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LETTER NO. L-8-09

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R. Horne
President
Concerned Citizens of Quail Ridge and Lochrem Road

Dear Messrs. Andrews, Horne and Cairns:

Re: FortisBC Inc. ("FortisBC")
Ellison Substation Project 3698442
Applications for Reconsideration of Commission Orders C-04-07 and G-75-07

This letter is in response to the letters of September 18, 2008 (Concerned Citizens of Quail Ridge and Lochrem Road "CCQRLR") and September 23, 2008 (Quail Ridge Residents Association "QRRA"") in which the respective organizations sought a reconsideration of the Commission's Decision approving the FortisBC Application of October 27, 2006 for a Certificate of Public Convenience and Necessity ("CPCN") for the Ellison Substation at the Lochrem Road site. The relevant Commission Orders that set out the details of the approval are C-4-07 and G-75-07.

Background

The history of the proceedings leading to this reconsideration is set out in the recitals of Order G-166-08 and will not be repeated here.

The Commission granted a reconsideration but limited the scope of the written process that was to follow. Commission Order G-166-08 dated November 18, 2008 sets out the issues that the Commission found were worthy of further examination. The Order provided (in part):

1. The Commission establishes a written hearing to reconsider the Decision, so as to address the initial question of whether the Ellison Substation, as proposed and approved at the Lochrem Road site, will cause problems for the systems at the Kelowna Airport under the terms specified the NAV CANADA Agreements and, if problems are caused, the changes that will be needed to remedy the situation, and the cost of the changes (the "Initial Issue").

2. By Monday, December 1, 2008, FortisBC will file an independent engineering Report (the "Report") by a properly qualified individual or group that reviews the siting and design of the Ellison Substation as proposed and approved, relative to the requirements of NAV CANADA as set out in the Agreements, and which confirms that the substation will comply with the requirements. If this confirmation cannot be provided, the Report will describe the changes to the substation that are needed to bring it into compliance, and the estimated cost of these changes.

3. FortisBC will provide a copy of the Report to Intervenors and Interested Parties in the Ellison Substation CPCN proceeding, parties who participated in the reconsideration phase one comment process and NAV CANADA (collectively the "Participants").

In brief, the Commission was concerned that the matter of possible radio interference with the landing and communication systems at the Kelowna Airport had not been brought to the attention of the Commission Panel considering the CPCN application and as it appears, was not investigated by FortisBC in any detail until after the CPCN had been granted. The Commission notes (as have the Parties and interested persons) that the Transport Canada document TP 1247 Part II, advises that:

> "Consultation… must take place at an early stage in the project in order to avoid costly redesign or undue pressure when seeking building and site approvals. It is recommended that consultation take place at the building concept stage, before site approval is sought."

Had FortisBC followed this recommendation and presented the issues associated with radio interference in the original CPCN Application, the Commission Panel dealing with the CPCN application would have had the relevant information before it, on the record, and could have afforded the matter the attention it deserved then, and precluded much of the time, effort, expense and delay that has now come to pass.

The Lochrem site for the Ellison Substation is located closer than 3.2 kilometers from the centre line of a runway of the Kelowna Airport and may therefore cause electromagnetic interference ("EMI") to aircraft landing systems operated by NAV CANADA. FortisBC and NAV CANADA entered into an Operating Agreement and a Statement of Work Agreement dated October 8, 2008 (the "Agreements"). The Agreements oblige FortisBC to monitor the level of EMI levels at the Ellison Substation and to correct the cause if the EMI level exceeds a specified level (Exhibit C5-2).

After reviewing the submissions in the first phase of the reconsideration process, the Commission was unclear as to the materiality of the risk that the Agreements may require FortisBC to make significant changes to the substation, or perhaps relocate it. The additional cost of such changes could impact ratepayers, and consequently the Commission granted a reconsideration on its merits of the "Initial Issue".

This Reconsideration has been considered by a Panel of four Commissioners who have reviewed the record of this Reconsideration and the positions advanced by FortisBC, the CCQRLR, QRRA and the other interested parties that provided submissions and argument.

The Independent Engineering Report (the "Report")

In accordance with Order G-166-08, Fortis filed the Report authored by PDK Airport Planning Inc. and CNSS Engineering Services. The Report was filed as Exhibit C5-3 on December 1, 2008. The Commission Panel has relied upon the professional opinions put forth in the Report and is of the view that the Report meets the requirements set out in the above Order.

However, the Commission Panel does find that the Report would have been more helpful if the authors had canvassed the possible mitigation measures that might be required in more detail, and provided greater specificity as to the range of costs that might be expected. It is understood that no firm pricing estimates could have been given for unknown problem areas or their respective fixes.

The Commission Panel is of the view that the Report, while measured in its language, does provide a balanced and thorough analysis of the technical matters at issue and which could give rise to EMI.

The concluding remarks of the Report state:

"a) The NavCanada and SHEL-BAR tests at a representative substation site showed negligible amounts of electromagnetic interference being radiated from various components involved in the operation of the substation. As long as all equipment and components in the design of the substation comply with all Industry Canada equipment interference standards and all electrical work is performed to applicable Federal Government and Provincial Electrical Codes, Industry standard substation design will meet NavCanada requirements.

b) With regard to the proposed Ellison substation site, in order to meet NavCanada's requirements for air navigation at the Kelowna Airport, a monitoring system was identified as a mitigating measure. This measure was requested to insure electromagnetic noise levels at the site do not interfere with airport communication and navigational systems. NavCanada is the owner operator of the Air Navigation System and has approved the site on that basis.

c) Although detailed analysis and field tests were completed prior to NavCanada developing its mitigating measures for substations located in close proximity to an airport, no amount of analysis can predict previously unknown situations. Corporate agreements usually contain contract clauses for managing "unspecified perils." It is our opinion that the NavCanada clause requesting a complete shutdown or relocation of the substation intends to cover off any "unspecified perils" in the event such things occur. Should the unthinkable occur, other options such as a redesign of the offending component/circuit, relocation of troublesome circuits, and other similar measures would be taken before a total relocation of the substation is even considered.

d) The proposed Ellison Substation does not violate the Obstacle Limitation Surfaces identified for the Kelowna Airport. With respect to any physical, structural or other geometric elements of the station, as long as these do not penetrate the Obstacle Limitation Surfaces at the airport, they should have no effect on the NavCanada communications or navigational systems."

The Final Statement of the Report is:

> "In conclusion, based on our review of the proposed Ellison Substation location, utility construction methods and maintenance practices, and considering our experience and field testing at other in-service substations, it is our expert opinion that the Ellison substation should not cause any problematic interference with the Kelowna Airport Operations. And even if some interference were to result, appropriate contingency measures have been identified and FortisBC has committed to implement these measures to mitigate such interference."

The authors do not state that there will be "no interference" at all. And no guarantees are proffered that the Ellison substation, when built, will meet all of the requirements or guidelines of NAV CANADA. The Commission Panel acknowledges this level of assurance would be impossible for any professional to provide, at any event before the substation was built.

Other Similar Sites Considered

The Commission Panel takes note of the comparisons that were made with other substations located close to airports including the following:

- The SHEL-BAR study and analysis of the Blackmud substation in Nisku, Alberta; and
- BC Hydro's Kidd substation near Vancouver International Airport.

While it is difficult to make any firm decisions for a substation yet to be built, on the basis of past experience, the Commission Panel found it reassuring that other substations had been sited close to airports without any reported difficulties. In the Report, the authors state in respect of the Kidd substation (that operates at a higher voltage than will the Ellison substation), "To our knowledge, this facility has not produced any interference issues with the airport's ILS ["Instrument Landing System"]" (Exhibit C5-3, p. 10).

Further on in the Report, they state: "We have not heard of any substations being required to mitigate electromagnetic noise levels after it was in service." And "We are not aware of any substations being shutdown or relocated on account of excessive electromagnetic noise." (Exhibit C5-3, p. 10)

The Commission Panel concludes that there is no evidence that electromagnetic noise ("EMN") levels generated by substations located near or in proximity to airports or the associated flight paths poses any likely or recurring problem. Indeed, while there are mitigating and remedial steps that could be taken if such interference was experienced, there is nothing on the record to show that such steps have been necessary.

The Kelowna Topography and its Effect on EMN

The impact of the surrounding topography on EMN was raised by Ms. Fortunat (Exhibit C4-2). This concern is addressed within the Report which states that where there are mountains near a site there is a potential for secondary reflection referred to as "multi-path" reflection. The Report goes on to outline the complex nature of such phenomena and their dependence on a variety of local factors such as obstruction size and distance from the site. The Report concludes that "it is very unlikely surrounding topography could elevate electromagnetic noise levels above those expected from a normal operation at the site" (Exhibit C5-3).

The Commission Panel finds that the topography in the vicinity of the Lochrem site is not expected to increase the EMI impact on the systems at the airport.

Proper Equipment, Installation, and Maintenance

The Commission Panel is of the view that the key to minimizing EMI from any electrical apparatus is a combination of component and system design (standards and codes) and good maintenance practices. Perhaps of these, good maintenance procedures are the most important (Exhibit C5-3, p. 9, Question 4). The Ellison Substation will be built to normal standards and codes as prescribed by the various government and industry authorities and the monitoring system as outlined in the Agreements signed with NAV CANADA will provide early warning of any deterioration in system components. The three levels of warning in the Operating Agreement, and the computerized recording and storage of the levels data by NAV CANADA will provide a database that will assist in carrying out timely maintenance as required and if deficiencies are noted, new maintenance routines can be developed.

Mitigating and Remedial Measures

The Commission Panel accepts as a fact that there will be some level of EMN generated at this (and all) high voltage substations. The issue is one of degree and corrective or remedial measures. The EMN levels set out in the Operating Agreement are extremely low and even if exceeded, may not cause operational difficulties for the ILS receivers. In any event, the reporting and remedial measures that are set out in the Operating Agreement appear to the Commission Panel as sufficient to meet most of the definable and expected problems that may arise in the course of operating the substation. There are provisions for notice, negotiation and resolution of any problems. Arbitration is available in the face of deadlock or lack of agreement. There appear to be many measures that can be employed to reduce EMN such as those set out in subsection (c) of the Concluding Remarks of the Report.

Commission Panel Determination

The Commission Panel accepts the position of QRRA and CCQRLR that the Report does not conclusively confirm that the Ellison Substation will comply with the requirements of NAV CANADA as set out in the Agreements. Therefore, there is some risk that FortisBC may need to make certain expenditures to meet these requirements. At a minimum, FortisBC estimates that the monitoring equipment will cost $135,000 and that extra operating and maintenance costs will be $6,250 per year (Exhibit C5-5, Horne IR 9). However, these additional costs are not sufficient to raise doubts whether the Lochrem Road site is appropriate.

The issue for deciding whether or not to proceed with a full reconsideration of the project as approved at the Lochrem site, is whether there is a material risk that FortisBC will be required to make additional significant expenditures to meet its obligations under the Agreements.

Having reviewed all the submissions of the Parties and the findings in the Report, the Commission Panel finds that the Ellison Substation, as proposed and approved at the Lochrem Road site, is very unlikely in the extreme, to cause any problems for the systems at the Kelowna Airport. Further, the Commission Panel is convinced that the monitoring system and the remedial measures anticipated in the Operating Agreement between FortisBC and NAV CANADA will be sufficient to provide advanced warning of any problem EMN and to provide a context for resolution of any such problem once identified.

In the absence of persuasive evidence that FortisBC will be unable to meet its obligations under the Agreements or that FortisBC is at significant risk of having to make material additional expenditures to comply with the Agreements, a full reconsideration of the Commission's decision to grant a CPCN for the Ellison Substation at the Lochrem site is not warranted.

Therefore, the Commission Panel denies the applications of CCQRLR and QRRA for a further expanded reconsideration, and reaffirms the approval for the Ellison Substation as set out in Orders C-4-07 and G-75-07.

Yours truly,

Original signed by:

Erica M. Hamilton

ac

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Interested Parties *(FBC-EllisonCPCN-IP)*