



Diane Roy
Vice President, Regulatory Affairs

Gas Regulatory Affairs Correspondence
Email: gas.regulatory.affairs@fortisbc.com

Electric Regulatory Affairs Correspondence
Email: electricity.regulatory.affairs@fortisbc.com

FortisBC
16705 Fraser Highway
Surrey, B.C. V4N 0E8
Tel: (604) 576-7349
Cell: (604) 908-2790
Fax: (604) 576-7074
www.fortisbc.com

September 16, 2021

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC
V6Z 2N3

Attention: Mr. Patrick Wruck, Commission Secretary

Dear Mr. Wruck:

Re: British Columbia Utilities Commission (BCUC) Inquiry into the Regulatory of Safety (Inquiry)

Project No. 1599100

FortisBC Energy Inc. and FortisBC Inc. (collectively FortisBC) Stage 1 Intervener Evidence

By Order G-241-20, the BCUC established the above referenced Inquiry.

In accordance with the regulatory timetable established in BCUC Order G-209-21, FortisBC respectfully submits its Intervener Evidence on the questions and sub-issues for Stage 1 of this Inquiry.

FortisBC notes that its Intervener Evidence does not address all of the Stage 1 questions and sub-issues as many are legal in nature and more appropriately dealt with in submissions.

If further information is required, please contact the undersigned.

Sincerely,

on behalf of FORTISBC

Original signed:

Diane Roy

Attachments

cc (email only): Registered Interveners

**British Columbia Utilities Commission
Inquiry into the Regulation of Safety**

**Evidence Addressing Stage 1
of
FortisBC Energy Inc. and FortisBC Inc.**

September 16, 2021

Table of Contents

Introduction	1
Q1: <i>In FortisBC’s view, what are the minimum requirements the BCUC must have in place to ensure the BCUC is informed of matters relating to public utility safety?.....</i>	<i>2</i>
Q2: <i>What reporting does FortisBC already provide to the BCUC to keep it informed on safety-related matters?</i>	<i>2</i>
Q3: <i>What safety related metrics does FortisBC currently report on to the BCUC?</i>	<i>2</i>
Q4: <i>What reporting does FortisBC provide regarding serious incidents such as a fatality, personal injury, significant damage to infrastructure, sabotage or other illegal activity requiring police involvement, etc.?</i>	<i>5</i>
Q5: <i>Should the BCUC rely on appointing inspectors and/or supervisors to keep itself informed about public utility safety matters?.....</i>	<i>6</i>
Q6: <i>Are there safety related matters that FortisBC does not report on to any regulator?.....</i>	<i>6</i>
Q7: <i>In FortisBC’s view do the categories of asset safety, worker safety, and public safety encompass the extent of the BCUC’s mandate with respect to public utility safety?</i>	<i>7</i>
Q8: <i>Please describe asset safety as it relates to FortisBC.....</i>	<i>7</i>
Q9: <i>Please describe worker safety as it relates to FortisBC.</i>	<i>11</i>
Q10: <i>Please describe public safety as it applies to FortisBC.</i>	<i>11</i>
Q11: <i>Please describe some of the relevant environmental requirements that apply to FortisBC.....</i>	<i>13</i>
Q12: <i>Are there other categories of safety that in FortisBC’s view the BCUC should consider such as customer safety or the safety of energy supply?</i>	<i>15</i>
Q13: <i>Has safety been a consideration in past FortisBC applications to the BCUC?.....</i>	<i>15</i>
Q14: <i>Has FortisBC identified any regulatory gaps with respect to safety?.....</i>	<i>16</i>
Q15: <i>Has FortisBC identified any areas of regulatory overlap with respect to safety?.....</i>	<i>17</i>

1 INTRODUCTION

2 FortisBC Energy Inc. (FEI) and FortisBC Inc. (FBC, and together with FEI, FortisBC) are
3 committed to delivering safe, reliable energy in an environmentally responsible manner to all of
4 the communities that we serve. In all aspects of how we design, construct, operate, and
5 maintain our assets, infrastructure and workplaces, FortisBC is internally committed to a strong
6 safety culture to ensure that our people return home safely every single day. FortisBC is also
7 externally focused on working to educate customers, contractors, and others about safe
8 practices around natural gas and electricity.

9
10 In addition, FortisBC recognizes that sound safety and environmental practices make good
11 business sense. Employees and contractors are expected to work safely and to protect their
12 health – along with the health and safety of others – and the natural environment during the
13 course of their work, by following established policies, rules, and procedures. FortisBC will not
14 compromise employee or public safety, and strives for excellence in safety performance. Some
15 examples are FortisBC's commitments to:

- 16 • comply with safety and environmental legislation, and operate in accordance with
17 accepted industry practices and standards, and require the same of our contractors;
- 18 • injury and incident prevention, the conservation of resources, and the prevention of
19 pollution;
- 20 • identify and manage operational hazards, and minimize risks that have the potential for
21 adverse consequences;
- 22 • train employees to be aware of and meet their responsibilities in the areas of safety and
23 environmental stewardship;
- 24 • develop, implement, maintain, manage and practice integrity, security, environmental,
25 emergency, and safety management policies and programs;
- 26 • regularly conduct safety and emergency exercises and drills independently and in
27 collaboration with communities, other utilities and agencies;
- 28 • communicate openly with employees, the general public and all stakeholders about our
29 activities and the potential impacts on our safety and environment;
- 30 • support community-oriented safety and environmental initiatives and programs; and
- 31 • review safety and environmental policy on a regular basis, regularly monitor our safety
32 and environmental performance, and strive for continual improvement.

33 Safety is an integral part of FortisBC's operations and is an appropriately regulated aspect of
34 FortisBC's business under various pieces of legislation. FortisBC reports upon various aspects
35 of safety to multiple regulatory bodies, including the BCUC.

1 **Q1: In FortisBC’s view, what are the minimum requirements the BCUC must have in**
2 **place to ensure the BCUC is informed of matters relating to public utility safety?**

3 The legislation does not set minimum standards for type, amount or currency of
4 information required to meet the legislative standard under sections 23 and 24 of the
5 *Utilities Commission Act*¹ (UCA).

6 The BCUC’s requirement to keep itself informed will be context-specific and will depend
7 upon the specific public utility in question, as public utilities vary in size, sophistication
8 and other characteristics. Many public utilities already report on safety to the BCUC to
9 varying degrees. The development and eventual implementation of any minimum
10 requirements should both recognize differences among public utilities and consider the
11 information that is already provided to the BCUC by public utilities with respect to public
12 utility safety.

13 **Q2: What reporting does FortisBC already provide to the BCUC to keep it informed on**
14 **safety-related matters?**

15 FortisBC provides regular reporting to the BCUC in its periodic regulatory filings. Both
16 FEI and FBC provide reporting on their safety performance in their Annual Reviews
17 under the Multi-Year Rate Plan (MRP). Included in Appendices A and B are excerpts of
18 annual review filings made in 2021 for the FEI Annual Review for 2022 Delivery Rates
19 and the FBC Annual Review for 2022 Delivery Rates.

20 FortisBC also periodically provides the BCUC with major project reporting for projects
21 authorized by a Certificate of Public Convenience and Necessity (CPCN), which may
22 include reporting related to safety.

23 FortisBC also provides *ad hoc* reporting to the BCUC with respect to issues related to
24 safety, which is discussed in greater detail below in response to Question 4.

25 **Q3: What safety related metrics does FortisBC currently report on to the BCUC?**

26 FortisBC currently reports certain Service Quality Indicators (SQIs) related to safety in its
27 Annual Reviews as part of the MRP. Under the MRP, SQIs are used to monitor the
28 utility’s performance to ensure that any efficiencies and cost reductions do not result in a
29 degradation of the quality of service to customers. While utilities that operate under a
30 different regulatory scheme may not provide, or may not even track, equivalent
31 information as part of their routine operations, FortisBC provides this information to the
32 BCUC on a regular basis.

33 The FortisBC SQIs that are currently in place were approved by the BCUC in 2020.² In
34 2020, the BCUC found “that a balanced set of SQIs should cover the three interrelated

¹ R.S.B.C. 1996, c. 473.

² Decision and Orders G-165-20 and G-166-20, June 22, 2020 (MRP Decision). Online:
https://www.bcuc.com/Documents/Decisions/2020/DOC_58466_2020-06-22-FortisBC-MRP-2020-2024-Decision.pdf.

1 categories of reliability, responsiveness to customer needs and safety.”³ This highlights
2 the interrelated nature of safety to FortisBC’s operations.

3 FortisBC has provided updated SQI performance information as part of its Annual
4 Reviews for 2022 Delivery Rates, which are currently the subject of two BCUC
5 proceedings.⁴

6 The SQIs track the following metrics with respect to safety for both FBC and FEI:

- 7
- 8 • **All Injury Frequency Rate (AIFR)** is a measure of worker and employee safety.
9 This indicator measures “the 3 year average of lost time injuries plus medical
10 treatment injuries per 200,000 hours worked.”⁵ In 2020, FBC set a benchmark of
11 1.64 and a threshold of 2.39 and FEI set a benchmark of 2.08 and a threshold of
12 2.95, which were approved by the BCUC.⁶

13 As reported in its Annual Review for 2022 Rates, FBC’s 2020 (three-year rolling
14 average) result was 0.87 which was better than the benchmark of 1.64. FBC’s
15 June 2021 year-to-date performance (three-year rolling average) result was 0.65
16 which is better than the benchmark. The June 2021 year-to-date performance
17 (annual) was 1.67 and reflected one Medical Treatment and three Lost Time
18 Injuries.⁷

19 As reported in its Annual Review for 2022 Rates, FEI’s 2020 (three-year rolling
20 average) result was 1.66 which was better than the benchmark of 2.08. FEI
21 reported that its June 2021 year-to-date performance (three-year rolling average)
22 result was 1.78, which is better than the benchmark.⁸ The June 2021 year-to-
23 date performance (annual) is 2.87 and reflected eight Medical Treatments and 18
24 Lost Time Injuries. FEI highlighted that the majority of these injuries are low-
25 severity in nature (ergonomic-related strains and sprains) and are mainly
26 attributable to the gas distribution workforce. FEI implemented corresponding
27 mitigation measures, including additional ergonomic assessments, safe design of
28 worker/task interface, focus on preparing the mind and body for the task in hand,
29 equipment suitability review, and renewed emphasis on achieving effective job
30 planning and hazard identification and risk control.⁹

- 31
- 32 • **Emergency Response Time** is an SQI that measures the responsiveness of
33 FortisBC to emergency calls received from customers, which is a key component
34 of customer and public safety.

35 For FBC, this SQI measures the time elapsed from the initial identification of a
36 loss of electrical power (via a customer call or internal notification) to the arrival

³ MRP Decision, p. 87.

⁴ FEI Annual Review for 2022 Rates, Exhibit B-2; FBC Annual Review for 2022 Rates, Exhibit B-2.

⁵ MRP Decision, Table 30, p. 97.

⁶ MRP Decision, Table 30, p. 97.

⁷ FBC Annual Review for 2022 Rates, Exhibit B-2, p. 120.

⁸ FEI Annual Review for 2022 Rates, Exhibit B-2, Table 13-1, p. 150.

⁹ FEI Annual Review for 2022 Rates, Exhibit B-2, p. 153.

1 of FBC personnel on site at the trouble location. This metric provides ongoing
2 information to assess FBC crew sizes and crew locations in response to system
3 trouble.

4 The FBC SQI benchmark for Emergency Response Time is 93 percent of calls
5 responded to within two hours and the threshold is 90.6 percent.¹⁰ As reported in
6 its Annual Review for 2022 Rates, the 2020 result was 92 percent which was
7 better than the threshold of 90.6 percent. The June 2021 year-to-date
8 performance was 94 percent, which is better than the benchmark of 93 percent.¹¹

9 The FEI Emergency Response Time SQI is a measure of the utility's
10 responsiveness to an annual average of over 24,000 emergency events that
11 include gas odour calls, carbon monoxide calls, house fires, and hit lines. This
12 SQI is calculated as the emergency calls responded to within one hour as a
13 percentage of the number of total emergency calls received in one year.¹² The
14 2020 result was 97.7 percent which met the benchmark of 97.7 percent and was
15 better than the threshold of 96.2 percent. As of June 2021, FEI was on track to
16 exceed its benchmark for this SQI, set at 97.7 percent, and had responded to
17 98.0 percent of emergency calls within one hour.¹³

18 FEI also reports upon SQIs related to safety that are unique to its gas utility operations:

- 19 • **Public Contact with Gas Lines** measures the overall effectiveness of FEI's
20 efforts to minimize damage to the gas system through public awareness, which is
21 designed to reduce interruptions and the associated public safety and service
22 issues to customers. This is calculated as the Number of Line Damages per
23 1,000 BC 1 Call notifications received. The principal factors that influence this
24 metric include economic growth (and hence third-party excavation activity levels),
25 prevention awareness programs, and heightened public awareness created by
26 the BC 1 Call program. FEI recently reported that it has increased awareness
27 through targeted workshops with municipalities and excavating contractors and
28 the implementation of a Damage Investigation Program. FEI continues to work
29 with Technical Safety BC to reduce line hits, with a focus upon repeat
30 damagers.¹⁴ FEI set a benchmark for this SQI of 8 and a threshold of 12.

31 FEI reported in its most recent Annual Review that the 2020 result was 7, which
32 is better than the benchmark and the June 2021 year-to-date performance is 6,
33 which is also better than the benchmark.¹⁵

¹⁰ MRP Decision, Table 30, p. 97.

¹¹ FBC Annual Review for 2022 Rates, Exhibit B-2, p. 118.

¹² FEI Annual Review for 2022 Rates, Exhibit B-2, p. 151.

¹³ FEI Annual Review for 2022 Rates, Exhibit B-2, p. 150.

¹⁴ FEI Annual Review for 2022 Rates, Exhibit B-2, pp. 153-154.

¹⁵ FEI Annual Review for 2022 Rates, Exhibit B-2, p. 154.

- 1 • **Telephone Service Factor (Emergency)** (TSF) measures the percentage of
2 emergency calls answered within 30 seconds. This ensures FEI is staying within
3 appropriate cost levels and maintain adequate services for its customers.

4 FEI reported in its most recent Annual Review that the 2020 result was 96.9
5 percent which was better than the benchmark of 95 percent. The June 2021
6 year-to-date performance was 97.0 percent, which is better than the benchmark
7 of 95.0 percent and the threshold of 92.8 percent.¹⁶

8 FEI also reports on certain informational SQIs to the BCUC, which are primarily related
9 to reliability, but are also related to safety. For example:

- 10 • **Transmission Reportable Incidents** is an informational indicator reported on by
11 FEI that measures the number of reportable incidents to outside agencies for
12 transmission assets as defined by the BC Oil and Gas Commission (BCOGC).
13 This is an example of *ad hoc* safety-related reporting that is provided at first
14 instance to the BCOGC, which is the technical regulator for FEI's high-pressure
15 gas assets, but is also reported on an aggregate basis to the BCUC.¹⁷

16 **Q4: What reporting does FortisBC provide regarding serious incidents such as a**
17 **fatality, personal injury, significant damage to infrastructure, sabotage or other**
18 **illegal activity requiring police involvement, etc.?**

19 FortisBC provides courtesy notifications to the BCUC of significant incidents. For
20 example, FortisBC sends *ad hoc* notices of service disruption to the BCUC in the event
21 of larger customer outages. FortisBC also provides notification and ongoing updates to
22 the BCUC in the case of events that have the potential to result in service disruption or
23 damage to FortisBC assets, such as wildfires.

24 FortisBC provides *ad hoc* required reporting to other regulators with respect to their
25 areas of jurisdiction. These regulators are well positioned to deal with the specific issues
26 that arise under their jurisdiction. Examples of specific reporting requirements include
27 the following:

- 28 • Incidents involving serious injuries to workers must be reported to WorkSafeBC. If
29 there is a workplace injury or disease arising out of a worker's employment, there is
30 a requirement under the *Workers Compensation Act*¹⁸ (WCA) to report the injury to
31 WorkSafeBC within three days. In the case of certain incidents or "near-misses" that
32 occur, there is a requirement for employers to investigate and submit a report to
33 WorkSafeBC, even where no injury arises from the circumstances. In the rare event
34 of a serious injury or a fatality, there is a requirement to report immediately by calling
35 WorkSafeBC's emergency reporting line. Other significant incidents, such major
36 releases of hazardous substances and major structural failures related to
37 construction equipment, also require immediate notification of WorkSafeBC.

¹⁶ FEI Annual Review for 2022 Rates, Exhibit B-2, p. 152.

¹⁷ FEI Annual Review for 2022 Rates, p. 161.

¹⁸ R.S.B.C. 2019, s. 150.

1 WorksafeBC may investigate in the case of a serious safety incident and has
2 jurisdiction to impose administrative penalties, or seek an injunction to prevent
3 ongoing work.¹⁹

- 4 • Significant damage to gas assets must be reported to the BCOGC and to the BC
5 Ministry of Environment in accordance with the *Environmental Management Act*²⁰
6 (EMA) and the *Spill Reporting Regulation*²¹ (SRR). With respect to an incident
7 involving a gas asset, an event resulting in a spill is reported to Emergency
8 Management BC (EMBC) via an emergency telephone line operated under the
9 Provincial Emergency Management Program.²² EMBC serves as a “single window”
10 reporting mechanism and notifies other regulatory agencies, including federal
11 agencies. There is a written follow-up reporting requirement within 30 days of the
12 end of the spill, or on a continuing basis if the spill is ongoing.²³ In addition to the
13 measures available under the EMA, a director may order a person to submit a written
14 report to evaluate the effectiveness of the response and a description of changes in
15 the current spill reporting contingency plan.²⁴

16 **Q5: Should the BCUC rely on appointing inspectors and/or supervisors to keep itself**
17 **informed about public utility safety matters?**

18 Though FortisBC acknowledges that it is within the BCUC’s jurisdiction to do so, it is not
19 necessary for the BCUC to appoint inspectors or supervisors to keep itself informed
20 about public utility safety matters as of a matter of course. This power is more
21 appropriately used when a specific issue is identified (including by a customer complaint)
22 and a public utility is not providing sufficient reporting to satisfy the BCUC’s supervisory
23 jurisdiction.

24 For example, FortisBC notes that the BCUC recently appointed an “independent expert”
25 pursuant to its powers under section 37 of the UCA in the Vancouver Airport Fuel
26 Facilities Corporation – Complaint Regarding Jet Fuel Line Abandonment of Service
27 proceeding.²⁵ While this appointment was not exclusively with respect to safety
28 concerns, this is an example where, in the rare circumstance where the BCUC requires
29 assistance with coordination, supervision and specialized knowledge, an appointment
30 may be appropriate.

31 **Q6: Are there safety related matters that FortisBC does not report on to any regulator?**

32 Yes, FortisBC also implements a number of safety initiatives that are part of its safety
33 management system that are not reported on to a regulator. Examples are the

¹⁹ WCA, ss. 95, 97.

²⁰ S.B.C. 2003, c. 53.

²¹ B.C. Reg. 187/2017.

²² SRR, s. 4.

²³ SRR, ss. 5, 6.

²⁴ SRR, s. 7.

²⁵ Vancouver Airport Fuel Facilities Corporation Complaint Regarding Jet Fuel Line Abandonment of Service, Exhibit B-1, Exhibit A-9 and Exhibit A-10.

1 programs and initiatives that are developed pursuant to the *Occupational Health and*
2 *Safety Regulation*²⁶ (OHSR). These include ergonomics programs, confined space
3 programs, preventative maintenance programs, safety culture programs and hazard
4 identification and risk assessment processes.

5 **Q7: In FortisBC's view do the categories of asset safety, worker safety, and public**
6 **safety encompass the extent of the BCUC's mandate with respect to public utility**
7 **safety?**

8 Yes, the categories of asset safety, worker safety and public safety are an appropriate
9 categorization of the facets of safety regulation that may be of interest to the BCUC.
10 These aspects are regulated by other regulatory bodies, which does not displace the
11 BCUC's overall supervisory jurisdiction, but could still permit the BCUC to exercise a
12 higher-level supervisory role with respect to these categories of safety. The BCUC has
13 a primary role to play in ensuring that the public utility has adequate funding to provide
14 service to the public that is safe.

15 **Q8: Please describe asset safety as it relates to FortisBC.**

16 FortisBC's assets related to the provision of electricity and gas are regulated at both the
17 provincial and federal level. A description of some of the relevant regulation is provided
18 below.

19 ***Provincial-Level Regulation of Electricity-related Assets***

20 **1. Dam Safety**

21 FortisBC's infrastructure with respect to electricity generation is regulated primarily by
22 the *Dam Safety Regulation*²⁷ (DSR) and its parent legislation, the *Water Sustainability*
23 *Act*²⁸ (WSA). The Comptroller of Water Rights oversees the provincial dam safety
24 program, which sets design, construction and operational requirements for the safe
25 operation of dams.

26 The DSR sets requirements and best practices for all aspects of dam design,
27 construction, operation and maintenance of dams. The DSR categorizes dams into five
28 categories based upon losses or damages that would be the most severe potential
29 consequence of a specific dam's failure.

30 FBC's dams are regularly inspected and regular reporting is required.

31 ***A) Regular Dam Inspection***

32 FBC regularly inspects its dams in accordance with regulatory requirements and FBC's
33 internal operational procedures:

²⁶ B.C. Reg. 296/97.

²⁷ B.C. Reg. 40/2016.

²⁸ S.B.C. 2014, c. 15.

- 1 • FBC carries out weekly dam safety inspections for its dams with a consequence of “4
2 – high” and above, and monthly for dams with a “3 – significant” classification.
- 3 • FBC carries out formal semi-annual dam safety inspection and annual inspection by
4 the FBC Dam Safety engineer, as required by the DSR.
- 5 • FBC performs regular dam safety reviews to assess and evaluate the safety of a
6 dam against failure, which are carried out by an independent qualified review
7 engineer. In accordance with the regulatory requirements, FBC performs an
8 independent dam safety review every seven years for its dams that are classified at
9 the high end of the dam failure scale.

10 Based upon the consequence classification of each dam, FBC produces, updates and
11 complies with an Operation, Maintenance and Surveillance Manual, which must be
12 reviewed and revised every seven to ten years. Furthermore, FBC provides an
13 Emergency Planning Guide to external emergency management organizations, such as
14 the RCMP, and an internal Emergency Response Plan for each of its dams.

15 *B) Regular Dam Safety Reporting*

16 Dam Safety Summaries are reported internally on a quarterly basis. FBC’s Chief
17 Engineer, Generation reviews the progress and discusses performance with managers
18 based upon the information contained within the summaries.

19 An Annual Dam Safety Report is compiled for each of FBC’s facilities, which sets out
20 information on various aspects of safety including inspections, dam safety projects,
21 spillway gate testing, emergency headgate closure, dam safety reviews and incidents,
22 and potential failure modes analysis results. A Dam Safety Status Report is submitted
23 annually to the provincial Dam Safety Officer.

24 **2. Safety Standards in Design for the Electrical System**

25 FBC’s electrical system is designed in accordance with numerous electrical safety
26 standards, including the Canadian Electrical Code Safety Standard for Electrical
27 Installations (CSA C22.1). FBC also develops its own internal standards for design and
28 maintenance and if there is a deviation from a standard, FBC generates sealed
29 engineering documentation, following the requirements of Engineers and Geoscientists
30 British Columbia (EGBC).

31 **3. Inspection and Assessment of Electricity Assets Other Than Dams**

32 FBC routinely inspects its electrical facilities to ensure their continued safe operation:

- 33 • FBC inspects substations on a quarterly basis;
- 34 • FBC carries out line patrols on an annual basis;
- 35 • FBC conducts detailed substation inspections on an ongoing six-year cycle; and

- 1 • FBC conducts detailed condition assessments for FBC’s transmission and
2 distribution feeders on an ongoing eight-year cycle.

3
4 FortisBC’s engineers are certified Professional Engineers who are subject to
5 professional standards and regulation by the EGBC as per the *Professional Governance*
6 *Act*,²⁹ and all journeymen tradesmen are certified, qualified Red Seal tradespersons in
7 accordance with the Industry Training Authority.

8 ***Provincial-Level Regulation of Gas-related Assets***

9 The primary safety regulator for FEI’s gas assets is the BCOGC for intermediate and
10 transmission pressure gas lines and Technical Safety BC for low pressure distribution
11 gas lines. The BCOGC is empowered by the *Oil and Gas Activities Act*³⁰ (OGAA) to
12 ensure compliance, enforcement and operational standards for oil and gas and pipeline
13 activities through permits, authorizations, order and regulations. FEI constructs, operates
14 and maintains its gas assets in accordance with regulatory requirements enacted
15 pursuant to the OGAA, including:

- 16 • Pursuant to the *Emergency Management Regulation*³¹ FEI’s pipeline assets comply
17 with CSA Z246.2 and FEI has developed and implemented an emergency response
18 program, undertakes regular emergency exercises and implements training plans
19 with respect to emergency preparedness.
- 20 • Pursuant to the *Pipeline Regulation*³² FEI constructs its pipelines in accordance with
21 CSA Z662 and undertakes regular maintenance, inspection, and testing to ensure
22 the pipeline the safe for use. In addition, FEI has developed and implemented a
23 pipeline integrity management program and damage prevention program to ensure
24 the safety of its pipeline assets.

25 Notably, while the *Pipeline Regulation* applies to gas equipment operating at
26 pressures greater than 700 kPa, the *Gas Safety Regulation*³³ (GSR), enacted
27 pursuant to the *Safety Standards Act*³⁴ (SSA), sets specific standards for gas
28 equipment operating at less than 700 kPa. This ensures that there is no regulatory
29 gap with respect to the operation of gas equipment.

- 30 • Pursuant to the *Liquefied Natural Gas Facility Regulation* (LNGFR)³⁵ FEI operates its
31 liquefied natural gas (LNG) facilities in accordance with the standards outlined in
32 CSA Z276. FEI also operates its LNG facilities pursuant to an overarching safety and
33 loss management program, which includes:

²⁹ S.B.C. 2018, c. 47.

³⁰ S.B.C. 2008, c. 36.

³¹ B.C. Reg. 217/2017.

³² B.C. Reg. 281/2010.

³³ B.C. Reg. 103/2004.

³⁴ S.B.C. 2003, c. 39.

³⁵ B.C. Reg. 146/2014.

- 1 ○ an Integrity Management Program to ensure that assets are operating in a safe
2 manner and are maintained in accordance with regulatory standards;
- 3 ○ an Emergency Response Plan to ensure preparedness and effective response to
4 unplanned events involving LNG assets; and
- 5 ○ a Security Management Plan, to ensure public safety with respect to FEI's LNG
6 facilities and to ensure that the likelihood of adverse events involving LNG assets
7 is minimized.

8 Independent of legislated regulatory requirements, FEI pipelines comply with industry
9 standards that govern the safe construction and operation of its assets. Unique
10 standards also exist for the transport of specific products such as:

- 11 • CSA Z276 for liquefied natural gas transportation;
- 12 • CSA Z341 for underground storage of hydrocarbons; and
- 13 • CSA Z662 for the transport of liquid or gaseous hydrocarbons.

14 ***Federal-Level Regulation***

15 The *Canadian Energy Regulator Act*³⁶ regulates the construction, operation and
16 abandonment of electric lines and pipelines that cross provincial or international
17 boundaries. The Canada Energy Regulator coordinates with the Canadian Impact
18 Assessment Agency to identify, assess and evaluate the environmental features that
19 may be impacted by cross-border electric lines or pipelines prior to construction,
20 maintenance and abandonment activities.

21 The *Canadian Energy Regulator Onshore Pipeline Regulations*³⁷ (CEROPRs) set out a
22 variety of materials, construction, operation and maintenance requirements, including
23 inspection and reporting requirements for pipeline assets that cross provincial or
24 international boundaries. The purpose of the CEROPRs is to “require and enable a
25 company to construct and operate a pipeline in a manner that ensures the safety and
26 security of persons” and “protection of property and the environment”.³⁸

27 Certain assets, including the FortisBC Huntingdon Inc.³⁹ Import and Export Pipelines at
28 Huntington Station, and Distribution Pressure service lines to Point Roberts and Oroville
29 US Customs Offices are subject to Transportation Safety Board of Canada (TSB)
30 regulations. Federally-regulated pipeline operators must report certain pipeline
31 occurrences to the TSB, including if a person sustains a serious injury, if there is a fire,
32 ignition or explosion that affects the safe operation of the pipeline or there is a release of

³⁶ S.C. 2019, c. 28.

³⁷ S.O.R./99-294, ss. 52, 53.

³⁸ CEROPRs, s. 6.

³⁹ These assets are owned by FortisBC Huntingdon Inc., but operated by FEI under an ongoing service agreement.

1 a commodity from the pipeline.⁴⁰ Such reports must be made “as soon as possible and
2 by the quickest means available.”⁴¹

3 **Q9: Please describe worker safety as it relates to FortisBC.**

4 In respect of worker safety, FortisBC is regulated by WorkSafeBC pursuant to its
5 jurisdiction under the WCA and the associated regulations. The WCA places a general
6 duty upon employers to ensure the health and safety of all workers and a duty to remedy
7 any workplace conditions that are hazardous to the health and safety of workers.⁴²

8 WorkSafeBC has broad jurisdiction to inspect working conditions and enforce
9 compliance with the OSHR, including with respect to building and equipment safety,
10 emergency preparedness, ergonomics.⁴³ The OHSR also contains specific worker safety
11 requirements applicable to oil and gas operations in British Columbia, which are
12 applicable to FEI’s business.⁴⁴

13 In addition, FortisBC offers a number of programs and initiatives to ensure the safety of
14 first-responders, who are often the first on the scene in the event of a natural gas or
15 electric emergency. FortisBC provides first-responder education training and provides
16 annual conferences to provide firefighters with the most up-to-date training for
17 emergency situations involving natural gas and electricity, including to volunteer
18 firefighters and First Nations Emergency Services. Many of these sessions include live
19 demonstrations for electric, natural gas, and LNG to provide education on physical
20 properties of FortisBC’s energy commodities and to provide training in identifying,
21 managing and mitigating hazards and risks. During the COVID-19 pandemic, these
22 sessions have been adapted to be conducted online.

23 **Q10: Please describe public safety as it applies to FortisBC.**

24 Public safety is a key focus of FortisBC’s operations. FortisBC ensures public safety
25 through both design and construction of its utility assets and through public education
26 regarding specific hazards that may arise from the provision of energy across our
27 service territory.

28 ***Public Safety Regulation***

29 The primary regulatory body ensuring public safety is Technical Safety BC, which
30 operates under the SSA. The SSA sets out the general requirements for regulated work
31 and includes information on the legal requirements for permits and qualifications. The
32 SSA authorizes Technical Safety BC to take enforcement actions against non-
33 compliance issues with the SSA or the associated regulations. In addition to issuing

⁴⁰ *Transportation Safety Board Regulations*, S.O.R./2014-37, s. 4.

⁴¹ *Transportation Safety Board Regulations*, s. 4(2).

⁴² WCA, s. 21.

⁴³ B.C. Reg. 296/67.

⁴⁴ OSHR, Part 23.

1 permits and licenses for operation, Technical Safety BC works with industry to reduce
2 safety risks through assessment, education and outreach, enforcement and research.

3 The SSA mandates the appointment of safety officers, who are empowered to conduct
4 inspections necessary for the investigation of regulated work, products or incidents
5 arising from the operation of regulated work and to enforce the requirements of the SSA,
6 including by suspending permits issued under the SSA.⁴⁵

7 ***Public Safety Awareness and Education***

8 FortisBC supports the delivery of public safety messaging across our service territory to
9 increase awareness of energy safety. Every year, a comprehensive communication
10 strategy is created based upon market research, customer needs and incident tracking.
11 Examples of key public messages which align both the FEI and FBC businesses include:

- 12 • **Natural gas odour awareness** *Smell gas, act fast – get out and call*
- 13 • **Excavation diligence** *Click or call before you dig & call before you clear*
- 14 • **Safe approach to power lines** *Downed power lines can be deadly*
- 15 • **Dam safety awareness** *Obey all warning signs and keep a safe distance*

16
17 FortisBC's public safety programs and messages are routinely evaluated for
18 effectiveness for improvement. A third-party market research firm conducts quantitative
19 and qualitative studies every four months to measure respondents' levels of
20 understanding of key messages related to safety and FortisBC adapts its messaging
21 accordingly.

22 FortisBC is also a founding and active member of the BC Common Ground Alliance
23 (BCCGA), a non-profit organization established to lead the development of consistent
24 practices and coordination of activities, to ensure the highest possible standards of
25 public safety and damage prevention in connection with underground infrastructure.⁴⁶
26 FortisBC staff are actively involved through committee work under the BCCGA umbrella.
27 Examples of work of the BCCGA include joint awareness initiatives, workshops,
28 tradeshows and media campaigns for public education.

29 FortisBC is also an active participant in the BC 1 Call program, designed to reduce the
30 occurrence of damage to underground infrastructure in British Columbia. As reported in
31 the latest FEI Annual Review, FEI repeatedly meets its benchmark under the MRP for
32 reducing line hits by members of the public.⁴⁷

⁴⁵ SSA, s. 18.

⁴⁶ BC Common Ground Alliance. More information online at: <https://commongroundbc.ca/>.

⁴⁷ FEI Annual Review for 2022 Rates, Table 13-5, p. 154.

1 **Q11: Please describe some of the relevant environmental requirements that apply to**
2 **FortisBC.**

3 Protection of the environment is of fundamental importance to FortisBC. This element of
4 FortisBC's business is highly supervised by regulatory bodies other than the BCUC.
5 Multiple levels of governmental regulation apply to both FEI and FBC, as environment is
6 an area of shared jurisdiction between the provincial and federal governments. An
7 overview of the environmental regulatory regime applicable to FortisBC, and some of the
8 applicable legislation, is described below.

9 ***Major Federal Regulators of FortisBC's Operations***

10 The overarching federal environmental regulatory framework is the *Canadian*
11 *Environmental Protection Act, 1999*⁴⁸ (CEPA), which covers a broad spectrum of
12 environmental features, including air and water quality, controlling levels of toxic
13 substances that may be released into the environment, and greenhouse gas emissions.
14 The federal regime also provides for enforcement and fines for violations of federal
15 environmental protection legislation, including administrative monetary penalties.⁴⁹
16 Specific regulatory agencies address particular areas of federal jurisdiction, such as
17 fisheries and interprovincial transportation.

18 The primary federal regulatory agencies that regulate FEI and FBC, and the related
19 statutes and regulations include:

20 • **Fisheries and Oceans Canada**

21 ○ *Fisheries Act*⁵⁰

22 • **Environment and Climate Change Canada**

23 ○ The CEPA

24 ■ *PCB Regulations*⁵¹

25 ■ *Interprovincial Movement of Hazardous Waste Regulations*⁵²

26 ■ *Environmental Emergency Regulations*⁵³

27 • **Transport Canada**

28 ○ *Transportation of Dangerous Goods Act, 1992*⁵⁴

29 • **Impact Assessment Agency of Canada**

⁴⁸ S.C. 1999, c. 33.

⁴⁹ *Environmental Violations Administrative Monetary Penalties Act*, S.C. 2009, c. 14, s. 126.

⁵⁰ R.S.C. 1985, c. F-14.

⁵¹ S.O.R./2008-273.

⁵² S.O.R./2002-301.

⁵³ S.O.R./2019-51.

⁵⁴ S.C. 1992, c. 34.

1 ○ *Impact Assessment Act*⁵⁵

2 Enacted under the CEPA, the *Environmental Emergency Regulations, 2019*⁵⁶ (EER)
3 require reporting of a facility's storage of certain prescribed substances. The federal
4 government has coordinated with the BC Ministry of Environment such that reports
5 under the EER may be reported to the provincial ministry. This is an example of effective
6 coordination amongst the provincial and federal regulatory agencies to reduce regulatory
7 duplication, while ensuring that the federal area of jurisdiction is appropriately regulated.

8 ***Major Provincial Regulators of FortisBC's Operations***

9 FortisBC's business operations are also regulated by a number of provincial agencies,
10 the majority of which apply to both FEI and FBC. The overarching provincial
11 environmental legislation is the EMA, which regulates the introduction of substances into
12 the environment and contains enforcement provisions, including reviews, administrative
13 penalties and fines. Examples of the major provincial regulatory agencies that regulate
14 FEI and FBC, and the related statutes and regulations include:

15 • **Ministry of Environment and Climate Change Strategy**

16 ○ The EMA

- 17 ▪ *Waste Discharge Regulation*⁵⁷
18 ▪ *Oil and Gas Waste Regulation*⁵⁸
19 ▪ *Spill Reporting Regulation*⁵⁹
20 ▪ *Contaminated Sites Regulation*⁶⁰

21 • **Ministry of Forests, Lands, Natural Resource Operations and Rural
22 Development**

23 ○ The WSA

- 24 ▪ *Water Sustainability Regulation*⁶¹
25 ▪ *Groundwater Protection Regulation*⁶²
26 ▪ The DSR

27 • **BCOGC**

⁵⁵ S.C. 2019, c. 28, s.1.

⁵⁶ S.O.R./2019-51.

⁵⁷ B.C. Reg. 320/2004.

⁵⁸ B.C. Reg. 254/2005.

⁵⁹ B.C. Reg. 187/2017.

⁶⁰ B.C. Reg. 375/96.

⁶¹ B.C. Reg. 36/2016.

⁶² B.C. Reg. 39/2016.

- 1 ○ The OGAA
- 2 ▪ *Environmental Protection and Management Regulation*⁶³
- 3 ○ The EMA
- 4 • **Environmental Assessment Office**
- 5 ○ *Environmental Assessment Act*⁶⁴
- 6 • **Ministry of Transportation and Infrastructure**
- 7 ○ *Transportation of Dangerous Goods Act*⁶⁵

8 The BC Ministry of Environment regulates the proper handling and disposal of
9 hazardous wastes, clean-up of contaminated sites and use and management of
10 pesticides. This is accomplished through the EMA and the associated regulations.

11 The *Environmental Protection and Management Regulation*, enacted pursuant to the
12 OGAA, sets baseline requirements for the protection of various environmental features,
13 including water quality, aquifers, streams and forest health in relation to FEI's
14 operations. Furthermore, certain riparian areas for the protection of designated zones,
15 as identified by the Minister, apply to FEI's operations under the regulation.

16 Under the OGAA, the BCOGC has decision making authority under various other acts
17 related to protection of the environment, including the EMA. The BCOGC has specific
18 incident reporting instructions and guidelines, which set specific reporting thresholds.⁶⁶
19 Notably, any spill or release that impacts waterways must be reported.

20 **Q12: Are there other categories of safety that in FortisBC's view the BCUC should**
21 **consider such as customer safety or the safety of energy supply?**

22 No, FortisBC believes that customer safety is included within the categories of asset
23 safety and public safety. FortisBC views energy supply as a separate issue from safety
24 as that term is understood in the UCA and considers the "safety of energy supply" to be
25 more closely linked to reliability. FortisBC reports on various reliability standards in its
26 reporting to the BCUC.

27 **Q13: Has safety been a consideration in past FortisBC applications to the BCUC?**

28 Yes. For example, consistent with FortisBC's commitment to safety, safety is a
29 consideration in the design of projects that are before the BCUC for approval.

⁶³ B.C. Reg. 200/2010.

⁶⁴ S.B.C. 2018, c. 51.

⁶⁵ R.S.B.C. 1996, c. 458.

⁶⁶ OGC Incident Reporting Instructions and Guidelines, July 2014: Online: <https://www.bco.gc.ca/files/operations-documentation/Emergency-Response-and-Safety/incident-reporting-instructions-and-guidelines-july-release-2014.pdf>.

1 In FEI's application for a CPCN for the Lower Mainland Intermediate Pressure System
2 Upgrade Projects, safety was a driving factor in the assessment of the public interest
3 and one of the main justifications for the approval of the project. The BCUC panel found
4 that the replacement of the Coquitlam Gate Intermediate Pressure gasline was justified,
5 as it was "required to address pipeline integrity issues resulting from increased
6 frequency of actual and projected gas leaks due to non-preventable corrosion" and that
7 the inclusion of in-line inspection tools in the project design was justified as "a useful
8 means of providing increased safety and reliability."⁶⁷

9 However, safety is an integral part of normal operations for FortisBC and therefore,
10 safety is a component of most applications, even if it is not the primary driver for a
11 specific application or explicitly highlighted in the application itself.

12 **Q14: Has FortisBC identified any regulatory gaps with respect to safety?**

13 Safety is a highly regulated aspect of FortisBC's business and FortisBC has not
14 identified any regulatory gaps with respect to the safe operation of its facilities. As
15 described above, FortisBC's operations are subject to oversight in areas ranging from
16 workplace safety under the WCA to the handling of waste under the EMA, and from dam
17 safety under the WSA to pipeline operations under the OGAA

18 Regardless of the regulatory requirements or the existence of any regulatory gap,
19 FortisBC would continue to operate with safety as a core commitment and proactively
20 assess its practices in response to emerging situations and technologies.

21 However, FortisBC recognizes that the emergence of novel technologies has the
22 potential to result in regulatory gaps, as do specific legislative exemptions from safety-
23 related legislation.

24 The BCUC's backstopping general supervisory jurisdiction may play a role in regulating
25 the safety of the novel technologies if implemented by public utilities. As previously
26 noted, section 23 of the UCA empowers the BCUC with the general supervisory
27 jurisdiction and oversight of public utilities, but does not compel the BCUC to undertake
28 specific actions.

29 While FortisBC does not believe that there are currently any legislative gaps in the
30 oversight of public utilities with respect to safety, as it submitted in the Indigenous
31 Utilities Regulation Inquiry, FortisBC believes that the BCUC should retain jurisdiction
32 with respect to safety and service reliability for Indigenous utilities, and Indigenous
33 utilities, like other utilities, should be regulated in accordance with the applicable
34 provisions of the UCA governing these issues.⁶⁸ The BCUC retaining jurisdiction with
35 respect to safety and service reliability will ultimately preserve regulatory harmonization
36 across British Columbia, thereby promoting reliable service and the safety of the general
37 public. Put another way, FortisBC believes that the creation of gaps in the oversight of

⁶⁷ BCUC Decision re FortisBC Application for a CPCN for the Lower Mainland Intermediate Pressure System Upgrade Project, Order No. C-11-15, dated October 16, 2015, pp. 7, 25. Online: https://www.bcuc.com/Documents/Proceedings/2015/DOC_44883_10-16-2015_FEI-LMIPSU-CPCN-Decision.pdf.

⁶⁸ BCUC Indigenous Utilities Regulation Inquiry, FortisBC Comments on Draft Report, pp. 18-19.

1 public utilities as a result of exemptions from provisions of the UCA governing safety
2 should generally be avoided.

3 **Q15: Has FortisBC identified any areas of regulatory overlap with respect to safety?**

4 Most of FortisBC's activities are in areas where there is overlapping oversight.
5 FortisBC's prior submissions provided three examples of overlapping jurisdiction.

6 The first example was a project where FEI relocates a low pressure gas main and a high
7 pressure gas line, which would be governed by legislation and best practices including:

- 8 1. The WCA with respect to workplace safety, for example, the co-ordination of
9 safety at a multiple employer worksite, shoring, personal protective equipment,
10 safe work procedures, flagging and traffic management, asbestos containing
11 material handling, first aid attendants, and the requirement to locate other
12 underground utilities before digging;
- 13 2. The OGAA with respect to the construction codes, construction permits and
14 operating permits for the high pressure gas line;
- 15 3. The SSA and the GSR with respect to the construction code for the low pressure
16 gas line;
- 17 4. The EMA with respect to the handling of and disposal of waste and contaminated
18 soil;
- 19 5. The *Motor Vehicle Act* (MVA)⁶⁹ with respect to the operation of vehicles and the
20 vehicles that are used for the work; and
- 21 6. BCCGA Best Practices for any ground disturbances.

22
23 The second example was work related to a LNG facility, which would be governed by
24 legislation and best practices including:

- 25 1. The WCA with respect to workplace safety;
- 26 2. The OGAA, including the LNGFR;
- 27 3. The SSA, which authorizes Technical Safety BC to take enforcement actions if it
28 discovers a non-compliance with the statute or regulations;
- 29 4. The *Building Act*⁷⁰ and *British Columbia Building Code*, which provide technical
30 requirements for the construction, alteration, repair and demolition of buildings;
31 and
- 32 5. The CEPA, which imposes requirements on those who own or manage a listed
33 substance (which includes natural gas) in a quantity at or over the prescribed
34 minimum quantity.

35
36 The third example was FBC's work related to vegetation management on a high-voltage
37 transmission line, which would be governed by legislation and best practices, including:

- 38 1. The WCA with respect to workplace safety;

⁶⁹ R.S.B.C. 1996, c. 318.

⁷⁰ S.B.C. 2015, c. 2.

- 1 2. The *Integrated Pest Management Act*⁷¹ with respect to the pesticides that are
2 used;
- 3 3. The EMA with respect to the handling of and disposal of waste;
- 4 4. The *Wildfire Act*⁷² with respect to the work if it may present a fire risk;
- 5 5. The MVA with respect to the operation of vehicles and the vehicles that are used
6 for the work;
- 7 6. Design and operations standards consistent with Good Utility Practice in the
8 Western Electricity Coordinating Council region; and
- 9 7. Compliance with all associated BC Mandatory Reliability Standards
10 requirements.
- 11

12 While the BCUC retains supervisory jurisdiction over public utilities under the UCA, the
13 existence of overlap with a regulatory body that has specialized or technical expertise in
14 a specific area permits the BCUC to satisfy itself that there is sufficient regulatory
15 oversight of that element of a public utility's work.

16 As an illustration, the BCOGC regulates FEI's gas operations through its specialized
17 expertise and specific statutory mandate. While FEI reports on various aspects of safety
18 in its operations to the BCUC, including the SQIs outlined above, the BCUC is able to
19 take a supervisory role of the safety-related elements of its gas business in fulfilling its
20 broader oversight of public utilities. The technical regulation by a specialized regulator
21 permits the BCUC to satisfy itself that FEI's operations are operating in a safe manner
22 without imposing duplicative regulatory oversight.

23 The BCUC's regulatory jurisdiction over safety operates as a "backstop" in the event that
24 other regulatory bodies do not adequately address the safety of public utilities within
25 their specialized areas of expertise. Where there is regulatory oversight granted to
26 another regulatory body, it is preferable to avoid duplication and unnecessary regulatory
27 burden.

28

⁷¹ S.B.C. 2003, c. 58.

⁷² S.B.C. 2004, c. 31.

Appendix A

**FEI ANNUAL REVIEW FOR 2022 DELIVERY RATES
SERVICE QUALITY INDICATORS**

13. SERVICE QUALITY INDICATORS

13.1 INTRODUCTION AND OVERVIEW

Under the MRP, SQIs are used to monitor the Utility's performance to ensure that any efficiencies and cost reductions do not result in a degradation of the quality of service to customers.

In the MRP Decision and Order G-165-20, the BCUC approved a balanced set of SQIs for FEI, covering safety, responsiveness to customer needs, and reliability. Nine of the SQIs have benchmarks and performance ranges set by a threshold level. Four of the SQIs are for information only and as such do not have benchmarks or performance ranges.

In the subsections below, FEI reports on its 2020 and June 2021 year-to-date performance as measured against the SQI benchmarks and thresholds. The 2020 and June 2021 year-to-date SQI results indicate that the Company's overall performance to date meets service quality requirements. In 2020, for the nine SQIs with benchmarks, eight performed at or better than the approved benchmarks, with one, Meter Reading Accuracy, lower than the threshold due to the impact of the COVID-19 pandemic.⁵⁸ For the four SQIs that are informational only, performance generally remains at a level consistent with prior years. In 2021 to date, performance for the metrics with benchmarks is trending towards meeting the benchmark or the threshold.

Consistent with how SQIs were reviewed during the 2014-2019 PBR Plan term,⁵⁹ FEI has provided 2020 and year-to-date 2021 SQI results in this annual review. In accordance with Order G-44-16, the BCUC will evaluate FEI's actual 2021 SQI performance in the Annual Review for 2023 Delivery Rates when actual SQI results are known. FEI also notes that it will provide information on the 2022 year-to-date SQI results in the Annual Review for 2023 Delivery Rates.

13.2 REVIEW OF THE PERFORMANCE OF SERVICE QUALITY INDICATORS

For each SQI, Table 13-1 provides a comparison of FEI's 2020 and June year-to-date performance for 2021 to the proposed benchmarks and thresholds approved as part of the MRP. Actual 2020 and June year-to-date results for 2021 are also provided for the four informational SQIs.

⁵⁸ In Letter L-20-20, dated March 31, 2020, the BCUC granted public utilities relief from meter reading, when necessary, for the duration of the State of Emergency in the Province of British Columbia and while social distancing practices remain in place.

⁵⁹ MRP Decision page 99: "the Panel determines that the existing approved process for interpreting metric performance is to remain in effect over the term of the MRPs".

1

Table 13-1: Approved SQIs, Benchmarks and Actual Performance

Performance Measure	Description	Benchmark	Threshold	2020 Results	2021 June YTD Results
Safety SQIs					
Emergency Response Time	Percent of calls responded to within one hour	>= 97.7%	96.2%	97.7%	98.0%
Telephone Service Factor (Emergency)	Percent of emergency calls answered within 30 seconds or less	>= 95%	92.8%	96.9%	97.0%
All Injury frequency rate (AIFR)	3 year average of lost time injuries plus medical treatment injuries per 200,000 hours worked	<= 2.08	2.95	1.66	1.78
Public Contacts with Gas Lines	Current year average of number of line damages per 1,000 BC One calls received	<= 8	12	7	6
Responsiveness to the Customer Needs SQIs					
First Contact Resolution	Percent of customers who achieved call resolution in one call	>= 78%	74%	81% ⁶⁰	79%
Billing Index	Measure of customer bills produced meeting performance criteria	<= 3.0	5.0	0.6	1.0
Meter Reading Accuracy	Number of scheduled meters that were read	>= 95%	92%	89%	91%
Telephone Service Factor (Non-Emergency)	Percent of non-emergency calls answered within 30 seconds or less	>= 70%	68%	70%	66%
Meter Exchange Appointment	Percent of appointments met for meter exchanges	>= 95%	93.8%	98.1%	98.4%
Customer Satisfaction Index	Informational indicator - measures overall customer satisfaction	-	-	8.7	8.7
Average Speed of Answer	Informational indicator – amount of time it takes to answer a call (seconds)	-	-	72	80
Reliability SQIs					
Transmission Reportable Incidents	Informational indicator – number of reportable incidents to outside agencies	-	-	1	0

⁶⁰ First Contact Resolution surveying was suspended from March 23 - May 3, 2020 as a result of the COVID-19 pandemic, thus the 2020 results do not contain data for the period that surveys were suspended.

Performance Measure	Description	Benchmark	Threshold	2020 Results	2021 June YTD Results
Leaks per KM of Distribution System Mains	Informational indicator - measures the number of leaks on the distribution system per KM of distribution system mains	-	-	0.0065	0.0030

1
2 In the following sections, FEI reviews each SQI's year-to-date individual performance in 2020
3 and 2021. Discussion is also provided for the informational SQIs.

4 **13.2.1 Safety Service Quality Indicators**

5 Emergency Response Time

6 This SQI measures the utility's responsiveness to on average 24,000 annual emergency events
7 that include gas odour calls, carbon monoxide calls, house fires and hit lines. It is calculated as:

$$8 \quad \frac{\text{Number of emergency calls responded to within one hour}}{9 \quad \text{Total number of emergency calls in the year}}$$

10 There are many variables affecting the response time, including time of day (i.e., during
11 business hours or after business hours), number and type of events, available resources,
12 location (i.e., travel times and traffic congestion) and weather conditions.

13 The 2020 result was 97.7 percent which met the benchmark of 97.7 percent and was better than
14 the threshold of 96.2 percent. In 2020, the Company performed slightly lower than the previous
15 three years (2017-2019) and higher than the three years previous to that (2014-2016). The June
16 2021 year-to-date performance is 98.0 percent, which is better than the benchmark.

17 For comparison, the Company's annual results under the 2014-2019 PBR Plan, the 2020 results
18 and the June 2021 year-to-date emergency response time results are provided below.

19 **Table 13-2: Historical Emergency Response Time**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Results	96.7%	97.3%	97.4%	97.8%	97.8%	97.9%	97.7%	98.0%
Benchmark	97.7%							
Threshold	96.2%							

20 Telephone Service Factor (Emergency)

21 This indicator measures the percentage of emergency calls answered within 30 seconds and is
22 calculated as:

$$23 \quad \frac{\text{Number of emergency calls answered within 30 seconds}}{24 \quad \text{Number of emergency calls received}}$$

1 The telephone service factor (TSF) is a measure of how well the Company can balance costs
2 and service levels, with the overall objective to maintain a consistent TSF level. This ensures
3 the Company is staying within appropriate cost levels and maintaining adequate service for its
4 customers. The principal factors influencing the TSF results include the volume of inbound calls
5 received and the resources available to answer those calls. Staffing is matched to the calls
6 forecast based on historical data in order to reach the service level benchmark desired.

7 The 2020 result was 96.9 percent which was better than the benchmark of 95 percent. The June
8 2021 year-to-date performance is 97.0 percent which is also better than the benchmark.

9 For comparison, the Company's annual results under the 2014 to 2019 PBR Plan, the 2020
10 results and the June 2021 year-to-date for TSF (Emergency) are provided below:

11 **Table 13-3: Historical TSF (Emergency) Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Results	95.8%	97.6%	98.5%	97.6%	97.9%	97.2%	96.9%	97.0%
Benchmark	95.0%							
Threshold	92.8%							

12

13 **All Injury Frequency Rate**

14 The All Injury Frequency Rate (AIFR) is an employee safety performance indicator based on
15 injuries per 200,000 hours worked, with injuries defined as lost time injuries (i.e., one or more
16 days missed from work) and medical treatments (i.e., medical treatment was given or
17 prescribed). The annual performance for this metric is calculated as:

18
$$\frac{\text{Number of Employee Injuries} \times 200,000 \text{ hours}}{\text{Total Exposure Hours Worked}}$$

19

20 For the purpose of this SQI, the measurement of performance is based on the three-year rolling
21 average of the annual results.

22 The 2020 (three-year rolling average) result was 1.66 which was better than the benchmark of
23 2.08. The 2020 annual AIFR was 1.43 which reflected 9 Medical Treatments and 15 Lost Time
24 Injuries.

25 The June 2021 year-to-date performance (three-year rolling average) result is 1.78 which is
26 better than the benchmark. The June 2021 year-to-date performance (annual) is 2.87 and
27 reflects 8 Medical Treatments and 18 Lost Time Injuries.

28 Strengthening the safety culture continues to be a key driver for FEI, building on the
29 commitment to learn from safety events, identify safety hazards, assess risk and continually
30 improve through the implementation and sustainment of robust safety barriers and controls.

1 While the 2021 year-to-date injury rate is trending above previous years, the majority of the
 2 injuries experienced in 2021 are low severity in nature (ergonomic related strains and sprains),
 3 and mitigation measures have been taken to address the causes of these injuries. Aspiring to
 4 create a safe workplace, where all employees go home healthy and safe each day, continues to
 5 be the main organizational goal. This includes reducing the number of relatively low
 6 consequence accidents, like those that feature in the AIFR metric, in a proportionate and
 7 effective manner. However, the number of low consequence accidents are not in themselves
 8 predictors of the likelihood that high severity injuries will be experienced. For this reason, FEI
 9 continues to dedicate proportionate focus on high risk activities, ensuring that finite resources
 10 are applied cost effectively to build sufficient safety capacity and resilience in the Company's
 11 systems and that robust critical controls have been identified, implemented and sustained to
 12 avoid serious life altering injuries or fatalities.

13 The 2021 worker injury sprains and strains experienced are mainly attributable to the gas
 14 distribution workforce. The corresponding mitigation measures adopted have included additional
 15 ergonomic assessments, safe design of worker/task interface, focus on preparing the mind and
 16 body for the task in hand, equipment suitability review, and renewed emphasis on achieving
 17 effective job planning and hazard identification and risk control.

18 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
 19 the June 2021 year-to-date AIFR results are provided below.

20 **Table 13-4: Historical All Injury Frequency Rate Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	1.73	2.52	2.13	1.36	1.74	1.82	1.43	2.87
Three year rolling average	2.22	2.42	2.13	2.00	1.74	1.64	1.66	1.78
Benchmark	2.08							
Threshold	2.95							

21 **Public Contact with Gas Lines**

22 This metric measures the overall effectiveness of the Company's efforts to minimize damage to
 23 the gas system through public awareness, which is designed to reduce interruptions and the
 24 associated public safety and service issues to customers.

25 This indicator is calculated as:

26
$$\text{Number of Line Damages per 1,000 BC One Calls received}$$

27 For the purpose of this service quality indicator, the measurement of performance is based on
 28 the annual results. The new benchmark and threshold approved in the MRP are 8 and 12,
 29 respectively.

1 In its Decision on FEI’s Annual Review of 2015 Delivery Rates, the BCUC directed FEI to
2 provide the number of line damages and the number of calls to BC One Call in future annual
3 reviews. Therefore, the number of line damages and number of calls to BC One Call are
4 provided in Table 13-5 below.

5 The 2020 result was 7, which is better than the benchmark. The June 2021 year-to-date
6 performance is 6, which is also better than the benchmark.

7 Principal factors influencing results for this metric include economic growth (i.e., construction
8 activity), damage prevention awareness programs, and heightened public awareness created by
9 the BC One Call program. The current year result reflects an ongoing positive trend for this
10 metric. Increased awareness through targeted workshops with municipalities and excavating
11 contractors, together with the ongoing execution of the Damage Investigation Program have
12 contributed to the improved performance.

13 For comparison, the Company’s results under the 2014 to 2019 PBR Plan, the 2020 results, and
14 June 2021 year-to-date results are provided below. The annual result has been trending
15 downward. This is due to the historical upward trend in BC One Call ticket volume (increased
16 awareness and increased construction activity) up until 2018, which was offset by an increase in
17 the number of line damages resulting from increased construction activities. The Company is
18 taking steps to continue to address line damages. FEI continues to have Damage Prevention
19 Investigators focus on repeat damagers, and is working with Technical Safety BC to reduce line
20 hits. In addition, FEI recently implemented the installation of marker tape above new
21 underground gas assets. While BC One Call ticket volume once again decreased in 2020,
22 mainly due to efficiency gains realized through new software introduced by BC One call, line
23 damages also decreased. For 2021, BC One Call ticket volume is trending upward year-to-date
24 as a result of improved awareness and higher than expected construction activities.

25 **Table 13-5: Historical Public Contact with Gas Lines Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	9	8	8	9	8	7	7	6
Benchmark	16						8	
Threshold	16						12	
BC One Call Ticket Volume	107,509	122,627	129,645	146,868	157,708	144,413	141,262	86,673
Line Damages	954	1,035	1,086	1,247	1,201	1,069	973	484

13.2.2 Responsiveness to Customer Needs Service Quality Indicators

First Contact Resolution

First Contact Resolution (FCR) measures the percentage of customers who receive resolution to their issue in one contact with FEI. The Company determines the FCR results using a customer survey, tracking the number of customers who responded that their issue was resolved in the first contact with the Company. The FCR rate is impacted by factors such as the quality and effectiveness of the Company’s coaching and training programs and the composition of the different call drivers.

The 2020 result was 81 percent which was better than the benchmark of 78 percent. This result excludes surveys from March 23 to May 3, 2020, as all Service Quality Measurement (SQM) surveys were suspended during that time due to the COVID-19 pandemic. The June 2021 year-to-date performance is 79 percent, which is slightly above the benchmark.

For comparison, the Company’s results under the 2014 to 2019 PBR Plan, the 2020 results and the June 2021 year-to-date results are provided below.

Table 13-6: Historical First Contact Resolution Levels

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	80%	81%	81%	80%	83%	81%	81%	79%
Benchmark	78%							
Threshold	74%							

Billing Index

The Billing Index indicator tracks the effectiveness of the Company’s billing system by measuring the percentage of customer bills produced meeting performance criteria. The Billing Index is a composite index with three components:

- Billing completion (percent of accounts billed within two days of the billing due date);
- Billing timeliness (percent of invoices delivered to Canada Post within two days of file creation); and
- Billing accuracy (percent of bills without a production issue based on input data).

The objective is to achieve a score of five or less.

The Billing Index is impacted by factors such as the performance of the Company’s billing system, weather variability, which can cause a high volume of billing checks and estimation issues, and mail delivery by Canada Post.

1 The 2020 result was 0.62 which was better than the benchmark of 3.0. No significant billing
2 issues occurred in 2020. The June 2021 year-to-date result is 1.04 which is also better than the
3 benchmark.

4 The 2020 Billing Index sub-measures calculation is as follows.

5 **Table 13-7: Calculation of 2020 Billing Index**

Billing sub-measure	Percent Achieved (PA)	Formula		Result
Billing Accuracy (Percent of bills without a Production Issue, based on input data); Target - 99.9%	99.9988%	If (PA≥99.9%,5000*(1 - PA),100*(1.05-PA))	=5000*(1-99.9988%)	0.06
Billing Timeliness (Percent of invoices delivered to Canada Post within 2 days of file creation); Target - 95%	100.00%	(100%-PA)*100	=(100%-100%)*100	0.00
Billing Completion (Percent of accounts billed within 2 days of the billing due date); Target - 95%	98.21%	(100%-PA)*100	=(100%-98.21%)*100	1.79
Billing Service Quality Indicator; Target < 3		(Accuracy PA+Timeliness PA+Completion PA)/3	=(0.06 +0+1.79) / 3	0.62

6
7 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
8 the June 2021 year-to-date results are provided below.

9 **Table 13-8: Historical Billing Index Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	0.89	1.06	0.57	0.75	2.63	0.44	0.62	1.04
Benchmark	5.0						3.0	
Threshold	5.0							

10

11 **Meter Reading Accuracy**

12 This SQI compares the number of meters that are read to those scheduled to be read.
13 Providing accurate and timely meter reads for customers is a key driver for the Company and its
14 customers. The results are calculated as:

15
$$\frac{\text{Number of scheduled meters read}}{\text{Number of scheduled meters for reading}}$$

16

1 Factors influencing this SQI's performance include the resources available, system issues
2 impacting the Company's billing or reading collections systems, weather conditions including
3 road and highway conditions, and traffic related issues.

4 The 2020 result was 89.2 percent which was lower than the benchmark and threshold. The
5 impact of the COVID-19 pandemic and the need for physical distancing and enhanced hygiene
6 practices by meter readers has resulted in a larger percentage of estimated reads in both 2020
7 and 2021 year-to-date. The BCUC anticipated this impact in Letter L-20-20, which granted
8 public utilities relief from meter reading, when necessary, for the duration of the State of
9 Emergency in the Province of BC and while social distancing practices remain in place.⁶¹

10 FEI continues to work closely with its meter reading service provider, Olameter, to achieve as
11 many actual meter reads as safely possible during the pandemic. In addition to using the best
12 available historical billing information to estimate reads for billing purposes, FEI is working with
13 some customers to acquire additional information to support minimizing the variance between
14 estimated and actual reads.⁶²

15 The June 2021 year-to-date performance is 90.7 percent which is close to the threshold.

16 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
17 the June 2021 year-to-date results are provided below.

18 **Table 13-9: Historical Meter Reading Accuracy Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	97.0%	97.5%	96.9%	96.2%	95.4%	95.2%	89.2%	90.7%
Benchmark	95.0%							
Threshold	92.0%							

19

⁶¹ In BCUC Letter L-20-20, dated March 31, 2020, the BCUC stated:

The BCUC recognizes that this Pandemic greatly impacts utilities and utility customers across British Columbia as many businesses and individuals adjust to working from home, social distancing, and self-isolation. Given these difficult circumstances, the BCUC understands that utilities may not be able to conduct in-person meter reading for all customers at this time due to safety and operational concerns. As such, any public utilities regulated by the British Columbia Utilities Commission (BCUC) that are unable to estimate billings within their endorsed tariff Terms and Conditions are granted relief from meter reading, when necessary, for the duration of the State of Emergency in the Province of British Columbia and while social distancing practices remain in place.

In place of meter readings, when necessary, energy consumption may be estimated from best available sources and evidence for billing purposes. When the next actual meter reading is completed, customers' bills must then be adjusted for the difference between estimated and actual use over the interval between meter readings.

⁶² For example, where capacity is available, FEI is proactively contacting customers with multiple estimates in a row to determine if a customer provided read is possible to support the estimation.

1 Telephone Service Factor (Non-Emergency)

2 The Telephone Service Factor (Non-Emergency) measures the percentage of non-emergency
3 calls that are answered in 30 seconds. It is calculated as:

$$\frac{\text{Number of non-emergency calls answered within 30 seconds}}{\text{Number of non-emergency calls received}}$$

6 Similar to the TSF (Emergency), this is a measure of how well the Company can balance costs
7 and service levels with the overall objective to maintain a consistent TSF level. This ensures
8 the Company is staying within appropriate cost levels and maintaining adequate service for its
9 customers. The principal factors influencing the TSF results include volume and type of
10 inbound calls received and the resources available to answer those calls. Staffing is matched to
11 the expected call volume based on historical data in order to reach the service level benchmark
12 desired. Other factors that can influence the non-emergency TSF are billing system related
13 issues and weather patterns that may generate high numbers of billing related queries and the
14 complexity of the calls.

15 The 2020 result was 70 percent which meets the benchmark of 70 percent. The June 2021
16 year-to-date performance is 66 percent which is lower than the threshold.

17 In January and the early part of February 2021, the contact centres experienced a challenging
18 mix of call volumes and high average handle time that resulted in non-emergency telephone
19 service factors for each month being below threshold levels. Opportunities to enhance
20 operational activities and processes were identified and performance returned to above
21 threshold levels in March, with performance at or above threshold levels being sustained since
22 that time. Due to the large volume experienced in the first quarter of the year compared to the
23 rest of the year, the year-to-date performance as at June remains below threshold; however,
24 FEI expects that the annual performance threshold will be met should the current performance
25 levels continue as expected. Despite challenges with the telephone service factor and average
26 speed of answer in the early part of the year, the overall impact on customer experience and
27 service quality has been mitigated by continued strong performance with first contact resolution.
28 As such, the customer service index has remained high throughout the period.

29 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
30 the June 2021 year-to-date results are provided below.

1 **Table 13-10: Historical TSF (Non-Emergency) Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	75%	71%	71%	71%	71%	71%	70%	66%
Benchmark ⁶³	75%	70%						
Threshold	68%							

2

3 **Meter Exchange Appointments**

4 The Meter Exchange Appointments SQI measures FEI's performance in meeting appointments
5 for meter exchanges (excluding industrial meters). The calculation for percentage meter
6 exchange appointments met is calculated as:

$$\frac{\text{Number of meter exchange appointments met}}{\text{Number of meter exchange appointments made}}$$

9 Factors influencing results include processes, number of emergencies, weather, and traffic
10 conditions. The processes require the contact centre and operations departments to work
11 closely together in order to better meet the needs of customers and match resources to
12 appointments while maintaining emergency response capabilities.

13 The 2020 result was 98.1 percent which was better than the benchmark of 95 percent.⁶⁴ The
14 June 2021 year-to-date performance is 98.4 percent, which is also better than the benchmark.

15 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
16 the June 2021 year-to-date results are provided below.

17 **Table 13-11: Historical Meter Exchange Appointment Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	95.5%	96.6%	96.9%	97.0%	96.3%	96.0%	98.1%	98.4%
Benchmark	95.0%							
Threshold	93.8%							

18

⁶³ The 2014 result was achieved with the Company targeting 75 percent as the benchmark. The BCUC approved the revised target of 70 percent in mid-September 2014. In 2015 and subsequent years, actual results were reflective of the revised target of 70 percent.

⁶⁴ The Meter Exchange program was suspended in April and May due to the COVID-19 pandemic with limited resumption of meter exchange activities in June. The Meter Exchange program ramped up July through October and resumed normal operation in November, completing 26,000 meter exchanges by year end.

1 **Customer Satisfaction Index**

2 The Customer Satisfaction Index (CSI) is an informational indicator that measures overall
3 customer satisfaction with the Company. The index reflects customer feedback about important
4 service touch points including the contact centre, perceived accuracy of meter reading, energy
5 conservation information and field services. The index includes feedback from both residential
6 and mass market commercial customers. The survey is conducted quarterly and results are
7 presented as a score out of ten.

8 The annual CSI score for 2020 was 8.7, the same as that obtained in 2019. There were no
9 statistically significant shifts from 2019 to 2020 in the five measures that make up the overall
10 customer satisfaction score. The scores for overall satisfaction, satisfaction with the accuracy of
11 meter reading, and energy conservation metrics were static at 8.7, 8.5, and 7.9 respectively.
12 The score for satisfaction with the contact centre decreased from 8.8 in 2019 to 8.7 in 2020,
13 while the score for the satisfaction with field services metric increased from 9.0 in 2019 to 9.2 in
14 2020. None of these changes are statistically significant.

15 The score for 2021 year-to-date is 8.7 and the same as the 8.7 annual score recorded for 2020.
16 Of the five measures that make up the overall customer satisfaction score, the results for June
17 2021 year-to-date were higher in one area, static in two and lower in two when compared to the
18 annual 2020 scores. The score for satisfaction with field services increased from 9.2 in 2020 to
19 9.4 in 2021. The scores for satisfaction with the accuracy of meter reading and energy
20 conservation information decreased from 8.5 to 8.4 and 7.9 to 7.7, respectively. The scores for
21 overall satisfaction and for satisfaction with the contact centre remained static at 8.7. None of
22 these changes are statistically significant.

23 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
24 the June 2021 year-to-date results are provided below.

25 **Table 13-12: Historical Customer Satisfaction Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	8.5	8.6	8.8	8.4	8.7	8.7	8.7	8.7
Benchmark	n/a							
Threshold	n/a							

26

27 **Average Speed of Answer**

28 The Average Speed of Answer (ASA) is an informational indicator that measures the amount of
29 time it takes for a customer service representative to answer a customer's call (seconds).

30 The 2020 result was 72 seconds and was affected by the COVID-19 pandemic. The June 2021
31 year-to-date performance is 80 seconds. As described above, challenges experienced in the
32 contact centre in January and February of 2021 resulted in monthly non-emergency TSF

1 performance levels below the threshold. Comparatively, the ASA also experienced challenges
 2 during January and February and, aligned with the recovery to threshold levels of TSF, the
 3 monthly ASA also returned to typical levels of less than one minute beginning in March.
 4 Relative to previous years, both 2020 and 2021 are higher; however, they remain within a
 5 reasonable range from a customer experience perspective in that, on average for the year, calls
 6 to the contact centre were answered in just over one minute in 2020 and currently
 7 approximately one minute and thirty seconds in 2021.

8 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
 9 the June 2021 year-to-date results are provided below.

10 **Table 13-13: Average Speed of Answer**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	34	37	40	34	35	39	72	80
Benchmark	n/a							
Threshold	n/a							

11 **13.2.3 Reliability Service Quality Indicators**

12 *Transmission Reportable Incidents*

13 The Transmission Reportable Incidents metric is an informational indicator that measures the
 14 number of reportable incidents to outside agencies for transmission assets as defined by the Oil
 15 and Gas Commission (OGC). The metric is intended to be an indicator of the integrity of the
 16 transmission system.

17 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
 18 the June 2021 year-to-date results are provided below.

19 The incident in 2020 was a very minor leak found on a dent during an integrity dig. It was
 20 temporarily repaired at the time of discovery by installing a sleeve over the dent. The dented
 21 pipe is scheduled to be replaced in 2021.

1 **Table 13-14: Historical Transmission Reportable Incidents**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results – Level 1	1	3	3	4	2	0	1	0
Annual Results – Level 2	1	0	0	0	0	0	0	0
Annual Results – Level 3	0	0	0	0	0	0	0	0
Benchmark	n/a							
Threshold	n/a							

2

3 **Leaks per KM of Distribution System Mains**

4 The Leaks per KM of Distribution System Mains metric is an informational indicator that
5 measures the number of leaks on the distribution system per KM of distribution system mains.
6 The metric is intended to be an indicator of the integrity of the distribution system. Each year,
7 approximately one fifth of the distribution system is surveyed for leaks, with the number of leaks
8 varying from year to year, depending on the condition of the pipe surveyed.

9 Variability in the number of leaks detected is influenced by the timing of the leak survey program
10 as well as the condition of the distribution system, as some sections of the pipeline system are
11 more prone to leaks depending on soil conditions, age of the pipelines, pipeline material and the
12 location of the pipeline. As the distribution system ages, the expected number of leaks may
13 increase depending on the Company’s pipeline renewal/replacement activities. Increases in
14 leak survey activity levels will generally also result in a higher number of leaks detected.

15 In its Decision on FEI’s Annual Review of 2015 Delivery Rates, the BCUC directed FEI to
16 provide a five-year rolling average as follows:

17 The Panel agrees with BCSEA that a five-year rolling average of Leaks per KM
18 of Distribution System Mains would be helpful information and directs FEI to
19 provide this information in future annual reviews.

20 Table 13-15 below provides the historical data for the calculation of the June 2021 year-to-date
21 five-year rolling average result of 0.0053 calculated using data from July 2016 to June 2021.

1 **Table 13-15: June 2021 Year-to-Date Five Year Rolling Average**

Period	Metric
July – December 2016	0.0022
January – December 2017	0.0047
January – December 2018	0.0047
January – December 2019	0.0061
January – December 2020	0.0060
January – June 2021	0.0030
Five Year Rolling Average	0.0053

2

3 The Company's 2014 to 2020 annual results are provided below. The five-year average for
 4 each year shown is calculated by taking the average of the results of the stated year and the
 5 four years prior (e.g. the 2020 five-year average is calculated using 2016 to 2020 annual data).
 6 The June 2021 year-to-date result is 0.0030, which is based on 70 leaks detected year-to-date,
 7 which is equal to the 2020 and 2019 results for the similar time period.

8 **Table 13-16: Historical Leaks per KM of Distribution System Mains**

Leaks per KM of Distribution System Mains	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Leaks	114	102	107	108	140	139	152	70
Total km	19,172	22,602	22,813	22,951	23,060	23,268	23,460	23,707
Leaks per km	0.0059	0.0045	0.0047	0.0047	0.0061	0.0060	0.0065	0.0030
5 year average	0.0077	0.0071	0.0063	0.0055	0.0052	0.0051	0.0056	0.0053

9

10 The number of leaks on DP mains will vary from year to year. FEI does not expect the number
 11 of leaks to be a continuing trend.

12 **13.3 SUMMARY**

13 In summary, FEI's 2020 results and June 2021 year-to-date SQI results indicate that the
 14 Company's overall performance is representative of a high level of service quality. In 2020, for
 15 those SQIs with benchmarks, eight performed at or better than the approved benchmarks with
 16 the Meter Reading Accuracy metric performance lower than the threshold due to the impact of
 17 the COVID-19 pandemic. For the four SQIs that are informational only, performance generally
 18 remains at a level consistent with prior years.

19

Appendix B

**FBC ANNUAL REVIEW FOR 2022 RATES
SERVICE QUALITY INDICATORS**

1 **13. SERVICE QUALITY INDICATORS**

2 **13.1 INTRODUCTION AND OVERVIEW**

3 Under the MRP, SQIs are used to monitor the Utility's performance to ensure that any
4 efficiencies and cost reductions do not result in a degradation of the quality of service to
5 customers.

6 In the MRP Decision and Order G-166-20, the BCUC approved a balanced set of SQIs for FBC,
7 covering safety, responsiveness to customer needs, and reliability. Eight of the SQIs have
8 benchmarks and performance ranges set by a threshold level. Four of the SQIs are for
9 information only and as such do not have benchmarks or performance ranges.

10 In the subsections below, FBC reports on its 2020 and June 2021 year-to-date performance as
11 measured against the SQI benchmarks and thresholds. The 2020 and June 2021 year-to-date
12 SQI results indicate that the Company's overall performance to date meets service quality
13 requirements. In 2020, for the eight SQIs with benchmarks, six met or were better than the
14 benchmark, with two better than the threshold. For the four SQIs that are informational only,
15 performance generally remains at a level consistent with prior years. In 2021 to date,
16 performance for the metrics with benchmarks are trending towards meeting the benchmark or
17 the threshold.

18 Consistent with how SQIs were reviewed during the 2014-2019 PBR Plan term,³⁶ FBC has
19 provided 2020 and year-to-date 2021 SQI results in this annual review. In accordance with
20 Order G-44-16, the BCUC will evaluate FBC's actual 2021 SQI performance in the Annual
21 Review for 2023 Rates when actual SQI results are known. FBC also notes that it will provide
22 information on the 2022 year-to-date SQI results in the Annual Review for 2023 Rates.

23 **13.2 REVIEW OF THE PERFORMANCE OF SERVICE QUALITY INDICATORS**

24 For each SQI, Table 13-1 provides a comparison of FBC's 2020 and June year-to-date
25 performance for 2021 to the proposed benchmarks and thresholds approved as part of the
26 MRP. Actual 2020 and June year-to-date results for 2021 are also provided for the four
27 informational SQIs.

³⁶ MRP Decision page 99: "the Panel determines that the existing approved process for interpreting metric performance is to remain in effect over the term of the MRPs."

1 **Table 13-1: Approved SQIs, Benchmarks and Actual Performance**

Performance Measure	Description	Benchmark	Threshold	2020 Results	June 2021 YTD Results
Safety SQIs					
Emergency Response Time	Percent of calls responded to within two hours	>=93%	90.6%	92%	94%
All Injury Frequency Rate (AIFR)	3 year average of lost time injuries plus medical treatment injuries per 200,000 hours worked	<=1.64	2.39	0.87	0.65
Responsiveness to Customer Needs SQIs					
First Contact Resolution	Percent of customers who achieved call resolution in one call	>=78%	74%	82% ³⁷	81%
Billing Index	Measure of customer bills produced meeting performance criteria	<=3.0	5.0	0.13	0.16
Meter Reading Accuracy	Number of scheduled meters that were read	>=98%	96%	99%	98%
Telephone Service Factor (Non-Emergency)	Percent of non-emergency calls answered within 30 seconds or less	>=70%	68%	70%	69%
Customer Satisfaction Index	Informational indicator - measures overall customer satisfaction	-	-	8.5	8.4
Average Speed of Answer	Informational indicator – the amount of time it takes to answer a call (seconds)	-	-	71	66
Reliability SQIs					
System Average Interruption Duration Index (SAIDI) – Normalized	Annual SAIDI (average of cumulative customer outage time)	3.22 ³⁸	4.52	3.17	2.90
System Average Interruption Frequency Index (SAIFI) - Normalized	Annual SAIFI (average customer outage)	1.57	2.19	1.64	1.64
Generator Forced Outage Rate	Informational indicator – Percent of time a generating unit is removed from service due to component failure or other events.	-	-	1.26%	0.04%

³⁷ First Contact Resolution surveying was suspended from March 23 - May 3, 2020 as a result of the COVID-19 pandemic, thus the 2020 results do not contain data for the period that surveys were suspended.

³⁸ Benchmarks and thresholds for SAIDI and SAIFI were approved in the FBC Annual Review for 2020 and 2021 Rates Decision and Order G-42-21.

Performance Measure	Description	Benchmark	Threshold	2020 Results	June 2021 YTD Results
Interconnection Utilization	Informational indicator – percent of time that an interconnection point was available and providing electrical service to wholesale customers.	-	-	99.89%	99.87%

1
2 In the following sections, FBC reviews each SQI’s year-to-date individual performance in 2020
3 and 2021. Discussion is also provided for the informational SQIs.

4 **13.2.1 Safety Service Quality Indicators**

5 ***Emergency Response Time***

6 Emergency Response Time is the time elapsed from the initial identification of a loss of
7 electrical power (via a customer call or internal notification) to the arrival of FBC personnel on
8 site at the trouble location. This metric provides ongoing information to assess FBC crew sizes
9 and crew locations in response to system trouble. The target measures the percentage of
10 emergency calls responded to within two hours. The measure is calculated as follows:

11
$$\frac{\text{Number of emergency calls responded to within two hours}}{\text{Total number of emergency calls in the year}}$$

13 There are many variables affecting the response time, including time of day (i.e., during
14 business hours or after business hours), number and type of events (i.e., widespread outages),
15 available resources, location (i.e., travel times and traffic congestion) and weather conditions.

16 The 2020 result was 92 percent which was better than the threshold of 90.6 percent. The June
17 2021 year-to-date performance is 94 percent, which is better than the benchmark of 93 percent.

18 For comparison, the Company’s annual results under the 2014-2019 PBR Plan, the 2020 results
19 and the June 2021 year-to-date emergency response time results are provided below. While
20 the results have been relatively consistent, variables such as the location and severity of outage
21 and the number of trouble calls contribute to the observed volatility in the annual performance
22 for this metric.

23 **Table 13-2: Historical Emergency Response Time**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Results	91%	92%	97%	93%	94%	92%	92%	94%
Benchmark	93%							
Threshold	90.6%							

1 **All Injury Frequency Rate**

2 The All Injury Frequency Rate (AIFR) is an employee safety performance indicator based on
3 injuries per 200,000 hours worked, with injuries defined as lost time injuries (i.e., one or more
4 days missed from work) and medical treatments (i.e., medical treatment was given or
5 prescribed). The annual performance for this metric is calculated as:

$$\frac{\text{Number of Employee Injuries x 200,000 hours}}{\text{Total Exposure Hours Worked}}$$

8 For the purpose of this SQI, the measurement of performance is based on the three-year rolling
9 average of the annual results.

10 The 2020 (three-year rolling average) result was 0.87 which was better than the benchmark of
11 1.64. The 2020 annual AIFR was 0.66 which reflected 1 Medical Treatment and 2 Lost Time
12 Injuries.

13 The June 2021 year-to-date performance (three-year rolling average) result is 0.65 which is
14 better than the benchmark. The June 2021 year-to-date performance (annual) is 1.67 and
15 reflects 1 Medical Treatment and 3 Lost Time Injuries.

16 Strengthening the safety culture continues to be a key driver for FBC, building on the
17 commitment to learn from safety events, identify safety hazards, assess risk and continually
18 improve through the implementation and sustainment of robust safety barriers and controls.

19 For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and
20 the June 2021 year-to-date AIFR results are provided below.

21 **Table 13-3: Historical All Injury Frequency Rate Results**

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	3.21	1.54	1.15	1.13	1.56	0.46	0.66	1.67
Three year rolling average	2.58	2.52	1.97	1.27	1.28	1.06	0.87	0.65
Benchmark	1.64							
Threshold	2.39							

22

23 **13.2.2 Responsiveness to Customer Needs Service Quality Indicators**

24 **First Contact Resolution**

25 First Contact Resolution (FCR) measures the percentage of customers who receive resolution
26 to their issue in one contact with FBC. The Company determines the FCR results using a
27 customer survey, tracking the number of customers who responded that their issue was