



**Nexen Inc. and CNOOC Canada Inc.**

**Long Lake Project Industrial System Designation Amendment**

**December 6, 2012**



**The Alberta Utilities Commission**

Decision 2012-330: Nexen Inc. and CNOOC Canada Inc.  
Long Lake Project Industrial System Designation Amendment  
Application No. 1608729  
Proceeding ID No. 2074

December 6, 2012

Published by

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## **1 Introduction**

1. Nexen Inc. (Nexen) and CNOOC Canada Inc., formerly OPTI Canada Inc., own the Long Lake Oil Sand Project (Long Lake project) near Anzac, Alberta. Nexen is the operator of all Long Lake project facilities. Nexen and CNOOC Canada Inc., pursuant to Order No. [U2010-151](#),<sup>1</sup> have approval for an industrial systems designation (ISD) for the Long Lake project. Nexen filed Application No. 1608729 with the Alberta Utilities Commission (AUC or the Commission) on August 9, 2012, requesting approval for an amendment to the ISD to include an expansion to its 25-kilovolt (kV) distribution system.

2. The application was made pursuant to sections 4 and 25(1) of the *Hydro and Electric Energy Act*.

3. The Commission issued information requests to Nexen on September 28, 2012. Nexen responded to the information requests on October 19, 2012.

4. The Commission issued a notice of application on November 9, 2012. The deadline for filing submissions with the AUC was November 30, 2012. No submissions were received by the deadline date.

## **2 Background**

5. The Long Lake project is a fully integrated project that combines a steam assisted gravity drainage (SAGD) bitumen recovery facility with an on-site OrCrude upgrader unit and a gasification facility, all of which are powered by on-site cogeneration facilities.

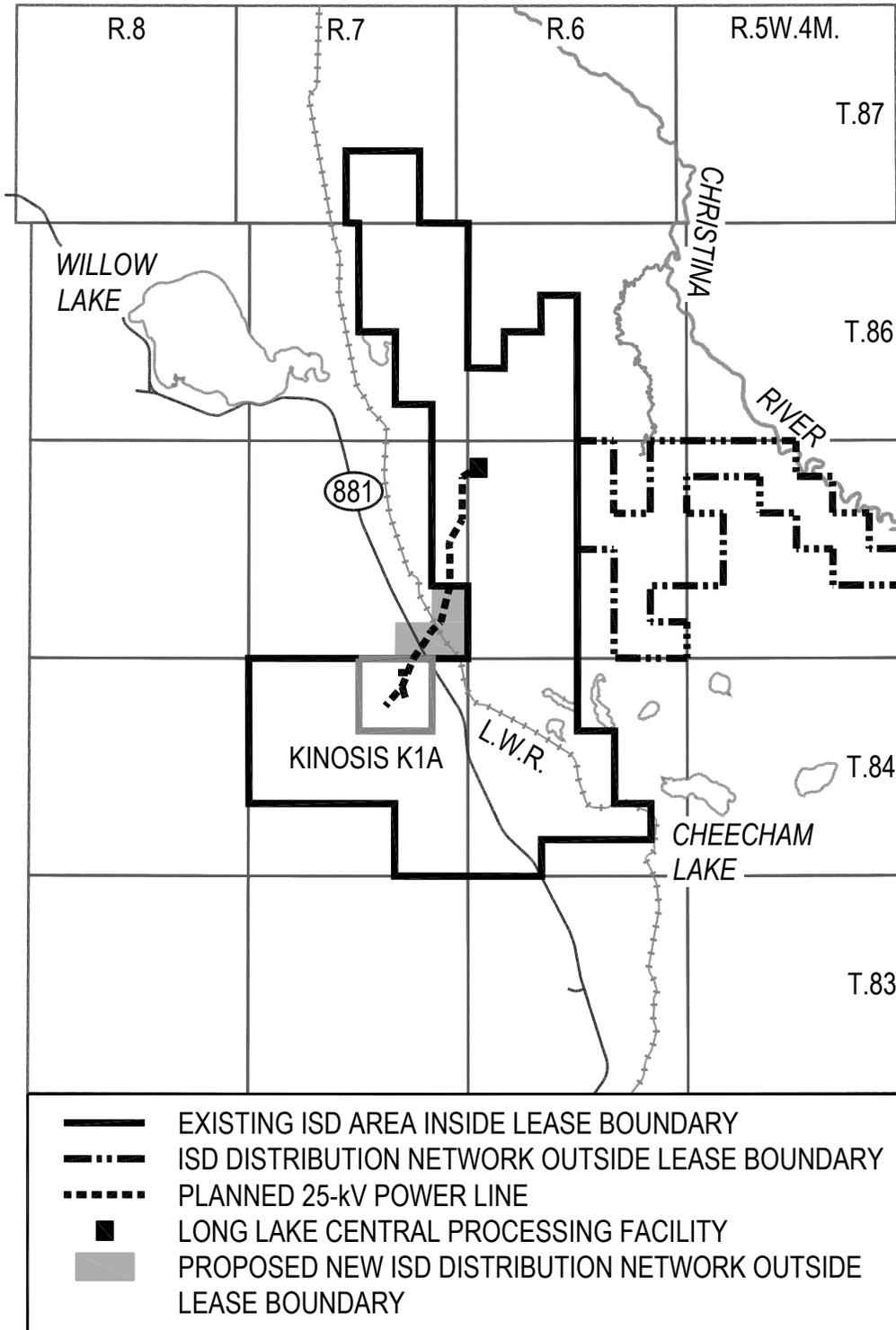
6. The OrCrude Upgrader unit and the SAGD facility rely on each other for feedstock. The OrCrude Upgrader supplies the gasification unit with the feedstock to produce synthetic gas that is used as fuel for turbines at the cogeneration facility as well as fuel for the on-site once-through steam generators. In turn, the on-site cogeneration facility supplies power to the SAGD and OrCrude Upgrader facilities, as well as other integrated components located off-site.

7. The Long Lake project includes an electrical distribution network of 25 kV which supplies components of the Long Lake project within the Long Lake project lease boundary and beyond the Long Lake project lease boundary.

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<sup>1</sup> Industrial System Designation Order No. U2010-151, Application No. 1604848, Proceeding ID No. 245, July 6, 2010.

8. Nexen is installing a steam generation facility and two bitumen recovery wellpads in the southwest area of its Long Lake lease boundary. The expansion project, called Kinosis 1A (K1A), will be fully integrated with the existing Long Lake SAGD facility, and located in Township 84, Ranges 6 and 7, west of the Fourth Meridian. K1A is approximately 10 kilometres south of the existing Long Lake central plant and within the existing Long Lake-Kinosis mineral lease boundary and its electric system is within the existing ISD.
9. The byproduct of the upgrading process is syngas, which is used as fuel for the Long Lake cogeneration facility. Some of the electricity generated at Long Lake using by-products from the K1A emulsion will be delivered back to K1A to power that facility.
10. Nexen applied to amend the existing ISD to include an additional 25-kV line. Part of the route of the 25-kV line would be outside of its lease boundary in sections 1, 2 and 12 of Township 85, Range 7, west of the Fourth Meridian, but within the existing main pipeline corridor that connects the Long Lake and K1A facilities.
11. A map of the proposed 25-kV route is included below.



**Figure 1: Proposed 25-kV distribution line**

12. ATCO Electric Ltd. (ATCO) is the regulated electric distributor for the service area in Sections 1, 2 and 12 of Township 85, Range 7, west of the Fourth Meridian. Nexen contacted ATCO directly via email and as part of its participant involvement mail out. Nexen did not receive any comments or concerns from ATCO. ATCO was also approached to provide a 25-kV

power source for K1A. In response, ATCO indicated that its existing 25-kV system did not have the capacity required to feed the K1A expansion.

13. Nexen evaluated several alternate power supply options for K1A before choosing the proposed 25-kV line from Long Lake as the preferred solution. Several 144-kV configurations were considered including sourcing from Long Lake and sourcing from ATCO. Both were deemed to be far less economical than the 25-kV solution.

14. The 144-kV ATCO supply option was determined to be approximately twice the cost of the proposed option. Further, a 144-kV ATCO supply option would take approximately two years to implement, which would not support the K1A start-up schedule.

15. Nexen stated that the environmental impact associated with the 25-kV distribution line would be minimal and consist of surface disturbance resulting from tree clearing within the distribution line and vegetation control easements. Routing the 25-kV distribution line parallel to the K1A-Long Lake pipeline corridor would allow construction crews to utilize the adjacent pipeline disposition area for work space and access requirements, thereby minimizing the overall width required for the 25-kV distribution line easement by five to 10 metres as compared to a stand-alone distribution line. Extensive geotechnical investigations were conducted for the K1A-Long Lake pipeline corridor, resulting in the minimum possible corridor distance between the two facilities while maintaining construction and operational feasibility for the pipelines within the corridor. Further, optimizing both the length and width of the distribution line easement by routing it parallel to the K1A-Long Lake pipeline corridor indicated that the overall footprint required for the distribution line would be reduced. In addition, the distribution line would be routed through land previously cleared by a forestry company reducing the amount of new disturbance.

16. Two alternate routes for the 25-kV line were considered. The first alternative was just to the east of the proposed route, but within Nexen's lease boundary. It would incur additional linear disturbance and fragment the landscape, and be contrary to best practices for wildlife and habitat management. The right-of-way required would be wider and approximately 800 metres longer with approximately five to 10 hectares of additional clearing. The cost for this alternate route was estimated to be eight per cent higher.

17. The second alternative 25-kV route considered would be to install larger conductors for the existing 25-kV lines to increase load carrying capacity. This option would take the existing 25-kV line out of service and shutdown the water well network for four weeks. This option also would have a lower power transfer capacity when compared with the transfer capabilities of other options. For these reasons, Nexen determined that overall, it was not a feasible option.

18. Nexen submitted that where the 25-kV line is outside of its lease boundary, it would not feed any electrical loads other than those directly associated with the Nexen pipelines, such as electrical heat tracing, leak detection, and/or corrosion protection.

19. The existing ISD and the project associated with the proposed ISD amendment would be located within the Lower Athabasca Regional Plan area. Nexen stated that the proposed project is compliant with the land-use planning detailed in the Lower Athabasca Regional Plan.

20. The surface land rights in Sections 1, 2 and 12 of Township 85, Range 7, west of the Fourth Meridian are owned by the Crown.

21. Nexen stated it conducted a participant involvement program for the work proposed in the project before filing the application. There were no concerns identified with the proposed project.

### 3 Findings

22. The ISD amendment requested in the application was made pursuant Section 4 of the *Hydro and Electric Energy Act*. The criteria to grant an ISD are listed in Section 4(3) of the *Hydro and Electric Energy Act*, namely:

- (a) the electric system includes a generating unit located on the property of the one or more industrial operations it is intended to serve, there is a high degree of integration of the electric system with one or more industrial operations the electric system forms part of and serves, and there is a high degree of integration of the components of the industrial operations;
- (b) the industrial operations process a feedstock, produce a primary product or manufacture a product;
- (c) there is a common ownership of all of the components of the industrial operations;
- (d) the whole of the output of each component within the industrial operation is used by that operation and is necessary to constitute its final products;
- (e) there is a high degree of integration of the management of the components and processes of the industrial operations;
- (f) the application to the Commission for a designation under subsection (1) demonstrates significant investment in both the expansion or extension of the industrial operations processes and the development of the electricity supply;
- (g) where an industrial operation extends beyond contiguous property, the owner of the industrial operation satisfies the Commission that the overall cost of providing the owner's own distribution or transmission facilities to interconnect the integral parts of the industrial operation is equal to or less than the tariffs applicable for distribution or transmission in the service area where the industrial operation is located.

23. With respect to criteria 4(3)(a), 4(3)(b), 4(3)(d), and 4(3)(e), the Long Lake project is an integrated project that combines a SAGD bitumen recovery facility with an on-site OrCrude Upgrader unit and a gasification facility, all of which are powered by an on-site cogeneration facility. The Commission recognizes that the on-site cogeneration facility powers the SAGD and OrCrude Upgrader facilities, as well as other integrated components located off-site.

24. With respect to criterion 4(3)(c), there is a common ownership of all of the components of the industrial operations by Nexen and CNOOC Canada Inc.

25. With respect to criterion 4(3)(f), the Commission believes the proposed 25-kV system expansion Nexen will incur a significant investment in both the expansion and extension of the

industrial operations processes and the development of the electricity supply for the Long Lake project.

26. Based on the findings stated above, the Commission finds that the ISD amendment requested in the application meets the requirements of Section 4(3) of the *Hydro and Electric Energy Act*.

27. The Commission recognizes that the expanded 25-kV distribution system is required to power the K1A expansion and that the routing outside Nexen's lease boundary is the most economic and environmentally suitable alternative.

28. Nexen conducted a participant involvement program prior to the application and advised that there were no outstanding objections or concerns. In addition, no objections were received in response to the notice issued by the Commission.

29. The Commission finds that the applications meet the requirements stipulated in AUC Rule 007: *Applications for Power Plants, Substations, Transmission Lines and Industrial System Designations*.

30. Based on the above, the Commission is satisfied that Nexen has met the required criteria to amend their ISD to include the proposed 25-kV line.

31. Based on the foregoing, the Commission considers the project to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

#### **4 Decision**

32. Pursuant to Section 4 of the *Hydro and Electric Energy Act* and sections 2(1)(d) and 117 of the *Electric Utilities Act*, the Commission approves the application and grants to Nexen Inc. and CNOOC Canada Inc. the approval set out in Appendix 1– Long Lake Project Industrial System Designation Amendment – Order No. U2012-595 – December 6, 2012 (Appendix 1 will be distributed separately).

Dated on December 6, 2012.

#### **The Alberta Utilities Commission**

*(original signed by)*

Tudor Beattie, QC  
Commission Member