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Alberta Electric System Operator
Needs Identification Document Application

Enbridge Pipelines Inc.
Facility Application

AltaLink Management Ltd.
Facility Application

Battle Sands 594S Substation and Interconnection

December 16, 2015

Alberta Utilities Commission
Decision 20932-D01-2015: Battle Sands 594S Substation and Interconnection

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Application 20932-A001

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Application 20932-A002

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Applications 20932-A003 to 20932-A005

Proceeding 20932

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1 Introduction and background

1. The Alberta Electric System Operator (AESO) filed an application with the Alberta Utilities Commission, pursuant to Section 34 of the *Electric Utilities Act*, for approval of the need to connect the Enbridge Pipelines Inc. (Enbridge) Battle Sands 594S substation to the 138-kilovolt (kV) transmission system in the Hardisty area. The needs identification document application was registered on October 19, 2015, as Application 20932-A001.

2. Enbridge filed a facility application with the Commission for approval to construct and operate the Battle Sands 594S substation. The application, filed pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, was registered on October 19, 2015, as Application 20932-A002.

3. AltaLink Management Ltd. (AltaLink) filed a facility application with the Commission for approval to construct and operate a new 138-kV transmission line, to be designated as 769BL, from Battle Sands 594S substation to existing transmission line 769L, connect 769BL to Battle Sands 594S substation, alter 769L to allow for the proposed 769BL line tap, and add a 138-kV circuit breaker at Rosyth 296S substation. The application, filed pursuant to sections 14, 15 and 18 of the *Hydro and Electric Energy Act*, was registered on October 20, 2015, as applications 20932-A003 to 20932-A005.

4. Pursuant to Section 15.4 of the *Hydro and Electric Energy Act*, the AESO and AltaLink requested that the Commission consider the needs identification document application and the facility application jointly. Enbridge also requested its application be considered concurrently with the AESO and AltaLink applications. The Commission combined the AESO, Enbridge and AltaLink applications and advised the parties that the applications had been combined and were being considered jointly as Proceeding 20932.

5. On November 6, 2015, the Commission issued an information request to Enbridge. On November 24, 2015, Enbridge responded to the information request.

6. On November 5, 2015, the Commission issued a notice of applications for Proceeding 20932. Submissions to the Commission in response to the notice were to be made by November 26, 2015. The notice was sent directly to landowners, residents, agencies, municipalities, industry stakeholders and pipeline operators within a minimum of 800 metres of the proposed project location as identified by AltaLink and Enbridge. The notice was also published on the AUC website and notification was automatically emailed to eFiling System users that had chosen to be notified of notices of application issued by the Commission.

7. No submissions were received by the submission deadline of November 26, 2015.

2 Discussion

2.1 Needs identification document application

8. The AESO received a system access service request from Enbridge for a reliable connection of its proposed Battle Sands 594S substation in order to serve its new load in the Hardisty, Alberta area. The proposed substation would have a peak load of 26 megawatts (MW). A demand transmission service capacity of 26 MW was not requested because the load will totalize with Enbridge's existing 60.3-MW demand transmission service contract.

9. The AESO determined that the need could be met by:

- Adding one new 138-kV circuit to connect the proposed Battle Sands 594S substation to the existing 138-kV transmission line 769L, using a T-tap configuration; and
- Adding one 138-kV circuit breaker to the Rosyth 296S substation.

10. The AESO stated that three other options were considered to connect Enbridge's substation. These options were the radial connection of the substation to Rosyth 296S substation or Clipper 656S substation, an in-and-out connection to transmission line 769L, and an in-and-out connection to transmission line 703L. The radial connection to Rosyth 296S substation and Clipper 656S substation options were ruled out because those substations had inadequate space to accommodate an additional circuit breaker bay and right-of-way constraints. The in-and-out connections to transmission line 769L or 703L were ruled out because they would require a new switching station which would result in a higher cost than the proposed solution.

11. The AESO conducted power flow, voltage stability, short-circuit and motor starting analyses to assess the impact of the proposed development on the transmission system. These analyses indicated that the proposed development would not adversely impact the performance of the transmission system.

12. The AESO directed AltaLink to file a facility application with the AUC for the facilities to meet the need identified and to assist the AESO in conducting a participant involvement program for its needs identification document application.

2.2 AltaLink facility application

13. To meet the need identified by the AESO in the needs identification document application, AltaLink proposed to:

- Construct approximately one kilometre of single-circuit 138-kV transmission line, to be designated as 769BL, from the existing transmission line 769L to Enbridge's proposed Battle Sands 594S substation;
- Modify the existing transmission line 769L, to allow for the proposed 769BL line tap;
- Add a 138-kV circuit breaker and associated equipment at the Rosyth 296S substation; and
- Interconnect transmission line 769L to the proposed Battle Sands 594S substation via the new 769BL transmission line.

14. AltaLink proposed one route for transmission line 769BL. The proposed transmission line would be located one metre within the Range Road 95 road allowance and on Enbridge's property in NE 19-42-9-W4M and SE 30-2-9-W4M. AltaLink stated that this route would meet the following objectives:

- Achieve a short and direct connection from transmission line 769L to Enbridge's substation;
- Ensure the transmission line route aligned with Enbridge's future development plans; and
- Minimize the overall impact.

15. Transmission line 769BL would utilize one 266 ACSR Partridge conductor on single-pole structures. The structures would be steel, wood or fiber composite and typically range between 18 and 28 metres in height. AltaLink would require 10 metres of right-of-way on the portion of the line located on Enbridge-owned land. Right-of-way for the portion of the transmission line located in the road allowance would not be required.

16. The alteration to Rosyth 296S substation would occur on the property leased from Enbridge and would not require any expansion of the existing fenceline. Upon completion of the alteration, Rosyth 296S substation would contain the following major equipment:

- Two 138/4.16-kV, 20/26.6/33.3-megavolt-ampere (MVA) transformers;
- One 138/4.16-kV, 15/20/25-MVA transformer;
- Two 138-kV circuit breakers; and
- Associated substation equipment.

17. AltaLink stated the project would not have residential or visual impacts because it is located within an industrial area with no residences within 800 metres of the proposed development. Similarly, the area does not support agricultural activities.

18. AltaLink estimated that environmental impacts would be minimal because the project is located within an industrial area. AltaLink stated that tree and brush removal is not required for the project because the area is free of any trees or vegetation. AltaLink conducted a search of the Fish and Wildlife Management Information System (FWMIS) and Alberta Conservation Information Management System (ACIMS) for any wildlife and vegetation species at risk. The FWMIS identified historical occurrences of badger, least flycatcher, norther harrier and Swainson's hawk. AltaLink stated that construction was scheduled to start prior to the start of migratory bird nesting and appropriate mitigation would be conducted in accordance with the Environmental Specifications and Requirements if required. AltaLink notified Alberta Environment and Parks (AEP). AEP did not identify any concerns with the project. The ACIMS search did not identify any "non-sensitive" or "sensitive element occurrences" within one kilometre of the project area. AltaLink indicated there are no wetlands within 100 metres of the project, with the closest wetlands approximately 300 metres away from the project area. AltaLink indicated the project would have no adverse effects to fish, fish habitat, groundwater or surface water.

19. AltaLink received *Historical Resources Act* approval from Alberta Culture and Tourism on September 25, 2015. The land where Rosyth 296S substation is located contains a Historic Resource Value 5a notation, however, AltaLink received *Historical Resources Act* approval from Alberta Culture and Tourism for all proposed projects and works within existing substation fencelines on October 8, 2014. The proposed project would not expand the fenceline.

20. AltaLink did not conduct a noise impact assessment because there would be no continuous audible noise source added by the proposed development.

21. AltaLink estimated the cost of the proposed development to be $4.933 million, with the cost allocated to the customer, Enbridge. The estimated in-service date is July 1, 2017.

22. AltaLink and the AESO conducted a joint participant involvement program. The program provided project-specific material to stakeholders within a minimum of 800 metres of the project location. The stakeholders within 100 metres of the new transmission line right-of-way and Rosyth 296S substation boundary were consulted through phone calls and via email in June 2015. AltaLink distributed a project update newsletter in August 2015. AltaLink stated that there are no outstanding concerns. No First Nations consultation was required for the project because there is no Crown land impacted by the proposed development.

2.3 Enbridge facility application

23. Enbridge applied to the Commission to construct and operate the Battle Sands 594S substation and to connect the substation to the Alberta Interconnected Electrical System. The proposed substation would contain the following equipment:

- Two 138/6.9-kV, 25/33-MVA transformers;
- Three 138-kV circuit breakers and motor operated isolation switches;
- One control building; and
- Associated substation equipment.

24. Enbridge stated that through discussions with the AESO, it was determined a new substation would be required to operate a new pump station located at the Hardisty terminal, approximately four kilometres south of the town of Hardisty. Enbridge received Section 101 release from FortisAlberta for the Battle Sands 594S substation. The substation would be located inside Enbridge's Hardisty terminal at NE-19-42-9-W4M. Enbridge selected the site for the substation due to its close proximity to existing transmission line 769L, AltaLink's proposed route for transmission line 769BL, and the Hardisty pump station. Enbridge stated that the location would also avoid impacts to additional lands and it would be located on lands already used and developed for the Hardisty pump station and would not impact residences or agricultural lands.

25. Enbridge stated that all costs associated with the substation, associated transmission line and interconnection would be paid directly by Enbridge. Since Enbridge was not contracting for an incremental amount of demand transmission service MWs the substation project costs would not currently be eligible for the AESO's local investment. The AESO agreed to support Enbridge's request for the totalization of the new Battle Sands 594S substation load with the existing loads at Rosyth 296S and Clipper 656S substations. Enbridge estimated an in-service date of July 1, 2017, in time for the commissioning and operation of Enbridge's Line 3 replacement pipeline.

26. Enbridge contracted CH2M Hill Energy Canada Ltd. to conduct an environmental evaluation of the proposed substation site. The evaluation stated that the substation would be: wholly contained within the fenceline of Enbridge's existing Hardisty terminal, avoid wetlands and watercourses, not adjacent to any parks or campgrounds, not located within any key wildlife and biodiversity zones or critical wildlife habitat, in close proximity to all-weather roads access for construction and operation. The evaluation concluded that the construction and operation of Battle Sands 594S substation would have no significant environmental impacts.

27. Enbridge stated the Battle Sands 594S substation did not require a conservation and reclamation plan or an environmental impact assessment under the Alberta *Environmental Protection and Enhancement Act*. Enbridge received *Historical Resources Act* clearance from Alberta Culture and Tourism on July 6, 2015.

28. Enbridge retained Acoustical Consultants Inc. (ACI) to conduct a noise impact assessment (NIA) for the proposed substation. ACI generated a computer model of the baseline, application case and cumulative case conditions and compared the noise levels to the applicable noise criteria outlined in the Commission's Rule 012: *Noise Control*. The closest residence (R-01) is seasonally occupied and located approximately 450 metres from the terminal fenceline and 1,600 metres from the proposed project. A second residence (R-02) is located approximately 980 metres from the existing Enbridge terminal fenceline and 2,230 metres from the proposed project.

29. The permissible sound level was determined to be 50 dBA L_{eq} daytime and 40 dBA L_{eq} nighttime at residence R-01 and 55 dBA L_{eq} daytime and 45 dBA L_{eq} nighttime at residence R-02. ACI calculated the cumulative predicted nighttime noise level at receptor location R-01 was 37.2 dBA L_{eq} and the cumulative predicted nighttime noise level at receptor location R-02 was 40.2 dBA L_{eq}. ACI concluded that the noise levels would be below the Rule 012 permissible sound levels for all surrounding residential and theoretical 1,500-metre receptors. The NIA also

indicated the project would have a low possibility of any low frequency tonal noise. The NIA concluded that the relative impact of the project on adjacent residential receptors would be low, complies with Rule 012 and that no additional noise mitigation would be required.

30. Enbridge conducted a participant involvement project, contacting all relevant agencies, landowners, municipalities and other stakeholders within 800 metres of the proposed substation. The stakeholders were sent a notification package containing maps and information brochures. No objections were received by Enbridge. Enbridge did not conduct personal consultation because there are no adjacent landowners within 100 metres of the proposed substation. No aboriginal consultation was required because the project would be located entirely within Enbridge's land.

31. Enbridge proposed an in-service date of July 1, 2017.

3 Findings

32. The Commission finds that the needs identification document application filed by the AESO contains all the information required by the *Electric Utilities Act*, the *Transmission Regulation* and Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*.

33. No interested party demonstrated that the AESO's assessment of the need to connect the proposed Battle Sands 594S substation to the 138-kV transmission system is technically deficient or that approval of the needs identification document application is not in the public interest. Therefore, the Commission considers the AESO's assessment of the need to be correct, in accordance with subsection 38(e) of the *Transmission Regulation*, and approves the AESO's needs identification document application.

34. The Commission finds that the facility applications to construct and operate transmission line 769BL and the Battle Sands 594S substation, and to alter Rosyth 296S substation, and connect the Battle Sands 594S substation to the Alberta Interconnected Electric System, filed by AltaLink and Enbridge pursuant to sections 14, 15 and 18 of the *Hydro and Electric Energy Act*, comply with the information requirements prescribed in Rule 007. AltaLink's facility application is also consistent with the need identified in the needs identification document application.

35. The Commission finds that the joint participant involvement program undertaken by the AESO and AltaLink, and the participant involvement program conducted by Enbridge meet the requirements of Rule 007. In addition, the Commission notes that there were no objections or concerns received in response to the AUC notice of applications.

36. The Commission is satisfied that the submitted noise impact assessment submitted by Enbridge is in compliance with the requirements of Rule 012.

37. The Commission is satisfied that potential adverse environmental impacts are minimal because the proposed substation is located within Enbridge's Hardisty terminal, the alteration to Rosyth 296S substation occurs within the existing fenced area, and transmission line 769BL is situated within a road allowance or on Enbridge's lands.

38. The Commission considers that the technical, siting and environmental aspects of the facilities, as specified in Rule 007, have been met.

39. Given the considerations discussed above, the Commission finds the proposed AltaLink and Enbridge projects to be in the public interest pursuant to Section 17 of the *Alberta Utilities Commission Act.*

4 Decision

40. Pursuant to Section 34 of the *Electric Utilities Act*, the Commission approves the need outlined in Needs Identification Document Application 20932-A001 and grants the AESO the approval set out in Appendix 1 – Needs Identification Document Approval 20932-D02-2015 – December 16, 2015.

41. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 20932-A002 and grants Enbridge the approval set out in Appendix 2 – Permit and Licence 20932-D003-2015 – December 16, 2015, to construct and operate Battle Sands 594S substation.

42. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 20932-A003 and grants AltaLink the approval set out in Appendix 3 – Permit and Licence 20932-D04-2015 – December 16, 2015, to construct and operate transmission line 769BL.

43. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves Application 20932-A004 and grants AltaLink the approval set out in Appendix 4 – Connection Order 20932-D05-2015 – December 16, 2015, to connect transmission line 769BL to Battle Sands 594S substation.

44. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 20932-A005 and grants AltaLink the approval set out in Appendix 5 – Permit and Licence 20932-D06-2015 – December 16, 2015, to alter and operate Rosyth 296S substation.

45. The appendices will be distributed separately.

Dated on December 16, 2015.

Alberta Utilities Commission

(original signed by)

Tudor Beattie, QC
Commission Member