



TransAlta Corporation

Sundance Power Plant Repowering

April 8, 2020

Alberta Utilities Commission

Decision 25239-D01-2020

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Proceeding 25239

Application 25239-A001

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1 Decision summary

1. In this decision, the Alberta Utilities Commission considers whether to approve an application from TransAlta Corporation for the alteration of a power plant, designated as the Sundance Power Plant, by constructing and operating a new combined-cycle power plant to repower Sundance Unit 5. 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, pursuant to Approval 23807-D02-2018,¹ has approval to alter and operate the Sundance Power Plant (Sundance), which consists of six coal-fuelled generating units, in the Wabamun Lake area. TransAlta applied to the AUC for approval under sections 11 and 19 of the *Hydro and Electric Energy Act* to alter Sundance by installing a new combined-cycle power plant to repower Sundance Unit 5. The application was registered on December 20, 2019, as Application 25239-A001.

3. Sundance units 3 through 6 are in the process of being converted from coal-fuelled to natural gas-fuelled. Sundance units 1 and 2 have been retired, and Sundance units 3 and 5 have been deactivated since April 1, 2018. Sundance units 4 and 6 have been given approval to operate as coal-fuelled until alterations have been completed.

4. TransAlta is seeking approval to alter Sundance by constructing and operating two combustion turbine generators and two heat recovery steam turbine generators to repower Sundance Unit 5. The newly installed turbines would be integrated with the existing facility to produce electricity and steam. The produced steam would drive the existing Sundance Unit 5 steam turbine generators.

5. Separately, TransAlta registered a similar application, Application 25240-A001, to alter the Keephills Power Plant by installing a new combined-cycle power plant to repower Keephills Unit 1. The Keephills Power Plant is also located in the Wabamun Lake area, approximately five kilometres from Sundance.

6. The Commission provided joint notice of TransAlta's applications for the Sundance and Keephills alterations in accordance with Rule 001: *Rules of Practice* on January 16, 2020. The Commission did not receive any responses to its notice of applications.

¹ Power Plant Approval 23807-D02-2018, Proceeding 23807, Application 23807-A001, December 21, 2018.

3 Discussion

7. TransAlta applied to alter Sundance by converting the simple-cycle natural gas-fuelled Sundance Unit 5 to a combined-cycle natural gas-fuelled unit via the installation of two new natural gas combustion turbine generators, and two heat recovery steam turbine generators. TransAlta filed the application with generic equipment assessed to be representative of the equipment that would eventually be installed.
8. The project would be located within the boundary of Sundance, which is located in the northwest quarter of Section 20, Township 52, Range 5, west of the Fifth Meridian, approximately 56 kilometres west of Edmonton, immediately south of Wabamun Lake.
9. TransAlta conducted a joint participant involvement program for both the Sundance and the Keephills alteration projects, pursuant to Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*, and indicated that it was not aware of any outstanding stakeholder concerns.
10. TransAlta stated that the project would result in a higher gross electricity output with lower air emission intensities as compared to the existing Sundance Unit 5 configuration. Unit 5 currently has a capability of 435 megawatts (MW), but would now have a maximum capability of 742 MW.
11. TransAlta stated that it had not finalized the length, operating pressure or location of tie-in points for the pipelines that would be constructed to provide the project with natural gas. However, it did confirm that all gas piping within the plant site would be designed, installed and inspected as pressure piping in accordance with the *Pressure Equipment Safety Regulation* as administered by the Alberta Boiler and Safety Association.
12. TransAlta submitted a noise impact assessment that predicted that the cumulative noise levels at receptors adjacent to the project would be compliant with the permissible sound levels, and confirmed that the project would comply with Rule 012: *Noise Control*. The noise impact assessment indicated that while the project was predicted to comply with the permissible sound levels, the project would be at the overnight permissible sound level at the adjacent receptors to the project.
13. In response to an information request, TransAlta clarified that the assumptions used in the noise modelling were conservative, and that the final equipment selection is not expected to result in non-compliances with Rule 012. Further, TransAlta stated that if noise levels associated with the project are non-compliant with Rule 012, it would identify the sources of noise and take source-specific mitigation measures, which could include equipment repair or replacement, or the installation of noise mitigation devices or structures.²
14. TransAlta confirmed that there were no siting or land use issues with the project due to its siting within the existing Sundance boundary. TransAlta also confirmed that there would be no impact to adjacent non-industrial lands as a result of construction activities associated with the project.

² Exhibit 25239-X0016.01, 25239_Sundance_AUCinformationrequestround1-TransAlta-AU_Response_v2, PDF page 7.

15. In response to an information request, TransAlta stated that as part of its soil management program, and in accordance with its existing *Environmental Protection and Enhancement Act* approval, TransAlta currently monitors soils at Sundance. If potentially contaminated soils were identified, they would be addressed prior to construction of the project, and managed in accordance with provincial guidelines, policies and requirements.³

16. TransAlta stated that the nitrous oxides, sulphur dioxide, particulate matter and carbon dioxide emissions intensities would be reduced as a result of the project. Further, TransAlta confirmed that the project would remain in compliance with provincial and federal emissions standards. As a result of the project's siting, reduction in emissions and limited environmental impacts, TransAlta stated that an environmental evaluation for the project was not required.

17. TransAlta confirmed it had applied to Alberta Environment and Parks (AEP) to amend its *Environmental Protection and Enhancement Act* approval for Sundance. TransAlta stated that AEP had acknowledged receipt of the *Environmental Protection and Enhancement Act* amendment application, but had not provided any further correspondence with TransAlta.⁴

18. TransAlta stated that it planned to begin the alteration of Sundance Unit 5 in the first quarter of 2021, with the project being completed by the fourth quarter of 2023.

4 Findings

19. The Commission has determined that the technical, siting, environmental and noise aspects of the application have been met. The Commission is satisfied that TransAlta conducted its participant involvement program in accordance with Rule 007.

20. The Commission finds that the project complies with Rule 012. The Commission is satisfied with TransAlta's use of conservative assumptions in its modelling, and expects that if non-compliances are discovered, TransAlta would mitigate them appropriately.

21. TransAlta submitted the application with generic equipment assessed, which it indicated would be representative of the equipment that would eventually be installed. The Commission would require confirmation that the final equipment selection would not materially change the impacts of the project from what was detailed in the application. Therefore, any approval granted by the Commission is conditional upon the following:

- a. Once TransAlta has made its final selection of equipment for the Sundance Unit 5 project, it must file a letter with the Commission that identifies the make and model of the generating units. In this letter, TransAlta must also confirm that the project will not increase the land, noise, or environmental impacts beyond those reflected in the materials submitted by TransAlta in its application and approved by the Commission. The letter is to be filed no later than 30 days before construction of the project would commence.

³ Exhibit 25239-X0016.01, 25239_Sundance_AUCinformationrequestround1-TransAlta-AU_Response_v2, PDF page 6.

⁴ Exhibit 25239-X0020, AUCinformationrequestround2-TransAlta-AUC_001-001_000023_v0_000024, PDF page 5.

22. Based on the foregoing, the Commission finds that the approval of the project is in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

5 Decision

23. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants TransAlta Corporation the approval set out in Appendix 1– Power Plant Approval 25239-D02-2020 – April 8, 2020.

Dated on April 8, 2020.

Alberta Utilities Commission

(original signed by)

Neil Jamieson
Commission Member