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**BY ELECTRONIC FILING**

British Columbia Utilities Commission  
Sixth Floor, 900 Howe Street  
Vancouver, BC V6Z 2N3

**Attention Erica M. Hamilton**  
**Commission Secretary**

Dear Sirs/Mesdames:

**Re: FortisBC Energy Inc. - Application For a Certificate of Public Convenience  
and Necessity for the Lower Mainland Intermediate Pressure System  
Upgrade Projects**

In accordance with the Regulatory Timetable set for this proceeding, we enclose for filing the electronic version of the Reply Submission of FortisBC Energy Inc.

Fourteen hard copies of the enclosed will follow by courier.

Yours truly,

**FASKEN MARTINEAU DuMOULIN LLP**

*[original signed by Tariq Ahmed]*

Tariq Ahmed

TA/vde  
Enclosure

**BRITISH COLUMBIA UTILITIES COMMISSION**  
**IN THE MATTER OF THE UTILITIES COMMISSION ACT**  
**R.S.B.C. 1996, CHAPTER 473**

**and**

**AN APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND  
NECESSITY FOR THE LOWER MAINLAND INTERMEDIATE PRESSURE  
SYSTEM UPGRADE PROJECTS**

**REPLY SUBMISSION OF  
FORTISBC ENERGY INC.**

**August 14, 2015**

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## **PART ONE: INTRODUCTION**

1. This Reply Submission of FEI addresses issues raised by British Columbia Old Age Pensioners' Organization and others ("BCOAPO") and the Commercial Energy Consumers Association of British Columbia ("CEC") (in these Reply Submissions referred to as the "Interveners") in their submissions. Abbreviations used in FEI's Final Submission dated July 17, 2015 are also used in this Reply Submission. As FEI has focussed on the main issues raised in the Intervener submissions, FEI's silence on a matter should not be construed as agreement.

2. The Projects have been accepted or not been persuasively challenged by the Interveners. The areas at issue are limited and focused, and the Projects should be approved for the reasons set out in FEI's Final Submission and with the conditions and attributes described therein.

## **PART TWO: REPLY TO CEC SUBMISSION**

3. CEC acknowledged that the proposed Projects were appropriately developed and costed. CEC recommended that the Commission approve the Coquitlam Gate IP Project and the Fraser Gate IP Project as proposed by FEI with the considerations as outlined in CEC's Submission. The primary point of contention raised by CEC is its recommendation that the Commission address the issue of the capital exclusion materiality threshold for PBR.<sup>1</sup> Specifically, CEC recommends that the Commission make a determination as to whether or not the capital exclusion criteria as very recently determined by the Commission in Order G-120-15 (the "Capital Exclusion Decision")<sup>2</sup> apply to the Projects.<sup>3</sup> FEI submits that such a determination is not necessary as:

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<sup>1</sup> CEC Submission, p. 1.

<sup>2</sup> *In the Matter of FortisBC Energy Inc. and FortisBC Inc. Multi-Year Performance Based Ratemaking Plans for 2014 through 2019 Approved by Decisions and Orders G-138-4 and G-139-14 Capital Exclusion Criteria under PBR – Compliance Filing*, Order No. G-120-15, July 22, 2015.

<sup>3</sup> CEC Submission, p. 31.

- (a) It is clear from the language of the Capital Exclusion Decision that it was not intended to apply to the Projects; and
- (b) The Capital Exclusion Decision was issued after the Application for a CPCN for the Projects was filed and as such, it is not applicable to the Projects.

4. Though the above considerations are dispositive of the matter, in any event, the Projects are rationally grouped under one CPCN.

**A. Capital Exclusion Decision, On Its Face, Does Not Apply**

5. A review of the Capital Exclusion Decision makes clear that the Projects were intended to be excluded capital under PBR as there was no associated adjustment to Base Capital for projects between the then-current \$5 million and the proposed \$15 million thresholds. In reviewing the submission of FortisBC (FEI and FortisBC Inc. together), the Commission noted as follows at page 4 of Appendix A to the Capital Exclusion Decision:

FortisBC submits that increasing FEI’s materiality threshold from \$5 million to the proposed \$15 million “would require an adjustment to its formula spending envelope (by way of a Base Capital adjustment), if the proposed higher CPCN threshold resulted in a need to incorporate additional capital work under the formula spending for capital projects between the current \$5 million and the proposed \$15 million thresholds.” However, it “does not anticipate any capital projects within this range of expenditure during the PBR Period and therefore submits that no adjustment to its Base Capital is required to accommodate the proposed CPCN threshold.”

(Emphasis added.)

6. FEI’s position regarding the increase in the CPCN threshold took into consideration that the Fraser Gate IP Project would not result in an adjustment to Base Capital because FEI had requested a CPCN as part of the Lower Mainland Intermediate Pressure System Upgrade Project.

7. This consideration formed a part of the Commission’s determination as it held as follows at page 12 of Appendix A:

The Panel considers FEI's existing \$5 million threshold to be low enough that it may be vulnerable to the possibility of combining projects. Raising it to \$15 million will require no rebasing, will not be subject to the effects of distortion caused by large, lumpy projects and is supported by both CEC and BCOAPO. Further, the Panel is satisfied that because the Commission retains the authority to require a CPCN, the public interest is adequately protected if the CPCN financial threshold is raised to \$15 million. Accordingly, for FEI, the Panel approves \$15 million as the threshold for both capital exclusion for the PBR formula and CPCN exemption.

(Emphasis added.)

8. It is clear that the Capital Exclusion Decision was premised in part on the fact that there were no anticipated FEI capital projects that would fall within the old and new thresholds, as otherwise rebasing would have been required, which it was not. Accordingly, the Projects should be treated as excluded capital under PBR. If the Fraser Gate IP Project is not excluded capital, rebasing is required.

**B. Project Commenced Under Previous CPCN Threshold**

9. While this above point is determinative of the matter, it is also evident that the Capital Exclusion Decision was meant to apply to future CPCN applications and not those that were already in progress. In its Decision accompanying Order G-138-14 regarding FEI's 2014-2018 Performance Based Ratemaking Application, the Commission approved FEI's \$5 million CPCN exemption threshold as applied for until such time as any further determination by the Commission was made concerning capital exclusion. The Capital Exclusion Decision defined what the appropriate capital exclusion criteria would be in the future; however, the Capital Exclusion Decision is not applicable to this Application, which was filed in 2014 under the then approved \$5 million capital exemption threshold.<sup>4</sup> The CPCN threshold of \$5 million was approved and in place when this CPCN Application was filed and as such, it is the \$5 million CPCN Capital Exclusion threshold that applies regardless of the Capital Exclusion Decision.<sup>5</sup> This

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<sup>4</sup> Exhibit B-14, CEC IR 2.3.4.

<sup>5</sup> Exhibit B-14, CEC IR 2.4.2.

is further supported by the fact that the Capital Exclusion Decision made directions at the bottom of page 12 of Appendix A for the content of future CPCN applications.

10. FEI submits that it would not be just and reasonable to apply the Capital Exclusion Decision in the manner contemplated by CEC. The Commission should not accede to CEC's request, and should apply the Capital Exclusion Decision prospectively as intended. Should the Commission determine that the Fraser Gate IP Project is not excluded capital, a process to rebase capital for the PBR term would be required.

### **C. Projects Are Rationally Grouped**

11. CEC also recommends that the Commission determine whether or not the Fraser Gate IP Project should be rationally grouped into the CPCN. FEI submits that there is no need for such a determination since the Capital Exclusion Decision, as described above, does not apply. However, in any event, the evidence shows that the Projects are rationally grouped together.

12. While each of the two Projects is justified on its own merits and can be constructed independently of the other Project, the proposed Coquitlam Gate IP and Fraser Gate IP Projects both involve the construction and installation of NPS 30 pipe to replace existing pipe along sections of the two primary pipelines supplying gas to the Metro IP system. The Coquitlam Gate IP Project as applied for is larger in scope; however, in general, both Projects share common attributes in terms of design, routing process, materials procurement and specialized construction and installation techniques due to their urban location. Both Projects are also premised on safety and will improve system reliability. With the replacement NPS 30 Coquitlam Gate IP pipeline in service, it will be possible to isolate the Fraser Gate IP pipeline and replace the seismically vulnerable segment of pipe with the proposed upgraded pipe without the use of a bypass.<sup>6</sup>

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<sup>6</sup> Exhibit B-6, CEC IR 1.3.2.

13. By using the same contractor for both Projects and by executing the Projects in parallel, FEI believes there to be potential cost benefits resulting from overall project efficiencies and economies of scale and has prepared cost estimates on that basis.<sup>7</sup> FEI anticipates that execution costs will be minimized over the Projects' lifecycle compared to executing each Project on a standalone basis. In addition, there could also be reduced costs including mobilization costs, costs associated with personnel training and familiarization with FEI standards, procedures, and local regulations and requirements, and reduced costs associated with establishing relationships with local municipalities.<sup>8</sup>

14. With respect to leveraging economies of scale in materials procurement, for example, if the NPS 30 pipeline required for the Fraser Gate IP and Coquitlam Gate IP Projects necessitates the manufacture (a pipe mill run) of new pipe, then placing a unified order will realize manufacturing efficiencies and therefore potential overall procurement savings. The same potential benefit would also apply to the procurement of induction bends for each Project.<sup>9</sup> Joint approval of the Projects provides an opportunity for cost savings and improved constructability.<sup>10</sup>

15. It is therefore logical that the Projects should be undertaken at the same time in terms of planning, permitting, stakeholder consultation and ultimately construction and commissioning, and FEI has identified cost savings benefits that can be achieved by coordinating the construction of the Projects.<sup>11</sup>

16. CEC's assertion that FEI did not apply for a single CPCN<sup>12</sup> is not correct; FEI applied "for a...CPCN to construct and operate two IP pipeline segments".<sup>13</sup>

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<sup>7</sup> Exhibit B-6, CEC IR 1.64.1.

<sup>8</sup> Exhibit B-6, CEC IR 1.64.1.

<sup>9</sup> Exhibit B-6, CEC IR 1.65.1.

<sup>10</sup> Exhibit B-4, BCUC IR 1.3.6; Exhibit B-6, CEC IR 1.65.1.3.

<sup>11</sup> Exhibit B-6, CEC IR 1.6.2.

<sup>12</sup> CEC Submission, p. 32.

<sup>13</sup> Exhibit B-1, Application, p. 1, line 5; Exhibit B-1-1, Application Appendix G-2.



17. Accordingly, FEI submits that the Commission should issue a CPCN in the form requested and maintain the exclusion of CPCN capital under PBR.

### **PART THREE: REPLY TO BCOAPO SUBMISSION**

#### **A. Coquitlam Gate IP Project**

18. In its submission BCOAPO agrees that FEI has provided sufficient evidence in support of FEI's preferred option for the Coquitlam Gate IP Project.<sup>14</sup> However, BCOAPO challenged the interrelationship of the Projects, the level of definition of routing and estimates, and deferral and cost treatment. FEI submits that a number of BCOAPO's submissions with respect to the Coquitlam Gate IP Project are based on incorrect factual assumptions or are otherwise without merit.

##### **(a) Actual Effect of Coquitlam IP Project on Fraser Gate IP Pipeline Integrity**

19. In paragraph 20 of the BCOAPO Submission, BCOAPO stated that the Coquitlam Gate IP Project Alternative 6 "will allow FEI to defer or avoid the Fraser Gate IP Project". This statement is not correct, as explained in more detail later in this Reply Submission with respect to the Fraser Gate IP Project. The Coquitlam Gate IP Project will not address the seismic vulnerability that has been identified for a portion of the Fraser Gate IP pipeline. Regardless of any resiliency that is provided by the Coquitlam IP Project, a portion of the Fraser Gate IP pipeline will remain vulnerable to a full-bore rupture of the pipeline resulting from a seismic event. In addition, this may result in a release of such gas volume that the capacity of the Coquitlam Gate IP pipeline would be exceeded, therefore resulting in system outages before the pipeline segment could be isolated.<sup>15</sup>

20. While each Project will improve system integrity and safety, only together will they allow for full system resiliency and reduce the risk of gas supply disruption to up to approximately 171,000 customers residing in the Lower Mainland in the event of a failure. If

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<sup>14</sup> BCOAPO Submission, p. 7.

<sup>15</sup> Exhibit B-6, CEC IR 1.5.1, 1.53.1; Exhibit B-14, CEC IR 2.5.1, 2.13.1, 2.14.1.

only one of these Projects as applied for were approved, then FEI would not fully achieve these objectives and requirements.<sup>16</sup>

**(b) Preferred Routing has been Provided**

21. In reply to paragraphs 23 and 24 of the BCOAPO Submission, FEI submits that there is no “significant uncertainty” as to the final routing of the Coquitlam Gate IP Project. While detailed design to achieve a fully engineered and defined final pipeline route alignment will occur after a CPCN is granted,<sup>17</sup> FEI has simply indicated that it will, as is appropriate, update the Commission in the event that an approved routing is no longer considered feasible and another route emerges as a feasible alternative.<sup>18</sup>

22. CEC submits that FEI's proposed manner to address change is appropriate. CEC submits that it is unlikely that there will be significant route changes but that it is reasonable for a process to be in place to address potential issues as they arise. CEC also recommends that the Commission approve the proposed route at this time.<sup>19</sup>

23. FEI will be filing regular progress reports with the Commission so that the Commission can remain apprised of the progress of the Projects<sup>20</sup> and FEI has indicated that it will update the Commission if the approved routing is no longer feasible. Accordingly FEI submits there is no basis for a “final report on routing” as sought by BCOAPO. In addition, FEI strongly opposes BCOAPO’s proposal that a Class 1 estimate be provided, as discussed further below.

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<sup>16</sup> Exhibit B-6, CEC IR 1.6.2.1.

<sup>17</sup> Exhibit B-1, Application, pp. 65, 80-81.

<sup>18</sup> Exhibit B-4, BCUC IR 1.36.1, 1.36.2; Exhibit B-11, BCUC IR 2.10.1.

<sup>19</sup> CEC Submission, p. 19.

<sup>20</sup> Exhibit B-13, BCOAPO IR 2.2.3.

**(c) Class 1 Estimate Inappropriate**

24. BCOAPO asserted that a Class 1 estimate should be required without providing an evidentiary basis that it is appropriate or would be of assistance.<sup>21</sup> FEI has provided a Class 3 estimate for the preferred alternative in the Application as required by the CPCN Guidelines.<sup>22</sup> BCOAPO did not make any Information Requests on this subject, or attempt to define what a Class 1 estimate entails. BCOAPO's suggestion of the requirement for a Class 1 estimate should be rejected for a number of reasons.

25. First, BCOAPO's submission is not a practical or reasonable approach in this case. The current project estimates are not based on firm bids received from vendors or contractors for materials or services. Consistent with past practice, FEI does not issue competitive tenders until receipt of Commission approval to proceed with a project. Instead, budgetary estimates have been developed using the professional judgment of FEI and its consultants and are based on cost information from previous similar projects.<sup>23</sup> A reasoned assessment would suggest that a highly accurate estimate would not be achievable in this case until the project is sufficiently advanced such that the detailed project design is completed, that all contracts are in place, and most contingency can be released; a point at which the project could not be terminated without having already incurred significant costs and potentially termination penalties.

26. Second, FEI has already provided a Class 3 estimate for the preferred alternative as required by the CPCN Guidelines.<sup>24</sup> To require additional estimates to be prepared without a rational basis would create unnecessary costs that would be borne by FEI's customers for a project that BCOAPO appears to accept is required. Further, FEI is not aware of, and BCOAPO has certainly not noted, any past requirement for Class 1 estimates from the Commission, and there is no basis to do so in this case.

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<sup>21</sup> BCOAPO Submission, paras. 24 and 28.

<sup>22</sup> Order G-50-10, Appendix A, p. 10; see also, Order G-20-15, Appendix A, p. 8.

<sup>23</sup> Exhibit B-13, BCOAPO IR 2.2.1.

<sup>24</sup> Order G-50-10, Appendix A, p. 10; see also, Order G-20-15, Appendix A, p. 8.

27. Third, irrespective of whether it is even possible, practical or cost-effective to develop a Class 1 estimate, providing a Class 1 estimate would have no material impact on subsequent project costs. The important consideration is whether there is a reasonable basis to proceed with a project. If so, then the decision to proceed is prudent and prudently incurred expenditures to deliver that project are recoverable in rates.

28. Accordingly, FEI submits that BCOAPO's suggestion of the requirement for a Class 1 estimate should be rejected by the Commission.

**(d) Cost Difference Deferral Account Inappropriate**

29. As proposed by FEI, all actual material and construction costs will be properly charged to the respective plant asset accounts in accordance with GAAP and the Uniform System of Accounts for Gas Companies.<sup>25</sup> However, in paragraphs 25 to 28 of its submission BCOAPO proposes that a deferral account be created to capture the difference between existing Class 3 estimates and the actual construction costs of the Project. This proposal should also be rejected by the Commission. (At paragraph 39 of its submission BCOAPO makes a similar proposal in respect of the Fraser Gate IP Project, which should be rejected for the same reasons.)

30. BCOAPO's argument is premised on unfounded assumptions about the degree of cost uncertainty surrounding particular matters. In reply to paragraph 25 of the BCOAPO Submission, the potential challenges identified by BCOAPO (which included potential challenges based on inadequate First Nations consultation, the cost of accommodation, unknown subsoil conditions and inability to obtain permits in a timely manner) are speculative and the potential for challenges exist with any project.

31. There is also a fundamental legal error underlying BCOAPO's position. The creation of an account to capture variances for the purpose described by BCOAPO is contrary to the presumption of prudence. That is, it assumes that any amount over the forecast costs for

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<sup>25</sup> Exhibit B-5, BCOAPO IR 1.5.4.

the Projects is sufficient to rebut the presumption of prudence and trigger a prudency review. This is a false premise. There can be any number of reasons why prudently incurred final costs vary from initial forecasts.

32. The costs of a proposed project are forecast on the best information available at the time of application for a CPCN in accordance with the CPCN Guidelines. The Projects are required. It is appropriate to expect that the Company will execute the Projects prudently. The Commission has the ability to oversee the progress of the Projects and has tools available to examine costs incurred after the fact.<sup>26</sup>

33. The Company will be filing regular progress reports with the Commission so that the Commission can remain apprised of the progress of the Projects.<sup>27</sup> Project management best practices will be utilized throughout the lifecycle of the Projects. The control budget will provide the baseline reference for subsequent project monitoring and control and assessment of financial performance during the Projects. Project controls will be put in place where processes and tools will be used to manage and mitigate potential cost issues and any risk events that may impact the Projects' costs. These project controls will provide the means to recognize variances from the cost management plans.<sup>28</sup>

34. FEI submits that periodic reports of costs as incurred or anticipated to be incurred throughout the Projects are sufficient to address higher than projected costs, should they become a concern. To that end, should the Commission provide direction to do so, and as indicated in the Draft Order included as Appendix G-2 of the Application, FEI will file with the Commission quarterly progress reports on the Projects. The quarterly progress reports will address in some detail the risks that the Projects are experiencing, the options available to address the risks, the actions that FEI is taking to deal with the risks and the likely impact on schedule and cost.<sup>29</sup>

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<sup>26</sup> Exhibit B-5, BCOAPO IR 1.5.5; Exhibit B-13, BCOAPO IR 2.2.3.

<sup>27</sup> Exhibit B-5, BCOAPO IR 2.2.3.

<sup>28</sup> Exhibit B-5, BCOAPO IR 1.5.2.

<sup>29</sup> Exhibit B-5, BCOAPO IR 1.5.2.

35. In summary, consistent with other CPCN projects of the Company, FEI anticipates providing periodic reports to the Commission and also considers a requirement for reporting of significant delays or material cost variances to be appropriate. Such reporting requirements strike an appropriate balance between the Commission's oversight of the execution of the Projects and the Company's responsibility for the ongoing management of the Projects.<sup>30</sup>

**(e) No Adjustment Required to Base O&M**

36. BCOAPO argues in paragraph 29 of its submission that Base O&M should be reduced while ignoring incremental O&M associated with the Coquitlam Gate IP Project.

37. The evidence provided by FEI is that although the 2013 Approved O&M would have been \$25 thousand lower without the Coquitlam IP leak repair costs, there were no further incremental costs included in either the original \$320 thousand net sustainable cost or the further \$220 thousand increase to the net sustainable cost used in determining the 2013 O&M Base.<sup>31</sup>

38. The 2013 Base did not consider the higher leak repair or survey costs experienced in 2013 or higher costs in the future that would likely be incurred with respect to the NPS 20 Coquitlam Gate IP pipeline in the absence of this Project. However, there was an implicit consideration of the \$25 thousand of costs that were embedded in developing the 2013 Approved.<sup>32</sup> Since the avoided leak repair costs would not be realized until at least 2018, and FEI has forecast additional O&M associated with this CPCN of \$26 thousand in 2018 and \$53 thousand in 2019 for which it has not proposed an increase to the base O&M, FEI has likewise not proposed a reduction of the Base O&M for the embedded \$25 thousand in avoided leak repair costs.<sup>33</sup> There is no resulting "money available for O&M increasing each year" as asserted by BCOAPO. No adjustment to the PBR O&M Base is required as a result of this CPCN application.

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<sup>30</sup> Exhibit B-5, BCOAPO IR 1.5.5.

<sup>31</sup> Exhibit B-14, CEC IR 2.19.1.

<sup>32</sup> Exhibit B-4, BCUC IR 1.24.1; Exhibit B-14, CEC IR 2.19.1.

<sup>33</sup> Exhibit B-14, CEC IR 2.19.1; Exhibit B-4, BCUC IR 1.24.1.1.

39. CEC, which provides a view consistent with FEI's position, noted that "The CPCN project is expected to increase annual incremental O&M by \$0.055 million which is not significant and an adjustment to the PBR formula should not be required on this basis."<sup>34</sup> In its submission CEC concluded with respect to O&M that:

...FEI has provided a reasonable explanation as to the accounting for the increased O&M due to leaks and is satisfied that only \$25 thousand was included in the base.

The CEC accepts that these savings will not accrue for several years, and will therefore not make a significant difference under PBR. The CEC recommends that the Commission not adjust the PBR base for O&M savings from this portion of the project.<sup>35</sup>

40. FEI submits that BCOAPO's submission regarding a minor adjustment to Base O&M should be rejected and no adjustment should be made.

**(f) Deferral Account Interest Rate**

41. In reply to paragraph 32 of the BCOAPO submission, BCOAPO submits that it does not oppose the recovery of application costs or development costs as proposed by FEI. However, BCOAPO submits that these costs should attract FEI's short term interest rate rather than a financing charge equal to the weighted average cost of capital. BCOAPO has not provided a persuasive justification to deviate from the usual practice. The evidence on record from FEI is that the cost of financing is the Company's after tax weighted average cost of capital.<sup>36</sup> This is consistent with what the Commission has approved for FEI in other CPCNs such as Huntingdon Station Bypass<sup>37</sup> and Muskwa River Crossing.<sup>38</sup> The quote contained in the

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<sup>34</sup> CEC Submission, p. 22.

<sup>35</sup> CEC Submission, pp. 23-24.

<sup>36</sup> Exhibit B-1, Application, pp. 1, 2, 139-140; Exhibit B-4, BCUC IR 1.22.9; Exhibit B-6 CEC IR 1.2.2, 1.79.2.

<sup>37</sup> Exhibit B-1, Application, pp. 139-140; *In the Matter of an Application by FortisBC Energy Inc. for a Certificate of Public Convenience and Necessity for the Huntingdon Station Bypass Project*, Order C-6-14, April 4, 2014 (*Huntingdon Decision*), p. 2, Appendix A, pp. 7-8.

<sup>38</sup> Exhibit B-1, Application, pp. 139-140; *In the Matter of An Application by Fortis BC Energy Inc. (FEI) for a Certificate of Public Convenience and Necessity to Construct and Operate a Transmission Pressure Pipeline*

BCOAPO submission is in regard to the electric utility FortisBC Inc., not FEI. BCOAPO's submission regarding interest rates should be rejected by the Commission.

**B. Fraser Gate IP Project**

42. BCOAPO submits that the Commission should not grant a CPCN for the Fraser Gate IP Project and that the need for the Project has not been established. BCOAPO also appears to have misconstrued the connection between the Fraser Gate IP Project and the Coquitlam Gate IP Project.

**(a) Seismic Vulnerability Must be Addressed**

43. BCOAPO's position regarding the need for the Fraser Gate IP Project appears to rest primarily upon three mistaken premises:

- (a) That identified seismic vulnerabilities and consequences should be ignored;
- (b) That the Coquitlam Gate IP Project alone will remove seismic vulnerability associated with a portion of the Fraser Gate IP pipeline; and
- (c) That high consequence, but lower likelihood, risks should not be mitigated.

44. As a public utility, FEI has an obligation under the Act to maintain its property and equipment in a condition to enable it to provide a service to the public that the Commission considers is in all respects adequate, safe, efficient, just and reasonable.<sup>39</sup>

45. As described in FEI's primary submission, one activity within the FEI Integrity Management Program, which provides a comprehensive and systematic approach to managing risks associated with hazards to the FEI pipeline system, is Seismic Hazard Management.<sup>40</sup> The objective of this activity is to maintain pressure integrity such that failure of identified assets

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*Crossing of the Muskwa River for the Fort Nelson Service Area*, Order C-2-14, January 30, 2014, p. 2, Appendix A, p. 3.

<sup>39</sup> Section 38.

<sup>40</sup> Exhibit B-1, Application, p. 102.



will not pose a hazard to the public immediately following ground displacements during an earthquake with a 1:2475 return period.<sup>41</sup>

46. FEI has identified other sections of pipeline in the Lower Mainland and the remainder of the province that do not meet FEI's minimum seismic criteria.<sup>42</sup> Many have already been scheduled for upgrading in the coming years.<sup>43</sup> In some cases, further assessment is underway either to confirm the risk to the integrity of the pipe or to develop a solution that will mitigate the concern in a cost effective manner.<sup>44</sup> FEI addresses seismic vulnerabilities on a planned basis, and considers both technical and resource factors in planning and scheduling mitigation.<sup>45</sup> Factors considered in selecting a schedule include:

- Estimated probability of failure;
- Estimated consequences of failure (safety, economic);
- Ease or difficulty of determining or implementing a solution to mitigate the risk;
- Ease or difficulty of repair, including duration of repair, in the event of a seismic-related failure; and
- Financial considerations, including impact to other identified system work.

47. The schedule essentially translates into a prioritization for implementation of mitigation projects.<sup>46</sup>

48. The 1:2475 return period standard is not arbitrary. CSA Z662, Oil and Gas Pipeline Systems, the governing technical code for the subject pipeline, requires that anticipated seismic loading be part of the design criteria for any oil or gas pipeline. In

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<sup>41</sup> Exhibit B-1, Application, p. 102.

<sup>42</sup> Exhibit B-6, CEC IR 1.4.3.1.

<sup>43</sup> Exhibit B-6, CEC IR 1.4.3.1.

<sup>44</sup> Exhibit B-6, CEC IR 1.4.3.1.1.

<sup>45</sup> Exhibit B-6, CEC IR 1.52.4.

<sup>46</sup> Exhibit B-6, CEC IR 1.52.4.

accordance with this code and consistent with industry practice, the FEI seismic design guideline DES-09-02<sup>47</sup> requires an assessment of potential seismic risks and that the pipeline design be sufficient to withstand anticipated seismic loadings for a seismic event with a return period of 1:2475 years (2.5 percent probability of exceedance over 50 years). FEI's seismic criteria align with both the 2005 Building Code of Canada and FEI's understanding of the minimum criteria applied by other critical utility infrastructure operators in the Lower Mainland<sup>48</sup> such as electrical, communications, transportation, water, and sewer infrastructure operators.<sup>49</sup>

49. The portion of the pipeline to be replaced in the Fraser Gate IP Project is a particularly vulnerable part of the system. The entire NPS 30 IP pipeline from Fraser Gate Station to East 2nd & Woodland, except for the section of pipeline at the outlet of the Fraser Gate Station that FEI has applied to upgrade, has been assessed as meeting the FEI seismic criteria of resistance to a 1:2475 seismic event.<sup>50</sup> In addition, the two transmission pipelines that supply the Fraser Gate Station can withstand a 1:2475 seismic event.<sup>51</sup>

50. Given an identified seismic vulnerability on a segment of the Fraser Gate IP pipeline (i.e., vulnerable to failure due to less than 1:2475 year seismic induced ground movement), FEI engaged a consultant in 2012 to produce a site specific summary report to capture the level of pipeline vulnerability and to recommend necessary follow-on study or mitigation measures for the Fraser Gate IP pipeline. The study identified the section of pipeline from Fraser Gate Station along East Kent Avenue as being susceptible to a seismic event, assessed the level of pipeline vulnerability and recommended mitigation measures for the Fraser Gate IP pipeline.<sup>52</sup>

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<sup>47</sup> Exhibit B-1-1, Application Appendix A-28.

<sup>48</sup> Exhibit B-1, Application, pp. 102-103.

<sup>49</sup> Exhibit B-6, CEC IR 1.4.1.

<sup>50</sup> Exhibit B-4, BCUC IR 1.29.1.5; Exhibit B-6, CEC IR 1.54.1.

<sup>51</sup> Exhibit B-4, BCUC IR 1.33.2.

<sup>52</sup> Exhibit B-1, Application, p. 104; Exhibit B-1-1, Application Appendix A-4; see also, Exhibit B-6 CEC IR 1.52.7.1.

51. Given the identified vulnerability, the potential consequences of a full bore rupture of the Fraser Gate IP pipeline due to a seismic event could result in significant safety and economic consequences.

52. The safety concern associated with the identified seismic vulnerability of the Fraser Gate IP pipeline is influenced by factors such as the predicted pipeline failure mode and population density. A hazard area radius of 83 metres for this pipeline has been estimated. The Fraser Gate IP pipeline is located in an urban area. A review of the East Kent Avenue in the vicinity of the pipeline shows that there are residential dwellings along the north side of the roadway. A potential ignition of gas escaping a full-bore rupture of the pipeline in a populated area resulting from a seismic event presents obvious and significant public safety issues.<sup>53</sup>

53. BCOAPO submits that the chance of a seismic-induced ground movement in the next several years is “highly unlikely”, but fails to describe why FEI should not follow the applicable standards for this portion of the Fraser Gate IP pipeline or why it should constitute an exception to FEI’s Seismic Hazard Management. BCOAPO also speculates regarding other technologies without any evidentiary basis, despite a workshop and two rounds of IRs in which it could have canvassed its conjectural alternatives. A shut-off of the pipeline would not serve to provide the pipeline with seismic protection nor would it prevent the release of residual gas from the ruptured pipeline. As such, it would not address the safety hazard.

54. In addition to the safety concern noted above, the potential consequence of large-scale service impacts to up to 171,000 customers and the economic loss resulting from failure of the Fraser Gate IP pipeline due to a seismic event is an additional driver for this Project.<sup>54</sup> FEI estimates that the economic impact (to the general public, customers and the Company) of a failure of the Fraser Gate IP pipeline could be in excess of \$320 million.<sup>55</sup>

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<sup>53</sup> Exhibit B-1, Application, p. 103; Exhibit B-6, CEC IR 1.72.2

<sup>54</sup> Exhibit B-1, Application, p. 104; Exhibit B-1-1, Application Appendix A-5, p. 5, Table ES-2a “Reference Case “As Is” Economic Consequences”, line item IP-Segment 1.

<sup>55</sup> Exhibit B-1, Application, p. 103.

55. Following completion of both proposed Projects, the Metro IP system would have the resilience to serve customers through possible anticipated future failure events, as well as to support isolation of segments for repair. If the Fraser Gate IP pipeline is not replaced as proposed, a full-bore rupture of the pipeline resulting from a seismic event may result in a release of such gas volume that the capacity of the Coquitlam Gate IP pipeline would be exceeded, therefore resulting in system outages before the pipeline segment could be isolated.<sup>56</sup> At paragraph 46 of its submission, BCOAPO appears to misapprehend this connection.

56. As described in FEI's Final Submission, system resiliency is an important consideration. Recent disruptions at energy delivery utilities around North America have driven increased industry and government awareness of the essential nature of critical energy delivery infrastructure. System resiliency has been considered a factor in recent FEI projects. For example, resiliency was a factor in the Fraser River Crossing Upgrade Project for which a CPCN was granted by the Commission for FEI to replace both the NPS 20 and NPS 24 South Fraser River crossings in 2012.<sup>57</sup> It was also a consideration in the recent Huntington Station Bypass for which a CPCN was granted to construct a bypass pipeline around FEI's Huntington Flow and Pressure Control Station.<sup>58</sup> This criticality of energy delivery infrastructure is precisely why FEI must take into consideration lower probability but potentially high consequence events.

57. In its submission, CEC concurs with FEI and also submits that cost to ratepayers for the additional seismic security is warranted and approval of the Fraser Gate IP Project by the Commission is warranted.<sup>59</sup>

58. FEI, as the owner and operator of the Fraser Gate IP pipeline, has determined that under the existing conditions, a failure of this pipeline could have an adverse economic effect and inflict significant harm to the public and to public confidence in the energy

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<sup>56</sup> Exhibit B-4, BCUC IR 1.29.1.5; Exhibit B-6, CEC IR 1.5.

<sup>57</sup> *In the Matter of an Application by Terasen Gas Inc. for a Certificate of Public Convenience and Necessity for the Fraser River Crossing Upgrade Project Decision*, Order No. C-2-09, March 12, 2009.

<sup>58</sup> *Huntingdon Decision*.

<sup>59</sup> CEC Submission, pp. 26-27.

infrastructure. The Project will result in a more reliable and resilient system that will significantly reduce the probability and consequences of such an event. FEI believes that the construction of a resilient infrastructure in the Metro Vancouver area is consistent with the intent of National Strategy for Critical Infrastructure.<sup>60</sup> FEI submits that BCOAPO's submission regarding the absence of need for the Fraser Gate IP Project should be rejected.

**(b) Connection with Coquitlam Gate IP Project and PBR**

59. FEI submits that the potential of increased costs exists if the Fraser Gate IP Project is undertaken independently of the Coquitlam Gate IP Project, as described in the BCOAPO submission. FEI disagrees that this potential should be disregarded as suggested by BCOAPO and notes the following from page 29 of the CEC Submission:

The CEC submits that the evidence shows that there are important savings that may be achieved from managing the construction of the two projects simultaneously and recommends that the Commission approve the projects to be constructed simultaneously. The CEC submits that such complementary scheduling should be undertaken as frequently as possible in prudent management of the company resources.

60. In reply to paragraph 51 of the BCOAPO Submission,<sup>61</sup> BCOAPO appears to be mistakenly attributing the avoidance of bypass costs only to an independently constructed Fraser Gate IP pipeline after the Coquitlam Gate IP Project pipeline is installed. However, the same benefit is realized with the Projects as proposed given that Coquitlam Gate IP will be commissioned in advance of the Fraser Gate IP pipeline tie ins.<sup>62</sup>

61. FEI's position regarding capital exclusion under PBR is addressed earlier in this Reply Submission in reply to the CEC Submission.

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<sup>60</sup> Exhibit B-4, BCUC IR 1.4.1.2.

<sup>61</sup> A similar statement is made in first sentence of para. 38 of the BCOAPO Submission.

<sup>62</sup> Exhibit B-6, CEC IR 1.22.1.3, 1.3.2; Exhibit B-4, BCUC IR 1.3.6.

### **C. Archeological Assessment**

62. At paragraph 56 of its submission BCOAPO suggests that FEI should be required to file the completed AIA with the Commission, with copies provided to the Interveners and affected First Nations. While a detailed AIA will be undertaken once Commission approval is granted,<sup>63</sup> the AIA is finalized following completion of construction. While FEI can file a copy of the AIA with the Commission and provide copies to the Interveners once the AIA is finalized following completion of Project construction if the Commission orders it to do so, FEI submits that there is little point imposing such a requirement as the timing is such that it would not assist in determining whether the Projects should proceed. With respect to the provision of the AIA to First Nations, FEI submits that the Commission should not order that the completed AIA be provided to First Nations as it is already provided to First Nations in course of the Archaeological Branch's permitting process.

63. FEI has long-standing working relationships with First Nations throughout British Columbia. FEI's experience has shown that First Nations generally like to be contacted at the outset of project development and will indicate a level of involvement to FEI based on their own resources and interests, which FEI takes into account during the engagement process.<sup>64</sup> The Company believes that a First Nation will respond if it is interested in receiving more information, or participating in the review of the Projects. FEI will engage with those interested in knowing more about the Projects.<sup>65</sup> If a request for material or information is made in the course of its ongoing engagement with First Nations, FEI will attempt to accommodate the request, which very well could include the provision of archaeology assessment materials. However, there is no evidentiary basis upon which such an order should be made by the Commission in the context of this Application for a CPCN.

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<sup>63</sup> Exhibit B-1, Application, p. 145.

<sup>64</sup> Exhibit B-5, BCOAPO IR 1.7.1; Exhibit B-13, BCOAPO IR 2.1.5.

<sup>65</sup> Exhibit B-5 BCOAPO IR 1.7.1; Exhibit B-13, BCOAPO IR 2.1.5.

**D. First Nations Consultation**

64. BCOAPO submits that the level of consultation conducted by FEI to date has been sufficient.<sup>66</sup> However, BCOAPO suggests that FEI should make more effort to engage First Nations. As previously described, FEI has long-standing working relationships with First Nations and has engaged First Nations by providing them with information regarding the Projects and by inviting their questions and further involvement.<sup>67</sup>

65. There has been no refusal to provide information to First Nations as alleged by BCOAPO and the change in preferred routing for the Coquitlam Gate IP Project described in the Evidentiary Update was within the same general vicinity as the initial preferred routing.<sup>68</sup> In order to respect First Nations' administrative capacity, the Company provided the update to those First Nations who had previously expressed an interest in the Project. If a request for material or information is made in the course of FEI's ongoing engagement with First Nations, FEI will attempt to accommodate the request.

66. First Nations consultation is an ongoing process during the Projects, and issues and concerns may arise as the Projects proceed through design and construction. It is FEI's intention and regular practice to continue liaising with First Nations as the Projects progress, including though the OGC permit application process.<sup>69</sup>

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<sup>66</sup> BCOAPO Submission, p. 17.

<sup>67</sup> Exhibit B-5, BCOAPO IR 1.7.1; Exhibit B-13, BCOAPO IR 2.1.5.

<sup>68</sup> Exhibit B-1-6, Application Evidentiary Update, pp.9-10.

<sup>69</sup> Exhibit B-1, Application, p. 179; Exhibit B-4, BCUC IR 1.59.1, 1.59.2.

**PART FOUR: CONCLUSION**

67. FEI submits that the Projects are in the public interest and approval should be granted as sought.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

Dated:

August 14, 2015

*[original signed by Tariq Ahmed]*

Tariq Ahmed

Counsel for FortisBC Energy Inc.