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

Attention: Mr. Patrick Wruck, Commission Secretary

Dear Sirs/Mesdames:

Re: FortisBC Energy Inc. ("FEI") Application for a Certificate of Public Convenience and Necessity for the Coastal Transmission System Transmission Integrity Management Capabilities Project - Reply Argument

In accordance with the regulatory timetable in the above proceeding, we enclose for filing the Reply Argument of FortisBC Energy Inc., dated November 26, 2021.

Yours truly,

FASKEN MARTINEAU DuMOULIN LLP

[Original signed by]

Christopher Bystrom*
*Law Corporation

CRB/NR
Encl.

BRITISH COLUMBIA UTILITIES COMMISSION

FORTISBC ENERGY INC.

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE COASTAL TRANSMISSION SYSTEM TRANSMISSION INTEGRITY MANAGEMENT CAPABILITIES PROJECT

BCUC PROJECT NO. 1598988

REPLY ARGUMENT

OF

FORTISBC ENERGY INC.

NOVEMBER 26, 2021

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PART ONE: INTRODUCTION

1. As set out in its Application and Final Argument, FortisBC Energy Inc. (FEI or the Company) is requesting that the British Columbia Utilities Commission (BCUC) issue a Certificate of Public Convenience and Necessity (CPCN) for the Coastal Transmission System Transmission Integrity Management Capabilities Project (CTS TIMC Project or Project) pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA). FEI is also requesting approval to recover the balance of costs in the TIMC Development Cost deferral account associated with the development of the Project pursuant to sections 59-61 of the UCA.

2. Three interveners filed final arguments. The British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Council of Senior Citizens' Organizations of BC, Disability Alliance BC, Tenant Resource and Advisory Centre and Together Against Poverty (BCOAPO) "takes the position that the Application should be approved", subject to several comments.[1] The Commercial Energy Consumers Association of BC (CEC) recommends that the BCUC grant a CPCN for the CTS TIMC Project, and argues that some costs could be deferred and amortized over a longer period than FEI has proposed. The Residential Consumer Intervener Association (RCIA) believes FEI "is justified in proceeding with the CTS TIMC Project" and "supports the TIMC project in principle," but argues that portions of the Project should not be approved.[2]

3. In the remainder of this Reply Argument, FEI responds to the comments and recommendations of interveners. Silence in this submission on a particular statement in an intervener submission does not indicate FEI's agreement. The sections below are organized around the following points:

(a) The RCIA's recommendations result in higher and unjustifiable safety and reliability risk and are not prudent. Contrary to the RCIA:

(i) The addition of flow control capability provides important benefits and is cost effective;

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1 BCOAPO Final Argument, p. 6.

2 RCIA Final Argument, p. 5.

(ii) The installation of pressure reduction facilities is necessary to ensure that FEI can mitigate the significant safety risk to the public due to cracking threats while maintaining service to customers over the winter, will provide ongoing benefits and is cost effective;

(iii) The removal of the 13 heavy wall segments is necessary for successful EMAT ILI tools runs to mitigate the significant safety risk to the public due to the potential for cracking on over 5 kilometres of the CTS in proximity to populated areas.

(b) In reply to CEC and BCOAPO:

(i) The assessment of the public interest through the CPCN process is robust.

(ii) FEI's alternative analysis is not contested.

(iii) Dynamic Risk acted reasonably in not undertaking material work outside its Terms of Reference.

(iv) Deferral of ongoing ILI-related O&M costs and data collection costs are properly the subject of revenue requirement proceedings.

(v) FEI's proposed amortization period for the development costs is reasonable, although FEI is not opposed to a longer period.

(vi) The development costs were prudently incurred.

(vii) The ITS TIMC Project will stand on its own merits.

PART TWO: RCIA'S RECOMMENDATIONS RESULT IN HIGHER AND UNJUSTIFIABLE SAFETY AND RELIABILITY RISK AND ARE NOT BE PRUDENT

4. RCIA accepts that FEI is justified in proceeding with the CTS TIMC Project.[3] RCIA agrees with FEI's characterization of the threat posed by cracking and agrees with FEI's proposed use of EMAT ILI tools to inspect the 11 CTS pipelines.[4] However, RCIA recommends not installing flow control and pressure control facilities or removing heavy wall segments of pipeline. FEI submits that RCIA's approach does not reflect a prudent way to manage the significant safety risk to the public due to the potential for cracking on the CTS or the potential serious consequences to customers if FEI were forced to maintain a pressure reduction on the CTS over the winter months.

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[3] RCIA Final Argument, p. 5.

[4] RCIA Final Argument, pp. 5-6.

While RCIA advances its proposals in the name of cost effectiveness, RCIA is proposing that FEI cut corners and take higher risks, based on suppositions and, in some cases, mischaracterization of FEI's evidence. RCIA's recommended approach would impose unjustifiable risks on customers, the public and FEI. RCIA's approach is not recommended by FEI or Dynamic Risk, nor has RCIA filed evidence to support its position. FEI submits that RCIA's approach is not prudent and should be rejected.

5. In the sections below, FEI responds to RCIA's recommendations regarding flow control, pressure control and removal of heavy wall pipe segments.

A. Addition of Flow Control Capabilities is Cost Effective

6. FEI requires flow control capabilities on NPS24, NPS30 and NPS36 pipelines so that it can use EMAT ILI tools for these pipelines from more than one vendor, including vendors whose products do not have built-in speed control for this size of pipeline. Control over gas flowrate will enable FEI to control the velocity of tools without a velocity control mechanism, as these tools rely on gas flow for propulsion.[5] Flow control will increase the chances of obtaining accurate data from ILI tool runs and will widen the seasonal window for running the tools on the pipelines with flow control.[6] The cost of the flow control work is estimated at $2.8 million[7] and is a cost-effective investment given these benefits.

7. FEI explained on page 98 of its Application that the ILI tools from certain vendors do not come with built-in speed control:[8]

> In designing the FCS, FEI took into consideration the specifications of EMAT ILI tools currently available on the market, and more specifically these tools' capability of controlling travel velocity. For EMAT ILI tools that come with built-in

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5 Exhibit B-1, Application, p. 98.

6 Exhibit B-5, BCUC IR1 18.1.

7 Exhibit B-1-1, Application, Appendix D:

1. Nichol Valve Station: App D-4, Basis of Estimate App B.7.5, page 178/417 thru 198/417;
2. Fraser Gate Station: App D-4, Basis of Estimate App B.7.7, page 214/417 thru 229/417;
3. Tilbury Regulating Station: App D-4, Basis of Estimate App B.7.8, page 230/417 thru 248/417; and
4. Port Mann Valve Station: App D-4, Basis of Estimate App B.7.9 page 249/417 thru 261/417.

8 Exhibit B-1.

> speed control, enabling them to manage their travel velocity, FEI found that such tools perform better when they are subjected to higher gas flowrates. Since current flowrates in the Project's pipelines allow for higher tool travel velocity, it was determined that an FCS will not be required for situations when an ILI tool with built-in speed control is utilized. However, there are EMAT ILI tools provided by certain vendors that do not come with built-in speed control which will require a FCS. Since the EMAT ILI tools that do not have built-in speed control are limited to NPS24, NPS30 and NPS36, the FCS will be used for these pipeline sizes only. [Emphasis added.]

8. RCIA points to FEI's response to RCIA IR2 22.1 as being contradictory to this, where FEI explained which vendors have built-in speed control and which do not, as follows:

> Currently, the EMAT ILI tools provided by Rosen have the speed control capabilities for all of the pipeline diameters listed in Table 1, whereas the EMAT ILI tools provided by Baker Hughes have the speed control capabilities for 610, 762, and 914 mm pipeline diameters only.

9. While FEI does not see any contradiction in this evidence, there is an error in the above IR response in that FEI intended to indicate that Baker Hughes' EMAT ILI tools do not have speed control capabilities. The response should have stated:

> Currently, the EMAT ILI tools provided by Rosen have the speed control capabilities for all of the pipeline diameters listed in Table 1, whereas the EMAT ILI tools provided by Baker Hughes do not have the speed control capabilities for 610, 762, and 914 mm pipeline diameters.

10. Without flow control, FEI would be limited to using products from a single vendor, Rosen,[9] which is inherently undesirable as FEI would be subject to higher costs due to a lack of competition and subject to the ILI tool availability from this single vendor. Given the expense of ILI tools runs (between $1.5 and $2.5 million),[10] and the need to ensure that FEI can meet the scheduled number of ILI tool runs,[11] it is not in the interest of ratepayers for FEI to be a captive customer of a single ILI tool vendor if it can be avoided.

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[9] Exhibit B-15, RCIA IR2 22.1,

[10] Exhibit B-5, BCUC IR1 28.2.

[11] Exhibit B-5, BCUC IR1 28.2.

11. Flow control will also widen the seasonal window for ILI tool runs. FEI explained this benefit as follows:[12]

> FEI does not currently have the ability to adjust gas flows on individual pipelines in the CTS. The addition of flow control station (FCS) facilities to the CTS will increase the likelihood of successful EMAT ILI runs by providing two major improvements to FEI's existing flow control capabilities:
>
> - It provides a means of direct control on the pipeline being inspected; and
> - It widens the seasonal window for ILI tools runs.
>
> An FCS discharges gas at a fixed rate into a parallel pipeline to maintain the ILI tool velocity within the targeted range, thus providing a more precise and localized method of controlling flow in the pipeline. Any variation in demand can be supplied by the parallel pipeline while the velocity in the pipeline under inspection remains relatively constant. EMAT ILI tools are required to travel at slower velocities than other in-line inspection tools currently used by FEI. Without an FCS, opportunities to successfully run EMAT ILI on the CTS would be limited due to the narrow seasonal window.
>
> The FCS widens the seasonal window for ILI tool runs in certain pipelines by managing the effects of higher seasonal system demand on gas flow using the parallel pipeline. This allows the flexibility to run ILI tools in a broader range of system demand conditions. This will aid FEI in mitigating scheduling issues for tool availability or operational support which may be imposed by a narrow run window.

12. As noted in the quote above, adding flow control capabilities to the pipelines as planned will allow FEI to run ILI tools in a broader range of system conditions, widening the season for ILI tools runs and improving the chances of a successful ILI run on these pipelines. These benefits will be realized for all types of ILI tool runs on these pipelines, not just EMAT ILI tool runs. Therefore, flow control will provide an ongoing benefit for FEI's ILI tools runs.

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[12] Exhibit B-5, BCUC IR1 18.1.

13. The cost of the flow control work is estimated to be $2.8 million, or under 2 percent of the Project cost estimate.[13] This relatively low cost reflects the limited scope of work to enable flow control:[14]

- A single FCS will be fabricated with an ultrasonic flowmeter for flowrate monitoring and an NPS8 control valve for flowrate control that will enable the FCS to be used for NPS24, NPS30 and NPS36 pipelines; and
- Piping and foundation for the FCS will be installed at four station facilities on a permanent basis, allowing the FCS to be connected on a temporary basis when required during ILI inspections.

14. Given the limited scope and cost of the flow control work, and the ongoing benefits of having the ability to contract with multiple vendors, and widening of the seasonal window for ILI tool runs and enabling more accurate data is collected on the pipelines with flow control, it is cost-effective for FEI to carry out the flow control work as proposed.

B. <u>Installation of Pressure Reduction Facilities is Prudent to Mitigate Risks</u>

15. RCIA's view is that FEI is being "exceedingly conservative" with its proposal to install four pressure reducing facilities and modify the Huntingdon Control Station to allow individual CTS pipelines to operate at reduced pressure.[15] To the contrary, FEI is being prudent and appropriately taking into account that it must reduce the pressure on the affected pipeline if it finds significant cracking following an ILI tool run, and that the utility must ensure that it can continue to serve its customers on the CTS throughout the winter. RCIA's approach of not installing any pressure reduction capabilities imposes unjustifiable risk on FEI and its customers and should be rejected.

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[13] Exhibit B-1-1, Application, Appendix D:
1. Nichol Valve Station: App D-4, Basis of Estimate App B.7.5, page 178/417 thru 198/417;
2. Fraser Gate Station: App D-4, Basis of Estimate App B.7.7, page 214/417 thru 229/417;
3. Tilbury Regulating Station: App D-4, Basis of Estimate App B.7.8, page 230/417 thru 248/417; and
4. Port Mann Valve Station: App D-4, Basis of Estimate App B.7.9 page 249/417 thru 261/417.

[14] Exhibit B-1, Application, p. 99.

[15] RCIA Final Argument, pp. 16-17.

(a) Pressure Reduction Facilities are Needed on the CTS

16. The need for the pressure reduction facilities is driven by four key factors:

(a) Except for the pressure reduction facilities installed as part of the pilot project, FEI's ability to control pressure on the CTS is currently "all or nothing". FEI is limited to the pressure reduction facility at Huntingdon, such that FEI must reduce the pressure on all the CTS or none of it.[16]

(b) FEI cannot know how many features will be found on any of the 11 CTS TIMC pipelines until after each of their baseline EMAT ILI runs and initial data analysis.[17]

(c) If FEI finds severe cracking on the CTS through its ILI EMAT runs, FEI is required to determine (by engineering assessment) and implement safe operating parameters. FEI would implement a pressure reduction of up to 20 percent, which is reasonable and accepted industry standard practice, until the issue is corrected.[18]

(d) FEI cannot serve customer load on the CTS through the winter when the pressure of the CTS is reduced through Huntingdon.[19]

17. FEI is aware through its discussions with peer pipeline operators that initial EMAT ILI tool runs can result in a significant number of indications that require timely inspection and validation. These indications do not always require repair; however, until they are excavated and inspected, they are considered to be an integrity risk. Therefore, FEI may have more features requiring an in-ditch assessment in a timely manner than can be dealt with prior to the winter peak season. Consequently, FEI needs to be able respond by reducing operating pressures for an extended period.[20]

18. FEI stresses that this is not an academic exercise. If FEI finds significant cracking and cannot complete the work in time, and does not have improved pressure reduction capabilities, FEI will have to maintain a pressure reduction on the entire CTS and will not be able to serve peak load during the winter, meaning that hundreds of thousands of customers could be without heat

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16 Exhibit B-11, BCUC IR2 34.4.

17 Exhibit B-8, RCIA IR1 12.1.

18 Workshop Transcript, p. 78, l. 24 to p. 80, l. 5.

19 Exhibit B-11, BCUC IR2 36.1.

20 Exhibit B-8, RCIA IR1 12.2.

and hot water during the coldest months of the year. FEI cannot know in advance the extent of cracking that may be found and what work will be required. Therefore, FEI must prudently plan to mitigate this potential significant risk.

(b) The Potential for Severe Cracking Is a Risk That Must be Managed

19. The potential for the EMAT ILI tools to find severe cracking is a risk that FEI must prudently manage. RCIA's argument continuously downplays this risk, which FEI submits is irresponsible.

20. RCIA mischaracterizes FEI's position, saying that FEI is "speculating that there will be too many instances of severe cracking on its CTS pipelines".[21] It is transparent on the record that FEI is not speculating about the extent of cracking on the CTS. FEI has been clear that it cannot know the extent of cracking on the CTS.[22] Indeed, this is a primary reason why FEI needs to adopt EMAT ILI tools.

21. RCIA's submission that there is "No Evidence of Severe Cracking"[23] is misleading. There is also no evidence there will <u>not</u> be severe cracking. Further, JANA's quantitative risk assessment showed that the CTS was assessed as having the highest safety risk, driven primarily by its proximity to populated areas, and that cracking threats (SCC and pipe seam) are the top driver of safety risk for the CTS at the system level.[24] Dynamic Risk affirms FEI and JANA's risk assessment,[25] and no intervener has contested it. The CTS pipelines were installed as early as 1957[26] and have never been subject to inspection by EMAT ILI tools. RCIA posed the question of the likelihood of finding severe cracking directly to Dynamic Risk, whose response was simple: "The current status of cracking (number of features and severity) on the susceptible CTS segments without EMAT ILI is unknown."[27] This is the key point – no one can predict what the

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21 RCIA Final Argument, p. 12.

22 Exhibit B-1, Application, s. 3.2.5, pp. 26-27.

23 RCIA Final Argument, p. 12.

24 Exhibit B-1-1, Appendix B-2, p. 15.

25 Exhibit A2-1, Independent Report, p.7.

26 Exhibit B-1, Application, p. 35.

27 Exhibit B-8, RCIA IR1 7.1.

EMAT ILI tools will find on the CTS pipelines. Therefore, FEI must prepare for the risk that severe cracking will be found.

22. RCIA erroneously claims that the results of the pilot project are "indicative that severe SCC and seam weld cracking may not be present, never mind prevalent, on the CTS pipelines."[28] This claim is false and directly contradicted by the evidence on the record from both FEI[29] and Dynamic Risk.[30] The fact that the pilot project did not return severe cracking results cannot be used to infer that there will not be severe cracking on other pipelines. As the formation and growth of cracks is a complex, highly localized, and often unpredictable process,[31] the lack of cracking in one location cannot be relied upon to assess other locations.[32] Again this is fact that underlies the primary driver of the need for EMAT ILI tools – a need which the RCIA has accepted.

23. As no one can know what the results of running the EMAT ILI tools will be, FEI must prepare for the possible outcomes including that severe cracking will be found. As stated by Mr. Doyle at the Workshop: "As we go to run these cracking tools, we're not sure what we're going to find, so we need to be prepared to find severe cracking, … and have a response that will make it safe immediately."[33]

24. FEI submits that RCIA is effectively asking the BCUC and FEI to "gamble" that severe cracking will not be found so that FEI does not have to spend money to mitigate the risk. This is not prudent. FEI's Application reflects what a prudent operator should be doing – responsibly planning to mitigate the risk of finding severe cracking when it runs the EMAT ILI tools. When service to, and the safety of, hundreds of thousands of customers in the Lower Mainland over the winter months is at stake with the potential loss of essential heating and hot water, it is only responsible to prudently plan to mitigate the consequences of this possibility.

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28 RCIA Final Argument, p. 13.

29 Exhibit B-5, BCUC IR1 11.1.

30 Exhibit A2-3, RCIA-Dynamic Risk IR1 7.1

31 Exhibit B-1, Application, Section 3.2.4.

32 Exhibit B-1, Application, p. 27.

33 Workshop Transcript, p. 80, ll. 20-23.

(c) FEI Has No Choice in its Approach for HUN ROE 1067 and there is no Evidence That FEI Can Duplicate this Effort for the Rest of the CTS

25. RCIA rests a significant portion of its argument on FEI's risk mitigation plan to address the potential for severe cracking on the HUN ROE 1067 line.[34] FEI explained the situation on the HUN ROE 1067 pipeline as follows:[35]

> All CTS pipelines, with exception of the HUN ROE 1067 pipeline, will be able to have their operating pressure reduced by 20 percent year-round without any supply shortfalls once the proposed PRS facilities are installed and the modifications to Huntingdon Control Station are completed as part of the CTS TIMC Project.
>
> As described in the response to BCUC IR2 36.1, the CTS has insufficient capacity when operating the HUN ROE 1067 pipeline with a 20 percent pressure reduction through the winter. This is because the HUN ROE 1067 serves as the backbone of the CTS, supplying a majority of gas to the other transmission pipelines in the CTS. Thus, a pressure reduction on the HUN ROE 1067 pipeline effectively results in a pressure reduction for the entire CTS. As a result, FEI will avoid implementing a pressure reduction on the HUN ROE 1067. Instead, FEI will prioritize the EMAT ILI run on the HUN ROE 1067 pipeline, work with the ILI vendor to accelerate data reporting, and ensure sufficient resources are available to perform all repairs on the HUN ROE 1067 pipeline to avoid the need for a pressure reduction. FEI does not anticipate any supply shortfalls on the CTS after the EMAT ILI runs.

26. As explained above, HUN ROE 1067 is in a unique position, as a pressure reduction of HUN ROE 1067 results in a pressure reduction on the entire CTS. However, FEI cannot operate the CTS with a 20 percent pressure reduction throughout the winter.[36] Therefore, FEI has a risk mitigation plan to work with the ILI vendor to accelerate data reporting on this pipeline, and ensure sufficient resources are available to perform all repairs on the HUN ROE 1067 pipeline so that it does not have reduced pressure on this line during the critical winter heating season.

27. RCIA mistakenly infers that FEI can carry out this mitigation plan for all the other pipelines in the CTS, stating without qualification: "FEI Has Capacity to Investigate Severe Cracking in One

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[34] RCIA Final Argument, pp. 12-13.

[35] Exhibit B-8, BCUC IR2 37.2

[36] Exhibit B-11, BCUC IR2 36.1.

Season".[37] RCIA cannot speak for FEI, its contractors and ILI vendors. RCIA has no evidence that FEI can work with the ILI vendor to accelerate data reporting for any other pipeline or that it is feasible for FEI to ensure there are sufficient resources available to perform potential repairs on the other pipelines. FEI submits that it cannot in fact ensure that this risk mitigation plan would be effective for all CTS pipelines and that relying on this plan would be uncertain and high risk for customers.

28. Moreover, the availability of a risk mitigation plan for the HUN ROE 1067 line should not be taken as a reason to not avoid the risk on all the other pipelines. In particular, the installation of the pressure control facilities avoids the risk of not being able to maintain service to customers if there is work that cannot be completed before the winter. Given the severity of this risk, avoiding the risk altogether using pressure reduction facilities is the prudent approach. While FEI's risk mitigation plan for HUN ROE 1067 is necessary for that pipeline, FEI should not unnecessarily put itself in the position of risking service to customers, and therefore the safety of its customers during the winter period, but instead should prudently and prospectively plan to avoid that risk.

(d) Pressure Reduction Will be Used for Future ILI Tool Runs

29. RCIA incorrectly claims that FEI changed its evidence, from saying in the Workshop that pressure reduction would only be required for the first ILI tool run, to saying in IRs that it would be required for future tool runs.[38] RCIA then draws its own conclusion that "the need for the pressure reducing facilities is for the initial EMAT ILI runs and they will not be required thereafter."[39] Contrary to the RCIA, FEI has not changed its position and FEI will in fact need pressure reduction for the initial and subsequent tool runs. As FEI submits in the section below, pressure reduction facilities will also have other ongoing system benefits.

30. RCIA incorrectly infers from the following exchange at the Workshop that FEI would only use pressure reduction in the initial run:

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[37] RCIA Final Argument, p. 12.

[38] RCIA Final Argument, pp. 15-16.

[39] RCIA Final Argument, p. 16.

> MR. RYALL: Yeah, where I was getting at is how would -- it sounded like you were going to have to reduce the pressure while doing the excavation and repair, and I was wondering how that was different than doing any repair to your line now that you would find from an existing ILI? I don't know, corrosion repair.
>
> MR. DOYLE: Okay, I think I understand, I think I understand your question a little bit better now. The difference between our traditional corrosion repairs is that we've run these tools before, we know roughly what we have, and we know roughly what to expect.
>
> There are sometimes some surprises, but you don't generally go from no corrosion to an extremely severe corrosion defect between runs, if that makes sense. As we go to run these cracking tools, we're not sure what we're going to find, so we need to be prepared to find severe cracking, such that -- and have a response that will make it safe immediately.

31. In the above response, Mr. Doyle does not say that pressure reduction would only be used for initial tool runs. Mr. Doyle indicates that running the tools for the first time has more potential for surprises, but Mr. Doyle also states that there are nonetheless sometimes still surprises in subsequent tool runs. RCIA ignores the potential for surprises on subsequent tool runs, and hyperbolically describes the risk as "vanishingly remote".[40] RCIA's assessment of this risk is baseless and should be rejected.

32. Further, RCIA ignores Mr. Doyle's previous statement explaining how the pressure reduction requirements for cracking are different, making the comparison to other ILI tool runs less relevant:[41]

> So, historically our typical approach has been to drop the pressure, if you will, at Huntingdon. With respect to these crack-like features, they're treated differently in the code, such that when you find a crack-like feature, you need to do a different type of calculation to figure out what the kind of safe pressure is. And if we find cracking that is sufficiently bad, if you will, or deep, the immediate response to make it safe as soon as we find it is to reduce the pressure to as low as 80 percent of the current operating pressure. And that has the effect of giving us a safety factor on top of its proven strength, until we can get in and expose and repair the crack.

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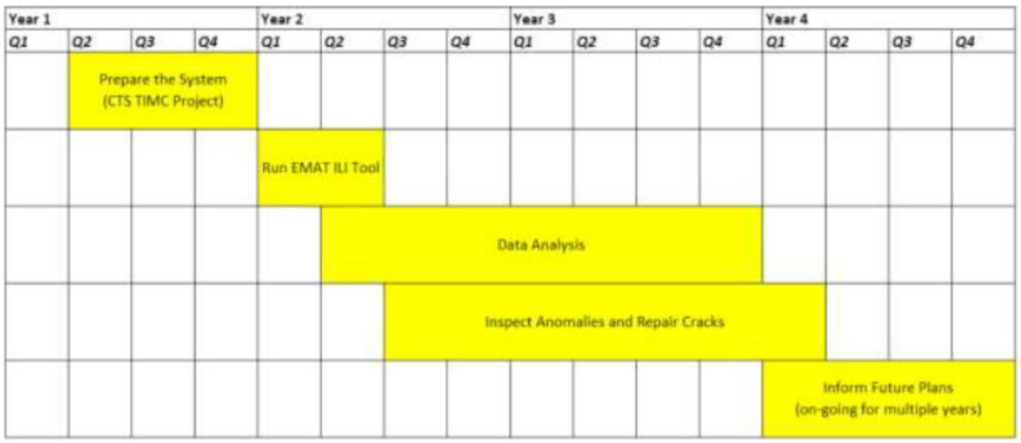
[40] RCIA Final Argument, p. 16

[41] Workshop Transcript, p. 79, ll. 6-19.

33. Consistent with the above, FEI explained in response to an IR how pressure reduction would be required to support both the initial and subsequent EMAT ILI run responses, as follows:[42]

> FEI does not consider it prudent to delay the Huntingdon, Nichol, Coquitlam, Roebuck and Livingstone Station facility modifications.
>
> FEI has determined that the facility modifications identified in Table 5-8 of the CTS TIMC Application are required to maintain safe and reliable service to customers while FEI conducts ongoing mitigation efforts to identify and address SCC and crack-like features on its transmission pipelines. This applies to both the initial EMAT ILI run and response, as well as to future EMAT ILI runs and responses. All of the modifications identified in Table 5-8 of the Application are required to meet the Project objective, whether to support the initial EMAT ILI run response, or to support future EMAT ILI run responses. [Emphasis added.]
>
> As shown in the Typical Timelines Gantt chart provided in the response to CEC IR1 33.1 (reproduced below), the initial EMAT ILI run must occur in Q1 or Q2 of a given year in order for the tool to travel at a velocity appropriate for collection of quality data while also leaving sufficient time in Q2 and Q3 to respond to any urgent features that are identified. Based on this timeline, FEI estimates that it would receive the initial tool run report in Q2 or early Q3. Were FEI to adopt the approach suggested by the RCIA, FEI would have a maximum of two quarters to undertake the facility modifications. This is not enough time to procure and install the required equipment, so FEI would have to purchase them before the ILI run and have them on hand.
>
> If the results identified a sufficient number of features, such that the modifications were required, FEI would then have to implement the facility modifications concurrently with the "Inspect Anomalies and Repair Cracks" activities. Both activities require the same resources, which are also involved in FEI's typical Operations activities. If FEI is unable to complete the required activities in the time remaining, this would increase the risk of a cracking feature growing to failure.
>
> As such, the minor potential deferral benefit of the installation of some facility modifications is outweighed by the risks associated with running the tools without an appropriate plan to respond to the findings, especially given the uncertainties associated with an initial EMAT ILI run.

[42] Exhibit B-15, RCIA IR2 18.1-18.5.



34. As noted above, while the uncertainties of the initial tool run increase the risk of finding severe cracking and needing pressure reduction, the risk does not disappear with subsequent tool runs. Therefore, contrary to the RCIA's claims, pressure reducing facilities are required for the initial and subsequent EMAT ILI runs.

35. RCIA has not filed any evidence to support its conclusion that the risk of surprises on subsequent tool runs is negligible or that pressure reduction will only be required during the initial tool runs. RCIA's claims are directly contradicted by FEI's evidence. As the operator of the system, FEI has a duty to provide safe and reliable infrastructure to its customers and the public at large, and therefore cannot plan based on the unfounded optimism exhibited by RCIA. FEI must assess risks realistically and take appropriate steps to mitigate those risks, as it has proposed to do in the Application.

(e) Availability of Pressure Reduction Facilities Will Have Other Ongoing System Benefits

36. The proposed pressure reduction facilities work will have other ongoing system benefits.

37. First, FEI will have the option to reduce the pressure on individual CTS pipelines, and maintain that reduction over the winter, to reduce risk due to findings by any of its ILI tools.

38. Second, having the capability to reduce pressure on components of the CTS will provide ongoing benefits to manage other risks, which is a benefit highlighted by recent flooding in the province. If flooding or other events damage FEI's pipeline, which could happen during the winter, the ability to reduce pressure to individual pipelines over the winter would be a significant

resiliency benefit. FEI would be able to reduce pressure on individual pipelines to mitigate risk of rupture on particular pipelines, and maintain service to customers.

(f) Work at the Huntingdon Control Station Should Not be Deferred

39. RCIA states that it supports pressure reduction work on the HUN NIC 762 line because it "recognizes that HUN NIC 762 is a large diameter line (which requires more effort and resources to excavate, assess, and repair) which is also 56 km long."[43] However, RCIA recommends that FEI wait until the after the ILI tool run to see if there are severe cracking indications before making modifications to facilitate pressure reduction on the HUN NIC 762 line.[44] Again, RCIA's argument is based on a discounting of risk to the system and unsupported conclusions. As canvassed above, FEI needs to add the pressure reduction capabilities to mitigate the risk of finding severe cracking. FEI does not support RCIA's apparent disregard for this risk.

40. Further, deferring work at the Huntingdon Control Station would achieve minimal cost savings and would be challenging, as FEI would need to purchase the required equipment in advance and have it on hand, and then implement the facility modifications concurrently with the inspection and correction activities, which require the same resources, which are also involved in FEI's typical Operations activities.[45] FEI submits that taking such an approach would not be prudent. Installing the pressure reduction equipment in advance of the ILI tool run avoids the risk and is the prudent course of action.

(g) RCIA Arguments Are Contradicted by the Only Expert Evidence in this Proceeding

41. In summary, FEI submits that RCIA's recommendation not to install pressure reduction capabilities is a high-risk approach from a public safety perspective based on unfounded inferences and mischaracterizations of FEI's evidence. RCIA's recommendations are directly contrary to the recommendations of FEI, and yet RCIA has not filed any engineering or other evidence to support that its approach is reasonable from a safety and reliability perspective. What RCIA frames as cost-effective is in fact cutting corners and would impose unjustifiable risk

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[43] RCIA Final Argument, p. 16.

[44] RCIA Final Argument, p. 16.

[45] Exhibit B-15, RCIA IR2 18.1-18.5.

on FEI's customers. FEI's proposal to improve its pressure reduction capabilities on the CTS is a reasonable plan to the mitigate risk of finding severe cracking, will have ongoing system benefits and should be approved.

C. Replacing Heavy Wall Segments Is Necessary and Cost-Effective

42. RCIA's recommendation that the 13 segments of heavy wall pipe should not be removed as part of the CTS TIMC Project should be rejected. The 13 heavy wall segments[46] need to be replaced to prevent speed excursions resulting in insufficient data downstream of the heavy wall segments that would result in FEI being unable to assess the safety risk posed by cracking to over 5 kilometres of pipeline in proximity to populated areas.[47] FEI has quantified the safety risk posed by cracking as the highest safety risk to the CTS, and EMAT ILI is an effective industry standard approach to mitigating that risk. As cracking is a time-dependent threat, meaning that it increases with time, leaving this risk unmitigated for a portion of the CTS is not prudent. FEI must act reasonably and proceed to mitigate the significant safety risk of a rupture and widespread loss of gas service to customers, including emergency services, businesses and critical care facilities, in accordance with industry standards and its obligations to maintain the ongoing safety and integrity of its infrastructure.

43. Dynamic Risk was asked to "discuss the benefits and drawbacks of proactively modifying pipelines (heavy wall sections) to avoid speed excursions in comparison to modifying pipelines to address actual speed excursions identified after an EMAT ILI tool run." Dynamic Risk's response is clear that proactively modifying heavy wall segments is the superior approach:[48]

> Speed excursions of the EMAT tool beyond ILI vendor specifications are to be avoided as exhibiting a potential to cause degraded data, impacting the minimum detection length and probability of identification (POI) of features. Proactively assessing and modifying pipelines to avoid the impact variability of speed excursions prior to EMAT ILI provides the following benefits:

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46 Exhibit B-1, Application, Figure 5-4 and p. 92.

47 Exhibit B-5, BCUC IR1 14.3; Exhibit B-1, Application, p. 92.

48 Exhibit A2-2, BCUC-Dynamic Risk IR1 1.1.

- Reduces the potential for a "failed" or incomplete EMAT inspection resulting in a requirement for a scheduled re-survey and delayed receipt of ILI data necessary to drive timely risk program decision making,

- Reduces the potential for "blind spots" and uncertainty within the ILI data, resulting in decreased excavations and pipe examinations being required for feature analysis

- Reduces the potential for the presence of false negatives (non-detected or mis-identified crack defects) to cause risk program uncertainty.

Proactively modifying the pipeline prior to EMAT ILI exhibits the following drawbacks:

- Construction related activities to replace pipe sections extend the ILI EMAT program preparation time required and have a potential to negatively impact on program scheduling.

Modifying pipelines to address actual speed excursions identified following an EMAT ILI tool run exhibits the following drawbacks:

- Increases the potential for an EMAT re-survey being required to capture missing or degraded data within overspeed areas, resulting in delayed risk program decision making.

- Identified EMAT tool overspeed areas will require additional investigation in alignment with the procedure, "in-ditch inspection of EMAT ILI tool blind spots".

- Areas of overspeed, depending on location may need to be excavated and subjected to NDE (non-destructive examination) for additional analysis.

44. Notably, Dynamic Risk did not identify any benefits of modifying pipelines following an EMAT ILI tool run. FEI agrees.

45. In the subsections below, FEI responds to the RCIA's particular arguments regarding the removal of the 13 heavy wall segments of pipe.

(a) It is Certain That There Will be Insufficient Data Downstream of the Heavy Wall Pipe Segments

46. RCIA argues that removing the heavy wall segments may not be needed because EMAT ILI tools perform better than MFL.[49] However, FEI has already taken into account the performance of EMAT ILI tools and excluded those heavy wall segments where there is uncertainty as to whether EMAT ILI tools will produce insufficient data from the scope of the Project. Mr. Doyle described this at the Workshop:[50]

> We did in fact look at that. So there are more than 13 locations in the coastal transmission system that have heavy wall or changes in wall thickness that do cause some sort of speed excursion. The 13 that we've located here are the ones that are expected to cause the worst speed excursions once we've controlled for our understanding of how the EMAT tool operates and whatnot.
>
> Using our modeling based off of the CFL -- or the CMFL, sorry, tool information, these are the ones that really need to be addressed. If we have speed excursions on the downstream side of some of the other heavy wall pipe that we're leaving in there, after we've run the tool we'll be in a better position to understand what we're missing or what the issue with the data is. It may only be, you know, a metre or two or ten, in which case it can be pretty quick to dig it up and inspect it as opposed to trying to guess how long the speed excursion is going to be based off of the MFLC data.

47. RCIA selectively quotes from the Application[51] and the IR response below[52] suggesting that the superior performance of EMAT ILI tools means that the 13 heavy wall segments do not need to be replaced. However, this evidence is describing how FEI was able to exclude heavy wall segments from the scope of the Project after taking into account the performance of EMAT ILI tools. The IR response states:[53]

> Based on observations of EMAT ILI tool behavior during the pilot project, FEI was able to refine the evaluation criteria used to analyze historical MFL tool data to anticipate EMAT tool behaviour. This allowed FEI to identity and select heavy wall segments with a high probability of causing EMAT tool speed excursions and

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49 RCIA Final Argument, pp. 17-18.

50 Workshop Transcript, p. 90, l. 10 to p. 91, l. 3.

51 RCIA Final Argument, p. 17, last paragraph.

52 RCIA Final Argument, p. 18, first line.

53 Exhibit B-5, BCUC IR1 13.1.

include them in the Project, while also deferring the replacement of other heavy wall segments until after reviewing data collected during the first run.

The table below lists the number of instances where previous MFL ILI tool runs by FEI exhibited speed excursions, the length of heavy wall pipe that caused them, and the length of pipe where the quality of data was affected as a result of the speed excursions, organized by pipeline. The 13 speed excursion events driving the 13 pipeline alterations that are part of the Project scope are not included in the table below.

Pipeline ID	Length (km)	Number of speed excursion events	Approximate length of heavy wall piping causing speed excursions (m)	Approximate length of pipe affected by speed excursions (m)
TIL BEN 323	5.9	1	682	198
CPH BUR 508	17	12	232	990
LIV COQ 323	34.9	10	1,693	990
TIL FRA 508	9.6	6	1,739	1,235
HUN NIC 762	56.4	3	58	181
HUN ROE 1067	55.7	1	16	63
NIC FRA 610	24.3	8	1,782	1,012
TIL LNG 323	1.7	1	48	10
ROE TIL 914	12.8	6	1,771	527
NIC PMA 610	4.9	2	77	130
LIV PAT 457	29.8	11	474	2,801

Given the extent of speed excursions exhibited by the MFL tools listed in the table above, FEI expects that the EMAT tool could perform better when compared to the MFL tools and therefore collect viable data. However, the magnitude of these speed excursions cannot be determined until the first tool run is complete and as such, to ensure a prudent use of funds and avoid doing work unnecessarily, FEI did not include them in the scope of the Project. If the EMAT tool exhibits a speed excursion during the baseline run at one of these locations, FEI may replace the heavy wall piping causing the speed excursion to avoid a repeat of the same scenario for future runs or it may choose to address the integrity of the affected segment of pipe through the use of pipeline replacement or pipeline exposure and recoat alternatives. FEI will evaluate the method that will be applied to mitigate SCC on a case-by-case basis to determine the most cost effective solution. [Emphasis added.]

48. In response to FEI's efforts to reduce the scope of the Project, the CEC submits:[54]

[54] CEC Final Argument, para. 95.

> The CEC congratulates FEI on conducting its Pilot Project in a manner that enabled it to reduce project scope in advance of engaging in unnecessary cost-causing activities.

49. RCIA, however, takes FEI's evidence as suggesting that none of the heavy wall segments need to be removed.[55] This is incorrect. The removal of the 13 heavy wall segments, as proposed, is required to successfully complete EMAT ILI runs of the CTS and to ensure the collection of useful and meaningful data. FEI has only proposed the removal of those heavy wall segments where it is certain there will be speed excursions. FEI identified the locations based on a detailed review of historical ILI reports, as-built information, discussions with ILI vendors regarding the pipelines, and learnings from the pilot EMAT ILI runs.[56] Therefore, FEI has in fact conservatively scoped the Project and deferred removal or alteration of pipeline components with a minor or moderate affect on the speed until after the baseline EMAT ILI runs.[57] As FEI knows that the 13 identified heavy wall segments will result in speed excursions and insufficient data, there is no reason to delay taking action to remove these segments.

(b) Over Five Kilometre Blind Spot On the CTS is Unacceptable

50. RCIA argues that the removal of the heavy wall segments is not needed because the downstream portion represents a "small portion" of the pipelines.[58] FEI disagrees. FEI would have inadequate data on cracking for over 5 kilometres of the CTS in proximity to populated areas.[59] The time-dependent risk of cracking applies to this length of pipeline just as much as any other portion. No intervener disagrees with the risk posed by cracking as described by FEI and JANA, and endorsed by Dynamic Risk. RCIA's proposal would again ask FEI to gamble that there is no cracking present where data is inadequate. FEI submits that it is an unacceptable response by a prudent operator to leave over 5 kilometres of pipeline of the CTS in proximity to populated areas untested by EMAT ILI.

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55 RCIA Final Argument, pp. 12-13.

56 Exhibit B-1, Application, pp. 91-92.

57 Exhibit B-1, Application, p. 90, ll. 10 to 18.

58 RCIA Final Argument, p. 18.

59 Exhibit B-5, BCUC IR1 14.3; Exhibit B-1, Application, p. 92.

(c) Other Factors Potentially Affecting ILI Tool Runs Does Not Justify Retaining Known Blind Spots

51. RCIA argues that a reason not to remove the heavy wall segments is that there are factors other than the expected speed excursions which affect the coverage of ILI tools runs.[60] This is not a logically sound argument. FEI has explained that, as pipelines in the CTS are interconnected, it is difficult to predict where speed excursions may occur because of operational conditions on the day of the ILI tool run.[61] However, the fact that operational conditions on a day may result in some speed excursions is not a logical reason not to take action to remove heavy wall segments that are certain to cause speed excursions and thereby prevent FEI from identifying whether there is significant cracking on these pipelines.

52. Operational conditions on the day that may impact ILI tool runs do not result in permanent blind spots like heavy wall pipe segments do. Furthermore, the elimination of the heavy wall pipe segments as part of the CTS TIMC Project, as well as the improved flow control capabilities, will improve FEI's ability to run other ILI tools by minimizing speed excursions and reducing the distances where FEI cannot obtain high quality data.[62] Thus, the CTS TIMC Project as proposed will help FEI reduce the impacts of operational conditions on the quality of ILI tool runs.

53. RCIA's observations on the variability in ILI tool runs are explainable and have no bearing on the fact that the 13 heavy wall segments identified by FEI will create blind spots in the EMAT ILI data. RCIA states: "Despite LIV PAT 457 not having any heavy wall segments and the CPH BUR 508 having five distinct locations with expected speed excursions, the EMAT ILI of CPH BUR 508 returned more complete data."[63] There are two factual errors in this statement:

- There are in fact heavy wall segments on LIV PAT 457. Specifically, it has 474 metres of heavy wall pipe (which FEI is not proposing to remove) and 2,801 metres of pipe where

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60 RCIA Final Argument, p. 19.

61 Exhibit B-5, BCUC IR1 14.3.

62 Exhibit B-8, RCIA IR1 11.5.

63 RCIA Final Argument, p. 19.

MFL tools experienced speed excursion.[64] This heavy wall pipe, along with operational conditions on the day, may explain why the EMAT ILI on this segment returned 91.4 percent[65] (rather than 100 percent).

- The portion of CPH BUR 508 on which FEI ran the pilot is referred to as COQ NOO 508 (see Figure 5-3 of the Application) and has only two (rather than five) heavy wall segments that FEI proposes to remove (see Figure 5-4 of the Application). The number of heavy wall segments on the COQ NOO 508 segment that FEI is not proposing to remove is not on the record; however, the entire CPH BUR 608 line has only 232 metres of heavy wall pipe segments that FEI is not proposing to remove and 990 metres of pipe where MFL ILI tools returned insufficient data, which is significantly less than LIV PAT 457.[66] This, along with more favourable operational conditions on the day, may explain why the EMAT ILI on this segment returned 97.9% high quality data.

54. RCIA also observes that "on the TIL FRA 508 line, a MFL-C ILI obtained valid data over only 78.8% of the line. However, a subsequent MFL-A ILI obtained valid data over 100% of this same line."[67] The fact that there is variability in the performance of MFL-A vs. MFL-C ILI tools is something that FEI investigated through its pilot project:[68]

> Preliminary results of the LIV PAT 457 provided FEI with valuable insight into the behaviour of the EMAT ILI tool performance and especially how it performed with respect to the MFL-A and MFL-C tools. In general, the EMAT ILI tool run confirmed that in a majority of cases, the same features were causing speed excursions in MFL-C and EMAT ILI tools which enabled FEI to assess MFL-C tool data for pipelines where EMAT ILI data was not available.

55. As indicated above, one of the learnings from FEI's pilot project was that the EMAT ILI tools experienced speed excursions when the MFL-C tools experienced excursions.[69] FEI proposal to replace 2 heavy wall segments on the TIL FRA 508 line[70] is consistent with the MFL-C ILI data, which was only 78.8 percent complete.

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64 Exhibit B-5, BCUC IR1 13.1; Exhibit B-1, Application, p. 91.

65 Exhibit B-8, RCIA IR1 10.1.

66 Exhibit B-5, BCUC IR1 13.1; Exhibit B-1, Application, p. 91.

67 RCIA Final Argument, p. 19.

68 Exhibit B-1, Application, p. 90.

69 Exhibit B-1, Application, p. 90.

70 Exhibit B-1, Application, p. 91.

(d) EMAT ILI Data from Rest of Pipeline Cannot be Used to Infer Condition of Segments Downstream of Heavy Wall Segments

56. RCIA argues that: "If no SCC is found on the initial EMAT ILI, or SCC is found that is not a critical threat to the integrity of the line, then FEI does not need to make the substantial expenditure to remove the heavy wall segments."[71] This is incorrect. FEI will not be able to use the EMAT ILI data on other parts of the CTS to infer the condition of the pipeline where it does not have EMAT ILI data. Section 3.2.5 of the Application discusses how the requirements for SCC initiation and growth are site specific in nature. This means that a lack of findings on one segment of pipeline does not predict a lack of findings on a different segment of pipeline.[72]

57. RCIA also incorrectly states that its approach "is effectively what FEI is proposing to do with heavy wall segments which it expects to have a minor or moderate effect on tool speed."[73] FEI is not taking RCIA's approach. Rather, if the EMAT tool exhibits a speed excursion during the baseline run due to heavy wall pipe, FEI may replace the heavy wall piping causing the speed excursion to avoid a repeat of the same scenario for future runs or may choose to address the integrity of the affected segment of pipe using pipeline replacement or pipeline exposure and recoat alternatives. FEI will evaluate the method that will be applied to mitigate SCC on a case-by-case basis to determine the most cost-effective solution.[74]

58. In short, FEI cannot use the condition of other parts of the pipeline to deduce the condition of blind spots. The integrity risk due to cracking in these blind spots will be permanent until the heavy wall pipe is removed, and speed excursions are eliminated. As cracking is a time-dependent threat, meaning that it increases with time, leaving this risk to the CTS unmitigated is not prudent.

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71 RCIA Final Argument, p. 19.

72 Exhibit B-8, RCIA IR1 12.2.

73 RCIA Final Argument, p. 19.

74 Exhibit B-5, BCUC IR1 13.1.

(e) Treatment of Pipelines without EMAT ILI Tools Is Irrelevant

59. Contrary to RCIA's submission, FEI's approach to the 106 smaller pipelines is not a reason to accept permanent blindness to cracking threats on the CTS. FEI has no option with the smaller pipelines due to the lack of EMAT ILI tools. As there are EMAT tools for the CTS pipelines, FEI must keep pace with industry standard approaches and adopt EMAT ILI. If there were to be a rupture on a CTS pipeline downstream of a heavy wall segment where FEI knew it was blind, RCIA's recommended cost cutting measure would be a catastrophic error. RCIA's recommendation to forgo taking the industry standard approach for over 5 kilometre of pipelines in proximity to populated areas imposes significant and unjustifiable safety risk to the public, customers and FEI.

(f) SCCDA Is Not a Reasonable Alternative

60. Contrary to RCIA's suggestion, SCDDA is not a reasonable alternative. As FEI submitted in Final Argument, SCCDA cannot be counted on to reliably identify the most significant, and therefore most likely to fail, cracking threats. This is because cracking can be highly randomized and unpredictable along susceptible pipelines, and existing assessment approaches (e.g., soil models) have limited value in pin-pointing the location of the deepest cracks.[75] SCCDA was not developed to manage crack-like imperfections in seam welds and is not viewed by FEI's peers as effective in comparison to the other alternatives.[76] Dynamic Risk similarly concludes: "While SCCDA is a suitable method for determine [sic] a pipeline's potential susceptibility to SCC, this method will not reliably identify or size the cracking on the CTS pipelines and should therefore not be considered as an alternative to EMAT ILI."[77] While SCCDA can be used to assess lines to determine if cracking is a potentially significant threat, FEI has already identified that cracking is a credible threat on CTS pipelines.[78] Thus, RCIA's recommendation to use SCCDA is effectively a recommendation to do nothing, which is not prudent and should be rejected.

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75 Exhibit B-1, Application, p. 71.

76 Exhibit B-1, Application, pp. 71-72.

77 Exhibit A2-1, Independent Report, p. 13; see also Exhibit A2-6, RCIA-Dynamic Risk IR2 9.2.

78 Exhibit B-1, Application, pp. 71-72.

(g) Timing of FEI's Application is Irrelevant

61. RCIA agrees that FEI should not delay the CTS TIMC Project, but argues that FEI can wait until the second round of ILI tool runs to consider removing heavy wall pipe segments, and argues that the timing of FEI's application means there is no urgency to do so.[79] The fact that FEI took the time necessary to bring forward a comprehensive application, does not mean that FEI can or should delay addressing what is now a known and confirmed integrity risk for which industry standard tools are available to mitigate. FEI filed the Application once industry knowledge and technology matured sufficiently for adoption on its system, for industry practice to move in this direction, and after conducting a quantitative risk assessment to justify its approach. Once the risk has been identified, and the appropriate approach determined, FEI must prudently take the necessary steps. As stated by Dynamic Risk:[80]

> Based on the SCC crack growth assessment performed by JANA in conjunction with the University of Alberta, the EMAT ILIs should commence immediately following the pipeline modifications in 2025. The eleven (11) lines to be inspected should be prioritized based on the SCC risk model, using the analysis performed in the SCC growth study, with actual operating conditions of each pipeline segment.

62. Given the known risk of cracking to the CTS, RCIA's recommendations disregard the potential significant safety and reliability consequences to the public and customers and would not be prudent.

(h) Replacement of Heavy Wall Segments is Cost-Effective

63. Contrary to RCIA's submission, replacing the 13 heavy wall segments is cost-effective. Fundamentally, this is because the speed excursions caused by these segments create blind spots where FEI will not be able to assess the condition of the pipeline. The risk of failure due to cracking increases over time, and poses a significant risk to the public, customers and FEI. Therefore, it is not reasonable to leave over 5 kilometres of pipeline in proximity to populated areas unchecked by EMAT ILI. FEI has the capabilities to mitigate this risk and should do so. While

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[79] RCIA Final Argument, p. 23.

[80] Exhibit A2-3, RCIA-Dynamic Risk IR1 3.3

FEI recognizes that there is a cost to this scope of work, the public interest is not served by cutting corners as RCIA has suggested.

D. FEI Has Correctly Scoped the CTS TIMC Project

64. Based on the foregoing points in response to RCIA's Final Argument, FEI submits that the BCUC should reject the RCIA's recommendations. FEI has reasonably and cost-effectively scoped the CTS TIMC Project to ensure that it can prudently manage the significant safety risk to the public and reliability risk to customers posed by cracking threats. FEI has refined the scope of flow control work to the minimum required to ensure it can effectively use EMAT ILI tools from multiple vendors where possible and has already reduced the scope of the Project to exclude items such as heavy wall pipe segments that may not reduce the quality of EMAT ILI tool runs. The further reduction in scope recommended by RCIA will come with increased safety risks to the public and increased reliability risks to customers that are not justifiable. The proposed scope of the CTS TIMC Project appropriately reflects FEI's role as a prudent operator responsible for the safe and reliable operation of the gas distribution system and should be approved as set out in the Application.

PART THREE: REPLY TO BCOAPO AND CEC

65. In this part, FEI responds to the comments and recommendations of BCOAPO and CEC.

A. The Assessment of the Public Interest Through the CPCN Process is Robust

66. BCOAPO suggests the BCUC should develop a robust process to assess the value of incremental improvements in risk to fully assess the cost and benefit to ratepayers.[81] FEI submits that the cost and benefits associated with a given project, including the value of incremental improvements in risk, are within the scope of a CPCN application process through the assessment of the public interest. In particular, section 2(ii) of the BCUC's CPCN Guidelines states that a CPCN application should contain: "A comparison of the costs, benefits and associated risks of the project and feasible alternatives, including estimates of the value of all of the costs and benefits of each alternative or, where these costs and benefits are not quantifiable, identification of the

[81] BCOAPO Final Argument, p. 7.

cost area or benefit that cannot be quantified."[82] The CPCN application process is robust, providing an effective and efficient means of assessing the cost and benefits of a project as a whole.

67. Moreover, in this proceeding, FEI explained that the risk benefits and cost of projects are assessed on an individual project basis,[83] and responded to a number of IRs regarding the incremental improvements in risk provided by the CTS TIMC Project.[84] While residual system risk cannot be reduced to zero,[85] EMAT ILI and subsequent integrity management activities will reduce the risk of unplanned or catastrophic failures due to cracking threats to the extent that EMAT ILI detects cracking threats on FEI pipelines over their lifecycle.[86]

B. FEI's Alternatives Analysis is Not Contested

68. Interveners, including the CEC, RCIA and BCOAPO agree with FEI's alternatives analysis, and the selection of EMAT ILI (Alternative 4) as the preferred alternative.[87] CEC makes two comments in this regard, which are each addressed below:

- CEC questions whether FEI's use of a 65-year average service life (ASL) for transmission main assets is appropriate as the ASL for this kind of asset could be diminishing due to changes in government policy related to the reduction of GHG emissions.[88] The ASL of FEI's transmission mains, including those on the CTS, was determined in FEI's most recent 2017 Depreciation Study. Even so, pipeline assets, if maintained appropriately and continually, can be used indefinitely.[89] FEI submits that there is no basis for using a shorter ASL and, in any case, FEI agrees with the CEC that that the length of the ASL would not change the outcome of the alternatives analysis.[90]

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82 BCUC CPCN Guidelines, p. 4. Online: https://docs.bcuc.com/documents/Guidelines/2015/DOC_25326_G-20-15_BCUC-2015-CPCN-Guidelines.pdf.

83 Exhibit B-6, BCOAPO IR1 5.2.

84 Exhibit B-6, BCOAPO IR1 5.1-5.3.

85 Exhibit B-6, BCOAPO IR1 5.2.

86 Exhibit B-6, BCOAPO IR1 5.1.

87 BCOAPO Final Argument, p. 10; CEC Final Argument, para. 79; RCIA Final Argument, p. 6.

88 CEC Final Argument, para. 62-67.

89 Exhibit B-5, BCUC IR1 24.1 and 24.2.

90 CEC Final Argument, para. 67.

- CEC submits that there is a possibility that FEI will use a shorter than 7-year interval for the running of its ILI tools[91] which would potentially increase costs of Alternative 4.[92] FEI submits that it has appropriately analyzed the costs of Alternative 4 based on its expectation to run an EMAT ILI tool eight to ten times per pipeline over the 65-year post-project analysis period.[93] In any case, FEI agrees with CEC that even if O&M costs were to double (hypothetically), its Alternative 4 remains "overwhelmingly more cost-effective" than other alternatives.[94]

C. Dynamic Risk Reasonably Did Not Conduct Material Work Outside its Terms of Reference

69. While BCOAPO acknowledges that "Dynamic Risk can only be expected to perform work within its terms of reference" and that "Dynamic Risk held true to this line from the Terms of Reference", BCOAPO is nonetheless concerned with Dynamic Risk's inability or unwillingness to respond to certain information requests.[95] FEI submits that the purpose of information requests to Dynamic Risk should be to test Dynamic Risk's filed evidence, and that the information requests referenced by BCOAPO would have required Dynamic Risk to conduct a material amount of further work and analysis outside its Terms of Reference (e.g., benchmarking FEI's existing integrity management practices), which it may not have been possible to complete within the time period for responding to information requests. Dynamic Risk acted reasonably in not providing the requested information in these cases. FEI notes that no party raised any concern with the BCUC during the evidentiary phase of this proceeding.

D. Deferral of Ongoing O&M Costs Are Properly the Subject of Rates Review Proceedings

70. The CEC observes that the EMAT ILI runs enabled by the CTS TIMC Project will result in increases in O&M costs, and that while this is acceptable, these costs could be capitalized in a rate base deferral account with amortization occurring over the term of the run, and successively over the life of the Project.[96] FEI is not opposed to such treatment, and consistent with CEC's acknowledgement that these costs will be filed in future annual review or revenue requirements

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91 CEC Final Argument, paras. 71-72.

92 CEC Final Argument, para 75.

93 CEC Final Argument, para. 69.

94 CEC Final Argument, para. 77.

95 BCOAPO Final Argument, p. 16.

96 CEC Final Argument, para. 122.

proceedings, submits that future annual review or revenue requirements proceedings would be the proper forum for a determination of the treatment of these costs.

71. CEC also proposes that costs associated with data collection from EMAT ILI runs be captured in a rate base deferral account as the data is gathered on each run and amortized over the remaining life of the pipeline inspected.[97] FEI does not agree that the proposed approach can be said to "match the costs to the benefits of avoided pipeline replacement",[98] and that linking such deferrals to the underlying pipeline asset would result in an unusually long amortization period. As with the treatment of ongoing O&M costs (addressed above), FEI submits that this matter is more appropriately addressed in future annual review or revenue requirements proceedings when these costs arise.

E. Proposed Amortization Period for Development Costs is Reasonable

72. FEI is seeking to transfer the portion of the non-rate base TIMC Development Costs deferral account related to the CTS TIMC Project to a new rate base CTS TIMC deferral account on January 1, 2023, with amortization over a three-year period commencing at that time.[99] CEC instead proposes an amortization period of at least seven years or as long as 65 years from the pipeline in service date, and that the consideration of the appropriate amortization period should generally match the costs to the associated benefits provided.[100] Similarly, BCOAPO submits that the BCUC should consider directing FEI to amortize the costs over a longer period so that current ratepayers are not paying for development costs that will benefit ratepayers beyond the next three years.[101] As FEI explained in its Final Argument, FEI's proposed three-year amortization period is reasonable and consistent with past practice.[102]

73. However, FEI is not opposed to a longer amortization period as a mechanism for managing any rate increases and considers CEC's proposal of a seven-year amortization period to be

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97 CEC Final Argument, para. 149.

98 CEC Final Argument, para. 149.

99 Exhibit B-5, BCUC IR1 26.2.

100 CEC Final Argument, paras. 180, 182.

101 BCOAPO Final Argument, p. 12.

102 FEI Final Argument, p. 38.

reasonable. FEI is concerned about amortizing these costs over a longer period. In particular, an amortization period extending as long as 65 years would be unusual compared to past practice and would do little to benefit ratepayers. This is because any rate mitigation benefits increasingly diminish with the length of the amortization period, and have incremental higher carrying costs.

F. Development Costs Were Prudently Incurred

74. Despite overwhelming evidence supporting the need for the CTS TIMC Project, BCOAPO submits that, in the event FEI's application for a CPCN is rejected, the BCUC ought to closely examine the Project's associated development costs to ensure they were prudently incurred.[103] While BCOAPO does not advocate for "complete disallowance", it nonetheless implies that FEI has pursued the TIMC project in pursuit of its "corporate and shareholders' interests".[104] There is no evidence to support this implication, and indeed, there is evidence on the record that demonstrates that the TIMC project is in the interest of all British Columbians, including FEI's ratepayers, and necessary for FEI to maintain compliance with its regulatory obligations.[105] In particular, the BCOGC has previously directed FEI to conduct a segment-by-segment risk assessment of its pipelines. If FEI were not taking steps to meet its legal and regulatory obligations, it is possible that the BCOGC would issue a direction to FEI requiring the activities enabled by the CTS TIMC Project.[106] In alignment with BCOAPO's submission, this must form part of "the broader context within which this Application sits".[107] BCOAPO uses the recent CleanBC Roadmap to 2030 as an example of a relevant contextual consideration. FEI first notes that the Roadmaps includes renewable gases as a pathway to reduce emissions, indicating an ongoing role for FEI's gas distribution system in this Province. However, the CleanBC Roadmap was released on October 25, 2021 and would not be relevant to a review of the prudence of the Project's development costs, as FEI had no knowledge of the CleanBC Roadmap when it incurred these costs. The Roadmap is also irrelevant as the TIMC project is driven by the safety risk posed

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103 BCOAPO Final Argument, p. 12.

104 BCOAPO Final Argument, p. 13.

105 Exhibit B-5, BCUC IR1 5.1.

106 Exhibit B-5, BCUC IR1 5.1.

107 BCOAPO Final Argument, p. 13.

by cracking threats, and as BCOAPO states, "are likely defensible as undertaking proactive examinations of potential improvements or necessary remediation on its system."[108]

G. ITS CPCN Project Will Stand on its Own Merits

75. BCOAPO is concerned that there is no cost estimate, however preliminary, for the Interior Transmission System (ITS) TIMC project.[109] The ITS TIMC Project remains under development, and therefore a project cost estimate is premature at this time.[110] FEI submits that the costs of the ITS TIMC project are irrelevant to the public interest assessment, which is the subject of this Application. FEI expects to file a separate CPCN application for the ITS TIMC project in 2022 following the receipt of a decision on the CTS TIMC Application.[111] That application will be subject to a fulsome and distinct review by the BCUC, and if approved, will be approved on its own merits. Finally, FEI has confirmed that it has no other projects currently planned to address cracking threats to its transmission pipelines[112] and, as such, the CTS TIMC Project cannot be said to represent a "test case for large scale Applications" as asserted by BCOAPO.[113]

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108 BCOAPO Final Argument, p. 13.

109 BCOAPO Final Argument, p. 8.

110 Exhibit B-5, BCUC IR1 29.1; Exhibit B-6, BCOAPO IR1 4.1.

111 Exhibit B-11, BCUC IR2 34.5.

112 Exhibit B-7, CEC IR1 15.1.

113 BCOAPO Final Argument, p. 8.

PART FOUR: CONCLUSION

76. FEI submits that the CTS TIMC Project is in the public interest and that the BCUC should grant a CPCN for the Project and approve FEI's proposed deferral account to capture the costs of preparing the Application and evaluating the feasibility of and preliminary stage development of the Project.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

Dated: November 26, 2021

[original signed by Chris Bystrom]
Chris Bystrom
Counsel for FortisBC Energy Inc.

November 26, 2021

[original signed by Niall Rand]
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