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August 27, 2018

Sent via email/eFile

**FEI ANNUAL REVIEW 2019 DELIVERY RATES  
EXHIBIT A-3**

Ms. Diane Roy  
Vice President, Regulatory Affairs  
FortisBC Energy Inc.  
16705 Fraser Highway  
Surrey, BC V4N 0E8  
gas.regulatory.affairs@fortisbc.com

**Re: FortisBC Energy Inc. – Annual Review for 2019 Delivery Rates – Project No. 1598966 – BCUC  
Information Request No. 1**

Dear Ms. Roy:

Further to Order G-143-18 establishing a regulatory timetable for the above-noted proceeding, please find enclosed British Columbia Utilities Commission Information Request No. 1. In accordance with the regulatory timetable, please provide your response no later than Tuesday, September 18, 2018.

Sincerely,

*Original signed by Ian Jarvis for:*

Patrick Wruck  
Commission Secretary

/jo  
Enclosure



FortisBC Energy Inc.  
Annual Review for 2019 Delivery Rates

**INFORMATION REQUEST NO. 1 TO FORTISBC ENERGY INC.**

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**A. EVALUATION OF THE PERFORMANCE BASED RATEMAKING (PBR) PLAN**

- 1.0 Reference: EVALUATION OF THE PBR PLAN**  
**Exhibit B-2, Sections 1.4.1 & 1.4.2, pp. 5–6, Table 1–3; FEI Annual Review for 2018 Delivery Rates, Exhibit B-2, pp. 5–6; Exhibit B-3, BCUC IR 1.5, 1.7, & 1.9 Overview of operating and maintenance (O&M) savings**

Page 5 of the FortisBC Energy Inc. (FEI) Annual Review for 2019 Delivery Rates application (Application) states:

In 2018, as we near the end of the term of the current PBR Plan, FEI continues to be faced with the increasingly difficult challenge of finding new productivity opportunities to meet the annual savings embedded in the formula, and to sustain the level of incremental O&M savings achieved in recent years. As a result, the 2018 projected O&M savings of \$5.0 million is lower than recent years, recognizing the impact of the PIF factor in the allowed annual O&M funding available. Contributing also to the productivity challenge are new cost pressures the Company is experiencing.

- 1.1 Please describe the new cost pressures FEI is experiencing in 2018 and expects to experience in 2019 with respect to O&M inside the formula.
- 1.1.1 Please discuss why these cost pressures are new for 2018 and 2019 and whether FEI expects these cost pressures to continue beyond 2019.
  - 1.1.2 To the best of FEI’s ability, please quantify these cost pressures by year.
  - 1.1.3 Please discuss if these new cost pressures will result in additional headcount and Full Time Equivalents (FTEs) and quantify where possible. Please also indicate whether the additions have already been included in Table 1–3.

On pages 5–6 of the FEI Annual Review for 2018 Delivery Rates proceeding (2018 Annual Review) application, FEI explained that it is experiencing incremental cost pressures related to integrity digs.

In response to British Columbia Utilities Commission (BCUC) Information Request (IR) 1.5 in the 2018 Annual Review, FEI stated:

One particular revision in the published CSA Z662-15 standard that remains under assessment by FEI and may result in future cost pressures is a requirement to consider sharp dents with a length to depth ratio less than 20 as defects unless their measured curvature strain is less than 6 percent, or unless determined by an engineering assessment to be acceptable.

- 1.2 Please provide any updates regarding FEI’s assessment of the revision to the CSA Z662-15 standard referenced in the above preamble and whether, as a result of FEI’s assessments, there has been an increase in cost pressures.

In response to BCUC IR 1.7 in the 2018 Annual Review, FEI provided three tables related to integrity digs and structural repairs.

- 1.3 Please update the first table (i.e. the number of digs per year) to provide the actual 2017 results, the 2018 Year End Forecast (YEF) and the 2019 Forecast number of digs. Please explain any significant variances in 2017 actual results compared to historical results.
- 1.4 Please update the second and third tables (i.e. number of structural repairs per year and percent of repairs associated with dents) to include 2017 results. Please explain any significant variances in 2017 actual results compared to historical results.

In response to BCUC IR 1.9 in the 2018 Annual Review, FEI provided the following update on “notable initiatives” related to in-line inspection and integrity management:

- Provision of in-line inspection capability to NPS 6 outside diameter and larger transmission pipelines operating at hoop stresses of 30% or more of the specified minimum yield strength of the pipe;
- Assessment of the need for and feasibility of adopting crack-detection capabilities within FEI’s in-line inspection program; and
- Development of enhanced risk assessment capabilities to enable FEI’s vision of managing the integrity of its transmission pipeline assets through a quantitative risk-based approach by 2020.

- 1.5 Please provide a further update on the above initiatives and describe any new initiatives (if any).
- 1.5.1 Please discuss each of the above, including any new, initiative’s current and future impacts on cost pressures.

**2.0 Reference: EVALUATION OF THE PBR PLAN  
Exhibit B-2, Section 1.4.2, p. 6; Appendix C3, pp. 1-2, Tables C3-1 & C3-2; 2018 Annual Review, Exhibit B-3, BCUC IR 2.8, 2.9, & 2.10  
Staffing levels**

Table C3-2 in Appendix C3 of the Application provides information on the changes in annual FTEs, including the following information:

- Actual 2017: increase of 25 FTEs outside of Base O&M
- Actual 2017: increase of 42 FTEs inside of Base O&M
- Projected 2018: increase of 58 FTEs outside of Base O&M

- Projected 2018: increase of 21 FTEs inside of Base O&M

On page 6 of the Application, FEI states:

Of the 67 FTEs increase observed from 2016 (1,581 FTEs) to 2017 (1,648 FTEs), approximately 28 were in the Operations and Engineering area, including Tilbury LNG, in response to increased operational and capital work requirements; approximately 14 in the Contact Centre and Billing Operations resulting from the timing of new hire classes, with the remainder of the overall increase in various departments throughout the Company.

In response to BCUC IR 2.8 in the 2018 Annual Review, FEI stated the following:

On a FTE basis, for the total projected increase in FTEs of 69, approximately 25 FTEs are related to new positions and 44 FTEs are related to filling of vacancies, and seasonal and temporary staffing. For the approximate 25 FTEs related to new positions, 3 FTEs are for the Tilbury LNG Plant Expansion, 4 FTEs are in the Project Management Office department, 2 FTEs are in the Conservation Energy Management department, 6 FTEs are in Operations, 3 FTEs in Market Development and External Relations, and the remaining 7 FTEs are in various other departments.

In response to BCUC IR 2.9 in the 2018 Annual Review, FEI explained the projected increase in headcount for 2017 in terms of positions inside and outside of Base O&M.

- 2.1 With reference to the explanations provided by FEI in the 2018 Annual Review, please provide an updated explanation for the 2017 actual FTE and headcount additions in 2017.
- 2.2 With regard to 2018, please separately provide the number of projected increases in FTEs and headcount for 2018 which are related to new positions (i.e. positions added to a department that were not previously there and are thus incremental to FEI) versus filling of vacancies (i.e. existing positions).
  - 2.2.1 With regard to the addition of new positions, please explain the nature of the new positions and how many of the new positions are inside and outside of Base O&M. Please provide the response in a similar level of detail as was provided in response to BCUC IRs 2.8 and 2.9 in the 2018 Annual Review.

Tables C3-1 and C3-2 in Appendix C3 of the Application provide information on the total annual headcount and FTEs, respectively, including the following information:

- Actual 2017: 1,735 headcount; 1,648 FTEs
- Projected 2017: 1,724 headcount; 1,650 FTEs
- Projected 2018: 1,816 headcount; 1,727 FTEs

- 2.3 Please explain why there were 11 more positions (headcount) filled in 2017 than projected and how this corresponds to the change in actual FTEs for 2017 (i.e. 2 less FTEs than projected).
- 2.4 Please identify the number of vacant positions broken down by outside of Base O&M, inside of Base O&M and by department at the end of 2017 and whether these positions are projected to be filled at the end of 2018.
- 2.5 Please explain why FEI is projecting such a large increase in FTEs outside of Base O&M for 2018, particularly when compared to years 2013 through 2017.

On page 6 of the Application, FEI states:

These decreases are now being offset by increased staffing primarily in the Operations and Engineering area to meet operational and capital work requirements. FEI is growing and adding new assets that require maintenance to keep them operating safely and reliably. In addition, assets are aging and requiring additional maintenance and corrective work. Emergency calls, BC One Call tickets and activities around our pipelines are all increasing. Municipal agreements, codes, regulations, public expectation, and industry practices continue to evolve and drive additional work. New main and service installations are at high levels.

- 2.6 Please provide a table showing the changes in headcount and FTEs from 2013 to Projected 2018 broken down by sustainment, growth and other activities (e.g. municipal agreements, codes, regulations, public expectation and industry practices).

In response to BCUC IR 2.10 in the 2018 Annual Review, FEI provided the following table:

Year	Affiliation	Headcount	Average FTEs	Headcount change year over year	Average FTEs change year over year
2013 Actual	MoveUp	764	702		
	IBEW	528	520		
	M&E	472	457		
	<b>Total</b>	<b>1,764</b>	<b>1,679</b>		
2014 Actual	MoveUp	711	656	(53)	(46)
	IBEW	499	502	(29)	(18)
	M&E	494	492	22	36
	<b>Total</b>	<b>1,704</b>	<b>1,650</b>	<b>(60)</b>	<b>(28)</b>
2015 Actual	MoveUp	674	616	(37)	(40)
	IBEW	497	488	(2)	(14)
	M&E	485	469	(9)	(24)
	<b>Total</b>	<b>1,656</b>	<b>1,573</b>	<b>(48)</b>	<b>(77)</b>
2016 Actual	MoveUp	626	588	(48)	(28)
	IBEW	529	511	32	23
	M&E	512	482	27	13
	<b>Total</b>	<b>1,667</b>	<b>1,581</b>	<b>11</b>	<b>8</b>
2017 Projected	MoveUp	633	591	7	3
	IBEW	541	533	12	22
	M&E	550	527	38	45
	<b>Total</b>	<b>1,724</b>	<b>1,650</b>	<b>57</b>	<b>69</b>

- 2.7 Please complete the table above with Actual 2017 and Projected 2018 results.

**3.0 Reference: MAJOR INITIATIVES UNDERTAKEN**  
**Exhibit B-2, Section 1.4.3, p. 8; Appendix C2, p. 4, Table C2-5; Appendix C3, pp. 1-2,**  
**Tables C3-1 & C3-2**  
**Online Service Application initiative**

On page 8 of the Application, FEI states:

The Online Service Application (OSA) initiative enables customers to make a self-serve online request for a new service line installation and was launched on the Company's external website in September 2016. In March 2017, the additional functionality of requesting a service line abandonment was added to the tool.... Annual savings were approximately \$0.05 million in 2017 and future years.

Table C2-5 in Appendix C2 of the Application states that no organizational changes are expected from the OSA and \$0.05 million annual O&M savings were incurred in 2017 and expected in future years.

Tables C3-1 and C3-2 in Appendix C3 of the Application do not show any reductions in headcount or FTEs for 2016 and onwards from "Other Major Initiatives".

3.1 Please explain what the \$0.05 million annual O&M savings are related to.

3.2 Please explain why the OSA does not result in any reductions in headcount or FTEs.

**4.0 Reference: MAJOR INITIATIVES UNDERTAKEN**  
**Exhibit B-2, Section 1.4.3, p. 8**  
**SAP Integration initiative**

On page 8 of the Application, FEI states:

The project is in progress and is tracking well to the schedule, with completion expected in the third quarter of 2018. The total cost of the project remains on budget, estimated at \$4.5 million. Based on the number of employees between the two companies, which is currently projected at approximately 77% FEI and 23% for FBC, approximately \$3.5 million of the implementation costs will be allocated to FEI with the remaining \$1.0 million to FBC. Total O&M savings for the project are expected to be approximately \$0.9 million annually, with \$0.6 million expected in FEI and \$0.3 million FBC. The savings will start being realized in 2019.

4.1 Please clarify if the estimated project costs of \$4.5 million will be allocated between FEI and FortisBC Inc. (FBC) based on the number of employees between the two companies at the point in time when the project is brought into service.

4.2 Please clarify if the estimated annual O&M savings of \$0.9 million will be allocated between FEI and FBC based on the number of employees between the two companies at the end of each year.

**5.0 Reference: MAJOR INITIATIVES UNDERTAKEN**  
**Exhibit B-2, Section 1.4.3, p. 9; Appendix C2, p. 5, Table C2-7**  
**Gas Workforce Management initiative**

On page 9 of the Application, FEI states:

The project will streamline and improve work processes, and replace Syclo, ClickSchedule, and Tensing Mobile GIS. The Syclo system has not been significantly upgraded since its implementation in 2008 and is at end of life. ClickSchedule and

Tensing Mobile GIS are nearing end of life and due for replacement. Bundling these 3 systems will simplify the user experience while providing FEI with the flexibility for future growth and improvement.

The project is underway with completion expected in late 2019. The total cost of the project is estimated at approximately \$6.5 million and will produce O&M savings of approximately \$0.5 million annually starting in 2020.

Table C2-7 in Appendix C2 of the Application includes the following information:

- Organizational changes: none
- O&M expenditures incurred or expected in 2017-2019: \$0.7 million
- Capital expenditures incurred or expected in 2017-2019: \$5.8 million
- Annual anticipated savings: \$0.5 million beginning in 2020

- 5.1 When were ClickSchedule and Tensing Mobile GIS implemented and how close is each system to its end of life?
- 5.2 Please clarify whether, if the Gas Workforce Management project was delayed, the existing systems (i.e. Syclo, ClickSchedule and Tensing Mobile GIS) could continue to be used for another year.
- 5.3 Please provide a more detailed description and breakdown of the projected O&M and capital costs by year.
- 5.4 Please describe the nature of the expected \$0.5 million annual O&M savings.
- 5.5 Please discuss if any reductions in headcount or FTEs are anticipated once the Gas Workforce Management project is fully implemented. If yes, please quantify. If no, please explain why not.
- 5.6 Please explain what system is replacing Syclo, ClickSchedule, and Tensing Mobile GIS and why this system was chosen.
- 5.7 Please explain what alternatives, if any, FEI explored to the chosen replacement system, and why each alternative was determined less desirable than the chosen option.

**6.0 Reference: MAJOR INITIATIVES UNDERTAKEN  
Exhibit B-2, Section 1.4.3, p. 9  
Common Trenching initiative**

On page 9 of the Application, FEI states:

Common Trenching is an initiative to improve the customer experience by introducing four-party trenching for new subdivisions and townhouse developments...

...To date, FEI has completed four party trenching projects in the Fraser Valley, Okanagan and Vancouver Island. The projects have generated many learnings and satisfied customers, as well as provided FEI with opportunities to determine best practices and improve the process.

- 6.1 Please explain the circumstances which precipitated the need/desire for this initiative.
- 6.2 When did FEI commence the Common Trenching initiative? When was the first project undertaken and completed?
- 6.3 How many four-party trenching projects have been completed to date and how many are currently in-progress?

- 6.4 With reference to specific completed projects, please provide the total capital and O&M costs incurred to complete the projects and how these costs would have compared to FEI's status quo approach. Please also explain whether the projects required more resources (labour and other) than the status quo approach.
- 6.5 Please confirm, or explain otherwise, that the trenching costs are considered to be inside Base O&M and/or capital.
- 6.6 Please discuss if FEI anticipates both O&M and capital savings from four-party trenching projects.
- 6.7 Please discuss the quantitative and qualitative measures that FEI is using to assess the success of the Common Trenching initiative.
- 6.8 With reference to specific completed projects, please provide a detailed discussion of the "lessons learned" from the projects, the implications (cost or other) of the issues which have arisen on the completed projects, and how FEI plans to address the issues in the future.

**7.0 Reference: MAJOR INITIATIVES UNDERTAKEN  
Exhibit B-2, Section 1.4.3, pp. 9–10  
Information technology opportunities**

On page 9 of the Application, FEI states:

The Planner Tool Box project was implemented in January 2018. The project streamlined and sped up the work order creation process, eliminated repetitive tasks, delivered improvements to user experience/interaction with information systems, and improved customer service. Anticipated labour savings of \$0.15 million per year are expected from reduced planner time required to process the different work orders that planners work on (i.e. alterations, install mains, meters, etc.).

- 7.1 Please discuss if the anticipated labour savings of \$0.15 million per year are expected to begin in 2018.
- 7.2 Please explain if the Planner Tool Box project is expected to result in a reduction to headcount/FTEs and if so, the amount of the reduction. If no, please explain why not.

On pages 9 and 10 of the Application, FEI states:

The "Automate Customer Moves" initiative was completed in February 2018. This removes the need for manual intervention in the back end for processing requests and improves turnaround time for customers to complete follow-on activities such as registering for paperless billing, equal payment plan and other Company products and services. At present, the automated completion rate is 66 percent of all online gas moves based on a year-to-date volume of 8,820. The estimated annual savings is \$0.2 million starting in 2018.

- 7.3 Please describe the nature of the estimated \$0.2 million in annual savings (i.e. labour or non-labour savings) and how the savings are expected to be achieved.
- 7.4 Please explain if the Automate Customer Moves initiative is expected to result in a reduction to headcount/FTEs and if so, the amount of the reduction. If no, please explain why not.

On page 10 of the Application, FEI states:

FortisBC is redesigning its website ([www.fortisbc.com](http://www.fortisbc.com)) in order to meets its evolving



business needs and the needs and expectations of its customers.... Estimated annual savings are forecast to be \$0.15 million shared between FEI and FBC. The project is currently underway with completion expected in 2019.

- 7.5 Please explain the nature of the estimated \$0.15 million annual savings and clarify when the savings will begin.
- 7.6 Please explain how the savings will be allocated between FEI and FBC.
- 7.7 Please provide the following information on the forecast website redesign costs:
- The total forecast O&M and capital costs;
  - The time period over which the expenditures are expected to be incurred; and
  - How much of the cost will be allocated to FEI and to FBC, and the allocation method which will be used to allocate the costs.

On page 10 of the Application, FEI states:

A mobile application to improve ease of access for customers to account information was launched in early 2018. The objective of this customer service focused initiative is to improve ease of access for customers to account information as well as to provide a single point of entry to access current and future products and services. To date, there are 12,000 participants using the tool with a year-end target of 30,000 active users. The application is expected to improve the participation rate in our current online account tool which currently has 388,000 gas customer enrolled, as well as customers' satisfaction in their online experience.

- 7.8 Please provide the total cost of the mobile application, including the portion of the expenditures that are O&M and capital.
- 7.9 Please discuss the anticipated savings from the mobile application, including the type of savings anticipated. If no savings are anticipated, please explain why not.
- 7.10 Is the mobile application also applicable to FBC?
- 7.10.1 If yes, please explain if the costs and savings are anticipated to be shared between FEI and FBC, and explain the allocation method for the costs and savings.

**8.0 Reference: OVERVIEW OF CAPITAL EXPENDITURES  
Exhibit B-2, Section 1.4.4, p. 11, Table 1-4; Appendix C4, Table C4-4; 2018 Annual Review, Exhibit B-2, p. 11, Table 1-4; Exhibit B-3, BCUC IR 6.12, 6.15 6.17 & 10.2; FEI Annual Review for 2017 Delivery Rates, Exhibit B-3, BCUC IR 9.9.1  
Capital spending results**

In Table 1-4 of the 2018 Annual Review application, the projected 2017 variance between formula and actual growth capital was \$14.547 million and between formula and actual sustainment/other capital was \$26.671 million.

In response to BCUC IR 10.2 in the 2018 Annual Review, FEI stated the following:

FEI expects that, excluding any variances resulting from growth capital, 2017 will be the year with the largest sustainment/other capital spending variance in the six year PBR term. Overall on a cumulative basis, the sustainment/other capital spending variance (in isolation from the growth capital variance) over the entire PBR term is expected to average to just over 10 percent of the formula, which is very close to being within the

dead band. FEI does not consider that level of variance to be significant in the context of the PBR Plan.

Table 1-4 on page 11 of the Application shows the following variances between formula and actual/projected sustainment/other capital:

- Actual 2017 sustainment/other capital variance - \$26.311 million
- Projected 2018 sustainment/other capital variance - \$31.664 million
- Projected cumulative sustainment/other capital variance - \$59.291 million

Table 1-4 also shows an Actual 2017 variance of \$26.066 million for growth capital.

- 8.1 Please explain in detail the causes/factors which resulted in the Actual 2017 variance in growth capital being \$11.519 million higher than projected.
- 8.2 Please explain the causes/factors which resulted in the Actual 2017 variance in sustainment/other capital being \$0.360 million lower than projected.
  - 8.2.1 As part of the above response, please discuss if any sustainment activities scheduled for 2017 were deferred to a future year.
- 8.3 Please explain the change in circumstances and spending between FEI's response to BCUC IR 10.2 in the 2018 Annual Review and the preparation of the current Application which led to the projected 2018 spending variance in sustainment/other capital to exceed the spending variance in 2017.
  - 8.3.1 In consideration of the above response, please discuss FEI's expectations regarding 2019 sustainment/other capital spending and the expected variance between formula and actual spending compared to previous years.
- 8.4 Please discuss whether, in consideration of the projected 2018 sustainment/other capital spending variance (and the expected 2019 variance), FEI would now consider the level of variance to be significant in the context of the PBR Plan.

On page 7 of Appendix C4 of the Application, FEI states:

The average cost per metre of main in FEI's 2013 Base was \$62 per metre. The actual cost per metre of main was \$87 in 2014, \$121 in 2015, \$121 in 2016, \$110 in 2017, with 2018 expected to be an average of 2016 and 2017 unit costs.

- 8.5 Please explain the causes/factors which resulted in a lower average cost per metre of main in 2017 compared to 2015 and 2016.
- 8.6 Please provide a table which shows the following for years 2014 to 2017 (actuals) and 2018 (projected): (i) number of new mains; (ii) metres of new mains; (iii) number of new mains costing more than \$100,000; and (iv) number of new mains costing more than \$50,000.

In response to BCUC IR 6.12 in the 2018 Annual Review, FEI provided the following table:

**Vancouver Island Sustainment/Other Capital Spending (000's)**

	Actual/ Projection	PBR Formula	Variance
2015	16,400	11,612	4,788
2016	19,130	11,733	7,397
2017	21,019	11,850	9,169
<b>Total</b>	<b>56,550</b>	<b>35,195</b>	<b>21,355</b>

8.7 Please update the above table to include the Actual 2017 and Projected 2018 amounts.

In response to BCUC IR 6.15 in the 2018 Annual Review, FEI stated that the following table is still reasonable for 2018 and 2019 forecasts regarding the capital cost of Jomar Valves:

Year	Capital Cost (\$ millions)
<b>2017 Forecast</b>	2.7
<b>2018 Forecast</b>	2.9
<b>2019 Forecast</b>	3.0
<b>TOTAL</b>	<b>8.6</b>

8.8 Please provide the actual costs for 2017 and an updated forecast for 2018 and 2019 capital costs, if different from the table above.

In response to BCUC IR 9.9.1 in the FEI Annual Review for 2017 Delivery Rates proceeding, FEI provided the following table:

**In-Line Inspection Activity**

(\$000)	2014	2015	2016	2017	2018	2019	Total
Capital Formula	1,350	1,361	1,375	1,389	1,389	1,389	8,253
Actual/Forecast	3,294	2,656	7,051	5,225	4,469	9,393	32,088
Difference	1,944	1,295	5,676	3,836	3,080	8,004	23,835

In response to BCUC IR 6.17 in the 2018 Annual Review, FEI stated:

The primary driver for the higher 2019 forecast than in the other years is FEI's projection of running crack-detection in-line inspection technology in selected pipelines beginning that year. As described in the response to BCUC IR 1.1.9, FEI is currently assessing the need for and feasibility of adopting crack-detection capabilities within its in-line inspection program. Because FEI continues to develop its strategy on this issue, the capital spending forecast for FEI's ILI activity could change.

8.9 Please discuss FEI's current assessment of the need for and feasibility of adopting crack-detection capabilities within its in-line inspection program.

8.10 Please update the table above and explain the causes/factors for significant changes in forecasts, if applicable.

Table C4-4 in Appendix C4 of the Application shows the following information with respect to capital variances in “Unanticipated system improvements and new stations to supply gas to new customers”.

- Actual 2014 variance: \$0.60 million
- Actual 2015 variance: \$2.7 million
- Actual 2016 variance: \$1.764 million
- Actual 2017 variance: \$1.901 million
- Forecast 2018 variance: \$7.403 million

- 8.11 Please explain why the Forecast 2018 variance is significantly larger than the actual variances experienced in previous years.
- 8.12 Please explain how much of the forecast \$7.403 million variance, if any, is related to unanticipated system improvements, and provide a detailed explanation for the unanticipated system improvements.
- 8.13 Please explain how much of the forecast \$7.403 million variance, if any, is related to new stations to supply gas to new customers, and provide a detailed explanation for the new station costs.

On pages 10 and 11 of Appendix C4 of the Application, FEI states:

In the spring of 2017, flooding in the Ashcroft area caused Cache Creek to leave its previous channel and create a new channel that eroded the ground cover over the Ashcroft Lateral NPS 88 pipeline. Approximately 150 metres of pipeline needed to be replaced and lowered below the new creek profile. Further flooding in the spring of 2018 exposed additional sections of the pipeline. Planning is underway to restore ground cover this year and protect the pipeline from further damage.

- 8.14 Please discuss if any capital costs are forecast for 2019 with respect to the Ashcroft Lateral Pipeline replacement. If so, please quantify the forecast capital cost.

On page 11 of Appendix C4 of the Application, FEI states:

In 2017, FEI is implementing cyber security measures to protect networks, computers and data from attack, theft, damage or unauthorized access.

- 8.15 Please discuss if any capital costs are forecast for 2019 with respect to cyber security. If so, please quantify and describe the forecast capital costs.

**9.0 Reference: OVERVIEW OF CAPITAL EXPENDITURES  
Exhibit B-2, Appendix C4, p. 13; FEI 2018 Annual Review, Exhibit B-3, BCUC IR 7.2  
Capital prioritization process**

On page 13 of Appendix C4 of the Application, FEI states that in 2017 it implemented the first phase of an “asset Investment Planning (AIP) tool” and that the second phase of implementation is currently underway, and includes electric sustainment, information systems, fleet and facilities.

In response to BCUC IR 7.2 in the 2018 Annual Review, FEI provided the forecast capital and operating costs associated with Phase 1 of the AIP tool as \$2 million and \$105,000, respectively.

- 9.1 Please provide the total actual capital and operating costs associated with Phase 1 of the AIP tool.
- 9.2 Please provide the forecast total capital and operating costs associated with Phase 2 of the AIP tool.
- 9.3 Please discuss if any of the costs associated with Phase 1 and 2 of the AIP are shared with FBC. If yes, please indicate how much and provide the cost allocation and methodology.

**10.0 Reference: OVERVIEW OF CAPITAL EXPENDITURES  
Exhibit B-2, Section 1.4.4.1, p. 11; Appendix C4, pp. 15–16, Table C4-5; 2018 Annual Review, Exhibit B-3, BCUC IR 9.1  
Projects planned to be undertaken outside of PBR term**

On page 11 of the Application, FEI states:

In addition to the formula-related pressures noted above, FEI has continued to experience other capital cost pressures in 2018 due to work that had been re-prioritized from previous years of the PBR term into 2018 and to manage unforeseen urgent and higher priority activities in 2018.

- 10.1 Please provide a list and description of: (i) the larger projects that have been re-prioritized from previous years of the PBR term into 2018; and (ii) unforeseen urgent and higher priority capital activities in 2018. Please also include the capital cost of each of these projects and activities.

On page 15 of Appendix C4 of the Application, FEI states:

FEI continuously manages its capital investment plan to achieve the values stated in section 4.1. In order to achieve these goals, some projects that provide less value, or that are less time-sensitive, may be reprioritized to future years in favour of more urgent or valuable projects. Likewise, if additional capital is made available through project delays or cost savings, projects may be brought forward based on their assessed value and their ability to be successfully executed.

- 10.2 Please provide a table listing the larger projects that have been executed during the PBR term which were not originally planned for execution at the beginning of the PBR term. Please also include the amount of the capital expenditures and the years incurred.

In response to BCUC IR 9.1 in the 2018 Annual Review, FEI provided a table that included the estimated cost of each of the projects delayed beyond the PBR Term.

- 10.3 Please provide a similar table with the current estimated cost of the projects listed in Table C4-5 of Appendix C4 of the Application.

**11.0 Reference: OVERVIEW OF CAPITAL EXPENDITURES  
Exhibit B-2, Section 1.4.4.2, p. 14  
Treatment of capital spending outside of the dead band**

On page 14 of the Application, FEI states:

Accordingly, FEI added 34.89 percent of its 2018 capital, or \$54.145 million to its opening plant in service for 2019 so that the two-year cumulative capital variance is within the two-year dead band at 15 percent. FEI also reduced the cumulative capital expenditures utilized in the earning sharing mechanism by the same amount (\$54.145

million), such that the earnings sharing with customers is increased (see Section 10 of the Application). In this way, there is no earnings sharing on the amount by which FEI exceeded the dead band.

- 11.1 Please confirm, or explain otherwise, that FEI is requesting approval to remove the amount of formula capital which has exceeded the cumulative dead band from the earnings sharing calculation for 2018, and to add the amount of capital in excess of the dead band to FEI's opening 2019 plant additions balance.

**B. DEMAND FORECAST AND REVENUE AT EXISTING RATES**

**12.0 Reference: DEMAND FORECAST AND REVENUE AT EXISTING RATES  
Exhibit B-2, Sections 3.1 to 3.4, pp. 24–31, Figures 3-1 to 3-6  
Use per customer (UPC) and demand forecast**

On page 24 of the Application, FEI states:

The total normalized demand is forecast to be approximately 235.4 PJs in 2019. The forecast for 2019 is up 7.2 PJs from 2018 Approved, with increases of 6.26 PJs for industrial demand, 0.78 PJs for Natural Gas for Transportation (NGT) and 0.61 PJs for commercial demand, partially offset by a decrease in residential demand of 0.45 PJs.

On page 26 of the Application, FEI states:

Individual UPC projections for each residential and commercial rate schedule are developed by considering the recent (three-year) historical weather-normalized UPC. The analysis of historical normalized residential use rates indicates an inclining trend for the residential and commercial rate schedules. As shown in Figure 3-1, the Residential (Rate Schedule 1) UPC is forecast to increase by approximately 0.6 GJs (0.7 percent) in 2019.

- 12.1 Please explain why there is a decrease of 0.45 PJs forecast for 2019 residential demand when UPC is forecast to increase by 0.6 GJs (0.7 percent) and residential net customer additions are forecast to increase by 10,724 in 2019, as shown in Figure 3-6.
- 12.2 Please discuss the reasons for the decrease in the UPC for Rate Schedule (RS) 1, RS 2 and RS 3 from 2016 to 2017, as shown in Figures 3-1 to 3-3.
- 12.2.1 Please discuss whether the UPC results for RS 1, RS 2 and RS 3 have likely been affected by external factors such as increases in appliance efficiencies and environmental policy.
- 12.2.2 How does FEI anticipate these factors, including the external factors discussed in the above response, will continue to impact the UPC forecasts for future periods? Please explain.

**13.0 Reference: DEMAND FORECAST AND REVENUE AT EXISTING RATES  
Exhibit B-2, Section 3.4, p. 29; Appendix A2, p. 2, Table A2-1  
Customer additions**

On page 29 of the Application, FEI states: "Net customer additions have been stronger since 2013 with the largest increase occurring in 2017. The Company is forecasting net customer additions at 14,417 in 2018 and 11,946 in 2019."

- 13.1 Please explain the factors FEI believes resulted in an increase in total net customer additions between 2016 and 2017.

13.1.1 Please discuss whether the factors discussed above are expected to continue in 2018 and 2019.

13.2 Please explain why, in Table A2-1 of Appendix 2 of the Application, the sum of existing customers plus customer additions in one year does not equal the number of existing customers in the following year.

**14.0 Reference: DEMAND FORECAST AND REVENUE AT EXISTING RATES  
Exhibit B-2, Section 3.6, Tables 3-2 & 3-3, pp. 39–40; Section 12.4.2.2, Table 12-5, p. 135; BCUC Order G-125-17A  
Revenue and margin forecast and Flow-through deferral account**

On August 17, 2017 the BCUC issued Order G-125-17A approving FEI’s application to provide a credit to certain customers during the period the customer was under an Evacuation Order due to wildfires in 2017.

In Table 3-2 and Table 3-3 of the Application, FEI provides the forecast sales revenue at approved rates and the forecast gross margin at approved rates, respectively.

In Table 12-5 on page 135 of the Application, FEI provides the 2018 Flow-through deferral account additions.

14.1 Please provide the total number of residential and commercial customers which received the evacuation relief in 2017 approved by the BCUC pursuant to Order G-125-17A.

14.2 Please provide the total impact on FEI’s 2017 revenue and margin resulting from the evacuation relief provided.

14.2.1 As part of the above response, please identify the variance between the approved 2017 and the actual 2017 sales revenue and gross margin that are due to the customer credits approved by Order G-125-17A.

14.3 Please explain how the revenue variance resulting from the evacuation relief bill credits was treated, including whether, and in what year, the variance was recorded in the Flow-through deferral account and in what year the variance will be recovered from ratepayers.

14.3.1 Please provide the rate impact of the amortization of the revenue variance resulting from the customer credits.

**15.0 Reference: DEMAND FORECAST AND REVENUE AT EXISTING RATES  
Exhibit B-2, Appendix A2, Section 3.18, pp. 19–22  
Holt’s Exponential Smoothing (ETS) method**

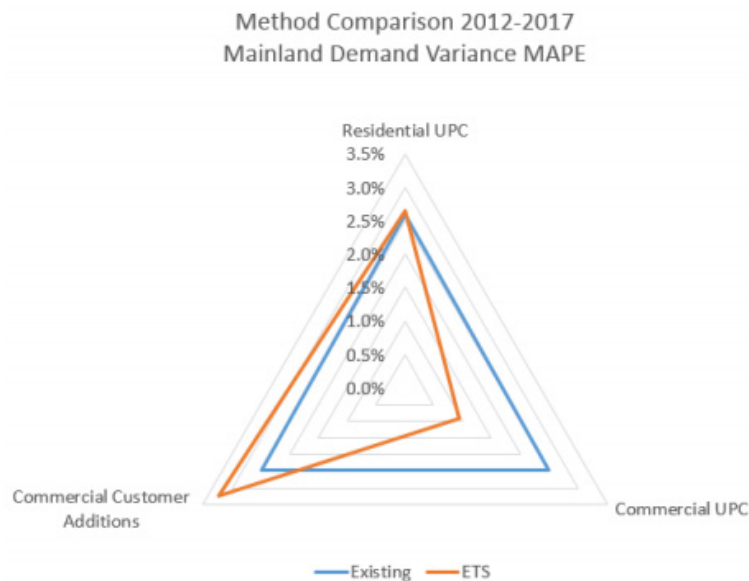
On pages 19–20 of Appendix A2 of the Application, in regards to residential UPC forecast results, FEI states that “the MAPE calculated from 2012 through 2017 remains almost identical for the two methods at 2.6 percent,” and provides the following table:

	Year	Data Cutoff	Forecast Demand	Actual Demand (PJs)	APE	2012-2017 MAPE
Existing	2012	2010	69.9	69.8	0.1%	
	2013	2010	69.8	68.1	2.5%	
	2014	2012	69.5	68.5	1.5%	
	2015	2013	68.5	68.9	0.6%	
	2016	2014	67.7	72.3	6.4%	
	2017	2015	68.5	71.7	4.5%	2.6%
ETS	2012	2010	68.4	69.8	2.1%	
	2013	2010	67.6	68.1	0.7%	
	2014	2012	68.9	68.5	0.6%	
	2015	2013	67.6	68.9	1.5%	
	2016	2014	67.8	72.3	6.2%	
	2017	2015	68.6	71.7	4.4%	2.6%

On pages 20–21 of Appendix A2 of the Application, in regards to commercial UPC forecast results, FEI states that “the ETS MAPE calculated from 2012 through 2017 is 0.9 percent, while the MAPE for the existing method is 2.5 percent,” and provides the following table:

	Year	Data Cutoff	Forecast Demand	Actual Demand (PJs)	APE	2012-2017 MAPE
Existing	2012	2010	47.1	48.8	3.4%	
	2013	2010	47.3	48.1	1.6%	
	2014	2012	50.2	48.8	3.0%	
	2015	2013	49.3	49.1	0.5%	
	2016	2014	49.3	50.8	2.9%	
	2017	2015	49.7	51.4	3.3%	2.5%
ETS	2012	2010	48.1	48.8	1.4%	
	2013	2010	48.5	48.1	0.8%	
	2014	2012	48.5	48.8	0.5%	
	2015	2013	49.1	49.1	0.0%	
	2016	2014	49.9	50.8	1.7%	
	2017	2015	50.9	51.4	1.0%	0.9%

On page 22 of Appendix A2 of the Application, FEI provides the following evaluation chart:





- 15.1 Please elaborate on FEI’s findings over the PBR period regarding the appropriateness of the existing forecast method compared to the ETS method, including the pros and cons of each forecast method.
- 15.2 Please confirm, or explain otherwise, that FEI intends to make a recommendation regarding which forecasting method to use going forward (i.e. subsequent to the conclusion of the current PBR term) as part of its next rate application.
- 15.3 Please discuss the suitability of using a forecast technique that utilizes both methods; for example, an approach which utilizes ETS for UPC forecasts and the existing method for customer additions.
  - 15.3.1 What are the pros and cons of this approach? Please explain.

**C. O&M EXPENSE**

**16.0 Reference: O&M EXPENSE FORECAST OUTSIDE OF THE FORMULA  
Exhibit B-2, Section 6.3.3, p. 52  
Biomethane O&M**

On page 52 of the Application, FEI states:

In December 2017 there was a fire at the Kelowna upgrader and the remediation costs were recorded in 2018 with the expected net insurance claim recovery of approximately \$0.213 million occurring in 2019.

- 16.1 Please explain the cause of the fire and any actions taken by FEI since then to prevent similar future incidents.
- 16.2 How much were the remediation costs recorded in 2018 O&M?
- 16.3 Please discuss the impact the fire at the Kelowna upgrader is expected to have on FEI’s Service Quality Indicators (SQIs), if any.

**17.0 Reference: O&M EXPENSE FORECAST OUTSIDE OF THE FORMULA  
2018 Annual Review, Exhibit B-3, BCUC IR 17.1  
Incremental O&M to support rate schedule 46**

In response to BCUC IR 17.1 in the 2018 Annual Review, FEI provided the following tables with respect to the Tilbury Plant:

	2017 Headcount	2018 Headcount
LNG Plant Operators	20	28
LNG Electrical and Instrumentation Technicians	2	2
LNG Administrative Assistant	1	1
	<b>23</b>	<b>31</b>
	2017 FTE	2018 FTE
Tilbury LNG FTEs	9	20

- 17.1 Please update the above tables for Actual 2017, Projected 2018 and Forecast 2019 results.

**D. RATE BASE**

**18.0 Reference: DEFERRAL ACCOUNTS**  
**Exhibit B-2, Section 11, Schedules 11, 11.1, 12**  
**Unamortized deferred charges and amortization (rate base and non-rate base)**

18.1 In the same format as is provided in Schedules 11, 11.1 and 12 in Section 11 of the Application, please provide the previous years' information on unamortized deferred charges by starting with the Actual 2017 ending deferral account balances and including the Projected 2018 deferral account additions and the Projected 2018 amortization.

**19.0 Reference: DEFERRAL ACCOUNTS**  
**Exhibit B-2, Section 7.5.2, pp. 67–68, Table 7-8**  
**2017 Long-term Resource Plan Application deferral account**

FEI states the following on pages 67–68 of the Application:

To date, total actual costs for this work have been \$0.431 million with a further \$0.100 million of expected costs by the time the regulatory proceeding for the LTGRP [Long-term Gas Resource Plan] is completed and a small amount of related stakeholder consultation in 2019. Costs have been lower than the original estimate as a result of FEI being able to complete more of the work using its own internal resources than originally estimated, as well as obtaining better commercial terms from external consultants than was estimated when preparing Table 7-8.

19.1 Please update Table 7-8 in the Application to reflect the actual costs of \$0.431 million and expected costs of \$0.100 million. If certain activities were not performed (thus contributing to the lower than forecast costs) please explain why.

**E. ACCOUNTING MATTERS AND EXOGENOUS FACTORS**

**20.0 Reference: ACCOUNTING MATTERS**  
**Exhibit B-2, Section 12.3.1.2, pp. 124–126**  
**Cloud computing**

On page 124 of the Application, FEI states: "An increasing number of IS solutions are being offered in the form of off-premise cloud computing services."

20.1 Please explain when (i.e. what year) FEI first began utilizing cloud computing services.

FEI states the following on page 125 of the Application:

Based on the criteria in *ASU 2015-05*, FEI cannot forecast which of its future cloud computing solutions will have agreements with external vendors that will have provisions that meet the above criteria until the projects are further along in the process. This creates uncertainty from the outset around whether future cloud computing expenditures will be O&M or capital pursuant to *ASU 2015-05*.

20.2 To date, how many of FEI's cloud computing solutions have not met the *ASU 2015-05* criteria and have therefore been expensed as O&M? Please provide both the number of computing solutions and the total amount which has been expensed as O&M.

FEI states on page 125 of the Application: “In June 2018, the Financial Accounting Standards Board (FASB) agreed to issue a final ASU in the third quarter of 2018...” and “[t]he new ASU is expected to have an effective date of January 1, 2020.”

On page 126 of the Application, FEI states:

While the new ASU 350-40 supports the capitalization of initial external vendor cloud computing implementation costs and can be applied retroactively, it is not expected to become effective until 2020. FEI therefore requests approval to adopt the new guidance for rate-setting purposes beginning in 2019.

- 20.3 Please discuss the likelihood that the new ASU 350-40 guidance will come into effect on January 1, 2020.
- 20.4 If the new ASU 350-40 did not come into effect on January 1, 2020 or there was some material change from the exposure draft, how would FEI propose to address this delay or change in the event it is approved to vary from US Generally Accepted Accounting Principles (US GAAP) for 2019?
- 20.5 Please clarify over what time period the new standard would be able to be applied retroactively (i.e. the beginning of 2019 or an earlier time period).
- 20.5.1 As part of the above response, please explain how FEI would utilize the retroactive treatment of the new standard (if at all) under a scenario where (i) FEI is approved to vary from US GAAP for 2019 and under a scenario where (ii) FEI is not approved to vary from US GAAP for 2019. Please quantify the impact of applying the retroactive treatment in each scenario, both from a cost perspective and a rate impact perspective.

FEI states on page 126 of the Application that one of the benefits to its proposed approach is it would “avoid a one-year change in capitalization policies and the associated potential volatility in O&M and capital.”

- 20.6 Please quantify the cloud computing implementation costs that FEI expects to recognize as capital expenditures for 2019 in the event it is approved to vary from US GAAP for 2019.
- 20.6.1 As part of the above response, please estimate the impact that the change in capitalization policies would have on O&M and capital in 2019 if FEI’s request to vary from US GAAP in 2019 was not approved.

FEI further states on page 126 of the Application: “The proposed approach keeps FEI’s O&M and capital funding envelopes consistent with the 2013 Base O&M and capital amounts for the final year of the PBR term, which were based on the assumption that IS implementation costs would be capitalized.”

- 20.7 Please confirm, or explain otherwise, that at the time the PBR plan was established, cloud computing was not a prevalent Information System (IS) solution.
- 20.8 Please explain when the issue of treatment of cloud computing implementation costs began to arise, and if the treatment of these costs has been an issue in previous years of the PBR term.
- 20.8.1 If yes, please explain how FEI has addressed the treatment of these costs in the past, and why FEI is not able to deal with this issue in the same manner it has been dealt with in previous years.
- 20.9 Please confirm, or explain otherwise, that generally FEI’s practice is not to request regulatory approval for changes related to proposed accounting or government-related changes (e.g. income tax rates) until the change has been made effective or enacted.

20.9.1 As part of the above response, please provide examples where FEI has requested approval from the BCUC to change its application of accounting standards or government policies in advance of the standard/policy being made effective/enacted.

**21.0 Reference: NEW DEFERRAL ACCOUNTS**  
**Exhibit B-2, Section 12.4.1, pp. 129–132, Tables 12-1 & 12-2; Appendix C4, Section 3.2, p. 10**  
**Transmission integrity management capabilities (TIMC) development costs**

On page 129 of the Application, FEI provides the following table showing the forecast development costs for the TIMC project:

**Table 12-1: CPCN Development Costs (\$000s)**

<u>Line</u>		<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>Total</u>
<u>No.</u>	<u>Phase</u>				
1	Phase 1	\$ 5,680	\$ 5,710	\$ 230	\$ 11,620
2	Phase 2	-	19,000	11,000	30,000
3					
4	Total	<u>\$ 5,680</u>	<u>\$ 24,710</u>	<u>\$ 11,230</u>	<u>\$ 41,620</u>

In Table 12-2 of the Application, FEI states that it is requesting the establishment of a new deferral account “to capture the development costs related to the TIMC project.” FEI further states that “anticipated costs for this phase will be incurred from 2018 through 2021” and that in the absence of the proposed deferral account, these costs would have been forecast as a combination of O&M and capital expenses outside of the formula. FEI also states that “until the completion of Phase 1, the Phase 2 costs currently have a high degree of uncertainty.”

- 21.1 Please provide a more detailed breakdown and accompanying explanation for the Phase 1 development costs, including the actual costs incurred to-date.
  - 21.1.1 As part of the above response, please identify which of the Phase 1 costs would be classified as O&M and which would be classified as capital in accordance with US GAAP and why (in the absence of an approved deferral account).
- 21.2 Please provide a more detailed breakdown and accompanying explanation for the Phase 2 development costs.
  - 21.2.1 As part of the above response, please identify which of the Phase 2 costs would be classified as O&M and which would be classified as capital in accordance with US GAAP and why (in the absence of an approved deferral account).
- 21.3 Please provide past examples where FEI has requested deferral account approval for development costs in an amount comparable to the current request.
- 21.4 Please provide the estimated Certificate of Public Convenience and Necessity (CPCN) capital cost and provide a description of the project which FEI will be seeking approval for in the CPCN application.
- 21.5 Please clarify whether anticipated costs for Phases 1 and 2 are expected to be incurred from 2018 to 2020 as presented in Table 12-1 or from 2018 to 2021 as stated in Table 12-2.
- 21.6 Please discuss the likelihood that, based on the development work performed in Phases 1 and 2, FEI would decide not to proceed with the project.
  - 21.6.1 Please discuss the implications to ratepayers if this situation were to occur.
- 21.7 Please discuss whether, given the uncertainty of the Phase 2 costs and the expected quantum of

Phase 2 costs, FEI considered requesting deferral account treatment for only Phase 1 development costs in this application. Please discuss why such an approach would not be more appropriate.

- 21.8 In consideration of the large quantum of development costs, particularly for Phase 2, please explain why it would not be more appropriate to request deferral account treatment for these expenditures in a separate application, such as at the time of filing the CPCN application.
- 21.8.1 As part of the above response, please clarify why FEI is requesting approval to defer the development costs related to the TIMC project in this Application instead of requesting approval during the anticipated CPCN application for the TIMC project.
- 21.9 Please explain if the TIMC project is related to the enhancements to FEI's in-line inspection activities described in section 3.2 of Appendix C4 of the Application.

**22.0 Reference: EXISTING DEFERRAL ACCOUNTS  
Exhibit B-2, Section 12.4.2.2, Table 12-5, p. 135; 2018 Annual Review, Exhibit B-3,  
BCUC IR 21.1  
Flow-through deferral account**

In response to BCUC IR 21.1 in the 2018 Annual Review, FEI provided a table similar to Table 12-5 in the current Application which showed the approved and actual 2016 amounts recorded in the Flow-through deferral account.

- 22.1 Please provide the same table as was provided in response to BCUC IR 21.1 in the FEI 2018 Annual Review, but showing the breakdown of the approved and actual 2017 amounts recorded in the Flow-through deferral account.

**F. SERVICE QUALITY INDICATORS**

**23.0 Reference: SERVICE QUALITY INDICATORS  
Exhibit B-2, Section 13.2, pp. 139 & 151  
Review of the performance of SQIs**

On page 139 of the Application, FEI states, with respect to the emergency response time SQI, it experienced an 11 percent increase in emergency calls in 2017 compared to 2016.

- 23.1 Please explain the causes/factors contributing to the 11 percent increase in emergency calls in 2017 compared to 2016.
- 23.2 Does FEI expect the increase in emergency calls to be a continuing trend? Please explain why or why not.

On page 151 of the Application, FEI states:

The June 2018 year-to-date result is 0.0030 which is based on 69 leaks detected year-to-date as compared to 54 in 2017 and 58 in 2016 for a similar time period.

- 23.3 Please explain why the number of leaks detected for the first six months of 2018 has increased by approximately 28 percent and 19 percent compared to the same period in 2017 and 2016, respectively.
- 23.4 Please explain if FEI expects the increase in number of leaks to be a continuing trend. If yes, please discuss how FEI plans to reduce the number of leaks in the future.