Alberta Utilities Commission

In the Matter of the Need for the Currant Lake 896S Substation and Transmission Line

And in the matter of the *Electric Utilities Act*, S.A. 2003, c. E-5.1, the *Alberta Utilities Commission Act*, S.A. 2007, c. A-37.2, the *Hydro and Electric Energy Act*, R.S.A. 2000, c. H-16, the *Transmission Regulation*, AR 86/2007 and Alberta Utilities Commission Rule 007, all as amended

Application of the Alberta Electric System Operator for approval of the Currant Lake 896S Substation and Transmission Line Needs Identification Document

PART A - APPLICATION

1 Introduction

1.1 Application – Pursuant to section 34(1)(c) of the *Electric Utilities Act* (Act) and in accordance with the further legislative provisions set out in the recitals, the Alberta Electric System Operator (AESO) applies to the Alberta Utilities Commission (Commission) for approval of the *Currant Lake 896S Substation and Transmission Line Needs Identification Document* (Application).

1.2 Application Scope – This Application describes the need for transmission development arising from a request by ATCO Electric Ltd., as distribution facility owner (DFO)[1], for transmission system access service to supply TransCanada Corporation's Monitor South pump station (end-user) which will form part of the Keystone XL (KXL) Pipeline. Service is requested commencing April 28, 2012.

ATCO Electric Ltd., as the owner of electric transmission facilities (TFO), is proposing development of a new substation and transmission line to provide service to the end-user. Having followed the AESO customer connection process, the AESO has determined that the proposed transmission development provides a reasonable opportunity for the DFO to exchange electricity, and is consistent with the AESO's long-term transmission forecasts and plans for the area. This Application, being consistent with the AESO's responsibility to plan the transmission system, is submitted for Commission approval.[2]

[1] ATCO Electric Ltd. acts as both the distribution facility owner (DFO) and the transmission facility owner (TFO) as applicable to its specific business functions.

[2] For information, in notes i and ii of Part C of this Application, some of the legislative provisions relating to the AESO's planning duties and duty to provide system access service are referenced.

1.3 AESO Directions to the TFO – During the customer connection process, the AESO issued various directions to the TFO.[3]

2 Need Overview and Proposed Transmission Development

2.1 Duty to Provide Transmission System Access Service – The AESO, pursuant to its responsibilities under section 29 of the Act, must provide system access service on the transmission system in a manner that gives market participants a reasonable opportunity to exchange electricity. The market participant, the DFO in this case, has determined that it is unable to serve the end-user utilizing existing 25 kV distribution infrastructure and has requested transmission system access service. Through the AESO connection process, the AESO, the TFO and the DFO have collaborated to determine the characteristics of the proposed transmission development, the AESO has assessed the impacts of connecting the proposed transmission development on the transmission system, and the AESO has issued directions to the TFO to prepare a transmission facility proposal[4] to meet the market participant's request for transmission system access.

2.2 Proposed Transmission Development – The proposed transmission development includes the new Currant Lake 896S Substation to serve as a point of connection to the transmission system. It is anticipated that the proposed transmission development will include one 144/6.9kV transformer rated at approximately 20/26.6/33.3 MVA, and associated switching and connection facilities, telecommunications, protection, and controls. The proposed transmission development includes provision for

[3] The directions are described in more detail in the following sections of this Application and in Part C, note vi.

[4] Also referred to as facility application, or FA, under Commission Rule 007.

connection to the transmission system via approximately 9 kilometres of 144kV transmission line, with a summer and winter rating of 120/146 MVA, respectively. [5]

2.3 Proposed Transmission Development Cost – The TFO estimated the in-service cost of the proposed transmission development to be in the order of $8 million (+20%/-10%), generally comprised of the costs of the proposed transmission development as described in Section 2.2. There is no system component identified within the proposed development costs.

2.4 Transmission Development Alternatives – The AESO and the TFO originally considered two possible transmission connection arrangements each based on 144kV supply. Alternative 1 entailed tapping the existing 7L110 line and constructing approximately 9 km of transmission line to the proposed 144/6.9 kV Currant Lake 896S substation. Alternative 2 entailed tapping the existing 7L98 line which was subsequently identified for salvage thereby eliminating this option from further consideration.

2.5 AESO Need Forecast and Connection Assessment – All anticipated Keystone and KXL Pipeline loads were included in the load forecast utilized in the Hanna Region Transmission Development (HRTD) NID[6]. The Hanna region is defined in the HRTD NID as comprising the Hanna (Area 42), Wainwright (Area 32), Alliance/Battle River (Area 36), Provost (Area 37) and Sheerness (Area 43) planning areas. The proposed KXL Pipeline in Alberta runs from a point near the Town of Hardisty south through the

[5] Details and configuration of equipment required for the proposed transmission development are more specifically described in the TFO's transmission facility proposal and further details will be determined as detailed engineering progresses and TFO operating requirements are finalized. Routing and/or siting of transmission facilities do not form part of this Application and are addressed in the TFO's facility proposal. The AESO also notes that distribution facilities that may be subsequently connected to the proposed transmission development are the responsibility of the DFO and are not included in the Application.

[6] The AESO received Commission approval of the Hanna Region Transmission System Development Needs Identification Document in *Decision 2010-188 and Approval U2010-135* and of five minor amendments in *Decision 2010-592 and Approval U2010-434.* The AESO filed with the Commission amendments to *Approval U2010-135* on September 1, 2010 (Application No. 1606526, Proceeding ID No. 748). These approved and filed amendments do not affect the load forecast included in the original HRTD NID filed with the Commission on August 14, 2009.

general Provost and Hanna areas before exiting from Empress in the southeast corner of the province. The HRTD need assessment studies indicated that the existing system is near capacity and will be unable to supply forecast loads including the Keystone and KXL Pipeline loads. Furthermore, the system does not have sufficient capacity to integrate potential wind developments forecast for this region. The HRTD studies identified existing system thermal over loads and voltage deficiencies under normal and emergency conditions.

To address the above deficiencies and provide system access for wind projects while meeting the forecast load, the AESO filed the HRTD NID for the Hanna Region. As part of the HRTD NID, the AESO conducted both steady state and transient analyses that included the ultimate loads for both Keystone and KXL loads along with other load and area wind generation increases forecast for 2012. The recommended transmission plan in the HRTD NID will meet the service requirements of the KXL Pipeline pump stations. It may be noted that the HRTD plan modeled KXL loads, including the Monitor South pumping station, at nearby substations since TransCanada had not determined the exact pump station locations at the time of its preparation. The Monitor South pumping station is now known to fall within the Hanna Planning Area (42) and it was modeled at the Monitor substation under the HRTD study. The study results and conclusions presented in the HRTD remain valid and applicable to the proposed service connection for Currant Lake 896S Substation. None of the KXL pump stations will be operated prior to completion of critical elements of the HRTD project.

2.6 AESO Participant Involvement Program – The AESO directed the TFO to assist the AESO in conducting a participant involvement program (PIP), in accordance with Commission Rule 007, NID13 and Appendix A. The TFO and the AESO utilized various methods to notify stakeholders of the need for transmission development in the vicinity of the proposed transmission development. The AESO knows of no outstanding concerns related to the need for the proposed transmission development.

2.7 Environmental and Socio-Economic Overview – As potential environmental effects are related to siting, routing, and on-going operations of the proposed

transmission development, the AESO has not undertaken a separate environmental and socio-economic assessment of the sort contemplated in Commission Rule 007, Section 6.1 – NID12. The AESO has been advised that the TFO's facility proposal will contain information in respect of Commission Rule 007, Section 6.1 – NID12.

2.8 Approval is in the Public Interest – Having regard to the AESO's duties and responsibilities to plan the transmission system, it is the conclusion of the AESO that the proposed transmission development provides a reasonable opportunity for the market participant to exchange electricity and that the load forecast and connection to the transmission system as proposed is consistent with the HRTD. In consideration of these factors, the AESO submits that approval of the Application is in the public interest.

3 Request to Combine this Application with the Facility Proposal for Consideration in a Single Process

3.1 Pursuant to subsection 35(1) of the Act, the AESO has directed the TFO to prepare a transmission facility proposal to meet the need identified. The AESO understands that the TFO's facility proposal will be filed shortly. The AESO requests, and expects the TFO will also request, that this Application be combined with the facility proposal for consideration by the Commission in a single process. Such a request is consistent with section 15.4 of the *Hydro and Electric Energy Act* and section 6 of Commission Rule 007. An evident advantage of doing so will be to enable the Commission to consider factors and information in the facility proposal that are relevant to the issue of need.

3.2 While it is believed that this Application and the facility proposal will be materially consistent, the AESO respectfully requests that in its consideration of both, the Commission be mindful of the fact that the documents have been prepared separately and for different purposes. The purpose of this Application is to obtain approval for the identified transmission system need and provide a preliminary description of the manner proposed to meet that need. In contrast, the facility proposal will contain more detailed

engineering and designs for the proposed transmission development and seek approval for the construction and operation of specific facilities.

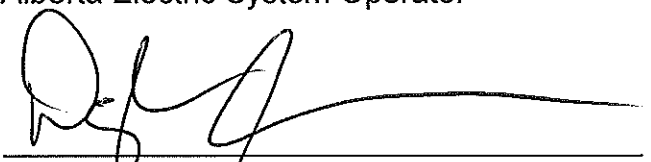
4 Relief requested

4.1 Having regard to the factors set out in section 38 of the *Transmission Regulation*, and in particular, subsection 38(e), the AESO submits that its assessment of the need to meet the market participant's request for transmission system access service is technically correct and that as such, the proposed transmission development as described in this Application is in the public interest.

4.2 For the reasons set out above, the AESO requests that the Commission approve this Application.

All of which is respectfully submitted this 9th day of February 2011.

Alberta Electric System Operator



Doyle Sullivan, P. Eng.
Director, Regulatory Services

PART B – APPLICATION APPENDICES

The following appended documents support the Application (Part A). They are provided for reference purposes only.

APPENDIX A **AESO Connection Assessment** – Appendix A contains the AESO *Engineering Study Report*, which contains an assessment of transmission system performance prior to and immediately following the connection of the proposed transmission development to the transmission system. The report describes the study scope, study results and related projects, and contains future transmission development assumptions.

APPENDIX B **AESO PIP –** Appendix B contains a summary of the PIP activities conducted regarding the need for the proposed transmission development. Copies of the relevant materials distributed during the PIP are attached for reference.

APPENIDX C **TFO Capital Cost Estimate –** Appendix C contains detailed cost estimates corresponding to the proposed transmission development. These estimates have been prepared by the TFO at the direction of the AESO. The estimates are prepared to an approximate accuracy level of +20%/-10% which exceed the accuracy requirement of Commission Rule 007, NID10.

APPENDIX D **TFO confirmation that Commission Rule 007 NID 12 aspects are being addressed in Facility Proposal** – Appendix D contains a letter provided by the TFO confirming that the seven major aspects of Commission Rule 007, NID 12 are addressed throughout the TFO's facility proposal.

PART C – REFERENCES

i. **AESO Planning Duties and Responsibilities –** Certain aspects o**f** AESO duties and responsibilities with respect to planning the transmission system are described in the Act. For example, section 17, subsections (g), (h), (i), and (j), describe the general planning duties of the AESO[7]. Section 33 of the Act states that the AESO "must forecast the needs of Alberta and develop plans for the transmission system to provide efficient, reliable, and non-discriminatory system access service and the timely implementation of required transmission system expansions and enhancements". Where the market participant, the DFO in this case [refer to note ii below], is requesting transmission system access service, the AESO must prepare and submit for Commission approval, as per section 34(1)(c), a needs identification document that describes a need to respond to requests for system access service, including the assessments undertaken by the AESO regarding the manner proposed to address that need. Other aspects of the AESO's transmission planning duties and responsibilities are set out in sections 8, 10, and 11, of the *Transmission Regulation*.

ii. **Duty to Provide Transmission System Access** – Section 29 of the Act states that the AESO "must provide system access service on the transmission system in a manner that gives all market participants wishing to exchange electric energy and ancillary services a reasonable opportunity to do so".

iii. **AESO Planning Criteria** – The AESO is required to plan a transmission system that satisfies applicable reliability standards. AESO Planning Criteria is described at: http://www.aeso.ca/rulesprocedures/8677.html.[8]

iv. **AESO Connection Process** – For information, the AESO transmission system connection process, which changes from time to time, is generally described at: http://www.aeso.ca/8602.html. [9]

v. **Application for Approval of the Need for Expansion or Enhancement of the Capability of the Transmission System –** This Application is directed solely to the question of the need for

[7] The legislation and regulations refer to the Independent System Operator or ISO. "AESO" and "Alberta Electric System Operator" are the registered trade names of the Independent System Operator.

[8] This link is provided for ease of reference and does not form part of this Application.

[9] This link is provided for ease of reference and does not form part of this Application.

expansion or enhancement of the capability of the transmission system. Any reference within the Application to existing customers or other parties and/or the facilities they may own and operate or may wish to, own and operate is not intended to constitute an application for approval of such facilities, and the responsibility for seeking such regulatory or other approval remains the responsibility of such customer or other party.

vi. **Directions to the TFO** – Pursuant to subsection 35(1) of the Act, the AESO has directed the TFO, in whose service territory the need is located, to prepare a facility proposal to meet the need identified. The facility proposal is also submitted to the Commission for approval. The TFO has also been directed by the AESO under section 39 of the Act to prepare a proposal to provide services to address the need for the proposed transmission development. The AESO has also directed the TFO, pursuant to section 39 of the Act and section 14 of the *Transmission Regulation*, to assist in the preparation of the AESO's Application.