



## **TransAlta Corporation**

**Coal-to-Gas Conversion of Sundance Power Plant Units 3, 4, 5  
and 6**

**December 21, 2018**

**Alberta Utilities Commission**

Decision 23807-D01-2018

TransAlta Corporation

Coal-to-Gas Conversion of Sundance Power Plant Units 3, 4, 5 and 6

Proceeding 23807

Application 23807-A001

December 21, 2018

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## **1 Decision summary**

1. In this decision, the Alberta Utilities Commission must decide whether to approve an application from TransAlta Corporation for alterations to the Sundance Power Plant that would permit units 3, 4, 5 and 6 to be converted from coal-fuelled to natural gas-fuelled. After consideration of the record of the proceeding, and for the reasons outlined in this decision, the Commission finds that approval of the project is in the public interest having regard to the social, economic, and other effects of the project, including its effect on the environment.

## **2 Introduction and background**

2. TransAlta Corporation (TransAlta), pursuant to Approval 23754-D02-2018,<sup>1</sup> is the owner of the Sundance Power Plant, located in the Wabamun Lake area. TransAlta filed an application with the Commission for approval to alter and operate units 3, 4, 5 and 6 of the power plant. The application was registered on August 2, 2018, as Application 23807-A001.

3. In Decision 23570-D01-2018,<sup>2</sup> TransAlta received approval for minor alterations to the Sundance Power Plant that included installing gas piping and pressure regulation infrastructure within the power plant as part of the transition from coal-fuelled to natural gas-fuelled generation. The application in this proceeding is for approval to complete the coal-to-gas conversion for Sundance Power Plant units 3 to 6.

4. The Commission issued a notice of application for the proposed Sundance Power Plant alterations in accordance with Section 7 of Rule 001: *Rules of Practice*. An AUC information session was also held at the Keephills Community Association Centre on September 20, 2018.

5. One submission was received, in response to the notice of application, from an owner of land located approximately 30 kilometres from the Sundance Power Plant. In a written ruling the Commission stated that the submission filer had not shown that he had rights that may be directly and adversely affected by the Commission's decision on the proposed alterations.<sup>3</sup>

## **3 Discussion**

6. The Sundance Power Plant consists of four coal-fuelled electric generating units with a total generating capability of 1,693 megawatts (MW). Unit 3 has a capability of 390 MW, Unit 4

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<sup>1</sup> Power Plant Approval 23754-D02-2018, Proceeding 23754, Application 23754-A001, July 27, 2018.

<sup>2</sup> Decision 23570-D01-2018: TransAlta Corporation - Alterations to Sundance and Keephills Power Plants, Proceeding 23570, Application 23570-A001, July 13, 2018.

<sup>3</sup> Exhibit 23807-X0034, AUC ruling on standing, November 26, 2018.

and Unit 5 each have a capability of 435 MW, and Unit 6 has a capability of 433 MW. Unit 1 and Unit 2 ceased operations on December 31, 2017, and July 31, 2018, respectively.

7. TransAlta applied for approval to alter the Sundance Power Plant by converting units 3 to 6 from coal-fuelled to natural gas-fuelled. Components for the alterations would include a new low nitrogen-oxide natural gas combustion system, a new natural gas pipeline within the property fenceline, potential modifications to the existing combustion and flue gas fans, and modifications to the boiler management system. TransAlta stated it had not yet selected the equipment vendors.

8. TransAlta also stated that the alterations would not change the existing land use. The alterations would occur within the existing operational site, which is zoned and approved for the intended use and is consistent with existing land use plans. The alterations are not anticipated to impact the appearance of site infrastructure or change the existing industrial footprint of the Sundance Power Plant.

9. TransAlta explained that new pipelines to transport natural gas to the power plant site (the transport pipelines) are expected to be constructed by Tidewater Midstream and Infrastructure, ATCO Gas and, potentially, a third company. The natural gas supply for the power plant would be delivered via the transport pipelines to pressure letdown stations at the power plant site. New natural gas pipelines within the power plant boundary would then distribute natural gas to the boiler burners in each unit.

10. In response to an information request, TransAlta provided the following details about the new natural gas pipelines within the Sundance Power Plant boundary. They are expected to have a maximum 24-inch diameter, an overall length of approximately 320 metres and a maximum operating pressure of 1,960 kilopascals (kPa). TransAlta anticipates the pipeline pressure would be reduced further, within the range of 240 to 480 kPa, to supply each unit's burners and igniters.<sup>4</sup>

11. TransAlta indicated that it had filed an amendment application with Alberta Environment and Parks to change the power plant's *Environmental Protection and Enhancement Act* Approval No. 9830-03-00 to reflect the proposed power plant alterations.

12. TransAlta stated that the alterations would not have adverse environmental impacts in relation to terrain and soils, surface water bodies, groundwater, wetlands, air quality, vegetation, wildlife and aquatic species.

13. TransAlta explained that the alterations would result in the elimination of mercury emissions and ash production. There would also be a reduction of sulphur oxide, greenhouse gases, nitrogen oxides and particulate matter emissions. The alterations are expected to reduce carbon dioxide emission intensity by approximately 45 per cent.

14. TransAlta stated that ash handling equipment associated with ash production would be retired, cleaned and stored in place following the alterations. The equipment would be decommissioned when the Sundance Power Plant is at the end of its operating life.

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<sup>4</sup> Exhibit 23807-X0021, TransAlta IR responses, October 9, 2018, PDF pages 2 and 3.

15. If the alterations are approved, the coal mining operation at the Highvale Mine and associated infrastructure, currently used to supply coal to the Sundance Power Plant, would no longer be required. Consequently, the cessation of the coal mine operation would reduce fugitive dust, fleet emissions and noise associated with the mine. Existing coal burning and handling equipment would be retired, cleaned, and stored in place. TransAlta committed to providing a decommissioning plan under a separate application at a future date.
16. A *Historical Resources Act* approval was not submitted with the application because no changes to the existing power plant footprint are expected. All changes would relate to replacing the fuel-burning equipment within the existing power plant footprint.
17. TransAlta submitted a noise impact assessment that considered the proposed alterations to the Sundance plant and shutdown of the Highvale Mine.<sup>5</sup> The noise impact assessment concluded that the anticipated noise levels following completion of the alterations to the power plant would be within the permissible sound levels specified in Rule 012: *Noise Control*. The noise impact assessment also predicted that the cumulative noise levels at the nearest receptor to the Sundance Power Plant would decrease as a result of the alterations.
18. TransAlta confirmed that the natural gas pipelines within the plant site would be designed and constructed in accordance with the *Pressure Equipment Safety Regulation AR49/2006*, administered by the Alberta Boilers Safety Association (ABSA). TransAlta confirmed that it would obtain all required ABSA approvals prior to operation.
19. TransAlta stated that the existing emergency response plan would be updated to reflect the alterations and that employees would be prepared to respond in the event of a natural gas leak.
20. TransAlta conducted a participant involvement program that included notification to occupants, residents, leaseholders, landowners and interest holders within 2,000 metres of the power plant site boundary, and consultation with occupants, residents, leaseholders, landowners and interest holders within 800 metres of the power plant site boundary. TransAlta also notified and consulted with other interested parties, including industry, special interest groups, Indigenous communities, government agencies, and municipalities. An open house was held at the Keephills Community Association Centre on May 30, 2018. TransAlta stated that it had responded to all project-specific issues of concern and would ensure that all outstanding commitments made to stakeholders and Indigenous groups are completed.<sup>6</sup>
21. TransAlta stated that units 3 to 6 at the Sundance Power Plant, as currently approved, have end-of-operating lives ranging from 2026 to 2029, and that the proposed alterations are expected to increase the operating lives of the units. The alterations are scheduled to start in 2020 and continue until the end of 2023.

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<sup>5</sup> The noise impact assessment also considered the proposed alterations to the nearby Keephills power plants being considered separately in proceedings 23808 and 23809.

<sup>6</sup> Exhibit 23807-X0005, PIP Report and attachments, PDF pages 33-37 contains a table of commitments and follow-up notes made by TransAlta.

## 4 Findings

22. The Commission has reviewed the application and has determined the information provided by TransAlta satisfies the information requirements of Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*. The Commission is satisfied that the technical, siting, emissions, environmental and noise aspects of the proposed power plant alterations meet the Commission's requirements.
23. The Commission accepts that the power plant will continue to comply with the conditions of the latest Alberta Environment and Parks *Environmental Protection and Enhancement Act* approval for the site, which includes compliance with the *Alberta Ambient Air Quality Objectives and Guidelines*. The Commission finds that the alterations will occur within the existing site boundary and will not result in material changes to the project footprint. The Commission further finds that approval of the proposed project will result in the reduction of certain emissions from the power plant and the eventual elimination of dust and noise from the Highvale Mine.
24. The Commission finds that the noise impact assessment submitted by TransAlta fulfills the requirements of Rule 012 and that the Sundance Power Plant will not exceed permissible sound levels after completion of the alterations.
25. The Commission also finds that TransAlta's participant involvement program has been satisfactory and there are no outstanding public, industry or agency objections or concerns from stakeholders with standing.
26. Based on the foregoing, the Commission has decided that the alterations to units 3 to 6 of the Sundance Power Plant are in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

## 5 Decision

27. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants TransAlta the approval set out in Appendix 1 – Power Plant Approval 23807-D01-2018 – December 21, 2018 to alter and operate the Sundance Power Plant (Appendix 1 will be distributed separately).

Dated on December 21, 2018.

### Alberta Utilities Commission

(original signed by)

Joanne Phillips  
Commission Member