



AltaLink Management Ltd.

Eastern Alberta Transmission Line Interconnection and Interface Project

November 15, 2012



The Alberta Utilities Commission

Decision 2012-305: AltaLink Management Ltd.

Eastern Alberta Transmission Line Interconnection and Interface Project

Application No. 1608447

Proceeding ID No. 1884

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1 Introduction

1. AltaLink Management Ltd. (AltaLink), by Application No. 1608447, registered on May 11, 2012, applied to the Alberta Utilities Commission (AUC or the Commission) for approval to alter and operate previously approved facilities as well as approval for a new telecommunications site, pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*.

2. Specifically, alterations are proposed to the following approved facilities:

- 240-kilovolt (kV) transmission line 923L (Permit and Licence No. [U2011-202](#))¹
- 240-kV transmission line 931L (Permit and Licence No. [U2012-412](#))²
- 240-kV transmission line 950L (Permit and Licence No. [U2002-853](#))³
- 240-kV transmission line 1034L (Permit and Licence No. [U2011-201](#))⁴
- 240-kV transmission line 1035L (Permit and Licence No. [U2011-201](#))⁵
- 240-kV transmission line 1053L (Permit and Licence No. [U2012-408](#))⁶
- 240-kV transmission line 1075L (Permit and Licence No. [U2012-411](#))⁷
- 500-kV transmission line 1206L (Permit and Licence No. [U2011-437](#))⁸
- 500-kV transmission line 1212L (Permit and Licence No. [U2011-437](#))⁹
- Heartland 12S substation (Permit and Licence No. [U2011-435](#))¹⁰
- Ellerslie 89S substation (Permit and Licence No. [U2011-436](#))¹¹
- Keephills 320P substation (Permit and Licence No. [U2012-252](#))¹²
- Lamoureux 71S substation (Permit and Licence No. [86-49](#))¹³

¹ Transmission Line Permit and Licence No. U2011-202, Application 1606402, July 7, 2011.

² Transmission Line Permit and Licence No. U2012-412, Application 1608604, August 28, 2012.

³ Transmission Line Permit and Licence No. U2002-853, Application 1274771, December 13, 2002.

⁴ Transmission Line Permit and Licence No. U2011-201, Application 1606402, July 7, 2011.

⁵ Transmission Line Permit and Licence No. U2011-201, Application 1606402, July 7, 2011.

⁶ Transmission Line Permit and Licence No. U2012-408, Application 1608604, August 28, 2012.

⁷ Transmission Line Permit and Licence No. U2012-411, Application 1608604, August 28, 2012.

⁸ Transmission Line Permit and Licence No. U2011-437, Application 1606609, December 22, 2011.

⁹ Transmission Line Permit and Licence No. U2011-437, Application 1606609, December 22, 2011.

¹⁰ Substation Permit and Licence No. U2011-435, Application 1606609, December 22, 2011.

¹¹ Substation Permit and Licence No. U2011-436, Application 1606609, December 22, 2011.

¹² Substation Permit and Licence No. U2012-252, Application 1608445, August 31, 2012.

- Milo 356S substation (Permit and Licence No. [U2011-186](#))¹⁴
- Cassils 324S substation (Permit and Licence No. [U2012-16](#))¹⁵
- Bowmanton 244S substation (Permit and Licence No. [U2012-198](#))¹⁶

3. The Alberta Electric System Operator (AESO) directed AltaLink to submit a facility application, pursuant to Section 41.3 of the *Electric Utilities Act*, for these facility alterations which had been designated as critical transmission infrastructure pursuant to Section 41.1 of the *Electric Utilities Act*.

2 Background

4. ATCO Electric Ltd. (ATCO Electric) filed Application No. 1607153 with the AUC, effective March 29, 2011, for approval to construct and operate the Eastern Alberta Transmission Line project (the EATL project). The EATL project proposed a 500-kV direct-current (DC) transmission line (the EATL line) between the Gibbons area, northeast of Edmonton, and the Brooks area, southeast of Calgary. The EATL project application also proposed two converter stations, one at the north end of the EATL line, to be identified as Heathfield 2029S converter station, and one at the south end of the EATL line, to be identified as Newell 2075S converter station, along with the related facilities to convert power from alternating-current to direct-current. As well, the EATL project proposed to connect the new facilities to the Alberta Interconnected Electric System through interface transmission. The Commission approved the EATL project in Decision 2012-303 (the EATL decision) on November 15, 2012.¹⁷

5. The need for the EATL project was determined by the government of Alberta when the EATL project was designated as critical transmission infrastructure in Section 1 of the schedule to the *Electric Utilities Act*. In the EATL decision, the Commission set out, in detail, the legislative framework for the approval of critical transmission infrastructure projects. For a detailed analysis of this issue, please refer to the EATL decision.

6. The approved routing of the EATL line requires a number of crossings over existing AltaLink transmission lines. The approved interconnection of the EATL project to the Alberta Interconnected Electric System requires changes to approved AltaLink transmission lines, to tie-in the interface transmission lines from the converter stations and to approved AltaLink substations.

3 Process

7. On May 1, 2011, AltaLink submitted Application No. 1607281 (original application) to the AUC requesting approval of the alteration to its facilities to interconnect the EATL project to the Alberta Interconnected Electric System.

¹³ Substation Permit and Licence No. 86-49, Application 851381, July 28, 1986.

¹⁴ Substation Permit and Licence No. U2011-186, Application 1607260, May 16, 2011.

¹⁵ Substation Permit and Licence No. U2012-16, Application 1607171, February 6, 2012.

¹⁶ Substation Permit and Licence No. U2012-198, Application 1606789, May 30, 2012.

¹⁷ Decision 2012-303: ATCO Electric Ltd. – Eastern Alberta Transmission Line Project, Applications No. 1607153 and No. 1607736, Proceeding ID No. 1069, November 15, 2012.

8. Consideration of the original application was deferred by the Commission until after a decision was made with respect to the EATL project because the facility modifications included in the original application would only be necessary if the EATL project application was approved as filed. The Commission advised AltaLink of the deferral of its consideration in a letter on May 12, 2011.

9. On May 11, 2012, AltaLink filed Application No. 1608447 requesting the Commission's leave to withdraw the original application and replace it with a new application. AltaLink stated that it wanted to file a new application because information in the original application was by then outdated, and it was now required to include five temporary line by-passes to satisfy system outage requirements of the AESO. Further, to reflect the new scope, the cost of and schedule for construction of the alterations needed to be adjusted because of the lost opportunity to take advantage of construction synergies with other AltaLink projects.

10. Based on its previous decision, the Commission deferred consideration of the new application on June 1, 2012.¹⁸

11. The Commission granted leave to AltaLink to withdraw Application No. 1607281 and replace it with Application No. 1608447 on July 10, 2012.

12. After the record for the EATL project application proceeding was closed on August 20, 2012, the Commission resumed consideration of AltaLink's new application (the application) in parallel with the EATL project application.

13. The Commission issued information requests to AltaLink on October 16, 2012, and AltaLink submitted its responses on October 29, 2012.

14. AltaLink also submitted an application amendment on October 29, 2012,¹⁹ and proposed a slight change to the alteration to 240-kV transmission line 950L in order to meet the AESO's reliability criteria.

4 Discussion

15. AltaLink submitted, with the support of the AESO, that the applied-for alterations would be needed and fall within the scope of critical transmission infrastructure as described in Section 1 of the schedule to the *Electric Utilities Act*.

16. The alterations proposed in the application are to physically accommodate the EATL line in locations where approved AltaLink facilities will be crossed and to connect the ATCO Electric Ltd. interface transmission lines from the converter stations to approved AltaLink facilities.

17. AltaLink's new application separated the alterations into two distinct interconnection areas, north and south.

¹⁸ Exhibit 0001.01.AUC-1884.

¹⁹ Exhibit 0025.01.AML-1884.

18. The major activities in the north interconnection area would be as follows:
- Expansion of the approved Heartland 12S substation by adding three 500-kV circuit breakers and extending the site by moving the fence line 60 metres to the west.
 - Reroute approximately 350 metres of the approved double-circuit 500-kV alternating-current (AC) transmission line 1206L/1212L to the west approximately 70 metres and re-terminate the transmission line into the new bays created by the expansion of Heartland 12S substation. This would include the installation of one new dead-end tower outside the substation fenceline.
 - Alterations to existing protection and control systems at Ellerslie 89S, Keepphills 320P and Lamoureux 71S substations.
19. The Commission observes that AltaLink filed Application No. 1608631 (Proceeding ID No. 2007) on July 10, 2012, proposing the repositioning of two of the structures on transmission line 1206L/1212L. As stated above, Application No. 1608447 also proposed, among other things, alterations to transmission line 1206L/1212L near the approved Heartland 12S substation. Both of these applications are currently active before the Commission and affect transmission line 1206L/1212L which is currently the subject of Permit and Licence [U2011-437](#).²⁰
20. The major activities in the south interconnection area would be as follows:
- Alterations to approved 240-kV AC transmission lines to accommodate the crossing of the EATL line as follows:
 - Reroute an approximately 390-metre segment of the existing 240-kV AC transmission line 950L, to the east by 265 metres, and salvage the relocated segment of line.
 - Separation of transmission lines 931L/1075L and 1053L off of double-circuit structures onto single-circuit structures.
 - Alteration of double-circuit 240-kV AC transmission line 1034L/1035L in the northwest quarter of Section 15, Township 18, Range 15, west of the Fourth Meridian to tie-in ATCO Electric's double-circuit 240-kV AC transmission line 1035L/1088L. Alterations would include:
 - Installation of two dead-end towers on transmission line 1035L.
 - Re-designation of transmission line 1035L from the connection point to Cassils 324S substation as transmission line 1088L.
 - Subject to final engineering, trenching of an underground fibre optic cable along transmission line 1035L between proposed structures 15A and 16.

²⁰ Transmission Line Permit and Licence No. U2011-437, Application No. 1606609, Proceeding ID No. 457, December 22, 2011.

- Alteration of double-circuit 240-kV AC transmission line 923L/935L in the south half of Section 17, Township 18, Range 15, west of the Fourth Meridian to tie-in ATCO Electric's double-circuit 240-kV AC transmission line 923L/1088L. Alterations would include:
 - Installation of two dead-end towers on transmission line 923L.
 - Re-designation of transmission line 923L from the connection point to Cassils 324S substation as 240-kV transmission line 1088L.
 - Subject to final engineering, trenching of an underground fibre optic cable along transmission line 1088L between proposed Structure 17A and Cassils 324S substation.
- Construction of a new telecommunications site in the southwest quarter of Section 22 and the northwest quarter of Section 15, Township 14, Range 4, west of the Fourth Meridian, adjacent to the approved Bowmanton 244S substation. This would include a new access road that would run along the fence line within the lease boundary of the approved substation.
- Alterations to existing protection and control systems at Milo 356S, Cassils 324S and Bowmanton 244S substations.

21. AltaLink stated in the application that temporary off right-of-way construction workspace would be required to install foundations; lay out, assemble and erect structures; and conduct stringing operations. In addition, AltaLink submitted that, temporary line by-passes would be required for transmission lines 931L, 1075L, 1053L, 935L and 923L in order to satisfy the AESO's outage scheduling constraints.

22. AltaLink indicated²¹ that the approved Heartland 12S substation site is on cultivated field surrounded by other cultivated fields containing no wetlands or watercourses. AltaLink stated that the site does not contain potentially sensitive soils, vegetation, wildlife or water resource environmental features. AltaLink concluded that, with the implementation of mitigation measures, no significant adverse environmental impacts were anticipated as a result of the expansion to the substation yard (i.e. fenced area).

23. The Heartland 12S substation is located in a region of high risk for the soil-borne pathogen, clubroot, although AltaLink stated that the specific area proposed for expansion of the substation yard is free of clubroot.

24. AltaLink indicated that the altered route proposed for transmission line 950L is within approximately 250 metres of the existing line routing in a vegetated area with grassland and wetland features, and a potential for sensitive soil conditions.²² By paralleling the existing line routing for most of its length, AltaLink asserted that it had substantively reduced the potential for adverse environmental impacts to occur as a result of the proposed alteration to transmission line 950L. In the application amendment referred to in paragraph 14 above, AltaLink indicated that the alteration to transmission line 950L had been modified by proposing to move the line further east. AltaLink stated that the move was to avoid a wetland on the north end of the relocation and,

²¹ Exhibit 26.01.AML-1884: IR Response to information Request to AUC(1-10), AUC.AML-010, pdf page 21.

²² Exhibit 26.01.AML-1884: Information responses to AUC (1-10), AUC.AML-010, pdf page 22.

as such, to further reduce the potential for environmental impacts.²³ With completion of pre-disturbance environmental assessments and implementation of mitigation measures, AltaLink predicted that no significant adverse environmental impacts would occur.

25. AltaLink stated that the proposed alterations to transmission lines 931L, 935L and 1053L involved alterations to existing structures located within the approved right-of-way which parallels an existing road. AltaLink anticipated that, with mitigation measures, construction activity could be completed with no significant adverse environmental impacts.

26. AltaLink indicated that construction of the proposed interconnections with transmission lines 1034L/1035L and 923L/935L could have the potential for adverse environmental effects; in particular, the potential to disrupt the Sprague's Pipit, a bird species of concern. AltaLink asserted that, with further pre-disturbance assessments and finalization of mitigation measures, the potential risk to that sensitive wildlife species could be mitigated, and no significant adverse environmental effects were anticipated.

27. In response to an information request from the AUC, AltaLink confirmed that all subsequent wildlife surveys will be conducted in accordance with Alberta Environment and Sustainable Resource Development Fish and Wildlife Division, *Sensitive Species Inventory Guidelines*.²⁴

28. AESO has submitted its certification that the applied-for alterations meet the functional specification set out for the facilities necessary to connect the EATL project to the Alberta Interconnected Electric System.²⁵

29. AltaLink consulted with Alberta Culture regarding the applied-for alterations. AltaLink stated that, if required and as directed by Alberta Culture, it will complete a Historical Resources Impact Assessment under the *Historical Resources Act* and obtain clearance certification from Alberta Culture prior to construction of the applied-for alterations.

30. AltaLink conducted a public consultation process with respect to the new application and provided potentially affected landowners with separate notification materials for the north and south interconnection areas. AltaLink consulted with all landowners, occupants and residents of land on or adjacent to the facilities requiring alteration, and notified all stakeholders within 800 metres of the proposed changes.

31. AltaLink outlined concerns raised during consultation in the north interconnection area and its response to resolve those concerns. AltaLink stated that no concerns were raised regarding the alterations in the south interconnection area. AltaLink committed to continuing to work with landowners where issues or concerns are raised regarding tower locations.

32. AltaLink coordinated with ATCO Electric to have ATCO Electric consult with landowners regarding the alteration of transmission line 950L as part of the EATL project consultation. On October 29, 2012, AltaLink submitted an amendment to the re-routing of

²³ Exhibit 25.01.AML-1884: EATL Amendment, pdf page 1.

²⁴ Sustainable Resource Development – *Sensitive Species Inventory Guidelines*, August 2010 Update (available at <http://www.srd.alberta.ca/FishWildlife/WildlifeManagement/documents/SensitiveSpeciesInventoryGuidelines-Aug2010.pdf>).

²⁵ Exhibit 28.01.AESO-1884: AESO Certification for EATL Interconnections and Converter Stations Interface Project.

transmission line 950L. AltaLink advised that it had consulted with the affected landowner, who agreed to the revised configuration on his lands.

33. AltaLink asserted that the approved Heartland 12S substation meets the requirements of AUC Rule 012: *Noise Control*. AltaLink stated that since the applied-for alterations do not have an effect on the primary source of noise in the substation, i.e. the three single-phase autotransformers, no further noise impact assessment was conducted.

34. AltaLink stated that electric and magnetic field levels were assessed for the proposed 240-kV transmission line alterations and the resultant field levels, under high-loading conditions, were “lower than international guidelines for electric fields and magnetic fields for general public and occupational exposure (such as those from the International Commission on Non Ionizing Radiation Protection (ICNIRP)). For example, the maximum calculated electric and magnetic fields at 150 metres from the proposed 240-kV crossings are calculated to be about 0.0 kilovolts per metre (kV/m) for electric fields for both crossings and range between 0.7 milligauss (mG) on the 950L line crossing and 1.6 mG on the 1053L line crossing at the completion of the project. The exposure guidelines for the general public developed by ICNIRP are 4.2 kV/m for electric fields and 2,000 mG for magnetic fields.”²⁶

35. The proposed modifications are estimated to cost approximately \$55,082,500.

36. Construction of the project is expected to start in February 2013, with a forecasted construction completion date of December 2014.

5 Findings

37. The Commission finds that the applied-for alterations are critical transmission infrastructure, as set out in Section 1 of the schedule to the *Electric Utilities Act*. The Commission finds that the applied-for alterations are required to interconnect the transmission facilities approved by the Commission in the EATL decision to the Alberta Interconnected Electric System.

38. The Commission finds that the application complies with the requirements of sections 14, 15, 18 and 21 of the *Hydro and Electric Energy Act*.

39. The Commission considers that the technical, siting, environmental and noise aspects of AUC Rule 007: *Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations* (AUC Rule 007) have been met.

40. The Commission finds that the participant involvement program meets the requirements of AUC Rule 007. The Commission relies on AltaLink’s submission that there are no unresolved concerns in the south interconnection area and understands that concerns raised in the north interconnection area have been withdrawn.²⁷

41. Specifically with respect to the alterations proposed to transmission line 1206L/1212L, the Commission notes that there are two active applications before the Commission pertaining to the same transmission line, 1206L/1212L. This situation creates the potential for confusion and

²⁶ Exhibit 0003.01.AML-1884: paragraph 28.

²⁷ Proceeding ID No. 1069, Exhibit 622.01.WLSNKGPR-1069: Wilson group letter of withdrawal of objection, May 9, 2012.

uncertainty with respect to the permits and licences normally issued with respect to transmission facilities. With a view to administrative efficiency and clarity, the Commission declines to approve the alterations requested by AltaLink with respect to transmission line 1206L/1212L. The Commission expects that AltaLink will make a separate application for these alterations.

42. The balance of the findings contained in this decision apply to the remaining proposed alterations.

43. The Commission considered that its decision with respect to the proposed alterations would not directly and adversely affect the rights of any person and, therefore, did not issue a notice of application or require a hearing pursuant to Section 9 of the *Alberta Utilities Commission Act*.

44. The Commission finds that AltaLink's request for temporary off right-of-way construction workspace is reasonable under the circumstances and approves the applied-for areas as set out in the application and the amendment of October 29, 2012.

45. The Commission reviewed evidence that initial environmental assessments had been conducted in the area to determine whether the applied-for routing minimized environmental impacts. The Commission finds that with the diligent application of the proposed mitigation and monitoring measures put forward by AltaLink, the environmental effects from construction and operation of the proposed alterations and substation site expansion will be adequately mitigated.

46. The proposal to expand the Heartland 12S substation site in a cultivated field is expected to minimize the potential for adverse effects to soil, vegetation, wildlife and water resource features. In addition to the environmental protection measures proposed, diligence is required during construction and operations to ensure the area developed for the Heartland 12S substation remains free of clubroot and that project construction does not contribute to the spread of clubroot in the area. The Commission requires AltaLink to comply with the best management practices provided in the *Alberta Clubroot Management Plan*.²⁸

47. The Commission finds that the environmental effects of the proposed transmission line alterations are commonly understood and that with diligent monitoring, mitigation and compensation, the effects can be effectively managed. Routing of the 950L line crossing modification to parallel an existing transmission line, and the work proposed for the 1053L and 931L/1075L line crossings in an existing right-of way is expected to reduce the potential environmental effects of those routes segments. During construction in native prairie, some environmental effects could occur to soil, vegetation, water resource features and sensitive wildlife species. In addition to the mitigation measures specified in the application, the Commission took into consideration AltaLink's commitment to conduct further pre-disturbance environmental assessments and to refine site-specific mitigation measures to further reduce environmental effects of construction and operations. As a result, the Commission finds that there will be no significant or non-mitigatable environmental impacts resulting from the construction and operation of the applied-for alterations.

48. The Commission expects that, prior to initiating construction, AltaLink will conduct pre -disturbance assessments regarding wildlife and wildlife habitat as set out in its application.

²⁸ Alberta Agriculture and Rural Development – *Alberta Clubroot Management Plan*, May 2010 (available at [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex11519#best](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex11519#best)).

AltaLink shall refine and implement environmental mitigation measures described in the application to reduce potential environmental effects of development. The Commission recommends that AltaLink communicate with the Alberta Environment and Sustainable Resource Development Fish and Wildlife Division with respect to any potential compromises to restricted activity dates or setback distances.

49. The Commission finds that approval of the application for construction of the applied-for facilities is in public interest as set out in Section 17 of the *Alberta Utilities Commission Act* based upon its consideration of the social and economic impacts of the project, and the impacts of the project on the environment.

6 Decision

50. Pursuant to Section 19 of the *Hydro and Electric Energy Act*, the Commission approves the application, and pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act* grants to AltaLink a permit and licence for the alteration and operation of the Heartland 12S substation as set out in Appendix 1 – Permit and Licence No. U2012-575.

51. Pursuant to sections 14, 15 and 21 of the *Hydro and Electric Energy Act*, the Commission grants to AltaLink the following permits and licences for the alteration and operation of the specified transmission lines:

Transmission line	Disposition document
240-kV transmission line 1053L	Appendix 2 - Permit and Licence No. U2012-577
240-kV transmission line 1075L	Appendix 3 - Permit and Licence No. U2012-578
240-kV transmission line 931L	Appendix 4 - Permit and Licence No. U2012-579
240-kV transmission line 923L	Appendix 5 - Permit and Licence No. U2012-580
240-kV transmission line 1087L	Appendix 6 - Permit and Licence No. U2012-581
240-kV transmission line 935L	Appendix 7 - Permit and Licence No. U2012-582
240-kV transmission line 1035L	Appendix 8 - Permit and Licence No. U2012-584
240-kV transmission line 1088L	Appendix 9 - Permit and Licence No. U2012-583
240-kV transmission line 1034L	Appendix 10 - Permit and Licence No. U2012-585

52. Pursuant to sections 14, 15 and 21 of the *Hydro and Electric Energy Act*, the Commission grants to AltaLink a permit to alter and salvage a section of transmission line 950L and operate transmission line 950L as set out in Appendix 11 - Permit and Licence No. U2012-576.

53. Pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, the Commission grants to AltaLink a permit and licence for the construction and operation of the Bowmanton 244R telecommunications site as set out in Appendix 12 – Permit and Licence No. U2012-574.

54. Pursuant to Section 13 of the *Hydro and Electric Energy Act*, the Commission, in Decision 2012-303²⁹ for the EATL project, jointly granted to AltaLink and ATCO Electric connection orders for the applied-for transmission line connections. The orders granted were as follows:

Connect 12L70 to Heartland 12S	Permit and Licence No. U2012-543
Connect 12L85 to Heartland 12S	Permit and Licence No. U2012-544
Connect new ATCO Electric 923L to existing AltaLink 923L	Permit and Licence No. U2012-545
Connect new ATCO Electric 1087L to existing AltaLink 1087L	Permit and Licence No. U2012-546
Connect new ATCO Electric 1035L to existing AltaLink 1035L	Permit and Licence No. U2012-547
Connect new ATCO Electric 1088L to existing AltaLink 1088L	Permit and Licence No. U2012-548

55. The appendices will be distributed separately.

Dated on November 15, 2012.

The Alberta Utilities Commission

(original signed by)

Tudor Beattie, QC
Panel Chair

(original signed by)

Neil Jamieson
Commission Member

(original signed by)

Clifford Goerz
Acting Commission Member

²⁹ Decision 2012-303: ATCO Electric Ltd. – Eastern Alberta Transmission Line Project, Applications No. 1607153 and 1607736, Proceeding ID No. 069, November 15, 2012.