



**Diane Roy**  
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April 8, 2015

**Via Email**  
**Original via Mail**

British Columbia Utilities Commission  
Sixth Floor  
900 Howe Street  
Vancouver, B.C. V6Z 2N3

Attention: Ms. Erica M. Hamilton, Commission Secretary

Dear Ms. Hamilton:

**Re: FortisBC Inc. (FBC)**

**Multi-Year Performance Based Ratemaking Plan for 2014 through 2019  
approved by British Columbia Utilities Commission (the Commission) Order G-  
139-14 – Annual Review for 2015 Rates (the Application)**

**Response to Workshop Undertakings**

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In accordance with Commission Order G-21-15 setting out the Regulatory Timetable for the review of the Application, FBC respectfully attaches its responses to the nine undertakings from the Workshop held on April 1, 2015.

In addition, FBC makes the following two clarifications to the Workshop transcript.

At Workshop Transcript page 79, lines 15-20, there was the following exchange between Mr. Weafer and Mr. King:

MR. WEAVER: So just to follow up. That's part of the point of the question is that all of those savings and efficiencies, **and if there was a change in employment levels**, that's all outside of PBR and all straight flow-through to the benefit of the ratepayer. Is that correct?

MR. KING: Yes. A hundred percent of our variance and our power purchase expense, including all of our market savings and all of our surplus sales revenue with the Waneta capacity flow through one hundred percent to our customer.

[emphasis added]

Mr. King's response is correct; variances in power purchase expense, including market savings and surplus sales revenue, flow through to the benefit of the ratepayer. However, with respect to Mr. Weafer's question of whether changes in employment levels would flow through to the benefit of ratepayers, FBC clarifies that this would not be the case. Power Purchase Management Expense (PPME) which includes the costs of the employees, is included in the O&M costs that are subject to the PBR formula, and therefore any variances in O&M caused by decreases (or increases) in employment levels are captured in the earnings sharing mechanism.

At Workshop Transcript page 161, lines 1-9, there was the following discussion regarding the change in the decimal place related to the Provincial Sales Tax (PST) adjustment:

MS. MARTIN: Just to clarify, the change in the decimal place is related to the FPST/HST factor.

MS. BRAITHWAITE: So, does it change the net inflation factor at all?

MS. ROY: Yes, it will.

MS. MARTIN: Yes.

MS. BRAITHWAITE: Okay. And do you know what it changes it to?

MS. MARTIN: It changes .025.

FBC clarifies that the change in the decimal place related to the PST adjustment is 0.005 (not 0.025 as stated by Ms. Martin) as shown in the response to BCUC IR 1.1.1.

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC INC.**

***Original signed:***

Diane Roy

Attachments

cc (email only): Registered Parties

**FortisBC Inc.**  
**Multi-Year PBR 2014-2019 Annual Review of 2015 Rates**  
**Workshop April 1, 2015**

**UNDERTAKING No. 1**

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**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 45, Line 14 to Page 46, Line 9; Page 185, Lines 4-7

**REQUESTOR:** Commission Staff (Ms. Domingo)

**QUESTION:** Provide the costs of the last Long Term Resource Plan, which also included the Long Term Capital Plan.

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**RESPONSE:**

Total costs for the development of the 2012 Long Term Resource Plan (LTRP) are set out in the table below.

|                                     | (millions)     |
|-------------------------------------|----------------|
| Stakeholder consultation            | \$ 0.09        |
| External consultant work or studies | 0.68           |
| Travel expenses                     | 0.07           |
| Incremental labour                  | 0.25           |
| Total                               | <b>\$ 1.09</b> |

The total of \$1.09 million shown above is not directly comparable to the 2016 LTRP development costs estimate of \$0.45 million. The 2012 costs also included costs incurred in developing the 2009 Resource Plan, which was filed with the Commission but later withdrawn. The majority of the work in developing the 2009 Resource Plan was carried forward and utilized in the 2012 Long Term Resource Plan.

FBC provides further explanation of each of the categories of costs incurred below.

The stakeholder consultation costs included notification, printing, supplies and venue rental costs related to costs associated with First Nations and stakeholder consultation.

The external consulting work or studies relate to work performed by external consultants in developing the LTRP. For example, Midgard Consulting Inc. conducted the energy market assessment and Resource Options Report for FBC as part of the development of the LTRP.

Travel expenses relate to travel and accommodation costs for staff involved in the development and consultation process of the LTRP.

**FortisBC Inc.**  
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**Workshop April 1, 2015**

**UNDERTAKING No. 1**

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Incremental Labour costs include all the incremental labour charges above the approved O&M from mid-2007 to mid-2011.

The 2012 LTRP was filed concurrently with FBC's Long Term Capital Plan and 2012-2013 Revenue Requirements. These were the subject of an oral public hearing at a total cost of \$1.314 million. While certain of the costs are clearly attributable to the capital or revenue requirement components of the proceeding (such as the depreciation study, etc.), it is not possible to determine the allocation of the remaining regulatory costs to the LTRP given the complexity of the combined regulatory process for the LTRP, the Long Term Capital Plan and 2012-2013 Revenue Requirements. Therefore, FBC is not able to provide the regulatory process costs attributable only to the 2012 LTRP.

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**Workshop April 1, 2015**

**UNDERTAKING No. 2**

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**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 86, Line 10 to Page 87, Line 11; Page 185, Lines 8-10

**REQUESTOR:** Commission Staff (Mr. Flintoff)

**QUESTION:** Provide the cost breakdown per unit of capacity and energy for FortisBC owned generation.

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**RESPONSE:**

The cost to own and operate the FBC Owned Generation is based on operating costs, financing, return and taxes, and is estimated at approximately \$37 million per year, of which approximately \$9 million is variable costs due the generation of the energy.

In 2015, FBC's Owned Generation is forecasting to provide 1,622 GWh of energy (46 percent of FBC's 2015 forecast load) and 2,549 MW of capacity over the year (average of 212 MW per month, equal to 29 percent of FBC's winter peak forecast). Therefore, the Unit Energy Cost (UEC) for 2015 is equal to approximately \$23/MWh, equal to the \$37 million divided by the total energy volume of 1,622 GWh. The Unit Capacity Cost (UCC) for 2015 is equal to approximately \$11,000/MW month, equal to the total cost of \$37 million, less the \$9 million in variable energy costs, divided by the total annual capacity of 2,549 MW.

There is no industry standard method for splitting a resource's fixed costs between energy and capacity. FBC has completed this analysis based on the UCC and UEC calculations, which is consistent with FBC's 2012 Long Term Resource Plan (LTRP) included as part of the 2012 Integrated System Plan dated June 30, 2011<sup>1</sup>. The one exception is that the calculation above is only for 2015 costs and resources, and not the cost and resources over the total anticipated service life as described in the LTRP. The UCC and UEC are independent metrics and cannot be added together. Rather, they provide the all in cost to provide the capacity resource and the all in cost to provide the energy resource.

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<sup>1</sup> Please refer to Section 6.1.1.1, page 72 of the LTRP. Source:  
[http://www.bcuc.com/Documents/Proceedings/2011/DOC\\_28033\\_B-1-2-FBC-Volume-2.pdf](http://www.bcuc.com/Documents/Proceedings/2011/DOC_28033_B-1-2-FBC-Volume-2.pdf)

**FortisBC Inc.**  
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**UNDERTAKING No. 3**

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**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 100, Line 25 to Page 101, Line 13; Page 185, Lines 11-12

**REQUESTOR:** Commission Staff (Mr. Flintoff)

**QUESTION:** Provide any future duration of outage and cost of repairs at Corra Linn.

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**RESPONSE:**

FBC is currently forecasting \$0.117 million of capital expenditures to be completed by the end of August 2015 in order to finalize the repairs at Corra Linn due to the fire in July 2013. A one-week maintenance outage is required to complete the new cable installation, and has been planned for June 2015. FBC is forecasting power purchase replacement costs for this maintenance outage to be approximately \$0.07 million.

FBC expects that these costs will be recovered through the insurance claim.

**FortisBC Inc.**  
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**UNDERTAKING No. 4**

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**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 134, Line 18 to Page 135, Line 8; Page 185, Lines 13-15

**REQUESTOR:** Mr. Hobbs

**QUESTION:** Provide the customer questionnaire and results for the most recent Customer Satisfaction Index.

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**RESPONSE:**

The following table provides the results from the 2014 Customer Satisfaction Survey.

| Question          | Satisfaction                    | Weight | 2014       |            |            |            |            |
|-------------------|---------------------------------|--------|------------|------------|------------|------------|------------|
|                   |                                 |        | Q1         | Q2         | Q3         | Q4         | YTD        |
|                   | <b>Electric Div. Results</b>    |        |            |            |            |            |            |
| B1                | Overall                         | 30%    | 7.4        | 7.5        | 7.6        | 8.2        | 7.7        |
| B3.2              | Accuracy of Meter Reading       | 10%    | 6.6        | 7.2        | 7.3        | 7.9        | 7.2        |
| B3.8              | Energy Conservation Info        | 10%    | 7.3        | 7.5        | 7.5        | 7.7        | 7.5        |
| C5                | Contact Center                  | 25%    | 8.2        | 7.9        | 8.4        | 8.6        | 8.3        |
| D3, D8, D13 & D22 | Field Services                  | 25%    | 8.9        | 8.7        | 9.0        | 9.1        | 8.9        |
|                   | <b>Total Electric CSI Score</b> |        | <b>7.9</b> | <b>7.9</b> | <b>8.1</b> | <b>8.4</b> | <b>8.1</b> |

The Customer Satisfaction survey questions follow.

| Question Text |  |
|---------------|--|
| B1            | First, I would like to get your opinion of the overall service provided by FortisBC. On a 10 point scale where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how satisfied are you with the overall service provided by FortisBC?   |
| B3.2          | Taking into consideration your personal experience and general impressions, how satisfied are you with the following aspects of your electricity service? Please use a scale of 1 to 10 where 1 is "Not at all satisfied" and 10 is "Extremely satisfied". Accuracy of meter reading?  |
| B3.8          | Taking into consideration your personal experience and general impressions, how satisfied are you with the following aspects of your electricity service? Please use a scale of 1 to 10 where 1 is "Not at all satisfied" and 10 is "Extremely satisfied". FortisBC's Power Sense providing information to help you conserve energy? |
| C5            | Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how satisfied are you in general with the service you receive from FortisBC customer service  |

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**UNDERTAKING No. 4**

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| Question Text |  |
|---------------|--|
|               | representatives over the phone?  |
| D3            | Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the Meter Reader?               |
| D8            | Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the Linesman?                   |
| D13           | Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the Technician?                 |
| D22           | Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the Power Sense Representative? |



**FortisBC Inc.**  
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**UNDERTAKING No. 5**

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**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 141, Line 24 to Page 142, Line 12; Page 185, Lines 16-19

**REQUESTOR:** Commission Staff (Mr. Flintoff)

**QUESTION:** Provide which incidents from 2014 were investigated by WorksafeBC and provide documents from WorksafeBC if able to be provided.

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**RESPONSE:**

Two incidents that contributed to the All Injury Frequency Rate results for 2014 also required reporting to WorksafeBC (WSBC). Details of the incidents are included below and the relevant WSBC documents are included as Attachment 5. Out of respect for the employees involved and due to potential privacy concerns, FBC has redacted the name and contact information of the employees involved in the incidents.

URM 198 – A journeyman electrician contacted an energized 600/347 V conductor and suffered open wounds to the right hand at the Brilliant Expansion plant. The incident was reported to WSBC and no orders were written against FBC.

URM 263 – A fault occurred during maintenance at Hollywood Substation in Kelowna resulting in a flash. FBC employee operating breaker was uninjured but was taken to hospital as a precaution. The incident was reported to WSBC and, although WSBC initially wrote an order against FBC citing lack of a proper investigation, following an in-person meeting between FBC and WSBC it was determined that FBC was in compliance.

**Event No: 198. Electric - FBC: Class 3 - Hazard:****Workflow Status****Workflow Status:** Closed (Completed)**Event Details**

|                            |  |
|----------------------------|--|
| <b>Event no.</b>           | 0198                                   |
| <b>Organizational unit</b> | Major Maintenance Electrical           |
| <b>Utility</b>             | Electric - FBC                         |
| <b>Reported to</b>         | [REDACTED]                             |
| <b>Reported by</b>         | Employee<br>FBC Contractor<br>External |
| <b>Name</b>                | [REDACTED]                             |
| <b>Phone number</b>        | [REDACTED]                             |
| <b>Third party client</b>  |  |
| <b>Date/Time reported</b>  | Friday, August 08, 2014 12:08:00 PM    |

**Event Summary**

|                               |  |
|-------------------------------|--|
| <b>Date/Time of event</b>     | Friday, August 08, 2014 11:55:00 AM  |
| <b>Location of event</b>      | Brilliant Expansion Plant  |
| <b>Event description</b>      | Employee made contact with the 600/347 volt system.  |
| <b>Major hazard group</b>     | Electricity  |
| <b>Immediate action taken</b> | Area made safe, first aid treatment delivered and employee taken to Castlegar health centre. |
| <b>Created by</b>             | [REDACTED]   |
| <b>Date created</b>           | 8/8/2014 3:08:27 PM  |

## Incidents

| Incident record no. | Incident Type       | Status | Injured party |
|---------------------|---------------------|--------|---------------|
| 00233               | 1. Injury / Illness | Review |               |

## Review

|                             |   |
|-----------------------------|---|
| Is this a valid event?      | Yes   |
| Classification              | Class 3                                       |
| Investigation required?     | Yes   |
| Reportable To: CGA          | No  |
| CEA                         | Yes   |
| WorkSafe BC                 | Yes   |
| Reporting group             | (E-Gen)                                       |
| Initial reviewer's comments | Please review and develop prevention measures |
| Investigator                |   |
| Reviewer                    |   |

## Investigation

|  |  |
|--|--|
| Date investigated                                | Wednesday, August 20, 2014                   |
| Scope of work                                    | Determine root cause of the listed incident  |
| Sequence of events leading up to the incident(s) | as outlined with in the incident information |

**Event details and conditions**

Employees had just finished up there task for the morning and were a few minutes short of the lunch break. All employees agreed to meet in the control room after they demobed from the job and cleaned up. One employee decided it would be a good opportunity for him to 'take a quick peak' at some equipment and in doing so made inadvertent contact with 347/600V to his right hand.

## Root Cause Analysis

**Level 1**

- 3. Procedures
- 3. Procedures
- 3. Procedures
- 3. Procedures
- 3. Procedures

**Level 2**

- Shortcuts taken
- Operating equipment w/o authority
- Failure to follow procedure
- Failure to check/monitor
- Failing to use PPE properly

## Investigation Summary and Results

**Preventable?****Investigation summary**

While interviewing witnesses and an injured worker, the following sequence of events has been identified:

Worker 1 (injured worker) was assigned to work at Brilliant Expansion plant (BRX) for the August 8, 2014 during planned Generator unit outage. The generator isolation was complete by 09:00 AM and a nutrition break was taken. Next, Crew lead (CL) scheduled maintenance on the un-watering pump #2. Assigned Worker 1 and Worker 2 completed the un-watering pump work by 11:40 AM. CL and Worker 2 went to the control room while worker 1 was assigned to put tools away. After tool cleanup, worker 1 went to Mimic board to review isolation points. About 11:45 am, Worker 1 went to the first aid room to review the equipment as he was a first aider assigned for the day. Then, Worker 1 walked towards the control room and noticed a service cart by the fan room. The fan room door was open. He looked in the fan room and recalled that the Air Handling Unit (AHU) heater #2 didn't work during the January Annual outage (2014). He decided to review the work he did previously on Heater #1. Worker threw the disconnect and opened the cabinet. He saw several fuses discolored, suspected an issue and used a meter to check voltage on discolored fuses. No voltage found and some potentially 'bad' wiring was observed pinched by a bolt. Worker tried to move a pinched wire when he received a 347/600 volt shock to his right thumb at about 11:50.

The investigation concluded that the following deviations from the established procedures have been observed:

- Worker initiated the task that has not been assigned (no job order). Worker was assigned to clean up the tools and join the crew in the control room.
- Worker has not signed the Safe Work Planning Form prior to start a new assignment.
- Worker has not followed the lock out protocol to de-energize the panel prior to opening the panel.
- Worker has not had Class 0 rubber gloves required for testing.

**Investigation  
results****Investigated  
by****Corrective Actions**

| Record no. | Type       | Action required  | Person Responsible | Due date   | Completion date | Status    |
|------------|------------|--|--------------------|------------|-----------------|-----------|
| 0463       | Preventive | Engage a consultant to review the Heating panel to determine if it is designed/engineered in accordance with regulations and best practices. |                    | 11/21/2014 | 11/28/2014      | Completed |
| 0359       | Preventive | Reinforce FortisBC safe work planning requirements and lockout procedure   |                    | 9/5/2014   | 11/28/2014      | Completed |
| 0360       | Preventive | Reinforce PPE use including class 0 gloves and voltage tester for testing and lock out.  |                    | 9/5/2014   | 11/28/2014      | Completed |
| 0361       | Preventive | Review the lessons learned (i.e. insubordination, inappropriate use of spare time, breach of trust) in next safety meeting                   |                    | 9/12/2014  | 11/28/2014      | Completed |

**Approval****Final  
approver's  
comments**

Root causes and prevention actions identified

**Date** Friday, November 21, 2014  
**approved**  
**Approved by** [REDACTED]

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## Attachment

| Attachment Name                    | URL |
|------------------------------------|-----|
| Copy of BRX Event 198 15Aug14.xlsx |     |

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## Workflow Comments

**POSTED**

| Employer # | Mailing Address  | Classification Unit # | Operating Location |
|------------|--|-----------------------|--------------------|
| 467545     | DIRECTOR, ENVIR HEALTH & SAFETY<br>16705 FRASER HIGHWAY<br>SURREY, BC V3S2X7 | 767003                | 002                |

| Lab Samples Taken | Direct Readings | Results Presented | Sampling Inspection(s) | Workers onsite during inspection | Notice of Project Number |
|-------------------|-----------------|-------------------|------------------------|----------------------------------|--------------------------|
| N                 | N               | N                 |                        | 10                               |                          |

| Inspection Report Delivered To | Employer Representative Present During Inspection | Worker Representative Present During Inspection | Labour Organization & Local |
|--------------------------------|---|---|-----------------------------|
|                                |   |   |                             |

| WorkSafeBC Officer Conducting Inspection | Contact Details |
|--|-----------------|
|  |                 |

| Inspection Time* | Travel Time* |
|------------------|--------------|
| 1.5 hrs          | 1 hrs        |

\*The time recorded above reflects the cumulative inspection time and travel time associated to the inspection activity cycle. Additional time may be added for subsequent activity.

**Right to a Review of Orders**

Any employer, worker, owner, supplier, union, or a member of a deceased worker's family directly affected may, within 90 calendar days of the delivery date of this report, in writing, request the Review Division of WorkSafeBC to conduct a review of an order, or the non-issuance of an order, in this report by contacting the Review Division. Employers requiring assistance may contact the Employers' Advisers at 1-800-925-2233. Workers may contact the Workers' Advisers at 1-800-663-4261.



6951 Westminster Highway, Richmond, BC  
Mailing Address: PO Box 5350, Vancouver BC, V6B 5L5  
Telephone 604 276-3100 Toll Free 1-888-621-7233 Fax 604 276-3247

**INSPECTION REPORT**  
**Worker and Employer Services Division**  
**201412916079A**

**REFERENCES**

In addition to any orders and the information provided in the Inspection Notes in this Inspection Report, the officer may discuss other health and safety issues with the employer arising out of the inspection. The information below sets out the health and safety requirements discussed with the employer, and unless otherwise noted, violations of these requirements were not observed.

| Reference  | Details Discussed   |
|--|---|
| <b>WCA173(1)(b)</b><br><br>An employer must immediately undertake an investigation into the cause of any accident or other incident that resulted in injury to a worker requiring medical treatment.<br><br>Workers Compensation Act Part 3 Division 10 Subsection 173 (1) does not apply in the case of a vehicle accident occurring on a public street or highway. | <p>The employer reported that they immediately undertook an investigation into the causes of this incident.</p> <p>As per WCA 174(1) and 174(2) Investigation process,</p> <p>174 (1) An investigation required under this Division must be carried out by persons knowledgeable about the type of work involved and, if they are reasonably available, with the participation of the employer or a representative of the employer and a worker representative.</p> <p>(2) As far as possible, the investigation must</p> <p>(a) determine the cause or causes of the incident,</p> <p>(b) identify any unsafe conditions, acts or procedures that contributed in any manner to the incident, and</p> <p>(c) if unsafe conditions, acts or procedures are identified, recommend corrective action to prevent similar incidents.</p> |



### INSPECTION NOTES

In accordance with Prevention Policy, the violations cited in this Inspection Report along with relevant compliance history have been reviewed to determine if further enforcement action is necessary. No further enforcement action will be taken at this time. This decision may change, particularly if the orders issued in this Inspection Report relate to an incident that is under investigation, or additional information becomes available. Furthermore, this decision does not preclude the violations cited in this Inspection Report from being considered in future enforcement action decisions.

This inspection was conducted in response to an incident. A worker/journeyman electrician contacted an energized 600/347 V conductor and in the process suffered open wounds to the right hand. The worker reported that he walked into the fan room located on the 5th floor and opened one of the electrical panels for the Air Handling Unit 1 to investigate for potential malfunction.

The employer reported that they are in the process of conducting investigation into the causes of this incident. A copy of the incident investigation report must be submitted to the Board.

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6951 Westminster Highway, Richmond, BC  
Mailing Address: PO Box 5350, Vancouver BC, V6B 5L5  
Telephone 604 276-3100 Toll Free 1-888-621-7233 Fax 604 276-3247

# INSPECTION REPORT

Worker and Employer Services Division

The *Workers Compensation Act* requires that the employer must post a copy of this report in a conspicuous place at or near the workplace inspected for at least seven days, or until compliance has been achieved, whichever is the longer period. A copy of this report must also be given to the joint committee or worker health and safety representative, as applicable.

| Inspection Report #201412916079A |  |                        |
|----------------------------------|--|------------------------|
| Employer Name                    | Jobsite Inspected                        | Scope of Inspection    |
| FORTISBC INC                     | 1006 Highway 3A<br>Central Kootenay I BC | Incident Investigation |

| Date of Initiating Inspection | Date of This Inspection | Delivery Date of This Report | Delivery Method |
|-------------------------------|-------------------------|------------------------------|-----------------|
| Aug 08, 2014                  | Aug 08, 2014            | Aug 15, 2014                 | Email           |

THERE ARE ZERO (0) ORDERS OUTSTANDING

NO ACTION REQUIRED

**Event No: 263. Electric - FBC: Class 3 - Hazard:**

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**Workflow Status****Workflow Status:** Closed (Completed)

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**Event Details**

|                            |   |
|----------------------------|---|
| <b>Event no.</b>           | 0263                                    |
| <b>Organizational unit</b> | Okanagan C&M                            |
| <b>Utility</b>             | Electric - FBC                          |
| <b>Reported to</b>         | [REDACTED]                              |
| <b>Reported by</b>         | Employee<br>FBC Contractor<br>External  |
| <b>Name</b>                | [REDACTED]                              |
| <b>Phone number</b>        | [REDACTED]                              |
| <b>Third party client</b>  |   |
| <b>Date/Time reported</b>  | Thursday, September 04, 2014 3:00:00 PM |

**Event Summary**

|                               |   |
|-------------------------------|---|
| <b>Date/Time of event</b>     | Thursday, September 04, 2014 3:00:00 PM   |
| <b>Location of event</b>      | Feeder HOL 452 at 1170 Hollywood Road.  |
| <b>Event description</b>      | After doing routine electrical maintenance testing on a breaker in the Hollywood Substation, the breaker was racked back into the cell contact, creating a phase to phase fault on the low voltage buss, locking out the entire substation. |
| <b>Major hazard group</b>     | Electricity   |
| <b>Immediate action taken</b> | 1. Employee was sent to the Hospital to be checked out.<br>2. Damage was surveyed<br>3. Steps were taken to return service to the customers<br>4. HOL 452 cell was cleaned up and made ready to return to service                           |
| <b>Created by</b>             | [REDACTED]  |

**Date created** 9/4/2014 9:25:06 PM

## Incidents

| Incident record no. | Incident Type        | Status | Injured party |
|---------------------|----------------------|--------|---------------|
| 00308               | 6. Production Outage |        | N/A           |
| 00309               | 5. Near Miss         |        | N/A           |
| 00310               | 1. Injury / Illness  | Review |               |

## Review

**Is this a valid event?** Yes

**Classification** Class 3

**Investigation required?** Yes

**Reportable To: CGA** No

**CEA** No

**WorkSafe BC** Yes

**Reporting group** (E-Ops)

**Initial reviewer's comments** Class 3 Investigation required. Assigned to to meet VP approval requirements. will work with to complete the investigation.

**Investigator**

**Reviewer**

## Investigation

**Date investigated** Monday, September 22, 2014

**Scope of work** Routine maintenance on HOL 452 Circuit Breaker

**Sequence of  
events  
leading up  
to the  
incident(s)**

1. Completed maintenance on HOL 152 Circuit Breaker in the morning.
2. Crew Leader completed SSWP for HOL 452
3. Tailboard meeting was completed with crew.
4. Dist crew off loaded feeder.
5. SCC opens HOL 452.
6. Electrician dons the appropriate PPE (Bomb Suit).
7. Both Crew members confirm HOL 452 in the open position.
8. Crew Leader requests Electrician to rack out HOL 452.
9. Crew installed DNO ( Do Not Operate) Tag in cubicle on rail.
10. Crew Leader verified switching time with SCC.
11. Electrician removes PPE (Bomb Suit).
12. SCC issues Control Release to Crew Lead.
13. CR # 12452 @ 12:13 pm.
14. Crew lead issues a Test And Work to himself, # 53717@ 12:14 pm.
15. Crew left site for lunch break.
16. Reviewed Print of HOL 452 to determine test gear connection points.
17. Crew proceeded to test HOL 452
18. General breaker inspection and clean contacts.
19. Megger test performed, (both crew members performed tests).
20. Ductor test performed, (Crew Lead performed this test by himself).
21. Timing Test performed, (both crew members performed this test). TEST LEADS WERE NOT REMOVED.
22. Circuit Breaker was checked in the Open State and Springs Discharged.
23. Crew Leader returns Test and Work # 53717 to himself @ 14:45.
24. Crew Leader returns Control Release # 12452 to SCC @ 14:50.
25. SCC starts Restoration Procedure.
26. SCC requests Crew Leader to confirm HOL 452 Open.
27. SCC requests Crew Leader to Rack in HOL 452 into cubicle.
28. Electrician don's PPE (Bomb Suit). CL & EL both confirm Circuit Breaker open.
29. Electrician attempts to rack in HOL 452.
30. Fault occurs while racking in HOL 452.
31. Electrician was thrown back from the Circuit Breaker.
32. 86 Lockout Protection Isolated the Station.
33. Crew Leader checks on condition of Electrician, EL said he was ok.
34. Crew Leader Opens doors to clear smoke from building.
35. SCC phones Crew Leader.
36. Crew Leader calls Stations Supervisor.
37. Crew left the building to discuss what happened.
38. Stations Ops Supervisor on route to Station.
39. Crew Leader and Electrician checked test equipment bag and realized 1 test lead was missing.
40. Station ops Supervisor & Dist ops Crew arrived,
  - .....a) Slowed the group down.
  - .....b) Discussed the situation and how to move forward.
  - .....c) Entered the building with the Dist. group and confirmed status of the equipment.
  - .....d) SOS signed in and reviewed SSWP with crew.
  - .....e) Crew leader contacted SCC to make arrangements for a Control Release on station for power restoration.
41. Electrician was directed to get checked out at the hospital by the Stations Operations Supervisor.
42. Station Ops Supervisor & Distribution Crew contacted SCC to coordinate Restoration.

**Event  
details and  
conditions**

Crew Leader and Electrician both Qualified Red Seal Electricians  
 Crew completed maintenance on HOL 152, 352, & 552 the week of this incident.  
 Crew Leader was the person in charge.  
 SSWP & Tailboard meeting were completed  
 Control Release of HOL 452 was issued to Crew Lead  
 Electrician was wearing appropriate PPE (Bomb Suit) when fault occurred

Test Lead was left on HOL 452  
86 Lockout protection functioned correctly

## Root Cause Analysis

### Level 1

- 3. Procedures
- 3. Procedures
- 3. Procedures

### Level 2

- Failure to follow procedure
- Failure to check/monitor
- Failure to identify hazard

## Investigation Summary and Results

### Preventable?

#### Investigation summary

Crew arrived at Hollywood Station on Sept. 4, 2014 to complete circuit breaker maintenance of HOL 152 & HOL 452. HOL 152 circuit breaker was completed by approximately 11:30 am and returned to service.

HOL 452 Circuit Breaker was isolated from the system for maintenance. During the maintenance of HOL 452 a test lead was left on the circuit breaker. Upon racking the breaker back into its cubicle a phase to phase fault occurred as a result of the test lead. The 86 lockout protection operated, isolating the station from the system, causing a major system outage.


As a result of this incident one of the employees was directed to the hospital to be checked out.

#### Investigation results

#### Investigated by

Blaine Whiteside

## Corrective Actions

| Record no. | Type       | Action required   | Person Responsible  | Due date   | Completion date | Status    |
|------------|------------|---|---|------------|-----------------|-----------|
| 0406       | Corrective | (Failure to Check)-<br>(Return of Control Release)<br><br>System Safety and Lockout Program 5.3 |  | 10/15/2014 | 12/8/2014       | Completed |

| Record no. | Type       | Action required   | Person Responsible | Due date   | Completion date | Status    |
|------------|------------|---|--------------------|------------|-----------------|-----------|
| 0405       | Corrective | Counsel Employee on 5.3<br>(Failure to follow Procedure)-<br>(Test Lead Removal)                              | [REDACTED]         | 10/31/2014 | 12/8/2014       | Completed |
|            |            | Counsel employee's to follow Work Procedures in place at FortisBC.  |                    |            |                 |           |
| 0408       | Corrective | Formal Communication Protocol review with Crews.  | [REDACTED]         | 2/26/2015  | 2/18/2015       | Completed |
|            |            | Work with Safety department to include current policies and procedures for transportation of injured workers. |                    |            |                 |           |
| 0407       | Corrective | Inclusion into monthly safety packages distributed company wide   | [REDACTED]         | 11/30/2014 | 1/19/2015       | Completed |

## Approval

**Final approver's comments**

DCS - Approved per [REDACTED] Oct 22, 2014

**Date approved**

Wednesday, October 29, 2014

**Approved by**

[REDACTED]

## Attachment

**Attachment Name****URL**

FortisBC WSBC Incident Notification - 1170  
Hollywood Road - Kelowna.htm  
Hollywood Sub-station Incident Snap chart.xlsx  
IR201411285040A.pdf  
[REDACTED] Statement.pdf  
Noffying SCC of the Incident.wav  
Pitures of 452 No 2.doc  
Pitures of 452.doc  
Protection Guarantee  
Protection Guarantee for HOL Restoration.pdf  
Rene URM 263 Statement Hollywood substation  
Sept 4 2014.htm

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**Workflow Comments**



**From:** [REDACTED]  
**Sent:** Thursday, September 04, 2014 5:31 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** FortisBC Incident - 1170 Hollywood Road - Kelowna

Hi Paul,

As per our discussion, at 2:53pm today FortisBC C&M crews completed maintenance testing on a breaker at our Hollywood Substation in Kelowna. After testing one of the crew members was racking the breaker back in to the bus in when a fault occurred resulting in a flash, accompanying sound blast and complete lockout of the substation. Protection equipment operated correctly and limited the arc flash.

FortisBC worker [REDACTED] was operating the breaker at the time of the incident and was wearing all required PPE. Although he was not injured, the worker went to the hospital as a precaution for a check-up.

Address of incident: 1170 Hollywood Road South, Kelowna.

Please send all correspondence through myself and feel free to give me a call if you need more information.



[http://intranet.fortisbc.com/News/PublishingImages/Fortis\\_primary-logo\\_rgb2.png](http://intranet.fortisbc.com/News/PublishingImages/Fortis_primary-logo_rgb2.png)

6951 Westminster Highway, Richmond, BC  
Mailing Address: PO Box 5350 Vancouver BC, V6B 5L5  
Telephone 604 276-3100 Toll Free 1 888-621-7233 Fax 604 276-3247

The *Workers Compensation Act* requires that the employer must post a copy of this report in a conspicuous place at or near the workplace inspected for at least seven days, or until compliance has been achieved, whichever is the longer period. A copy of this report must also be given to the joint committee or worker health and safety representative, as applicable.

**Inspection Report #201411285047A**

| Employer Name | Jobsite Inspected  | Scope of Inspection    |
|---------------|--|------------------------|
| FORTISBC INC  | Fortis BC Substation<br>1170 Hollywood Road<br>Kelowna BC V1X4N4 | Incident Investigation |

| Date of Initiating Inspection | Date of This Inspection | Delivery Date of This Report | Delivery Method |
|-------------------------------|-------------------------|------------------------------|-----------------|
| Oct 10, 2014                  | Oct 10, 2014            | Oct 10, 2014                 | Email           |

**THERE IS ONE (1) ORDER OUTSTANDING****ACTION REQUIRED****Summary of Orders**

See "Orders - Full Details" section of this Inspection Report for orders cited

|                                     |                            |                         |
|-------------------------------------|----------------------------|-------------------------|
| Order No.1 <input type="checkbox"/> | Status: <b>Outstanding</b> | Cited: <b>WCA174(2)</b> |
| Notice of Compliance Required.      |                            |                         |

**ORDER STATUS LEGEND**

| Order Status | Description   |
|--------------|---|
| Outstanding  | Order Outstanding - Action Required to Achieve Compliance   |
| Complied     | Compliance Achieved - No Further Action Required            |
| Closed       | Order Could Not be Followed Up - No Further Action Required |
| Rescinded    | Order has been cancelled - No Further Action Required       |

### INSPECTION NOTES

No further enforcement action will be taken at this time as a result of any orders issued in this Inspection Report. Further enforcement action may be considered if the orders relate to an incident under investigation by WorkSafeBC or other circumstances warrant.

This officer received the employers investigation report on September 26, 2014, related to the September 4, 2014 Hollywood Road Sub-station incident.

After review of the investigation report submitted by the employer it is determined that the employers investigation report does not meet the requirements of the WCA 174(2)(a-c) respectively.

The investigation has not thoroughly determined the cause or causes of the incident, identified any unsafe conditions, acts or procedures that contributed in any manner to the incident, or recommended sufficient corrective action to prevent similar incidents.

The employer is ordered to review the initial investigation report, conduct a subsequent investigation of this incident and ensure it meets the requirements of the WCA 174(2)(a-c), and re-submit the investigation report to this officer as well all of the documents, worker statements, standards and information related to this investigation for review.

The deficiencies noted in the investigation report include but are not limited to the following:

The investigation report does not provide a sufficient level of details related to determining the cause and contributing factors of the incident.

The investigation report does not provide and address appropriate and sufficient corrective measures to ensure there cannot be a re-occurrence of a similar nature.

It would be prudent of the employer to develop and implement written safe work procedures including signage & checklists to inform workers and ensure all safe work tasks are completed.

The employer should develop a system of conducting random or regular supervisory reviews or job task observations to ensure consistency in performance of safe work procedures.

Review the emergency procedures and conduct a first aid risk assessment to ensure that adequate procedures are in place at every location to address the requirements for assessing an injured worker, provide sufficient guidance to first aid attendants in providing appropriate first aid treatments on site and determining appropriate medical referral and or injured work transport to an appropriate medical facility ie: Assessment of immediate patient transport requirements-RTC (rapid transport Criteria)

**ORDERS**

**An employer who fails to comply with Part 3 of the *Workers Compensation Act*, the *Occupational Health & Safety Regulation*, or *WorkSafeBC* orders may be subject to monetary or other sanctions as prescribed by the *Workers Compensation Act*.**

**Orders - Full Details**Order No.1 ☐Status: **Outstanding**Cited: **WCA174(2)**

This officer received the employers investigation report on September 26, 2014, related to the September 4, 2014 Hollywood Road Sub-station incident.

After review of the investigation report submitted by the employer it is determined that the employers investigation report does not meet the requirements of the WCA 174(2), as such I do not accept the employers investigation report as compliant.

The investigation has not thoroughly determined the cause or causes of the incident, identified any unsafe conditions, acts or procedures that contributed in any manner to the incident, and recommended corrective action to prevent similar incidents.

This is in contravention of the Workers Compensation Act Section 174 (2).

As far as possible, the investigation must:

- (a) determine the cause or causes of the incident,
- (b) identify any unsafe conditions, acts or procedures that contributed in any manner to the incident, and
- (c) if unsafe conditions, acts or procedures are identified, recommend corrective action to prevent similar incidents.

**Measures to Ensure Compliance:**

Notice of Compliance Required. Pursuant to section 194 (1) of the Workers Compensation Act, the employer must prepare a Notice of Compliance report. In accordance with section 194 (2), this report must detail what has been done to comply with the order, and where compliance has not been achieved by the time the report has been submitted, include a plan of what will be done to comply and when compliance will be achieved. Please submit the report no later than November 28, 2014 .

### REFERENCES

In addition to any orders and the information provided in the Inspection Notes in this Inspection Report, the officer may discuss other health and safety issues with the employer arising out of the inspection. The information below sets out the health and safety requirements discussed with the employer, and unless otherwise noted, violations of these requirements were not observed.

| Reference   | Details Discussed                    |
|---|--------------------------------------|
| <b>OHS4.6</b><br><br>If machinery, equipment or a structure is dismantled in whole or in part, and subsequently re-assembled, it must be checked by a qualified person and determined to be safe before operation or use.   | Discussed requirements with employer |
| <b>WCA194(1)</b><br><br>You are required to notify the Board, in writing, of the steps to be taken to correct the contraventions cited that require a 'Notice of Compliance' [Decision Code will contain the letter N].<br><br>The Notice of Compliance shall be delivered to the nearest Board office by month, day, year.<br><br>This order includes a requirement for a compliance report in accordance with WCA section 194(1). You are required to notify the Board, in writing, of the steps to be taken to correct the contraventions cited that require a 'Notice of Compliance'.<br><br>The Notice of Compliance shall be delivered to the nearest Board office.<br><br>This order includes a requirement for a compliance report in accordance with WCA section 194(1). This Inspection Report contains one or more orders requiring you to submit a Notice of Compliance report. This report must be prepared in accordance with section 194(2) of the Workers Compensation Act. | Notice of Compliance                 |
| <b>WCA194(2)</b><br><br>The employer or other person directed by an order under subsection (1) must prepare a compliance report that specifies:<br>(a) what has been done to comply with the order, and<br>(b) if compliance has not been achieved at the time of the report, a plan of what will be done to comply and when compliance will be achieved.   | Notice of Compliance                 |

| Reference  | Details Discussed                     |
|--|---------------------------------------|
| <b>OHS4.11(b)</b><br><br>Before any equipment, machinery or work process is put into operation the persons responsible for doing so must ensure that no person will be exposed to undue risk by putting the equipment, machinery or work process into operation.   | Discussed requirements with employer  |
| <b>OHS19.8(3)</b><br><br>Appropriate safe work procedures must be established and followed for testing electrical equipment and circuits.  | Discussed with employer               |
| <b>OHS3.16(2)(b)</b><br><br>For the purpose of complying with subsection 3.16(1), the employer must conduct an assessment of the circumstances of the workplace, including<br>(b) the nature and extent of the risks and hazards in the workplace, including whether or not the workplace as a whole creates a low, moderate or high risk of injury.                     | Discussed requirements with employer  |
| <b>OHS3.21(1)(a)</b><br><br>The first aid attendant must promptly provide injured workers with a level of care within the scope of the attendant's training and this Part.   | Discussed requirements with employer. |
| <b>OHS4.3(4)(b)</b><br><br>Unless otherwise specified by the Occupational Health and Safety Regulation, any modification of a tool, machine or piece of equipment must be carried out in accordance with<br>(a) the manufacturer's instructions, if available,<br>(b) safe work practices, and<br>(c) the requirements of the Occupational Health and Safety Regulation. | Discussed requirements with employer  |

| Employer # | Mailing Address  | Classification Unit # | Operating Location |
|------------|--|-----------------------|--------------------|
| 467545     | DIRECTOR, ENVIR HEALTH & SAFETY<br>16705 FRASER HIGHWAY<br>SURREY, BC V3S2X7 | 767003                | 009                |

| Lab Samples Taken | Direct Readings | Results Presented | Sampling Inspection(s) | Workers onsite during Inspection | Notice of Project Number |
|-------------------|-----------------|-------------------|------------------------|----------------------------------|--------------------------|
| N                 | N               | N                 |                        | 2                                |                          |

| Inspection Report Delivered To | Employer Representative Present During Inspection | Worker Representative Present During Inspection | Labour Organization & Local |
|--------------------------------|---|---|-----------------------------|
|                                |   |   |                             |

| WorkSafeBC Officer Conducting Inspection | Contact Details |
|--|-----------------|
|  |                 |

| Inspection Time* | Travel Time* |
|------------------|--------------|
| 9 hrs            | 0 hrs        |

\*The time recorded above reflects the cumulative inspection time and travel time associated to the inspection activity cycle. Additional time may be added for subsequent activity.

**Right to a Review of Orders**

Any employer, worker, owner, supplier, union, or a member of a deceased worker's family directly affected may, within 90 calendar days of the delivery date of this report, in writing, request the Review Division of WorkSafeBC to conduct a review of an order, or the non-issuance of an order, in this report by contacting the Review Division. Employers requiring assistance may contact the Employers' Advisers at 1-800-925-2233.

RECEIVED

NOV 27 2014

The Workers Compensation Act requires that the employer must post a copy of this report in a conspicuous place at or near the workplace inspected for at least seven days, or until compliance has been achieved, whichever is the longer period. A copy of this report must also be given to the joint committee or worker health and safety representative, as applicable.

**Inspection Report #201411285047B**

| Employer Name | Jobsite Inspected  | Scope of Inspection    |
|---------------|--|------------------------|
| FORTISBC INC  | Fortis BC Substation<br>1170 Hollywood Road<br>Kelowna BC V1X4N4 | Incident Investigation |

| Date of Initiating Inspection | Date of This Inspection | Delivery Date of This Report | Delivery Method |
|-------------------------------|-------------------------|------------------------------|-----------------|
| Oct 10, 2014                  | Nov 14, 2014            | Nov 14, 2014                 | Email           |

**THERE ARE ZERO (0) ORDERS OUTSTANDING****ACTION MAY STILL BE NECESSARY TO ENSURE COMPLIANCE  
PLEASE READ FULL REPORT****Summary of Orders**

See "Orders - Full Details" section of this Inspection Report for orders cited

|   |                         |                         |
|---|-------------------------|-------------------------|
| Order No. 1 <input checked="" type="checkbox"/> | Status: <b>Complied</b> | Cited: <b>WCA174(2)</b> |
|---|-------------------------|-------------------------|

**ORDER STATUS LEGEND**

| Order Status | Description   |
|--------------|---|
| Outstanding  | Order Outstanding - Action Required to Achieve Compliance   |
| Complied     | Compliance Achieved - No Further Action Required            |
| Closed       | Order Could Not be Followed Up - No Further Action Required |
| Rescinded    | Order has been cancelled - No Further Action Required       |





6951 Westminster Highway, Richmond, BC  
Mailing Address PO Box 5350, Vancouver BC, V6B 5L5  
Telephone 604 276-3100 Toll Free 1-888-621-7233 Fax 604 278-3247

**FOLLOW UP INSPECTION REPORT #1**  
**Worker and Employer Services Division**  
**201411285047B**

**INSPECTION NOTES**

No further enforcement action will be taken at this time as a result of any orders issued in this Inspection Report. Further enforcement action may be considered if the orders relate to an incident under investigation by WorkSafeBC or other circumstances warrant.

This was a follow-up inspection to authenticate appropriate compliance with the order(s) noted.

This Inspection Report has been issued to document the receipt and acceptance of the employer's incident investigation report, relating to an incident which occurred on September 4, 2014 at the Hollywood Road Sub Station.  
This report meets the requirements of sections 174 (1) and 174 (2) of the Workers Compensation Act, as such the employer has met compliance with the written order.

---

**ORDERS**

An employer who fails to comply with Part 3 of the *Workers Compensation Act*, the Occupational Health & Safety Regulation, or WorkSafeBC orders may be subject to monetary or other sanctions as prescribed by the *Workers Compensation Act*.

**Orders - Full Details**Order No.1 ☒Status: **Complied**Cited: **WCA174(2)****Progress towards compliance:**

**Nov 14, 2014** - I met with the employer to discuss and review the compliance documentation and incident investigation. The employer conducted a presentation and full description of the investigation process that they utilize for all incidents. The employer provided a copy of the completed URM event #263 for review. All documentation provided indicates compliance has been met, no further action required.

This officer received the employers investigation report on September 26, 2014, related to the September 4, 2014 Hollywood Road Sub-station incident. After review of the investigation report submitted by the employer it is determined that the employers investigation report does not meet the requirements of the WCA 174(2), as such I do not accept the employers investigation report as compliant. The investigation has not thoroughly determined the cause or causes of the incident, identified any unsafe conditions, acts or procedures that contributed in any manner to the incident, and recommended corrective action to prevent similar incidents.

This is in contravention of the Workers Compensation Act Section 174 (2).

As far as possible, the investigation must:

- (a) determine the cause or causes of the incident,
- (b) identify any unsafe conditions, acts or procedures that contributed in any manner to the incident, and
- (c) if unsafe conditions, acts or procedures are identified, recommend corrective action to prevent similar incidents.

| Employer # | Mailing Address  | Classification Unit # | Operating Location |
|------------|--|-----------------------|--------------------|
| 467545     | DIRECTOR, ENVIR HEALTH & SAFETY<br>16705 FRASER HIGHWAY<br>SURREY, BC V3S2X7 | 767003                | 009                |

| Lab Samples Taken | Direct Readings | Results Presented | Sampling Inspection(s) | Workers onsite during Inspection | Notice of Project Number |
|-------------------|-----------------|-------------------|------------------------|----------------------------------|--------------------------|
| N                 | N               | N                 |                        | 4                                |                          |

| Inspection Report Delivered To | Employer Representative Present During Inspection | Worker Representative Present During Inspection | Labour Organization & Local |
|--------------------------------|---|---|-----------------------------|
|                                |   | N/A N/A   |                             |

| WorkSafeBC Officer Conducting Inspection | Contact Details |
|--|-----------------|
|  |                 |

| Inspection Time* | Travel Time* |
|------------------|--------------|
| 2 hrs            | 0.5 hrs      |

\*The time recorded above reflects the cumulative inspection time and travel time associated to the inspection activity cycle. Additional time may be added for subsequent activity.

**Right to a Review of Orders**

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**FortisBC Inc.**  
**Multi-Year PBR 2014-2019 Annual Review of 2015 Rates**  
**Workshop April 1, 2015**

**UNDERTAKING No. 6**

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**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 142, Line 24 to Page 145, Line 13; Page 185, Lines 23-25

**REQUESTOR:** Mr. Gabana

**QUESTION:** Provide number of vehicle incidents and the number of people on long-term disability and the pattern.

---

**RESPONSE:**

As of April 1, 2015, there are 16 FBC electric employees on long term disability. FBC long term disability claims remain generally static with 17 employees on long term disability as at April 1, 2014 and 15 employees on long term disability as at April 1, 2013. FBC is not able to provide detailed information on long term disability statistics as employee medical information is private to the employee.

The below table sets out the number of vehicle incidents for 2014 including details.

| Date      | Affiliation | Job Title                                 | Details                                      |
|-----------|-------------|---|--|
| 1/22/2014 | IBEW        | CPC Technologist                          | FBC made contact with fixed object           |
| 2/5/2014  | IBEW        | Journeyman<br>Tradesman Electrician       | FBC vehicle made contact with fixed object   |
| 3/31/2014 | IBEW        | PLT                                       | FBC vehicle made contact with parked vehicle |
| 5/26/2014 | IBEW        | PLT Network Services                      | FBC vehicle made contact with fixed object   |
| 5/28/2014 | IBEW        | Journeyman<br>Tradesman                   | FBC vehicle made contact with fixed object   |
| 6/14/2014 | IBEW        | PLT                                       | FBC vehicle made contact with fixed object   |
| 6/19/2014 | IBEW        | Metering technician                       | FBC vehicle made contact with other vehicle  |
| 7/4/2014  | IBEW        | Journeyman<br>Tradesman<br>(Transmission) | FBC vehicle made contact with fixed object   |
| 7/23/2014 | IBEW        | Apprentice CPC Tech                       | FBC vehicle made contact with fixed object   |
| 9/12/2014 | M&E         | Acting Project<br>Manager, PMO            | FBC vehicle made contact with parked vehicle |
| 9/12/2014 | IBEW        | Temporary Electrician                     | FBC vehicle made contact with fixed object   |

**FortisBC Inc.**  
**Multi-Year PBR 2014-2019 Annual Review of 2015 Rates**  
**Workshop April 1, 2015**

**UNDERTAKING No. 6**

| <b>Date</b>  | <b>Affiliation</b> | <b>Job Title</b>                    | <b>Details</b>   |
|--------------|--------------------|-------------------------------------|--|
| 9/12/2014    | M&E                | Construction Manager<br>T&D Lines   | FBC vehicle made contact with fixed object while backing |
| 9/23/2014    | IBEW               | Crew Leader PLT                     | FBC vehicle made contact with rolling tool box           |
| 9/26/2014    | IBEW               | Journeyman<br>Tradesman Electrician | FBC made contact with fixed object                       |
| 10/21/2014   | M&E                | Construction Manager<br>T&D Lines   | FBC made contact with fixed object                       |
| 10/27/2014   | IBEW               | Crew Leader                         | FBC made contact with fixed object                       |
| 11/17/2014   | IBEW               | Meter Reader Temp                   | FBC made contact with fixed object                       |
| 11/18/2014   | M&E                | Operations Manager                  | FBC made contact with oncoming vehicle                   |
| 11/26/2014   | IBEW               | Journeyman<br>Tradesman             | FBC made contact with fixed object                       |
| 11/25/2014   | IBEW               | Warehouse Projects                  | FBC made contact with fixed object                       |
| 12/2/2014    | IBEW               | Meter Reader Temp                   | FBC vehicle rear ends other vehicle                      |
| 12/20/2014   | IBEW               | 1st Yr Apprentice PLT               | FBC vehicle overturned on snow-covered HWY               |
| <b>Total</b> | <b>22</b>          |                                     |  |

**FortisBC Inc.**  
**Multi-Year PBR 2014-2019 Annual Review of 2015 Rates**  
**Workshop April 1, 2015**

**UNDERTAKING No. 7**

---

**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 153, Lines 13 to 22; Page 159, Lines 18 to 22;  
Page 185, Line 25 to Page 186, Line 3

**REQUESTOR:** Mr. Flintoff

**QUESTION:** Provide details of the causes of the two generator fires. Include testing done on generators.

---

**RESPONSE:**

The fire at South Slocan Unit 1 on April 13, 2014, was caused by equipment failure. The cables which connect the unit switchgear to the transformer failed, likely as a result of heating and cooling that occurred during the normal load/thermal cycling of the cables. It appears that the heating/cooling resulted in excessive expansion/contraction which broke the protective sheath of the cable when a metal cable clamp cut into the cable. This created a second ground point in the cable system, which caused excessive circulating currents to flow. The high circulating currents caused thermal damage to the cable.

The fire at Corra Linn on July 13, 2013, was due to equipment failure. Although the initiating event is unknown, it appears that one of the braided connectors between the generator and the unit switchgear failed. This failure caused local overheating to occur and likely caused the protective material around the connections to melt, which started a fire.

Following the failures, comprehensive electrical testing was completed and all cable installations and main lead installations were thoroughly inspected. As a result of the root cause analyses conducted by FBC's engineering department, FBC has implemented additional quality assurance standards and measures for assessing new and existing cable installations. In addition, FBC will implement comprehensive cable testing on all cables every 6 years and is in the process of preparing a detailed testing/maintenance plan. Finally, a pilot project to measure local cable temperatures and circulating currents is underway to investigate its feasibility as an additional monitoring tool.

**FortisBC Inc.**  
**Multi-Year PBR 2014-2019 Annual Review of 2015 Rates**  
**Workshop April 1, 2015**

**UNDERTAKING No. 8**

---

**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 156, Lines 20 to 25; Page 186, Lines 7 to 10

**REQUESTOR:** Commission Staff (Ms. Ashley)

**QUESTION:** Provide an update on whether Fortis is looking at increasing its incentives supporting studies for industrial energy efficiency programs.

---

**RESPONSE:**

The Company is reviewing its policies regarding the portion of supporting study costs available, which would require a revision to Rate Schedule 90.

The support (funding) currently available for studies forms part of the incentive budget, and hence is not limited except by the overall Industrial Efficiency incentive budget itself. The established DSM spending rules include the ability to shift up to 25 percent of sector budget (or more with Commission approval) if increased incentives prove necessary.

In the longer term, FBC awaits the results of the BC Conservation Potential Review (CPR), which will be used to develop several DSM scenarios for discussion with stakeholders. The CPR and other program research activities will provide the foundation of the next long-term DSM Plan, which will include funding for DSM for industrial customers, and which will be filed with the Company's LTERP in June 2016, and will inform the next DSM expenditure filing for 2017 and subsequent years.

**FortisBC Inc.**  
**Multi-Year PBR 2014-2019 Annual Review of 2015 Rates**  
**Workshop April 1, 2015**

**UNDERTAKING No. 9**

---

**WORKSHOP DATE:** April 1, 2015

**TRANSCRIPT**

**REFERENCE:** Volume 1, Page 120, Line 26 to Page 124, Line 14; Page 186, Lines 11 to 10

**REQUESTOR:** Commissioner Morton

**QUESTION:** Provide whether FBC keeps Call Abandon duration statistics, on a per call basis and if so, whether it could provide a histogram of intervals of duration for all the calls that are abandoned.

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**RESPONSE:**

FBC has confirmed that historical information on the wait time before abandoning is not available at this time. This information is part of a file that is purged daily in order to manage system storage size. FBC is in the process of investigating the feasibility of moving this data to a stored location so that it could be reported on in the future. FBC will provide an update on this process in the next annual review.