



Suncor Energy Inc.

Errata to Decision 2011-523

**Firebag Substations and Power Plant Expansion and
Industrial System Designation Amendment**

January 10, 2012

The Alberta Utilities Commission

Decision 2011-523 (Errata): Suncor Energy Inc.

Firebag Substations and Power Plant Expansion and
Industrial System Designation Amendment

Applications No. 1607226, No. 1607227, No. 1607230, No. 1607233, No. 1607641

Proceeding ID No. 1198

January 10, 2012

Published by

The Alberta Utilities Commission

Fifth Avenue Place, Fourth Floor, 425 First Street S.W.

Calgary, Alberta

T2P 3L8

Telephone: 403-592-8845

Fax: 403-592-4406

Website: www.auc.ab.ca

Suncor Energy Inc.
Firebag Substations and Power Plant Expansion
and Industrial System Designation Amendment

Decision 2011-523 (Errata)
Application Nos. 1607226, 1607227, 1607230,
1607233 and 1607641
Proceeding ID No. 1198

1. On December 23, 2011, the Alberta Utilities Commission (AUC or the Commission) issued Decision 2011-523. The decision number was incorrectly shown as 2011-253 throughout this document. Paragraph 33 of the decision also contained an error as it referred to the applicant as ATCO. This paragraph has been corrected to read “The Commission finds that the noise impact assessment submitted by Suncor fulfills the requirements of AUC Rule 012.”
2. Section 48 of the Commission’s Rule 001: *Rules of Practice* indicates that “[t]he Commission may correct typographical errors, errors of calculation and similar errors made in any of its orders, decisions or directions.” Accordingly, this Errata Decision has been issued to correct the error.
3. The decision number within Decision 2011-523 has been amended and is attached to this Decision 2011-523 (Errata).

Dated on January 10, 2012.

The Alberta Utilities Commission

(original signed by)

Neil Jamieson
Commission Member



Suncor Energy Inc.

Firebag Substations and Power Plant Expansion and
Industrial System Designation Amendment

December 23, 2011

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1 Introduction

1. Suncor Energy Inc. (Suncor) filed an application with the Alberta Utilities Commission (AUC or the Commission) seeking approval to construct and operate a substation designated as 29EDD-571 pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*. The application was registered on April 21, 2011, as Application No. 1607226.
2. Suncor filed an application with the Commission seeking approval to construct and operate a substation designated as 29EDD-109 pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*. The application was registered on April 21, 2011, as Application No. 1607227.
3. Suncor, pursuant to Permit and Licence No. [U2009-358](#)¹ is the operator of 29EDD-71 substation. Suncor filed an application with the Commission seeking approval to alter and operate the 29EDD-71 substation pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*. The application was registered on April 21, 2011, as Application No. 1607230.
4. Suncor filed an application with the Commission seeking an approval to construct and operate two 85-megawatt (MW) cogeneration units pursuant to Section 11 of the *Hydro and Electric Energy Act*. This application was registered on April 21, 2011, as Application No. 1607233.
5. On May 14, 2011, the Commission issued Decision [2010-213](#)² and Industrial System Designation Order No. [U2010-205](#),³ designating Firebag as an industrial system pursuant to Section 4 of the *Hydro and Electric Energy Act* and exemption from the operation of the *Electric Utilities Act* of the electric energy produced from and consumed by the proposed industrial system, pursuant to Section 117 of the *Electric Utilities Act*. The industrial system consists of the following equipment:
 - Four steam turbine generators STG 1 (17 MW), STG 2 (32 MW), STG 3 (60 MW), and STG 4 (70 MW).
 - Five heat recovery steam generators.
 - Five gas turbine generators GTG 5 (115 MW), GTG 6 (115 MW), GTG 7 (85 MW), GTG 8 (85 MW), and GTG 9 (85 MW).

¹ Substation Permit and Licence No. U2009-358, Application No. 1605213, November 19, 2009.

² Decision 2010-213: Suncor Energy Inc. Industrial System Designation Amendment, Application No. 1605800, Proceeding ID No. 461, May 14, 2010.

³ Industrial System Designation Order No. U2010-205, Application No. 1605800, Proceeding ID No. 461, May 14, 2010.

- Four 240-kV substations 29EDD-1, 29EDD-34, 29EDD-56, and 29EDD-65.
- Ten 240-kV transmission lines 29PL9-1, 29PL9-2, 29PL9-3, 29PL9-4, 29PL9-5, 29PL9-6, 29PL9-12, 29PL9-13, 29PL9-14, and 29PL9-15.
- Six 144-kV substations 29EDD-18, 29EDD-71, 29EDD-86, 29EDD-87, 29EDD-107 and 29EDD-108.
- Eight 144-kV transmission lines 29PL7-1, 29PL7-2, 29PL7-3, 29PL7-4, 29PL7-5, 29PL7-7, 29PL7-8 and 29PL7-10.
- Fifteen 72-kV portable unit substations 29EDD-8, 29EDD-9, 29EDD-10, 29EDD-19, 29EDD-20, 29EDD-31, 29EDD-32, 29EDD-46, 29EDD-64, 29EDD-66, 29EDD-67, 29EDD-83, 29EDD-84, 29EDD-93 and 30EDD-218.
- Twenty-one 72-kV substations 30EDD-1 (836S), 30EDD-3 (737S), 30EDD-200, 29EDD-2, 29EDD-5, 29EDD-7, 29EDD-22, 29EDD-33, 29EDD-45, 29EDD-55, 29EDD-62, 29EDD-70, 29EDD-72, 29EDD-79, 29EDD-80, 29EDD-82, 29EDD-111, 29EDD-126, 29EDD-142, 29EDD-149 and 29EDD-150.
- Twenty-seven 72-kV transmission lines 6L32, 29PL6-1, 29PL6-2, 29PL6-3, 29PL6-4, 29PL6-5, 29PL6-6, 29PL6-7, 29PL6-14, 29PL6-16, 29PL6-22, 29PL6-23, 29PL6-24, 29PL6-25, 29PL6-26, 29PL6-27, 29PL6-28, 29PL6-29, 29PL6-30, 29PL6-34, 29PL6-36, 29PL6-38, 29PL6-39, 29PL6-41, 29PL6-42, 29PL6-43, and 29PL6-44.

6. Suncor filed an application with the Commission seeking an amendment to the industrial system designation by adding a new power plant and transmission and distribution facilities at the industrial system site. This application was registered as Application No. 1607641 on September 21, 2011.

7. The industrial system designation encompasses all facilities at Firebag. These facilities are located in Townships 92 to 97, Ranges 3 to 7, west of the Fourth Meridian, approximately 47 kilometres from Fort McKay.

8. The work proposed in the five applications introduced above will be cumulatively described as the Suncor project.

9. The Commission issued information requests to Suncor for the Suncor project applications on September 12, 2011 and October 31, 2011, in order to clarify details of the Suncor project applications. The Suncor project applications were deemed complete on November 28, 2011.

10. The Commission issued a notice of applications on November 28, 2011. The deadline for filing submissions with the AUC was December 19, 2011. No submissions were received by the deadline date.

2 Background

2.1 Substations

11. In Application No. 1607226, Suncor applied to construct and operate a 144-kV substation designated as 29EDD-571 which will be located in LSD 15, Section 4, Township 95, Range 6, west of the Fourth Meridian. The substation will consist of:

- One 145/4.16-kV, 7.5 megavolt-ampere (MVA) transformer.
- One 145-kV circuit breaker.
- One 145-kV disconnect switch.
- Associated substation equipment.

12. In Applications No. 1607227, Suncor applied to construct and operate a 144-kV substation designated as 29EDD-109 which will be located in LSD 3, Section 10, Township 95, Range 6, west of the Fourth Meridian. The substation will consist of:

- One 145/4.16-kV, 7.5 MVA transformer.
- One 145-kV circuit breaker.
- One 145-kV disconnect switch.
- Associated substation equipment.

13. Applications No. 1607226 and No. 1607227 indicated that substations 29EDD-109 and 29EDD-571 will connect electrically to Suncor's other facilities via a connection to the existing 144-kV transmission line 29PL7-8. The alteration of Suncor's transmission line 29PL7-8 is not a part of Applications No. 1607226 or No. 1607227. Suncor stated it will submit an application to the Commission to amend transmission line 29PL7-8 and to include the connection of substations 29EDD-109 and 29EDD-571 in the future.

14. In Application No. 1607230, Suncor applied to expand the existing substation 29EDD-71, which is located in LSD 7, Section 14, Township 95, Range 6, west of the Fourth Meridian. Suncor proposed the addition of:

- Two 145/25/13.8-kV transformers.
- Two 145/13.8-kV generator transformers.
- Six 170-kV breakers.
- Two 144-kV/208-volt/120-volt station service voltage transformers.

15. Suncor submitted that the proposed substations and substation expansion will occur entirely within Suncor's lease and within the existing industrial area. In 2006, Suncor submitted a full environmental impact assessment that assessed all air, water, land, ecological and human impacts of the proposed development area. Suncor stated that it will also conduct and submit to Alberta Environment a pre-disturbance assessment when new developments are added to its existing environmental approvals.

2.2 Power plants

16. In Application No. 1607233, Suncor applied to construct and operate two 85-MW cogeneration units at the Firebag plant site located in the southeast quarter of Section 14, Township 95, Range 6, west of the Fourth Meridian.

17. The power plants are a part of the fourth stage of Suncor's Firebag oilsands project. The Firebag project is located approximately 65 kilometres northeast of Fort McMurray. The property includes 425 sections of oil sands mineral leases and permits in Township 92 to 97, Ranges 3 to 7, W4M. The nearest community to the Firebag project is Fort McKay, located approximately 47.3 kilometres to the west.

18. Suncor identified the nearest seasonal resident is approximately 21 kilometres from the plants and the nearest permanent resident is located 48 kilometres from the power plants. The power plants will be located within Suncor's existing lease at the Firebag stages 3-6 central processing facility beside existing cogeneration units. Suncor identified that no siting or land-use issues are expected for the power plants.

19. Suncor stated that they hold Alberta Environment *Environmental Protection and Enhancement Act* approval number 80105-00-08, which includes approval for the proposed power plants. The approval was received following the submission of an Environmental Impact assessment to Alberta Environment for the Firebag stages 4-6 development project, of which the proposed power plants are a part.

20. Suncor provided information regarding the nitrogen oxides, sulphur dioxide, and primary particulate matter emissions predicted for the power plants. Suncor stated that the plants will meet Alberta air emission standards.

2.3 Industrial system designation

21. Suncor applied to amend the current Industrial System Designation Order No. U2010-205 to include new 240-kV substation 29EDD-94, new 144-kV substations 29EDD-571, and 29EDD-109, new 72-kV substation 29-EDD-152, the expansion of substations 29-EDD-1 and 29EDD-71, two new 85-MW cogeneration power plants designated as GTG-10 and GTG-11 and associated heat recovery steam generators, and 260-kV transmission lines 29PL9-16 and 29PL9-17. Suncor also updated the correct output of steam turbine generator STG 3 as 64-MW, and not 60-MW as listed in the existing order.

22. Substations 29EDD-94 and 29EDD-1 and transmission lines 29PL9-16 and 29PL9-17 will be the subject of future facility applications. Substation 29EDD-152 is a mine shovel substation and does not require a permit and licence and, therefore, is not subject to a facility application.

23. Suncor stated that the additional proposed facilities are required to meet projected electrical load growth within Suncor's existing industrial complex and were not intended to avoid Alberta Interconnected Electric System costs or to provide an uneconomic bypass to the Alberta Interconnected Electric System.

24. Suncor further stated that the proposed amendments will further capture opportunities for gains in energy and environmental performance including minimizing land disruption, creating self-sufficiency in water use between other facilities within the industrial complex.

25. Suncor declared that the proposed facilities do not parallel or duplicate existing or proposed transmission facility owner's transmission or distribution facilities. In addition, there are no Alberta transmission system facilities in the areas where Suncor's proposed facilities are to be located. The Suncor system is sized only to meet Suncor's industrial requirements. There is no consideration in the design for supplying transmission capacity to other parties.

26. Suncor submitted that construction of the facilities will be carried out in accordance with Alberta Environment's environmental protection guidelines for electric transmission lines, Suncor's EPEA approval number 80105-00-08, and Suncor's surface dispositions MLL 0100032 and MLL 000036.

2.4 Details common to all Suncor project applications

27. Suncor filed a noise impact assessment respecting the proposed substations and power plant and stated that anticipated noise levels will be within the permissible sound levels specified in AUC Rule 012: *Noise Control* (AUC Rule 012).

28. In their respective applications, Suncor stated it conducted a participant involvement program for the work proposed in the Suncor project before filing the applications. Suncor has further stated that there are no occupants, residents, or landowners other than Suncor within 800 metres of the proposed substations or 2,000 metres of the proposed power plants.

29. Suncor stated that their participant involvement program process involved public consultation with residents, occupants and landowners well beyond the 800 metre radius recommended for substations and the 2,000 metre radius recommended for power plants in AUC Rule 007: *Rules Respecting Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations* (AUC Rule 007). Suncor stated there are no known objections to the Suncor project.

3 Findings

30. The Commission has reviewed the application and has determined that the technical, siting, emissions, environmental and noise aspects of the proposed substations and power plant have been met.

31. Suncor conducted a participant involvement program for the application and advised that there were no outstanding public or government objections or concerns. No objections were received in response to the notice issued by the Commission.

32. The Commission finds that the applications meet the requirements stipulated in AUC Rule 007.

33. The Commission finds that the noise impact assessment submitted by Suncor fulfills the requirements of AUC Rule 012.

34. The Commission accepts that Suncor has submitted extensive reports on the environmental impacts of the proposed project to the Commission and Alberta Environment and that the impacts will be mitigated by the fact that the project will take place on land within the existing developed area and by specific mitigation measures proposed by Suncor.

35. The Commission finds that the applicant has demonstrated that the on-site generation is the most economic and efficient source of power for the industrial system, that the efficiency of the interconnected electric system is improved, that there is no duplication of the interconnected electric system and that a significant investment is being undertaken.

36. 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

37. Pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Suncor the approval set out in Appendix 1 – New 29EDD-571 Substation – Approval No. U2011-480 – December 23, 2011 (Appendix 1 will be distributed separately).

38. Pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Suncor the approval set out in Appendix 2 – New 29EDD-109 Substation – Approval No. U2011-481 – December 23, 2011 (Appendix 2 will be distributed separately).

39. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the permit and licence to alter and operate the substation and grants Suncor the approval set out in Appendix 3 – Alter 29EDD-71 Substation – Approval No. U2011-482 – December 23, 2011 (Appendix 3 will be distributed separately).

40. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Suncor the approval set out in Appendix 4 – 170 MW cogeneration plant – Approval No. U2011-483 – December 23, 2011 (Appendix 4 will be distributed separately).

41. 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 Suncor the approval set out in Appendix 5– Firebag Industrial System Designation – Order No. U2011-484 – December 23, 2011 (Appendix 5 will be distributed separately).

Dated on December 23, 2011.

The Alberta Utilities Commission

(original signed by)

Neil Jamieson
Commission Member