



Shell Canada Limited

Scotford Industrial System Designation Amendment

December 3, 2014



The Alberta Utilities Commission

Decision 2014-329: Shell Canada Limited
Scotford Industrial System Designation Amendment
Application No. 1610447
Proceeding No. 3157

December 3, 2014

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1 Introduction

1. On April 2, 2014, Shell Canada Limited (Shell) filed Application No. 1610447 with the Alberta Utilities Commission (AUC or the Commission) seeking an amendment to its existing Scotford industrial system designation (ISD) approval. The Commission considered the application under Proceeding No. 3157. On September 23, 2014, the Commission issued Decision [2014-274](#)¹ approving, in part, Shell's application to alter the Upgrader 879S substation in order to accommodate the addition of a CO₂ sequestration facility.

2. In this decision, the Commission must decide whether to approve the remaining part of Shell's application to construct three kilometres of 34.5-kilovolt (kV) transmission line and a 34.5/4.16-kV 2013S Drummond substation in order to accommodate the addition of a hydrogen gas production facility.

3. The Commission issued information requests to Shell on April 29, September 8, and November 18, 2014. Shell responded to the Commission's information requests on May 23, September 9, and November 25, 2014, respectively.

2 Background

4. The Scotford industrial complex is located in Strathcona County near Fort Saskatchewan and has been designated as an industrial system since 1999. The complex has expanded throughout the years and the most current ISD approval is Order No. [U2014-402](#).²

5. The ISD, formed by Shell, Shell Canada Products Ltd. (SCPL), Shell Chemicals Canada Ltd. (SCCL), Air Liquide Canada Ltd. (ALC), ATCO Power Canada Ltd. (ATCO Power) and ATCO Energy Solutions (AES), processes diluted bitumen and produces high-quality synthetic crude oils in a highly integrated industrial operation combining upgrading, refining, and petrochemical processes. There are six processes on-site, including the upgrader, upgrader expansion, refinery, ALC air separation plant, and two SCCL petrochemical facilities.

¹ Decision 2014-274: Shell Canada Limited – Scotford Industrial System Designation Amendment, Proceeding No. 3157, Application No. 1610447, September 23, 2014.

² Industrial System Designation Order No. U2014-402, Proceeding No. 3157, Application No. 1610447, September 23, 2014

6. The Scotford industrial complex also includes, as stated in Order No. U2014-402, the following major electric facilities:

- The ALC 84-megawatt (MW) gas turbine generator complete with unit transformer and heat recovery steam generator.
- The ALC substation that includes three transformers and six 138-kV circuit breakers.
- The ATCO Power 83-MW upgrader gas-turbine generator complete with unit transformer and heat recovery steam generator.
- The ATCO Power 87-MW upgrader steam-turbine generator complete with unit transformer.
- The AES upgrader substation that includes three 138-kV circuit breakers and two 138/34.5-kV transformers.
- The AES upgrader expansion substation that includes five 138-kV circuit breakers and two 138/34.5-kV transformers.
- The AES 138-kV transmission loop connecting the ALC substation, the upgrader substation, the upgrader expansion substation, and 409S substation, which is owned by AltaLink Management Ltd.
- The Shell 18-MW upgrader expansion steam-turbine generator.
- Distribution facilities and equipment of less than 60-kV serving the Scotford industrial site.

3 Discussion

7. Shell stated that it has contracted with Air Products Canada Ltd. (APL) to build a hydrogen gas production facility on Shell's lands adjacent to the Scotford industrial complex that would be integrated with the refinery and upgrader, and would be operated to meet Shell's requirements. Shell would provide APL with low-pressure boiler feed water and electricity, and APL would provide Shell with high-pressure steam and hydrogen gas. Surplus hydrogen production, anticipated to be about 25 per cent of the total production, would be sold to third-party industrial customers. Shell proposed a new 34.5/4.16-kV Drummond 2013S substation at the hydrogen plant site and a three kilometre double-circuit 34.5-kV line, from the existing 402S AES substation to the Drummond 2013S substation, in order to supply electric energy to APL's hydrogen plant.

8. Shell submitted that the electrical distribution equipment associated with the APL hydrogen gas production facility would be owned by AES and was therefore of the view that APL would not need to be added to the ISD.

9. Shell indicated that all of the electrical equipment required to provide electricity to the project would be at 34.5 kV or 4.16 kV and, therefore, under the 60-kV distribution equipment definition in Order No. U2014-402. Therefore, Shell requested that the proposed additional distribution assets, less than 60 kV, continue to be included under the ISD, as is the case under Order No. U2014-402.

10. Shell submitted a noise impact summary respecting the Drummond 2013S substation and stated that the proposed substation would have no effect on the existing sound level at the nearest residences and would comply with AUC Rule 012: *Noise Control*.

11. Shell submitted that the notification packages for the hydrogen gas production facility project were mailed to all occupants, residents and landowners within 800 metres of the substation site. No concerns were received with respect to the project.

4 Findings

12. The Commission finds that the application meets the information requirements stipulated in AUC Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*.

13. The Commission finds that Shell's participant involvement program has been satisfactory and there are no public, industry or agency objections or concerns.

14. Due to the minor nature of the application, the Commission finds that the addition of electric distribution facilities to accommodate the hydrogen gas production facility are not likely to cause any adverse environmental effects.

15. The Commission accepts the assessment that there will be no net increase in noise levels at the nearest receptors as a result of the proposed Drummond 2013S substation.

16. The Commission finds that because AES owns the electrical assets involved with the hydrogen production plant, a change to the companies forming the industrial system designation is not required.

17. As the Commission considered that its decision or order would not directly and adversely affect the rights of a person pursuant to Section 9 of the *Alberta Utilities Commission Act*, a notice of application was not issued for the ISD amendment and, therefore, a hearing was not required.

18. The Commission considers that the Scotford site has been designated as an ISD since 1999, the electrical equipment to be added is less than 60 kV, therefore, the amendment application was not tested rigorously with respect to the principles and criteria of Section 4 of the *Hydro and Electric Energy Act*.

19. Having considered all of the evidence before it, the Commission finds the proposed work at the ISD site to be in the public interest pursuant to Section 17 of the *Alberta Utilities Commission Act*, having given consideration to the environmental, economic and social impacts of the proposed work.

5 Decision

20. 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 industrial system designation amendment. The Commission notes that Order No. U2014-402 includes distribution facilities and equipment of less than 60 kV in the list of major equipment. Therefore, Order No. U2014-402 will remain effect.

Dated on December 3, 2014.

The Alberta Utilities Commission

(original signed by)

Tudor Beattie, QC
Commission Member