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October 26, 2017

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

Attention: Mr. Patrick Wruck, Commission Secretary and Manager, Regulatory Support

Dear Mr. Wruck:

Re: FortisBC Energy Inc. (FEI)

Project No. 1598919

Multi-Year Performance Based Ratemaking Plan for 2014 through 2019 approved by the British Columbia Utilities Commission (the Commission) Order G-138-14 – Annual Review for 2018 Rates (the Application)

Response to Workshop Undertakings

In accordance with Commission Order G-115-17 setting out the Regulatory Timetable for the review of the Application, FEI respectfully files the attached responses to the eight undertakings from the Workshop held on October 17, 2016.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Registered Parties

FortisBC Energy Inc.
Multi-Year PBR 2014-2019 Annual Review of 2018 Delivery Rates
Workshop October 17, 2017

UNDERTAKING No. 1

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 31, Line 14 to Page 33, Line 10

REQUESTOR: Mr. Craig (CEC)

QUESTION: Model the revenue surplus amortization scenarios to get 2020 closer to about 2 and a half percent and then see what happens in the other years.

RESPONSE:

Based on the known information at this time, FEI has evaluated three additional rate smoothing options as outlined in the table below from what was presented in FEI's workshop.

Underlying assumptions include: a flat demand profile; an assumed rate increase in years 2019 through 2022 of two percent from general cost of service increases; and the Lower Mainland Intermediate Pressure System Upgrade (LMIPSU) in service January 1, 2019.

FEI presents the option with the lowest year-to-year delivery rate volatility first and the option with the highest volatility last.

Options

1. Hold 2018 delivery rates at 2017 levels[1], followed by a 2.3%, 2.6%, 2.8% and 2.8% increase in 2019, 2020, 2021 and 2022. This could be accomplished by a three year amortization of the 2017/2018 Revenue Surplus deferral account. The amortization would not be equal over the three years, but would be adjusted to smooth the year over year rate changes.

2. Hold 2018 delivery rates at 2017 levels[2], followed by a 3.0%, 2.0%, 2.0% and 3.5% increase in 2019, 2020, 2021 and 2022. This could be accomplished by a three year amortization of the 2017/2018 Revenue Surplus deferral account. The amortization would be equal over the three years.

3. Hold 2018 delivery rates at 2017 levels[3], followed by a 1.7%, 3.0%, 3.9% and 2.0% increase in 2019, 2020, 2021 and 2022. This could be accomplished by a two year

[1] Exclusive of Delivery Rate Riders
[2] Ibid
[3] Ibid

amortization of the 2017/2018 Revenue Surplus deferral account. The amortization would not be equal over the two years, but would be adjusted to smooth the year over year rate changes.

4. Hold 2018 delivery rates at 2017 levels[4], followed by a 2.2%, 2.0%, 4.4% and 2.0% increase in 2019, 2020, 2021 and 2022. This could be accomplished by a two year amortization of the 2017/2018 Revenue Surplus deferral account. The amortization would be equal over the two years. *(Presented as Option 3 in FEI's workshop)*

		Delivery Rate Change				
Option	**Description**	**2018**	**2019**	**2020**	**2021**	**2022**
1	No 2018 delivery rate increase, Surplus deferral account with three year adjusted amortization	0.0%	2.3%	2.6%	2.8%	2.8%
2	No 2018 delivery rate increase, Surplus deferral account with three year equal amortization	0.0%	3.0%	2.0%	2.0%	3.5%
3	No 2018 delivery rate increase, Surplus deferral account with two year adjusted amortization	0.0%	1.7%	3.0%	3.9%	2.0%
4	No 2018 delivery rate increase, Surplus deferral account with two year equal amortization (*Option 3 from workshop*)	0.0%	2.2%	2.0%	4.4%	2.0%

Although FEI's upcoming Rate Design Application (RDA) will not increase delivery rates in total, the proposals, if accepted, may result in a rate increase for one group of customers and a rate decrease for another group. These rate changes are also expected to be effective in 2018.

FEI believes it would be beneficial to refrain from setting an amortization period for the 2017/2018 Revenue Surplus deferral account at this time. The determination of whether the 2017/2018 Revenue Surplus deferral account should be amortized over one year, two years or three years on an equal or adjusted basis should be made in the Annual Review for 2019 Rates. By not setting the amortization period for the 2017/2018 Revenue Surplus Deferral Account at this time, FEI will have the flexibility to use the amortization of this account to mitigate rate volatility for customers from FEI's LMIPSU project expected to enter rate base in 2019.

[4] Ibid

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UNDERTAKING No. 2

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 50, Line 5 to Page 52, Line 3; and Page 120, Lines 21 to 26

REQUESTOR: Mr. Quail (MoveUP)

QUESTION: How will the SAP system track on a per transaction basis whose employee is performing what transactions, and how does that relate to how we would allocate costs between the companies?

RESPONSE:

The shared SAP platform does not adversely affect how transactions made by users are tracked or identified. The two companies are distinguished in SAP by separate company codes and each employee's network ID contains the employee's company affiliation, and each transaction is identified by the employee's network ID. The shared SAP platform will have the ability to track the number of transactions by employee should there be a business requirement to do so.

The shared SAP platform will not affect the cost per interaction calculation for FEI contact centre employees that answer calls on behalf of FBC. This is because the cost per interaction calculation for shared contact centre resources is determined based on call volume statistics that come from the telephony system and not from SAP.

FortisBC Energy Inc.
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UNDERTAKING No. 3

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 55, Line 9 to Page 56, Line 26

REQUESTOR: Ms. Walsh (Commission Staff)

QUESTION: Reconcile the $11.612 million PBR formula amount for sustainment and other capital for Vancouver Island to the amount that was approved for 2014 from the decision where Vancouver Island was included in the PBR plan.

RESPONSE:

On November 14, 2014, FEI filed its application to include FortisBC Energy (Vancouver Island) Inc. (FEVI) and FortisBC Energy (Whistler) Inc. (FEW) within the PBR Plan. FEI filed the Application in compliance with Order G-138-14 directing FEI to provide historical FEVI Capital expenditure information and a proposal for the inclusion of FEVI requirements into FEI's base Capital.

Order G-106-15 provided a decision for, among other things, the inclusion of FEVI's Sustainment and Other Capital to be included as part of FEI's 2014 Base Sustainment and Other Capital from which 2015 Formulaic Sustainment and Other Capital would be derived. Page 27 of the Decision states:

> To summarize, the Panel approves a total Net Base Capital for FEVI of $21.564 million for inclusion in the 2014 FEI PBR Base Capital. The approved FEVI Net Base Capital is comprised of the following: (i) Sustainment Capital Base of $9.385 million; (ii) Growth Capital Base of $8.802 million; (iii) Other Capital Base of $4.230 million; reduced by (iv) Contributions in Aid of Construction of $853 thousand.

The following table reconciles the above to the 2015 PBR Formulaic Sustainment/Other Capital amount of $11,612 thousand included in response to BCUC IR 1.6.12. FEI has filed an erratum to the response to BCUC IR 1.6.12 concurrently with this undertaking response.

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UNDERTAKING No. 3

Line No.	Particulars	Amount ($000)	Reference
1	Sustainment	9,385	G-106-15, Page 27
2	Other	4,230	G-106-15, Page 27
3	CIAC	(853)	G-106-15, Page 27
4	Total	12,762	Line 1 + Line 2 + Line 3
			FEVI 2014 RRA filed December 12, 2013, Exhibit B-4, Response to BCUC IR 1.20.1, Line Capital, Column 2014 Forecast - Sustainment and Other
5	Less: 2014 Pension & OPEB	(1,244)	Capital Portion
6	Total	11,518	Sum of Lines 4 and 5; 2014 Amalgamated - VI portion
7	Inflation Factor	0.203%	G-86-15
8	Growth Factor	0.614%	G-86-15
9	Total Inflator	100.818%	(1 + Line 7) x (1 + Line 8)
10	2015 Formulaic Sustainment and Other Capital	11,612	Line 6 x Line 9

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UNDERTAKING No. 4

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 73, Line 23 to Page 74 Line 3

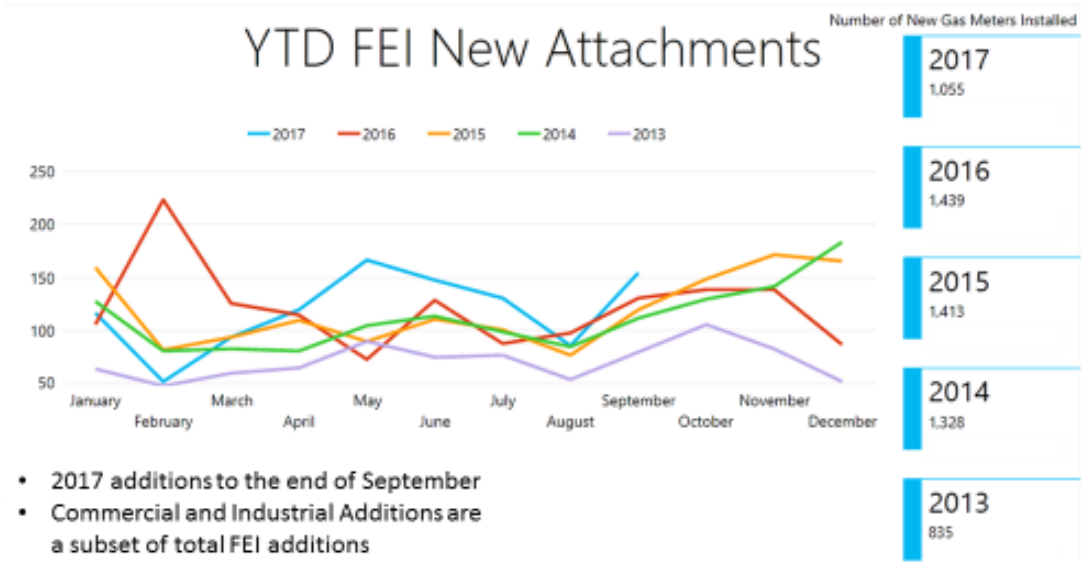
REQUESTOR: Mr. Andrews (BCSEA)

QUESTION: Provide the breakdown by customer type, to the extent possible, for slide 28 (gross additions of customers in total) and slide 29 (gross additions of customers on Vancouver Island).

RESPONSE:

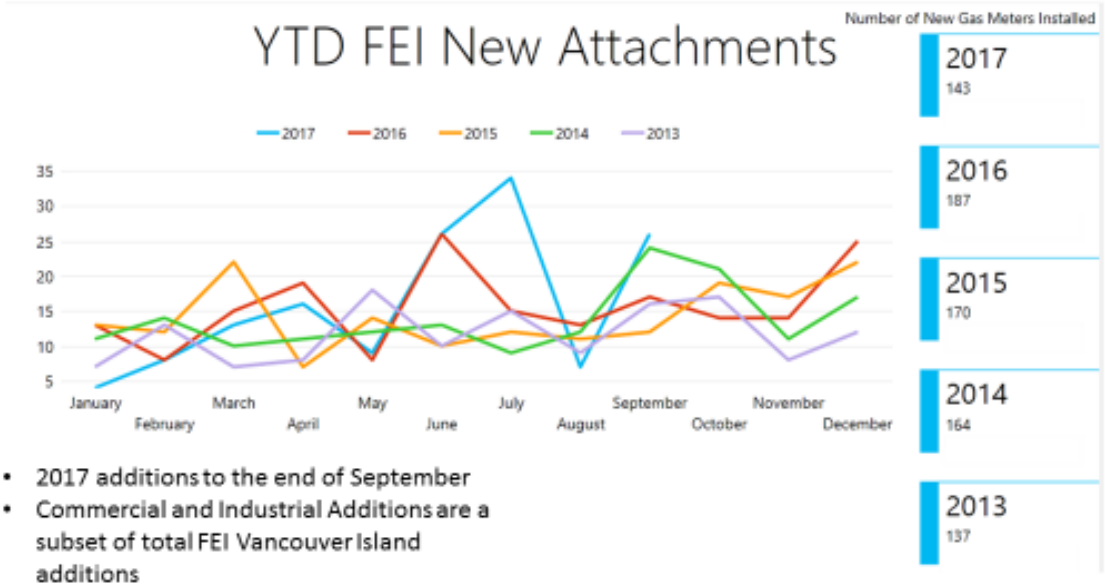
The following figures provide the breakdown of gross additions for Commercial and Industrial customers. Further breakdown is not available.

FEI Commercial and Industrial Gross Additions



UNDERTAKING No. 4

Vancouver Island – Commercial and Industrial Gross Additions



- 2017 additions to the end of September
- Commercial and Industrial Additions are a subset of total FEI Vancouver Island additions

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UNDERTAKING No. 5

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 97, Line 6 to Page 101, Line 17

REQUESTOR: Mr. Quail (MoveUP) and Mr. Craig (CEC)

QUESTION: Regarding Exhibit B-9 (filed response to FBC BCUC IR 6.5), provide the savings forecast for FEI, a breakdown of the details behind that that would support the 63 percent and the 37 percent, and in that same response provide a discussion of whether the costs overall on an ongoing basis are going to be lower and how that relates to what otherwise would have occurred in FEI and FBC.

RESPONSE:

The allocation of the SAP Integration Project capital costs of 63 percent to FEI and 37 percent to FBC, as described in Exhibit B-9 (FBC BCUC IR1.6.5) and provided in further detail below, is based on the forecasted annual O&M savings resulting from the project.

The forecasted annual O&M savings attributed to each of FEI and FBC from the SAP Integration Project, which drives the 63/37 percent allocation are forecast at approximately $580 thousand and $340 thousand, respectively, as shown below.

O&M savings

	FEI (gas)	FBC (elec)	total
	($000s)		
reduced IS support/maintenance costs [1]			
reduced licensing costs	150	50	200
reduced contracted support costs	300	100	400
	450	150	600
other department O&M reductions [2]			
Finance	130	20	150
Human Resources		150	150
Supply Chain		20	20
	130	190	320
Total Forecasted O&M Annual Savings	**580**	340	**920**
	63%	37%	100%

(1) The estimated reduction in licensing costs and annual contractor costs allocated to FEI was described in the response to BCUC IR 1.5.1.

(2) While Finance, Human Resources and Supply Chain have committed to annual O&M reductions at the initiation of the project, the final determination of those savings are still being determined and subject to change throughout the process of configuring and implementing the SAP Integration

project. The nature of such savings is expected to be achieved through a combination of savings in consultants, labour, overtime and other administrative costs.

The forecast O&M savings for the SAP Integration Project are expected to be sustainable and contribute to lower O&M costs overall, recognizing that other cost pressures in the future may offset the savings.

Additionally, had the SAP Integration Project not been initiated, instead of a reduction in O&M costs, there would have been an increase in capital and O&M costs and a reduction of efficiencies across both FEI and FBC on a prospective basis. In addition to not achieving the approximately $900 thousand of annual O&M savings, not implementing the SAP Integration Project would result in further increases of approximately $500 thousand related to increases in capital costs to upgrade separate SAP systems every five years and further increases of approximately $250 thousand in O&M related to enhancement costs. These avoided capital and O&M costs are higher-level estimates, although it is expected that FEI will see the majority of the benefits. This is due to additional SAP modules that are used by FEI as compared to FBC, as well as the greater number of FEI SAP users, which has resulted in sustainment and enhancement expenditures for FEI's SAP system historically being approximately three times higher than that for FBC's Electric SAP system. The benefits of the SAP Integration Project will lower those costs proportionately.

While the reductions in O&M (63%/37%) and avoided costs described above are benefits associated with the SAP Integration Project, there are other non-measurable efficiencies and benefits that will be attributable to FEI and FBC and, as such, only quantifiable savings or avoided costs is not an appropriate cost driver.

To expand on the list in Exhibit B-9, the non-quantifiable benefits that have not been incorporated into the forecasted O&M budgets savings and cost avoidances include the following:

- provide efficiencies for all cardholders across the organization by implementing a new Paperless Expense Management module which will reduce the current inefficient manual credit card and employee expense process;
- strengthen the system of internal controls through the implementation of the Business Planning Consolidation (BPC) financial reporting software which will allow for better integrity of data through increased controls and logging of changes to financial information;
- improve internal and external audit efficiency due to a singular system being audited rather than two, thus reducing the number of key system-based controls to be tested;
- replace the current manual and time-intensive intercompany cross-charging process with a more automated process;

- establish a Single Sign-On feature which will result in reducing time for end users who currently have to log in separately to different modules in the system for each company to conduct business (for example, an employee will be able to post an accounting transaction, approve an invoice, process a credit card reconciliation and enter time with a single sign-on, rather than entering in multiple user ids to access each module); and

- establish a consistent base ERP platform that will allow for upcoming and potential future projects to be consistently implemented for both gas and electric segments, including, but not limited to the following:

  a) warehouse Bar Coding;

  b) integrated budgeting and forecasting solution to replace many large and complex spreadsheets;

  c) financial reporting applications that will allow for the replacement of current key spreadsheets used for financial reporting; these system-based financial reporting applications allow for increased auditable controls and reduce the risk around manual input errors strengthening our system of internal controls which is of benefit in a SOX-compliant organization; and

  d) third party billing solutions to reduce manual processes and provide timely supporting documentation requested by customers.

A greater proportion of the above non-quantifiable benefits is expected to be attributable to FEI primarily because the employees, who are the users of the SAP system, will experience the benefits.

FEI considers the number of employees per company to be the most appropriate cost driver of the SAP Integration Project capital and operating costs. The employees are the users of the shared system and are the driver of project costs, and therefore should be the appropriate project cost driver. The number of employees is also expected to be a more stable and practical allocation over the long-term. This overall allocation is further corroborated with the application of the Massachusetts Formula (76%/24%), which has been previously approved by the BCUC to allocate Board of Director and Executive costs between FEI and FBC and has been accepted as a cost allocator in other regulatory jurisdictions, as described in Exhibit B-9.

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UNDERTAKING No. 6

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 110, Lines 1 to 14

REQUESTOR: Mr. Craig (CEC)

QUESTION: Provide an understanding and some quantification of the capital savings that FEI has undertaken during PBR in efficiencies and capital.

RESPONSE:

Although the PBR has produced some challenges in capital spending, the certainty and flexibility of the multi-year PBR Plan have allowed FEI to achieve savings and efficiencies in its execution of capital work. Several examples of this were provided on page 9, Section 1.4.4.1 of the Annual Review for 2017 Rates. In that section, FEI stated the following:

> Examples of efficiency initiatives undertaken to date include Project Blue Pencil, negotiating rates with contractors, better coordination with municipal and Ministry of Transportation projects, reuse of standardized bypass equipment, in-line inspection run coordination, and the in-sourcing of application and infrastructure development. For 2016, FEI is continuing this ongoing productivity focus through pursuing capital efficiencies associated with a number of projects, such as a change in process for the replacement of aging residential regulators, coordination with municipalities during mains renewals and updates to station design requirements.

In the table below, FEI has attempted to quantify the impact of these capital efficiencies over the PBR term. The efficiencies achieved generally fall into the following categories which are how they have been grouped in the table:

- Economies of Scope: The predictability offered by the multi-year PBR has allowed FEI to provide its contractors with a multi-year commitment, which in turn has allowed the contractors to reduce their risk in hiring resources and purchasing equipment to support the capital plan. The reduction in risk is passed on to FEI in the form of reduced rates.

- Economies of Scale: Includes combining projects that have similar scope to save on engineering, project management and procurement costs; or combining projects that are located in close geographic proximity to save costs on mobilization of equipment and personnel; or reallocating internal resources to

work on capital projects and reducing the overall need to employ contract resources.

- Procurement or reuse of equipment: savings associated with the ability to procure parts and materials at lower rates; or reducing the procurement needs of a project by reusing equipment, or modifying construction methodologies to utilize existing resources.

- Coordination of work with third parties: coordinating construction activities with municipalities or other parties doing work in the area to reduce disruption and share common costs such as paving and traffic management. The coordination of work with third parties also reduces project execution risk by improving communication and relationships with municipalities for planning and permitting of projects.

The quantified savings that FEI has attributed to each of these categories is shown in the table below.

Type of Savings	Value of Savings
Economies of Scope	$ 1,378,500
Economies of Scale	$ 6,153,950
Procurement & reuse of equipment	$ 990,014
Coordination of work with third parties	$ 446,650
Total	$ 8,969,114

The efficiencies noted above were used to mitigate the capital pressures that FEI has experienced throughout the PBR term.

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UNDERTAKING No. 7

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 115, Lines 6 to 25

REQUESTOR: Mr. Hackney (BCSEA)

QUESTION: Response to BCSEA IR 3 series regarding the leak detection and repair system, of the total greenhouse gas emissions FEI is reporting, what proportion of those are dependent on specific events (like line hits resulting in methane leaks) and to what extent or proportion of the reported leakage is the result of calculated estimates for the distribution systems as a whole.

RESPONSE:

The total GHG emissions for FEI as reported in the response to BCSEA IR 1.3.1 is based on a number of sources along the natural gas transmission and distribution system. These sources are quantified by:

1) Company specific activity data that has had industry emission factors applied to it;

2) Site specific metered data; or

3) Site specific engineering estimates.

The vast majority of GHG emissions from FEI are based upon quantification using company specific activity data that has had industry emission factors applied to it.

In the table below, three examples of sources of emissions from FEI 2015 GHG report are provided. The method of quantification associated with these sources are also provided as are the percentage allocation. Since there are approximately 50 sources, FEI has provided only the most significant ones.

Source of GHG Emission	Method of Quantification	Percent of 2015 GHG Emissions
Third party line hits	Number of incidents and length of time is company/incident specific while the rate of discharge is based on an industry factor	14
Fuel use at line heaters and compressor engines	Site specific metered data	37

UNDERTAKING No. 7

Source of GHG Emission	Method of Quantification	Percent of 2015 GHG Emissions
Venting at compressor stations, venting at transmission pipelines, line hits along the transmission pipeline	Engineering estimates	4

FortisBC Energy Inc.
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UNDERTAKING No. 8

WORKSHOP DATE: October 17, 2017

TRANSCRIPT REFERENCE: Volume 1, Page 118, Lines 11 to 19

REQUESTOR: Ms. Buretta (Commission Staff)

QUESTION: Regarding the response to BCUC IR 1.7, in Table 2 for 2016 there were 12 dent repairs that took place which seems relatively high compared to previous years, please explain why.

RESPONSE:

FEI clarifies that there were 13 total dent repairs in 2016 as included in the response to BCUC IR 1.1.7. Of these, one repair was due to CSA Z662 criteria, and 12 were due to FEI determination.

Based on information provided in the response to BCUC IR 1.1.7, FEI provides the following table:

	2014	2015	2016
Number of dent digs	12	10	32
Number of dent repairs (sum of dent repairs due to CSA Z662 criteria and due to FEI determination)	4	2	13
Percentage of dent digs requiring structural repairs	33%	20%	41%

As demonstrated in the table above, although the number of dents requiring repairs in 2016 is significantly higher than in prior years, the number is not unexpected given the higher number of digs; the percentage of integrity dig sites requiring structural repairs is within a reasonable range.

Other factors that contribute to year-to-year fluctuations in repairs include:

- Location of pipelines being excavated in a given year - local geology and soil conditions influence the frequency and severity of dents due to rocks (all 13 repairs in 2016 were to Interior pipelines); and
- Age of pipelines being excavated in a given year - construction practices have evolved over time to better protect pipelines from dent occurrence (12 of 13 repairs in 2016 were to pipelines constructed in 1957, which is among the earliest natural gas transmission pipelines constructed in British Columbia).

UNDERTAKING No. 8

FEI notes that its 2017 dent digs have also required a higher number of repairs compared to previous years. Of 23 dent digs completed in 2017 year-to-date, 10 sites (43%) required structural repairs.