



Alberta Electric System Operator and AltaLink Management Ltd.

**Airdrie-Balzac Reactive Requirements Needs Identification
Document Application**

**Addition of a Capacitor Bank at East Airdrie 199S Facility
and at Dry Creek 186S Facility Applications**

June 1, 2010

ALBERTA UTILITIES COMMISSION

Decision 2010-244: Alberta Electric System Operator and AltaLink Management Ltd.

Airdrie-Balzac Area Reactive Requirements:

Addition of Capacitor Bank at East Airdrie 199S and at Dry Creek 186S

Applications Nos. 1605249, 1605317, and 1605318

Proceeding ID. 250

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ALBERTA UTILITIES COMMISSION

Calgary Alberta

ALBERTA ELECTRIC SYSTEM OPERATOR AND ALTALINK MANAGEMENT LTD.

**AIRDRIE-BALZAC AREA REACTIVE REQUIREMENTS:
ADDITION OF CAPACITOR BANK AT EAST AIRDRIE 199S
AND AT DRY CREEK 186S**

**Decision 2010-244
Application Nos. 1605249
1605317 and 1605318
Proceeding ID. 250**

1 INTRODUCTION

1. On July 10, 2009, the Alberta Electric System Operator (AESO) filed Application No. 1605249 (Needs Identification Document (NID) Application) with the Alberta Utilities Commission (AUC or Commission) seeking approval of the NID for the installation of one 27-megavolt ampere reactive (MVAR) capacitor bank and associated switching equipment at the East Airdrie 199S substation, and for similar facilities at the Dry Creek 186S substation (Project).

2. AltaLink Management Ltd. (AltaLink), pursuant to Permit and Licence No. U2007-090 and No. U2008-254, is the operator of the East Airdrie 199S substation and the Dry Creek 186S substation (Substations).

3. Pursuant to section 35 of the *Electric Utilities Act*, the AESO directed AltaLink to submit a facility proposal to the Commission that was consistent with the need identified in the NID Application. On July 28, 2009, AltaLink filed Applications Nos. 1605317 and 1605318 (Facility Applications) with the AUC seeking approval to alter and operate the Substations.

4. The AESO requested that the Commission consider both the NID Application and AltaLink's pending Facility Applications jointly, pursuant to section 15.4 of the *Hydro and Electric Energy Act*.

5. On September 22, 2009, the Commission issued information requests to the AESO. The AESO responded to the information requests on December 16, 2009. The Commission issued additional information requests to the AESO on January 28, 2010, and the AESO responded on February 25, 2010.

6. On September 22, 2009, the Commission issued information requests to AltaLink. AltaLink responded to the information requests on November 16, 2009.

7. The Commission issued a Notice of Applications on March 26, 2010, to occupants, residents, and landowners who are located within 800 meters of the Substations. No objections to the NID Application or Facility Applications were received by the April 19, 2010, deadline for intervenor submissions. On April 21, 2010, the Notice of Applications was re-sent to six changed addresses and the deadline for intervenor submissions was extended to May 6, 2010. No objections were received by the deadline.

2 BACKGROUND

2.1 Overview – the Process for New Transmission Development in Alberta

8. Three approvals from the Commission are required to build new transmission facilities in Alberta: (1) an approval of the need for expansion or enhancement to the system pursuant to section 34 of the *Electric Utilities Act*; (2) a permit to construct; and (3) a licence to operate a substation pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*.

9. Section 34 of the *Electric Utilities Act* provides the Commission with three different options for making a decision on a NID application. The Commission may approve, deny, or refer the NID back to the AESO with suggestions or directions for changes or additions.

10. Section 38 of the *Transmission Regulation* provides guidance to the Commission in the exercise of its jurisdiction when considering whether to approve a NID under section 34(3) of the *Electric Utilities Act*. Section 38 provides that the Commission must

- (a) have regard for the principle that it is in the public interest to foster
 - (i) an efficient and competitive generation market,
 - (ii) a transmission system that is flexible, reliable and efficient and preserves options for future growth, and
 - (iii) geographic separation for the purposes of ensuring reliability of the transmission system and efficient use of land, including the use of rights of way, corridors or other routes that already contain or provide for utility or energy infrastructure or the use of new rights of way, corridors or other routes, notwithstanding that geographic separation for the purposes of ensuring reliability of the transmission system or efficient use of land may result in additional costs,
- (b) have regard for the following matters when it considers an application for a transmission facility upgrade or expansion, or operations preparatory to the construction of a transmission facility, namely, the contribution of the proposed transmission facility:
 - (i) to improving transmission system reliability;
 - (ii) to a robust competitive market;
 - (iii) to improvements in transmission system efficiency;
 - (iv) to improvements in operational flexibility;
 - (v) to maintaining options for long term development of the transmission system,
- (c) take into account the long term transmission system outlook document and the transmission system plan filed with the Commission,
- (d) take into account the ISO's responsibilities under the Act and regulations, and
- (e) consider the ISO's assessment of the need to be correct unless an interested person satisfies the Commission that
 - (i) the ISO's assessment of the need is technically deficient, or
 - (ii) to approve the needs identification document would not be in the public interest.

11. Facility applications are prepared by a transmission facility owner (TFO) at the direction of the AESO. The TFO for these facilities is AltaLink. Pursuant to section 17(1) of the *Alberta Utilities Commission Act*, when considering an application for a transmission facility, the Commission must consider whether the proposed transmission development is in the public interest having regard for the social and economic effects of the transmission development and the effect of the transmission development on the environment.

2.2 The NID Application

12. The AESO stated that there is an increasing concern for the reliability of serving load in the Airdrie area due to rapidly growing industrial, commercial and residential load and that most recent forecasts show loads to be growing at a much higher rate than originally anticipated. The AESO submitted that the 2008/2009 winter peak load of 136 megavolt ampere (MVA) will grow to 230 MVA by 2017/2018.

13. The AESO stated that the situation of greatest concern arises when the Balzac power plant is offline during peak load because it places the system at risk for very low voltages during outage of a single transmission element (a Category B event) in the Airdrie area. The AESO added that its studies demonstrate that the addition of capacitor banks in the Airdrie area would restore distribution voltages to acceptable levels after a Category B event.

14. In its NID Application the AESO presented its preferred alternative, consisting of the following proposed developments:

- a. Addition of one 27-megavolt ampere reactive (MVAR) capacitor bank and associated switching equipment at the East Airdrie 199S substation; and
- b. Addition of one 27-MVAR capacitor bank and associated switching equipment at the Dry Creek 186S substation.

2.3 The Facility Applications

15. To meet the need specified by the AESO in the NID, AltaLink proposed to:

- a. Install one 27-MVAR capacitor bank, a 138-kV circuit breaker and 138-kV disconnect switch, modify the existing 138-kV bus work and relocate the existing substation gate to expand the substation to the north at the East Airdrie 199S substation; and
- b. Install one 27-MVAR capacitor bank, a 138-kV circuit breaker and 138-kV disconnect switch and modify the existing 138-kV bus work at the Dry Creek 186S substation.

16. The AESO, in conjunction with AltaLink, conducted a participation involvement program for the Project before the Facility Applications were filed with the Commission. All occupants, residents, and landowners within an 800-metre radius of either of the Substations were notified. Landowners directly adjacent to the Substations were personally consulted by telephone. AltaLink held an open house on March 5, 2009, in Airdrie, Alberta. No comments or concerns were received.

17. AltaLink stated that all proposed activities of the Project will occur within or immediately adjacent to the existing Substations. To incorporate the additions, the existing substation at East Airdrie 199S will be expanded by 20 meters to the north on land which is owned by AltaLink. It further stated that its desktop review and site investigations have confirmed that the land to be used for the expansion and the access roads has been recently disturbed and that no wetlands are present. AltaLink concluded that adverse environmental impacts are not expected from the proposed expansion and associated facility upgrades of the Substations.

18. The estimated cost of the Project activities at the East Airdrie 199S substation is \$2,514,000 (+20%/-10%). The estimated cost of the Project activities at the Dry Creek 186S substation is \$2,215,000 (+20%/-10%).

3 DISCUSSION

3.1 The NID Application

19. The Commission has reviewed the NID Application and has determined that it meets the requirements of a NID. In coming to this decision the Commission had specific regard for the direction provided in subsections 38(a) through (e) of the *Transmission Regulation* reproduced above and discussed in the following paragraphs.

20. The Commission is satisfied that the public interest criteria set out in section 38(a) of the *Transmission Regulation* are met. Reliable electrical transmission facility infrastructure is a prerequisite to having an efficient and competitive generation market. The AESO's preferred alternative best preserves options for future growth of the transmission system in the Airdrie-Balzac area by providing capacity to meet future load.¹

21. The Commission is satisfied that the criteria set out in section 38(b) of the *Transmission Regulation* have been met. In the NID Application, concerns about reliability, system efficiency and operational flexibility are elevated because the NID proposes to upgrade existing transmission facilities to reinforce the reactive power support in the area in order to maintain normal operating voltages and voltage stability margins of the transmission system under different contingency events. In this regard, the development of the proposed facilities is forecast to meet demand until the 2010/2011 winter peak² and will alleviate reliability and inefficiency concerns associated with the unacceptable operating levels of the current infrastructure.

¹ Ex. 2, Needs Identification Document, sections 6.1. pp. 13

² Ex. 2, Needs Identification Document, sections 5.2. pp. 11

22. The Commission finds that the need identified by the AESO in the NID is consistent with that identified in the AESO's 2009 long-term transmission system plan which the AESO has filed with the Commission. The Commission also finds that the NID Application is reflective of the AESO's responsibilities; in particular, its responsibility to direct the safe, reliable and economic operation of Alberta's interconnected transmission system³ and its responsibility to plan the transmission system.⁴ This satisfies the requirement of subsections 38(c) and 38(d) of the *Transmission Regulation*.

23. The Commission notes that a participant involvement program has been conducted and finds that there are no outstanding public or industry objections or concerns. Also, no objections or concerns were received after the Notice of Applications was issued. Hence, the Commission finds that no interested person has demonstrated that the AESO's assessment of the need to alter the Substations and the AESO's choice of its preferred alternatives are technically deficient or not in the public interest, in accordance with subsection 38(e) of the *Transmission Regulation*.

24. The Commission has reviewed the Application in light of the principles and matters it is required to consider pursuant to section 38 of the *Transmission Regulation*. Because no interested party has demonstrated that the AESO's assessment of the need to expand and enhance the transmission system in the Substations is technically deficient or that approval of the NID is not in the public interest, the Commission finds the AESO's assessment of need to be correct, in accordance with subsection 38(e) of the *Transmission Regulation*.

3.2 The Facility Applications

25. The Commission understands from its review of the Facility Applications that the alterations to the existing Substations will be constructed within the existing fenced Substation areas or within adjacent lands owned by AltaLink.

26. As noted earlier by the Commission, a participant involvement program has been conducted, wherein all occupants, residents and landowners within an 800-metre radius of the Substations were notified by AltaLink, and no objections were received. The Commission also notes that no objections were received in response to the Notice of Applications issued directly to landowners within the 800-metre radius of the Substations.

27. The Commission considers that the proposed alterations will be made on land that is already disturbed and accepts AltaLink's submissions that the alterations will not result in additional environmental impacts including noise.

28. Based on the above, the Commission is satisfied that the Project is in the public interest, having regard to its social, economic and environmental impacts. The Commission finds that the Facility Applications satisfy the requirements prescribed by sections 14 and 15 of the *Hydro and Electric Energy Act* and by AUC Rule 007 – *Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations*. The Commission also finds that the transmission development applied for by AltaLink will fulfill the need identified in the NID.

³ This responsibility is set out in section 17(h) of the *Electric Utilities Act*

⁴ This responsibility is set out in section 15 of the *Transmission Regulation*

4 DECISION

29. Having considered all of the evidence before it, the Commission finds that no interested person has demonstrated that the AESO's assessment of the need to expand and enhance the transmission system in the Airdrie-Balzac area and the AESO's choice of its preferred alternative are technically deficient or not in the public interest. The Commission approves the NID as filed, pursuant to section 34 of the *Electric Utilities Act* and grants the AESO the approval set out in Appendix 1 – Airdrie-Balzac Area Reactive Requirements – NID Approval No.U2010-210 – June 1, 2010 (Appendix 1 will be distributed separately).

30. The Commission also approves AltaLink's Facility Applications, pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, and grants the Applicant the approvals to alter and operate the Substations set out in Appendix 2 – Alter East Airdrie 199S Substation – Permit and Licence No. U2010-211 – June 1, 2010; and in Appendix 3 – Alter Dry Creek 186S Substation – Permit and Licence No. U2010-212 – June 1, 2010 (Appendices 2 and 3 will be distributed separately).

Dated on June 1, 2010.

ALBERTA UTILITIES COMMISSION

(original signed by)

Carolyn Dahl Rees
Vice-Chair

(original signed by)

Tudor Beattie, Q.C.
Commissioner

(original signed by)

Anne Michaud
Commissioner