



**Alberta Electric System Operator
Needs Identification Document Application**

**ATCO Electric Ltd.
Facility Applications**

Carmon Creek Interconnection

June 19, 2015

Alberta Utilities Commission

Decision 3543-D01-2015: Carmon Creek Interconnection

Alberta Electric System Operator
Needs Identification Document Application
Application 1611092-1

ATCO Electric Ltd.
Facility Applications
Applications 1611030-1 to 1611030-4

Proceeding 3543

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1 Introduction and background

1. Pursuant to Alberta Utilities Commission Approval [U2014-98](#),¹ Shell Canada Ltd. has approval to construct and operate the 690-megawatt Carmon Creek Project Phases 1 and 2 power plant (the Carmon Creek power plant) located in Northern Sunrise County, Alberta, approximately 40 kilometres northeast of the town of Peace River.
2. Shell Canada Ltd. also has approval to construct and operate the Brock 232S substation pursuant to AUC Permit and Licence [U2014-99](#).²
3. ATCO Electric Ltd. (ATCO Electric) is the owner and operator of the Wesley Creek 834S substation pursuant to AUC Permit and Licence [U2008-337](#).³
4. The Alberta Electric System Operator (AESO) filed a needs identification document application (the NID application) with the Alberta Utilities Commission pursuant to Section 34 of the *Electric Utilities Act* seeking approval of the need to respond to a request for system access service by connecting the Carmon Creek power plant to the Alberta Interconnected Electric System. The NID application was registered on December 17, 2014 in the AUC's electronic filing system as Application 1611092-1.
5. ATCO Electric filed facility applications with the Commission for approval to meet this need identified by the AESO by constructing two new 240-kilovolt (kV) transmission lines approximately 23 kilometres in length, and modifying the existing Wesley Creek 834S substation by adding equipment and expanding the fenced area (the project). The applications were filed pursuant to sections 14, 15 and 18 of the *Hydro and Electric Energy Act* and were registered on November 28, 2014 in the AUC's electronic filing system as Applications 1611030-1 to 1611030-4.
6. In accordance with Section 15.4 of the *Hydro and Electric Energy Act*, the AESO and ATCO Electric requested that the Commission combine and consider the needs identification document application and the facility applications jointly. On December 29, 2014, the Commission advised the AESO and ATCO Electric that the applications had been combined and were being considered jointly as Proceeding 3543.

¹ Power Plant Approval U2014-98, Proceeding 2787, Application 1610047, March 21, 2014.

² Substation Permit and Licence U2014-99, Proceeding 2787, Application 1610047, March 21, 2014.

³ Substation Permit and Licence U2008-337, Application 1581126, December 18, 2008.

7. In the NID application, the AESO requested that the Commission combine the needs and facility applications in Proceeding 3543 with two other proceedings in the Peace River area to increase administrative efficiency. On March 19, 2015, the Commission decided, for reasons given in its ruling, to continue to conduct each proceeding separately.⁴
8. On April 2, 2015, the Commission issued a notice of applications for Proceeding 3543, which notified anyone who wished to express concerns about, or support of, one or more of the applications that they must file such submissions with the Commission by April 24, 2015. The notice was sent directly to landowners, occupants, agencies and other interested parties identified by ATCO Electric as being located within 800 metres of the project. The notice was published on the AUC website and in the Peace River Record Gazette on April 15, 2015.
9. On May 1, 2015, the Commission issued information requests to the AESO and to ATCO Electric. Both responded to the information requests on May 8, 2015. In its response, the AESO indicated that preliminary results of a study that was currently underway would be provided when available. On May 29, 2015, the AESO filed a supplemental response with the study results.
10. One of the mailed notices was returned by Canada Post. The notice was returned to ATCO Electric to obtain updated contact information. ATCO Electric provided updated contact information respecting these stakeholders and notice was issued to them on May 7, 2015, with an extended submission deadline of May 22, 2015.
11. An earlier submission was received from TransCanada Energy Ltd. on February 3, 2015, regarding combining the Peace River area proceedings. On April 2, 2015, TransCanada Energy Ltd. withdrew from participating in the proceeding and on May 13, 2015, it submitted an email in response to the notice of applications indicating that it had no concerns with the project. No other submissions were received.

2 Discussion

2.1 Needs identification document application

12. The NID application was prepared by the AESO in response to a request by Shell Canada Ltd. to connect the Carmon Creek power plant to the Alberta Interconnected Electric System.
13. The AESO directed ATCO Electric, the transmission facility owner in the project area, to assist in the preparation of the NID application pursuant to Section 39 of the *Electric Utilities Act* and Section 14 of the *Transmission Regulation*.
14. The AESO's proposed transmission system expansion to respond to this system access service request included the following components:
- a. two new 240-kV transmission lines to connect Shell Canada Ltd.'s approved Brock 232S substation to the existing Wesley Creek 834S substation
 - b. two new 240-kV circuit breakers to be installed at Wesley Creek 834S substation

⁴ Exhibit 3543-X0004, AUC letter to parties - combining proceedings 3543, 3598 and 3591.

- c. other equipment additions and modifications as necessary, including operational protection, controls, and telecommunication devices, required to ensure proper integration with the transmission system

15. The AESO stated that it had considered two alternatives for connecting the Carmon Creek power plant during its preliminary evaluation. The first alternative proposed an in-and-out connection with the existing 240-kV transmission line 9L15 connecting Wesley Creek 834S substation and Brintnell 876S substation. The second alternative proposed two new 240-kV transmission lines radially connected to the existing Wesley Creek 834S substation and was put forward by the AESO. The first alternative was rejected because the thermal capacity of transmission line 9L15 was insufficient and an extra switching substation would be required. The thermal violations and N-0 overloads on the 144-kV system, and mitigation measures to correct them, would be similar for the two alternatives.

16. The AESO conducted a connection study to assess transmission system performance prior to and after the proposed connection. The AESO performed its connection assessment for the project in conjunction with the connection assessment for the interconnection of the approved Whitetail Peaking Power Plant, also located in the Peace River area. The connection assessments found that the connection of the proposed facilities described in paragraph 14, in conjunction with the Whitetail Peaking Power Plant, may result in new thermal constraints on the 144-kV transmission line 7L27 under N-0 conditions (i.e. system normal conditions).

17. The AESO stated that the planned development of transmission elements in the Northwest Region, specifically a transmission line from Wesley Creek 834S substation to a planned Little Smoky South substation, would resolve these potential overload issues. The AESO expected, based on its preliminary studies for the region, that developments in the Northwest Region will be in service in 2019 or 2020. The AESO confirmed that until the planned developments for the Northwest Region are in service, remedial action schemes and ISO Rules, Section 302.1, *Transmission Constraint Management* will be used to maintain safe and reliable operation of this part of the Alberta Interconnected Electric System.

18. The AESO submitted that rather than considering potential N-0 constraints in the Peace River area in the present proceeding, these would be better addressed in Proceeding 3591, in which a number of market participants are registered to consider the AESO request for an exception pursuant to Section 15(2) of the *Transmission Regulation* for the Peace River area.

19. During the period from November 2013 to December 2014, the AESO worked with ATCO Electric to carry out a participant involvement program to notify stakeholders of the need for the project. The AESO participant involvement program notified all occupants, residents and landowners within 800 metres of the proposed development, as well as other interested parties including First Nations. Because of the potential for future thermal constraints associated with the project, the AESO also included potentially affected market participants in its participant involvement program. The AESO stated that one landowner's concern and a concern from a potentially affected market participant, TransCanada Energy Ltd., were raised during consultation but that each was subsequently resolved. The AESO indicated that there are no outstanding concerns regarding the need for the project.

20. The AESO determined that there are no system-related costs associated with the proposed transmission expansion.

2.2 Facility applications

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

22. Accordingly, ATCO Electric proposed to construct two new single-circuit 240-kV transmission lines to be designated as 9L124 and 9L139, approximately 23 kilometres in length, connecting the existing Wesley Creek 834S substation to Shell Canada Ltd.'s approved Brock 232S substation, and alter the Wesley Creek 834S substation by adding two 240-kV circuit breakers and expanding the fenced area.

23. Following the circuit breaker additions, the major equipment in Wesley Creek 834S substation would be:

- a) two 180/240/300 megavolt-amperes, 240/144/25-kV transformers
- b) seven 240-kV circuit breakers
- c) seven 144-kV circuit breakers
- d) three 25-kV circuit breakers
- e) one 25-MVAR, 240-kV reactor
- f) one 20-MVAR, 25-kV reactor
- g) one telecommunications tower and associated communications equipment
- h) an enclosure surrounded by a chain-link fence

24. The Wesley Creek 834S substation is located approximately 30 kilometres northeast of the town of Peace River in the southwest quarter of Section 17, Township 84, Range 19, west of the Fifth Meridian. To accommodate the addition of the circuit breakers, ATCO Electric proposed to expand the fenced area of the substation by an additional 10 metres by 115 metres along the north boundary.

25. ATCO Electric developed, and then engaged in consultations with respect to, three preliminary transmission line route options. It developed a proposed route based on feedback from these consultations, relying in particular on input from Alberta Environment and Sustainable Resource Development in selecting a route which would avoid wetland and trumpeter swan breeding areas and follow existing linear developments. Only one transmission line route was ultimately proposed. ATCO Electric stated that the proposed route was acceptable to Alberta Environment and Sustainable Resource Development because it avoided the wetlands in the project area.

26. ATCO Electric stated that the potential environmental impacts of the proposed route are not expected to be significant. The southern portion of the proposed transmission line route, including the existing Wesley Creek 834S substation site, overlaps an aquatic environmentally significant area. ATCO Electric stated that through implementation of its environmental protection plan, impacts on the aquatic environmentally significant area would be mitigated.

27. ATCO Electric did not submit a noise impact assessment because no noise-producing equipment was proposed for the Wesley Creek 834S substation.

28. The project would be located in Northern Sunrise County in the Lower Peace Region of Alberta, for which there is not currently a provincial land-use framework in force. ATCO Electric stated that the project was exempt from, but would align with, environmental initiatives outlined in the Northern Sunrise County Municipal Development Plan.
29. ATCO Electric stated that the project would include pre-construction environmental surveys of wildlife, vegetation and wetlands. ATCO Electric committed to monitor bird mortality along the proposed transmission lines during annual inspections and, in consultation with experts from Alberta Environment and Sustainable Resource Development and Ducks Unlimited, would develop specific mitigation measures to protect birds as requested or required.
30. ATCO Electric stated that the project would be located within the Boreal Forest Natural Region and the Central Mixedwood and Dry Mixedwood sub-regions. The land use in the project area is a mix of oil and gas, and forestry developments with some scattered cultivated areas in the southern portion.
31. ATCO Electric stated that Alberta Culture granted *Historical Resources Act* clearance for the project in June 2014 and that a historical resources impact assessment was not required for the project.
32. ATCO Electric stated that it would comply with setbacks or other activity restrictions applicable to designated areas where required. However, it noted that in locations such as wetlands where environmental features are present, and setbacks cannot be complied with, it has either obtained, or would obtain, approval for them from Alberta Environment and Sustainable Resource Development. For segments of the project that will have activity occurring during unfrozen conditions, ATCO Electric stated that it would consult with Alberta Environment and Sustainable Resource Development to obtain such additional approvals and directions as may be required.
33. ATCO Electric conducted a participant involvement program that included notification to and consultation with occupants, residents, landholders, agencies, municipalities and other interested parties located within 800 metres of the proposed project. It also notified Duncan's First Nation and the Woodland Cree First Nation. ATCO Electric stated that it responded to all concerns raised, but that there was one outstanding concern that related to future development, proposed construction activities and the consultation process, raised by a landowner adjacent to the existing Wesley Creek 834S substation.
34. The cost of the project was estimated by ATCO Electric to be \$46,277,500 plus 20 per cent or minus 10 per cent. No costs were designated as system costs.

3 Findings

35. 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*.

36. No interested party demonstrated that the AESO's assessment of the need to interconnect the Carmon Creek power plant is technically deficient or that approval of the needs identification document is not in the public interest. Therefore, as prescribed by subsection 38(e) of the *Transmission Regulation*, the Commission considers the AESO's assessment of the need to be correct, and approves the AESO's needs identification document.

37. The Commission finds that the ATCO Electric facility applications to interconnect the Carmon Creek power plant by constructing and operating two new 240-kV transmission lines approximately 23 kilometres in length and modifying the existing Wesley Creek 834S substation, filed pursuant to sections 14, 15 and 18 of the *Hydro and Electric Energy Act*, comply with the information requirements prescribed for them in Rule 007. The Commission is satisfied that the facilities proposed in the facility applications will be sufficient to meet the need identified in the AESO's needs identification document.

38. The Commission is also satisfied that the joint participant involvement program undertaken by the AESO and ATCO Electric meets the requirements of Rule 007.

39. In light of ATCO Electric's submission that it may not be able to comply with some setback requirements, it is directed, prior to initiating construction, to consult specifically with Alberta Environment and Parks⁵ wildlife staff and to comply with their directions about the need to assess and mitigate expected effects of construction upon wildlife.

40. The AESO has filed the need application to meet its legislated mandate to provide non-discriminatory system access service on the transmission system. The AESO has provided sufficient assurance that the proposed facilities will not negatively affect the safety and reliability of the Alberta Interconnected Electric System. Potential N-0 transmission constraints and congestion attendant upon future operation of these proposed facilities are not a proper basis for denying an otherwise meritorious application for system access service. The Commission is satisfied that any such implications will be adequately managed by the AESO by applying ISO Rules 302.1 *Transmission Constraint Management* which is in the course of being amended to comply with applicable legislation, and by applying remedial action schemes. Whether or not an exception is approved pursuant to Section 15(2) of the *Transmission Regulation* for the Peace River area and potential market impacts, if any, in Proceeding 3591 is not relevant to this decision.

41. The Commission is aware of the motion made by Shell Canada Ltd. on June 3, 2015 in Proceeding 3591 regarding the interconnection of the Carmon Creek power plant. The issuance of a connection order in this proceeding addresses Shell Canada Ltd.'s motion.

42. Based upon all of the evidence provided in this proceeding and its above findings, the Commission also finds the project to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

⁵ Since the filing of the application Alberta Environment and Sustainable Resource Development has been reorganized into Alberta Environment and Parks.

4 Decision

43. Pursuant to Section 34 of the *Electric Utilities Act*, the Commission approves the need described in the Needs Identification Document in Application 1611092-1 and grants the AESO the approval set out in Appendix 1 – Needs Identification Document Approval 3543-D02-2015 – June 19, 2015.
44. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 1611030-1 and grants ATCO Electric the approval set out in Appendix 2 – Transmission Line Permit and Licence 3543-D03-2015 – June 19, 2015, to construct and operate transmission line 9L124.
45. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 1611030-2 and grants ATCO Electric the approval set out in Appendix 3 – Transmission Line Permit and Licence 3543-D04-2015 – June 19, 2015, to construct and operate transmission line 9L139.
46. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves Application 1611030-4 and grants ATCO Electric the approval set out in Appendix 4 – Connection Order 3543-D05-2015 – June 19, 2015, to connect transmission line 9L124 to Brock 232S substation.
47. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves Application 1611030-4 and grants ATCO Electric the approval set out in Appendix 5 – Connection Order 3543-D06-2015 – June 19, 2015, to connect transmission line 9L139 to Brock 232S substation.
48. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 1611030-3 and grants ATCO Electric the approval set out in Appendix 6 – Substation Permit and Licence 3543-D07-2015 – June 19, 2015, to alter and operate Wesley Creek 834S substation.

49. The appendices will be distributed separately.

Dated on June 19, 2015.

Alberta Utilities Commission

(original signed by)

Willie Grieve, QC
Chair

(original signed by)

Anne Michaud
Commission Member

(original signed by)

Bohdan (Don) Romaniuk
Acting Commission Member