. PowerTech said it never had inspected a smart meter and Hydro said it never inspects meters before returning them to ITRON for replacement.

APPENDIX L

SMART METERS REMOVED PRIOR TO INSPECTION -✉

ALL 3 CODING AREAS CbD (CANNOT BE DETERMINED)

Castlegar, 3113 4th Ave. Fire Nov. 18, 2015. Cause undetermined. Witness saw Fortis BC take the smart meter at the time of the fire.

Coldstream, 10025 Ricardo Rd., fire Aug. 12, 2014. BCSA wasn't notified for several days so by the time the inspection was done the smart meter had been removed.

Cumberland, 2868 Bruce St., Fire Aug. 8, 2013. Cause undetermined. Witnesses reported that BC Hydro had removed the smart meter immediately after the fire.

Nanaimo, 361 Albert St., Fire Nov. 30, 2014. A serious fire resulting in one death. BCSA reported that the meter had been removed prior to inspection.

Saanich, 3214 Wetherby St., Fire March 19, 2013. All major categories of the incident report were coded "cannot be determined". Witness reported BC Hydro removed meter immediately and took photo if empty base.

Saanich, 468 Austin, Fire Sept. 21, 2014. Incident report electrical sections are coded as "cannot be determined". Meter removed immediately by Hydro according to witness.

Vancouver, 1598 SE Marine Dr., Fire Jan. 12, 2013. Fire, arcing at panel. Vancouver reported that the smart meter was done prior to their doing the electrical inspection.

APPENDIX M – COMPARING COMMENTS OF INCIDENTS REPORT TO JAG vs TO OFC

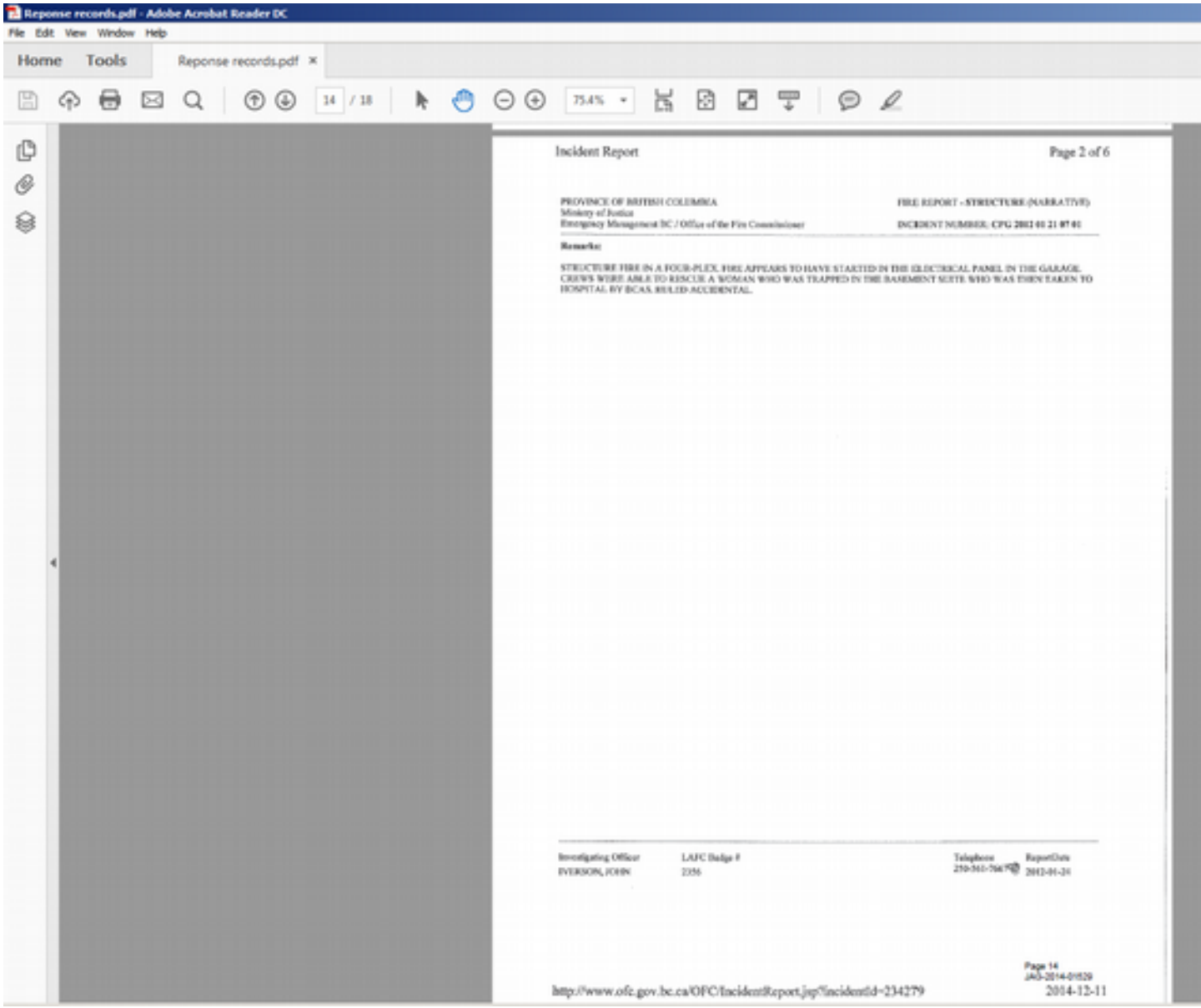
PROVINCE OF BRITISH COLUMBIA
Ministry of Justice
Emergency Management BC / Office of the Fire Commissioner

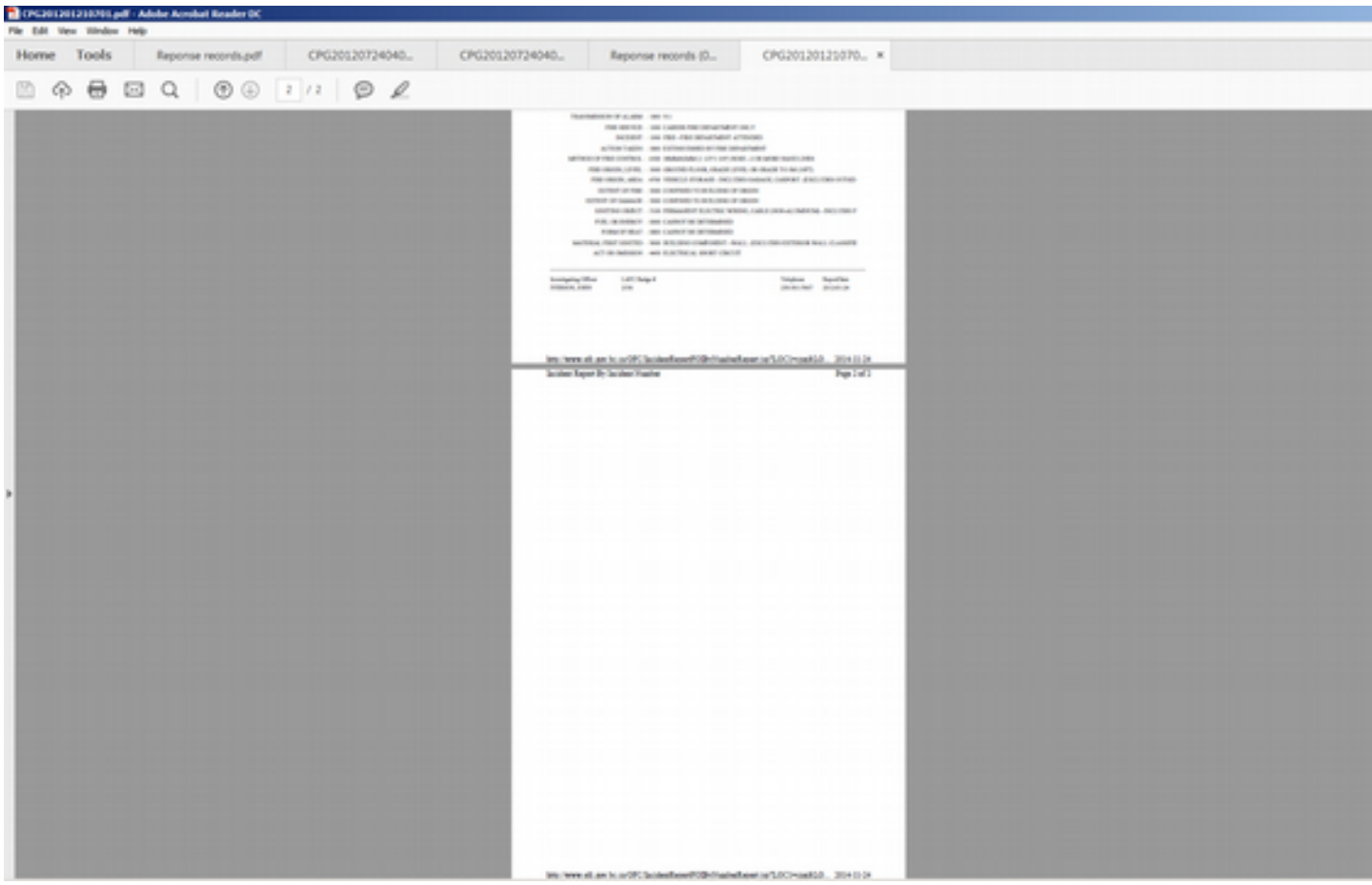
FIRE REPORT - **STRUCTURE** (NARRATIVE)

INCIDENT NUMBER: **CPG 2012 01 21 07 01**

Remarks:

STRUCTURE FIRE IN A FOUR-PLEX. FIRE APPEARS TO HAVE STARTED IN THE ELECTRICAL PANEL IN THE GARAGE. CREWS WERE ABLE TO RESCUE A WOMAN WHO WAS TRAPPED IN THE BASEMENT SUITE WHO WAS THEN TAKEN TO HOSPITAL BY BCAS. RULED ACCIDENTAL.





APPENDIX N

IGNITING OBJECT ELECTRICAL DISTRIBUTION EQUIPMENT, NO ELECTRICAL INSPECTION REPORT

Abbotsford, 2304 McKenzie, Fire Oct. 18, 2014. No BCSA report Feb. 20, 2015

Burnaby, Copeland Arena, Fire Dec. 8, 2014, No report available from Burnaby.

Cache Creek, 10475 TransCanada Hwy., Fire July 28, 2014. No BCSA report Aug. 11, 2016

Nelson, 1808 Granite Rd. Fire July 16, 2014. No BCSA report Nov. 24, 2016

New Westminster, 728 Princess. Fire Dec. 2, 2014. No BCSA report April 30, 2015

Port Alberni, 6110 Russell Pl., Fire July 18, 2015. No BCSA report Oct. 7, 2015

Port Alberni, 2609 Third Ave., Fire Sept 14, 2015. No BCSA report April 19, 2016

Port Hardy, 7705 Eagle Cres., Fire Feb. 11, 2013. No BCSA report Dec. 22, 2014

Prince George, 1489 McCullagh, Fire Jan. 21, 2012. No BCSA report Feb. 19, 2015

Saanich, 1681 Midgard Ave., Fire Dec. 30, 2014. No BCSA report July 20, 2015

Surrey, 12547 68th Ave., Fire Aug. 23, 2012. No inspection report from Surrey Oct. 14, 2014

Surrey, 15321 111th Ave., Fire July 30, 2014. No inspection report from Surrey Sept. 26, 2016

Vavenby, 3052 Capostinsky Rd. Fire Dec. 3, 2014. No BCSA report April 9, 2015

APPENDIX O

FUEL ELECTRICITY, NO ELECTRICAL INSPECTION REPORT

Abbotsford, 2304 McKenzie, Fire Oct. 18, 2014. No BCSA report Feb. 20, 2015

Burnaby, Copeland Arena, Fire Dec. 8, 2014, No report available from Burnaby.

Cache Creek, 10475 TransCanada Hwy., Fire July 28, 2014. No BCSA report Aug. 11, 2016

Christina Lake, 1700 Hwy. 3E., Fire Nov 21, 2015. No BCSA report April 5, 2016

Elkford, Rocky Mountain Elementary School, Fire June 2, 2014, No BCSA report Dec. 22, 2014

Langley, 21810 8th Ave., Fire Dec. 8, 2014. No BCSA report July 6, 2016

Nelson, 1808 Granite Rd. Fire July 16, 2014. No BCSA report Nov. 24, 2016

New Westminster, 728 Princess. Fire Dec. 2, 2014. No BCSA report April 30, 2015

Port Alberni, 6110 Russell Pl., Fire July 18, 2015. No BCSA report Oct. 7, 2015

Port Alberni, 2609 Third Ave., Fire Sept 14, 2015. No BCSA report April 19, 2016

Port Hardy, 7705 Eagle Cres., Fire Feb. 11, 2013. No BCSA report Dec. 22, 2014

Prince George, 1489 McCullagh, Fire Jan. 21, 2012. No BCSA report Feb. 19, 2015

Prince George, 1705 Mill Rd., Fire Sept. 20, 2013. No BCSA report Sept., 8, 2016

Saanich, 1681 Midgard Ave., Fire Dec. 30, 2014. No BCSA report July 20, 2015

Surrey, 12547 68th Ave., Fire Aug. 23, 2012. No inspection report from Surrey Oct. 14, 2014

Surrey, 15321 111th Ave., Fire July 30, 2014. No inspection report from Surrey Sept. 26, 2016

Vavenby, 3052 Capostinsky Rd. Fire Dec. 3, 2014. No BCSA report April 9, 2015

West Kelowna, 3273 McGinnis, Fire June 24, 2016. No BCSA report Feb. 14, 2017

APPENDIX P

INCIDENTS FOR WHICH BCSA REPORT RECEIVED, SMART METER INVOLVED

Coquitlam, 3466 Darwin Ave., fire Aug. 5, 2012

Delta, 4280 Tamboline Rd., Fire July 29, 2014

Langley, 26675 32nd Ave., fire March 29, 2012

Mission, 7964 Burdock St., fire June 15, 2012

Nanaimo, 458 Kennedy St., Fire Nov. 15, 2011

Port Alberni, 3273 9th Ave., fire May 15, 2012

Port Alberni, 4683 Margaret St., July 31, 2013

Sparwood, 126 Aspen, Fire Aug. 1, 2012

Vernon, 2200 53rd Ave., Fire Aug. 13, 2013

Vernon 2810 33rd St., fire Jan. 13, 2013

APPENDIX Q-1

FIRES ON EXTERNAL WALLS (INCLUDING GARAGES), AT PANEL

Port Alberni, 6110 Russell Pl., fire July 18, 2015. Fire at panel on exterior wall. Smart meter determined to have been the cause, reported on JAG report, not on OFC incident report. No BCSA inspection.

Prince George, 1489 McCullagh Ave, fire Jan. 21, 2012. Fire in electrical panel in garage. OFC report codes Electrical Distribution Equipment, Fuel being electricity. No BCSA inspection.

Surrey, 15321 111th Ave., fire July 30, 2014. Fire in electrical panel in garage. OFC report codes Electrical Distribution Equipment, Fuel being electricity. No BCSA inspection.

APPENDIX Q-2

FIRES ON EXTERIOR WALLS, FORM OF HEAT ELECTRICAL

Langley, 26674 32nd Ave., fire March 29, 2012. Fire started at meter base. Meter was removed and could not be inspected. Igniting object electrical distribution equipment, fuel electricity, form of heat electrical.

Port Alberni, 4683 Margaret St., fire July 31, 2013. Meter was removed before inspection. Incident Report coded igniting object as electrical distribution equipment (EDE), fuel as electricity, form of heat electrical.

Port Alberni, 6110 Russell Pl., fire July 18, 2015. Fire on panel, no mention of smart meter involvement in OFC incident report, but it was on the JAG report. Incident report coding EDE, fuel electricity, heat electrical. Cause, failed meter.

Surrey, 12547 68th Ave., fire Aug.23, 2012. Fire chief told media meter on fire. Short circuit possible, meter destroyed, could not be examined. Incident report codes EDE, fuel electricity, heat electrical on an exterior wall.

Surrey, 15321 111th Ave., fire July 30, 2014. Panel fire on garage wall. Incident report coding EDE, fuel electricity, heat electrical. No inspection report available.

Vernon, 2200 53rd Ave., fire Aug. 13, 2013. No details in OFC incident report, except coding of EDE, fuel electricity and heat electricity. JAG report says short in meter/meter base on exterior wall but smart meter was destroyed so no inspection could confirm cause.

APPENDIX R-1

FIRE WHERE IGNITING OBJECT WAS ELECTICAL DISTRIBUTION EQUIPMENT & FORM OF HEAT WAS ELECTRICAL

Burnaby, Copeland Arena, 3676 Kensington, fire Dec. 8, 2014.
Cache Creek, Royal Bank, 1047 S. TransCanada Highway, fire July 28, 2014.
Langley, 26675 32, Ave., fire March 29, 2012.
Nanaimo, 1400 Wingrove, fire Oct. 19, 2013.
New Westminster, 728 Princess, fire Dec. 2, 2014.
Port Alberni, 4683 Margaret Ave., fire July 31, 2013.
Port Alberni. 6110 Russell Place, fire July 18 2015.
Port Alberni, 2609 Third Ave., fire Sept. 14, 2015.
Saanich, 1681 Midgard Ave., fire Dec. 30, 2014.
Surrey, 12547 68th Ave., fire Aug. 23, 2012.
Surrey, 15321 111th Ave., fire July 30, 2014.
Vavenby, 3052 Capostinsky Rd., fire Sept. 13, 2014.
Vernon, 2200-106 53rd Ave., fire Aug. 13, 2013.
Vernon, 2810 33rd St., fire Jan. 13, 2013

APPENDIX R-2

FIRE ON EXTERIOR WALL, IGNITING OBJECT ELECTRICAL DISTRIBUTION EQUIPMENT & FUEL ELECTRICITY

Coquitlam. 3466 Darwin Ave., fire Aug. 5, 2012. BCSA could not inspect because smart meter had been removed. Fire was determined to be smart meter-related and BC Hydro paid for repairs.

Langley, 26675 32, Ave., fire March 29, 2012. BCSA arrived within hours and Hydro had removed smart meter, making it impossible for cause to be determined although fire started at meter/base

Mission, 7964 Burdock Ave., fire June 15, 2012. Smart meter determined to be cause. BC Hydro was sued.

Port Alberni, 4683 Margaret Ave., fire July 31, 2013. BCSA couldn't inspect meter because BC Hydro had removed it.

Port Hardy, 7705 Eagle Cres., fire Feb. 11, 2013. No BCSA inspection was done.

Surrey, 12547 68th Ave., fire Aug. 23, 2012. Meter was destroyed in the fire. No electrical inspection report available.

Vernon, 2200-106 53rd Ave. Fire Aug. 13, 2013. BC Hydro told media that they were removing meter to have it inspected. PowerTech never receivied it.

APPENDIX S

IGNITING DEVICE “ELECTRICAL DISTRIBUTION EQUIPMENT” & FUEL WAS “ELECTRICITY”

Abbotsford, 2304 McKenzie Rd., fire Oct. 18, 2014. No BCSA inspection.

Burnaby, Copeland Arena, 2676 Kensington, Fire Dec. 8, 2014. No OFC. Details direct from fire department. No BCSA inspection.

Cache Creek, Royal Bank, 1047 S. TransCanada Hwy., fire July 28, 2014. No BCSA inspection

Coquitlam, 3466 Darwin Ave., fire Aug. 5, 2012. BCSA reported smart meter removed so no inspection possible.

Gibson, 993 Fircrest Rd., fire Oct. 26, 2012. No BCSA report requested .

Langley, 26675 32nd Ave., fire March 29, 2012. BCSA report said smart meter removed so no inspection possible.

Langley, 20333 Grade Crescent. Fire Dec. 8, 2013

Mission, 7965 Burdock St., fire June 15, 2012. Hydro sued by victim.

Nanaimo, 1400 Wingrove, fire Oct. 19, 2013.

Nelson, 1808 Granite Rd., fire July 16, 2014. No BCSA inspection.

New Westminster, 728 Princess, fire Dec. 2, 2014. No BCSA inspection.

Port Alberni, 4683 Margaret St., fire July 31, 2013. On exterior wall. BCSA said smart meter removed so no inspection possible.

Port Alberni, 6110 Russell Pl., fire July 18, 2015. OFC said fire at panel on exterior wall. Report submitted to JAG/TRA said electrical failure of the smart meter. No BCSA inspection.

Port Alberni, 2609 Third Ave., fire Sept. 14, 2015. No BCSA inspection.

Port Hardy, 7705 Eagle Cres., fire Feb. 11, 2013. On exterior wall. RCMP witness said it started at the smart meter. No BCSA inspection.

**Prince George, 1489 McCullagh, fire Jan. 21, 2012. OFC coded “Fuel” as ‘cannot be determined although comments say fire started at the panel. Obviously a coding error occurred. OFC said BCSA said it was an accident but BCSA said they did no inspection.

Surrey, 12547 68th Ave., fire Aug. 23, 2013. No electrical fire inspection report.

Surrey, 15321 111th Ave., fire July 30, 3014. Fire at panel in garage. No electrical fire inspection report.

Vavenby, 3052 Capostinsky Rd., fire Sept 13, 2014. “spark, arcing”. No BCSA inspection.

Vernon, 2200-106 53rd Ave., fire Aug. 13, 2013. No details on report submitted to OFC except fire on exterior wall. Report to JAG/TRA says fire involved base, smart meter destroyed so it could not be inspected.

Vernon, 2810 33rd St., fire Jan. 13, 2013. OFC report said short in meter base. BCSA said water leaked into the smart meter causing a short.

Victoria (Saanich), 1681 Midgard, fire Dec. 30, 2014. Panel fire. No BCSA inspection.

APPENDIX T

APPARENT SMART METER INCIDENTS WITH NO INCIDENT REPORT

Burnaby, Copeland Arena, 3676 Kensington Ave., fire Dec. 8, 2014

Campbell River, 500 Colwyn, fire Sept. 25,2012

Cranbrook, Mesa Home Trailer, fire Feb. 4, 2014

Delta, 4200 Tamboline Rd, Fire Fuly 29, 2014

Vernon, Westside Rd., fire Nov. 20, 2013

APPENDIX U

RESUMÉS of ELECTRICAL ENGINEERS, TONY SIMMONS & WILLIAM BATHGATE

Resumé of Tony P. Simmons
PO Box 571300 Las Vegas, NY 89157

License:

Professional Electrical Engineer. Nevada # 13451 and California # 15621.

Education and Training:

2015 Electrical Transmission and Distribution OSHA 10 Hour Certification & Red Cross AED/First Aid/CPR.

OHSA 30 for Construction (In Progress).

ReVit (In Progress)

Enoserv RTS 7 relay testing software Essentials class.

Enoserv RTS 7 relay testing software Developers class.

2014 National Electric Code 2014 Edition Updates.

2012 Factory trained on SKM Software suite, SEL 735 Revenue Meter, Doble 6xxx Power System Simulator, and Doble Protest and Protection Suite software.

2011 AVO Utility Electrical Worker Safety, Factory trained on SEL RTAC and SEL protection relays.

1994 BS in Electrical Engineering with a Business Minor. University of Nevada, Las Vegas. 3.21 GPA

1976 Journeyman Wireman Apprenticeship. 8,000 hours of On the Job Training and 576 hours of classroom instruction.

Software Experence. Microsoft Office, MS Visio, MS Project, Metercat, ION Setup, SEL Accelerator Quickset, Enoserv RTS7, Doble Protest, GE Entervista, Microstation, and AutoCad. .

Work Experience:

2016- Present. PowerGrid Engineering, Lake Mary, FL

Senior Field Technician (On Call). Performed all component and wiring testing for protection, metering, station service, and internal communications system. Performed local, end to end, and functional testing on SEL electronic protection relays

2012 - 2015. Hampton Tedder Electric, Montclair, CA.

Supervising Test Technician for Southern California Edison substation and substation upgrades. Prepared work schedule, requested equipment outages, reviewed switching orders, performed Personal Protective Grounding as necessary, coordinated questions and scope changes with other project team members, performed or supervised all testing and completed documentation. Performed all component and wiring testing for protection, metering, station service, and internal communications system.

Performed local, end to end, and functional testing on ABB, GE, Basler, and SEL electronic protection relays Performed extensive field research to identify and document “as found” field conditions. Projects included:

- New 220 KV switch station near Tehachapi, CA.
- Completion of new 66 KV 50 MW peaking generation substation and upgrades on adjacent substations.
- Transformer replacement at three existing substations in the SCE service area,
- Substation RTU replacement near Barstow, CA.
- New 16 KV feeder protection and removal of abandoned-in-place load transfer system in Malibu, CA.
- New 500 KV-220 KV substation near Desert Center, CA.

2011 - 2012. Carob Valley Electric.

Contract Test Supervisor on short term assignment. Performed the detailed field audit for completion of a major substation protection system. New protection system has been started several years earlier by the utility, but had faltered due to loss of lead substation test technician. Documented work scope and prepared detailed project schedule.

1999 - 2010. Nevada Power Company and Sierra Pacific Power Company

Staff Engineer, Electric Meter Operations.

- Prepared specifications for metering equipment purchases and conducted technical review of vender proposals. Developed meter configurations for the Schneider ION 8000 series meters, as well as for Elster, Itron, and Landis + Gyr meters.
- Primary contributor to NV Energy net metering tariff (Rule 15), standard (RE-3), and customer interaction practices. Performed utility field verifications in southern Nevada and. Trained other engineers to perform field verifications. Lead contractors to solutions on problematic installations using the “Have you considered…” methodology. Provided monthly training classes to the net metering community.
- Primary contributor to Root Cause Analysis of safety incidents.
- Provided metering system design and custom meter configurations for all interconnection and generation projects. Coordinated communication schemes for real-time and billing data. Troubleshot communications links and data transfer between data management systems.
- Provided and reviewed testimony for litigation and reviewed complex damage claims and recommended appropriate settlement.
- Prepared procedures for meter field operations.
- Reviewed testimony for regulatory proceedings including transformer loss calculations, customer interconnection requirements, and net metering.
- Created Marginal Meter Cost Studies and calculated NPC Rule 2J transformer losses factors.
- Served as liaison with chief inspectors for local building jurisdictions.

- At the request of the Nevada State Contractor's Board, served as the public member of developing test for photovoltaic C2g contractors.
- Investigated high-value and high-profile billing complaints, concerns, and questions.

1997 - 1999. Nevada Power Company.

Senior Power Quality Engineer

- Addressed a long-standing, wide-spread gaming industry concern about power quality from the utility impacting gaming devices. Detailed research showed that Nevada Gaming Control Board evaluated the impact of power quality on gaming devices as part of the anti-tampering testing. Any device that could be impacted by power issues should not have been licensed.
- Assisted customers with power quality issues within their facility or resolved utility service issues affecting customers.

1994 - 1997. Nevada Test Site. Bechtel Nevada and Reynolds Electrical and Engineering Co. (REECO)

Senior Test Facility Design Engineer 1996-1997

- Designed the power system for a simulated foreign terrorist facility using domestic and foreign voltages and equipment. Required detailed coordination of grounded and ungrounded systems.
- Performed field research and documented the power system for an underground federal testing facility. The existing power system had evolved over several decades and was poorly documented.
- Prepared CPM schedules using P3, performed material take-offs, and developed cost estimates.

Field Project Engineer for Yucca Mountain Repository. 1994-1995

- Tracked scope changes and documented four million dollars in change orders.
- Coordinated Design and Constructibility Issues.
- Resolved "punch list" items for completed projects.

1992 - 1994. Attended UNLV full time.

1972 - 1992. Multiple contractors.

Wireman Foreman

- Supervised crew of electricians, HVAC mechanics, and plumbers for a large remote military installation.
- Supervised installation of a prototype security system on a military facility. Provided field engineering and conducted field testing as system evolved.
- Supervised electrical crew maintaining power system for construction of a power plant and chemical plant. Duties included documenting the temporary power that had been installed by a previous contractor and ensuring system reliability.

Journeyman Wireman

- Troubleshot all equipment and systems associated with a large airbase and weapons research facility. Installed power systems for industrial, commercial, utility, and residential installations.

Apprentice Wireman

Worked on a wide variety of industrial, commercial, utility, and residential installations under the immediate direction of a journeyma

BACKGROUND: William S. Bathgate

I hold an electrical engineering and mechanical engineering degree and previously was employed through late 2015 for 8 years at the Emerson Electric Company. While at Emerson Electric I was the Senior Program Manager for Power Distribution Systems and in charge of RF and IP based digitally controlled high power AC power switching system product lines in use in over 100 countries and I was also directly responsible for product certifications such as UL, CE, PSE and many other countries electrical certification bodies.

I am very familiar with the electrical and electronic design of the AMI meters in use because I was responsible for very similar products with over 1 Million units installed across the world. I have done this analysis due to my own curiosity without conflict of interest of this new technology.

I have 40 Years work experience in design and deployment of:

High tech power management systems,
UPS and power distribution
Switched Mode Power Supplies

Electrical and
Electronic hardware
engineering
Computer systems
engineering
Radio Systems design and testing
High Current and High Voltage switches
Internet communications using both wired and wireless technologies
UL, CE (Europe), Africa, Japan, Australia and China product safety certifications
Cyber encryption and protection of Radio Communications using digital signals

APPENDIX V -- BC Hydro misleading, non-related response to FOIs regarding due diligence.

BC Hydro
Power smart

Scott Macdonald
Manager, Freedom of Information and Privacy
16th Floor
Phone: (604) 623-3880
Fax: (604) 623-4556

Request Number: 201.20.2017-158

24 March 2017

Ms. Sharon Noble
818 Bexhill Place
Victoria, BC
V9C 3V5

Dear Ms. Noble:

Re: *Freedom of Information and Protection of Privacy Act* ('the Act')
— Request for records

I am writing in response to your request for records under the Act.

Your request consisted of 3 parts.

Each element of your request is addressed, below, in the order it appeared in your request.

1. **A copy of the formal SbD report with the names and qualifications of those conducting this study.**

   Please see attached records. As you review the records, please note that the table/report was a theoretical tool to provide BC Hydro with an overview of possible risks in the context of reported safety incidents and near misses. It is important to understand that the wording used in the tool was designed to identify ranges of possibility, rather than act as a record of actual events.

   Section 15 of the Act permits a public body to withhold information if its disclosure could reasonably be expected to harm the security of any property or system, including a building or communications system. One piece of security-related information has been withheld in accordance with section 15.

   A small amount of information in the table has been withheld in accordance with section 22 of the Act. Section 22 requires BC Hydro to not disclose the personal information of a third party if the disclosure of that information would be an unreasonable invasion of a third party's personal privacy. In view of section 22, we have removed from the enclosed records the names of some individuals.

2. **The safety related requirements included in the RFP tender documents and the test reports that were provided, in response, by ITRON.**

   Please see attached record from RFP tender documents.

   With regard to test reports provided by ITRON, BC Hydro has 266 pages that are fully redacted under Section 21 of the Act.

   Section 21 prohibits a public body from disclosing information that would reveal commercial or financial information of or about a third party that is supplied, implicitly or explicitly, in confidence and could, if disclosed, reasonably be expected to harm significantly the competitive position, or interfere significantly with the negotiating position, of the third party, or result in undue financial loss or gain to any person or organization. The ITRON test reports constitute the type of information contemplated by Section 21. They have therefore, been withheld.

3. **The third party (NEETRAC) report on ITRON's remote disconnect switch.**

   BC Hydro's report from NEETRAC is 138 pages and we have redacted all pages under Section 21 of the Act.

   Section 21 prohibits a public body from disclosing information that would reveal commercial or financial information of or about a third party that is supplied, implicitly or explicitly, in confidence and could, if disclosed, reasonably be expected to harm significantly the competitive position, or interfere significantly with the negotiating position, of the third party, or result in undue financial loss or gain to any person or organization. The NEETRAC report constitutes the type of information contemplated by Section 21. It has therefore, been withheld.

   If you wish to purchase a copy of the NEETRAC report, you could contact NEETRAC at the following website:

   www.neetrac.gatech.edu

If you have any questions regarding our response to your request for records, please call me. You may also ask the Office of Information and Privacy Commissioner for BC ('the OIPC') to review our response to your request by writing to the following address within 30 days of receipt of this letter:

Office of the Information and Privacy Commissioner for BC
4th Floor, 947 Fort Street
Victoria, B.C.
V8V 3K3

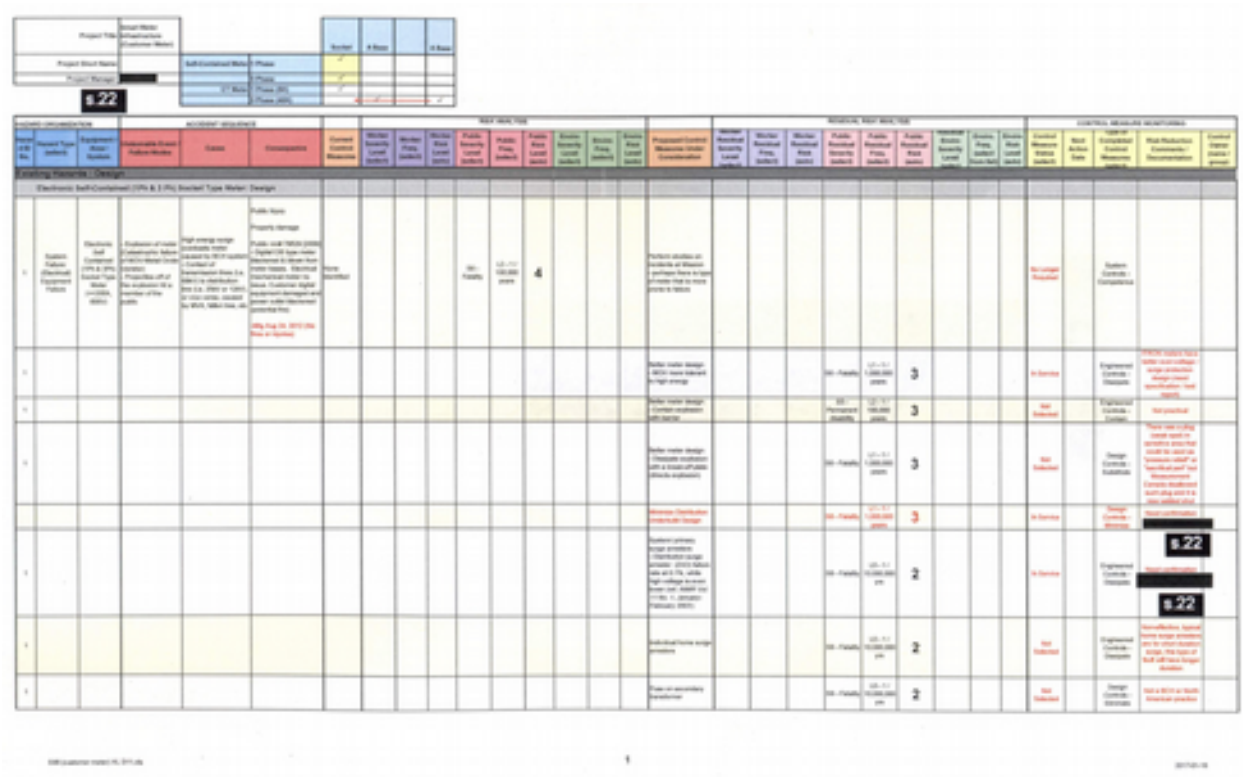
If you request a review, please provide the OIPC with a copy of this letter and a copy of your request.

Yours truly,

Scott Macdonald

Scott Macdonald

Attachments



BC HYDRO'S FAILURE TO CONFIRM DUE DILIGENCE

From: Dennis and Sharon Noble [mailto:dsnoble@shaw.ca]
Sent: June 14, 2017 11:08 PM
To: 'Macdonald, Scott' <Scott.MacDonald@bchydro.com>
Subject: FOI 201-20-2017-158

Dear Mr. Macdonald,

I am writing with regards to your response dated March 24, 2017, which purportedly related to my FOI but in reality did not.

1) I requested a **copy of the formal SbD report with the names and qualifications of those conducting the study.**

   You said you had attached records with the information requested, but that was not the case. Attached is one page of the 18 sent, and as you can see it is non-responsive. Instead of test results it appears to be a summary of situations confronted, e.g. page 7 "worker bit by dog". How is this relevant to my requests for a report on the safety testing of smart meters? Can you please provide the actual SdB test results with the names and qualifications of those conducting the study? If BC Hydro did not conduct safety testing, then please confirm that this is the situation.

2) I requested the **safety related requirements included in the RFP tender documents and the test reports that were provided by ITRON**

Can you please confirm that the items on page 71, Section 9 “Ability to meet the specified Safety and Security requirements, is the complete list?

3) I requested the **testing report on ITRON’s remote disconnect switch.**

You said that the NEETRAC report was redacted under Section 21 of the Act to protect the commercial or financial information of a third party, but said I could obtain a copy of the report from NEETRAC. After several weeks of attempting to get that report, I was told that it is available only to members of NEETRAC, which includes every major utility company and meter manufacturing company. This information is hardly private, therefore, being readily available to competitors. I am surprised that you would not know that it is NOT available to me as a member of the public. I therefore am asking for a full and unredacted copy of this test report.

I look forward to receiving the information that I have requested at your earliest convenience.

Regards,

Sharon Noble