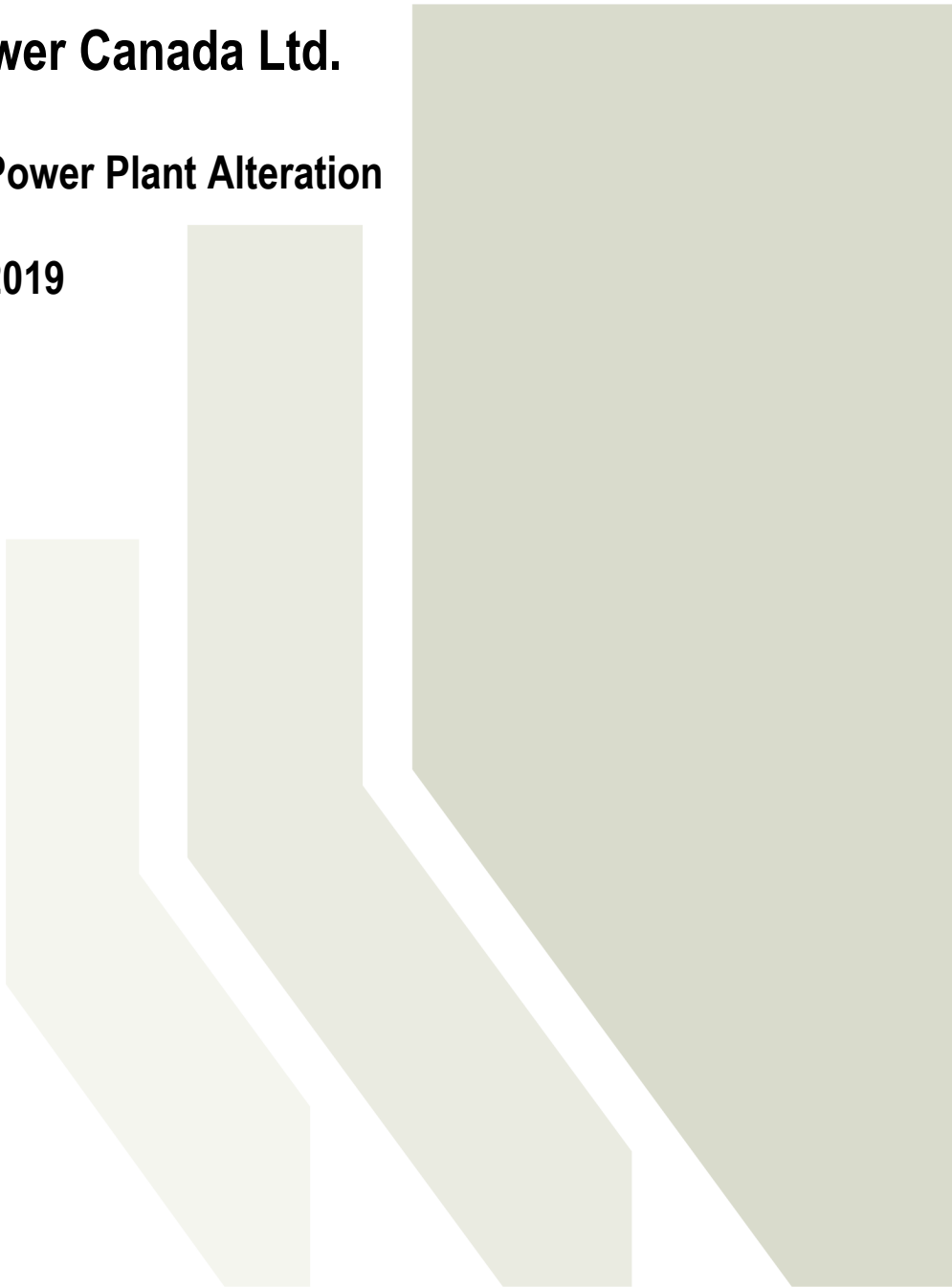




ATCO Power Canada Ltd.

Poplar Hill Power Plant Alteration

January 7, 2019



Alberta Utilities Commission

Decision 23936-D01-2019

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Proceeding 23936

Application 23936-A001

January 7, 2019

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1 Decision summary

1. In this decision, the Alberta Utilities Commission must decide whether to approve an application from ATCO Power Canada Ltd. (ATCO) for the alteration of a power plant designated as the Poplar Hill Power Plant. 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. ATCO, pursuant to Approval HE 9811,¹ is the owner of a power plant designated as the Poplar Hill Power Plant, in the Grande Prairie area.

3. ATCO filed an application with the AUC for approval to alter and operate the power plant by adding a 33-megawatt (MW) natural gas-fired turbine. The application was registered on September 27, 2018, as Application 23936-A001.

4. The Commission issued a notice of application for the proposed alteration in accordance with Section 7 of Rule 001: *Rules of Practice*.

3 Discussion

5. The Poplar Hill Power Plant currently contains one natural gas-fired combustion turbine with a total generating capability of 45 MW and operates as a peaking plant that supplies power to the Alberta Interconnected Electric System. ATCO applied for an alteration to the power plant to install an additional natural gas combustion turbine-generating unit. ATCO stated that it is considering either the General Electric LM-2500+ or the LM2500+G4 with a generating capability of 33 MW and that selection of the generating unit would occur in the first quarter of 2019. ATCO confirmed the power plant would continue to operate as a peaking plant.

6. ATCO stated that the point of interconnection would be the same as the existing facility and that no transmission system development would be required. It anticipated that some behind-the-fence changes, such as a supply transmission service increase and an uprate to the site main transformer, would be required.

¹ Approval HE 9811, Application 980312, September 19, 1998.

7. ATCO stated that the addition would be sited within the existing site boundary on 0.28 hectares of previously disturbed land within Legal Subdivision 11 of Section 19, Township 73, Range 8, west of the Sixth Meridian. The power plant is located approximately 45 kilometres northwest of Grande Prairie within the Dry Mixedwood Natural Subregion. ATCO stated that the project falls under the Upper Peace Regional Plan and the purview of the Mighty Peace Watershed Alliance² and that it would comply with the Plan and any initiatives from the Alliance.

8. ATCO stated that compressed natural gas would be delivered through the existing metering station and utilize existing pipeline infrastructure where possible. It stated that the pipeline details, such as length, diameter and maximum operating pressure have not been determined because the generating unit model has not been selected.

9. ATCO stated that the design of the natural gas pipeline would comply with applicable safety regulations. While the hazards of the proposed generating unit would be similar to the hazards that currently exist on site and are included in the current emergency response plan, ATCO confirmed that the emergency response plan would be amended as appropriate with new site maps.

10. ATCO requested an environmental assessment of the project by Alberta Environment and Parks (AEP). AEP responded on August 20, 2018, and stated that no further assessment was required because the alteration would occur entirely within the existing fenced site.

11. ATCO prepared an environment evaluation that it submitted to AEP on September 14, 2018, as part of its industrial approval amendment application. It currently holds an *Environmental Protection and Enhancement Act* approval³ to construct, operate and reclaim the site. ATCO received a draft approval from AEP on November 8, 2018.

12. ATCO conducted an updated air quality assessment as part of its application to AEP. The assessment demonstrated that the altered power plant would comply with all *Alberta Ambient Air Quality Objectives and Guidelines*.

13. ATCO stated it undertook a comprehensive participant involvement program between July and August 2018, in accordance with Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*. It provided notification to all landowners, residents and occupants within two kilometres of the project site boundary as well as to any interested parties including government agencies, identified Indigenous and Métis communities, municipalities and industrial associations. ATCO also conducted personal consultations with all landowners, residents and occupants within 800 metres of the project site boundary as well as with other interested parties including key regulatory agencies. ATCO stated that stakeholders identified concerns related to visual impacts, land values, noise and traffic. However, ATCO stated that, following consultation, no party objected to the project.

14. ATCO conducted a noise impact assessment (NIA) for the proposed project in accordance with Rule 012: *Noise Control*. The NIA considered both generator models and used

² The Mighty Peace Watershed Alliance is the official Watershed Planning and Advisory Council for the Peace/Slave River Basin. It is a multi-sector, not-for-profit, society.

³ *Environmental Protection and Enhancement Act* Approval 67774-01-00.

the option with the higher sound power levels to provide a more conservative assessment. Noise control measures recommended in the NIA included upgrading the exhaust stack silencer on the proposed LM2500+G4 system, installing an L-shape 10-metre high acoustic barrier to the north and west of the proposed turbine package, and installing a silencer on the existing turbine exhaust stack vent.⁴

15. ATCO stated that after the noise control measures were considered in the noise model, one receptor, R1, had a predicted cumulative sound level of 40.2 dBA, which was 0.2 dBA above the nighttime permissible sound level.⁵ The NIA stated that the increase in sound levels from the existing case to the application case was predicted to be 0.5 dB and 0.6 dB at receptors R1 and R2, respectively, and that this level of increase would be minor and imperceptible to these receptors.⁶ The NIA submitted that the predicted cumulative sound level of 40.2 dBA at R1 was considered to be in compliance with Rule 012.

16. ATCO explained that the predicted cumulative sound levels were presented to one decimal place and that when rounded to the nearest whole number, the predicted nighttime cumulative sound level at R1 would be reported as 40 dB and would meet the nighttime permissible sound level.⁷ In addition, ATCO indicated that it used conservative assumptions in the noise modelling for the project, including downwind conditions from each sound source to each receptor, and continuous full-load operation during nighttime periods.⁸ With respect to noise mitigation measures included in the NIA, ATCO stated that those noise control measures represented one viable alternate for achieving compliance with Rule 012. ATCO stated it would commit to implementing a system of noise control measures that would match or beat the acoustic performance presented in the NIA. It stated that noise optimization would occur during the detailed design phase, once a generator was selected.⁹

17. The low frequency noise analysis in the NIA showed that the dBC minus dBA value at R1 was 20.3 dB, which is greater than a limit of 20 dB for the low frequency noise test defined in Rule 012.¹⁰ ATCO stated that it presented the low frequency test value to one decimal place and that, when rounded to the nearest whole number, the calculated dBC minus dBA value at R1 would be 20 dB. ATCO explained that to identify a clear tonal component, the sound pressure levels in individual one-third octave bands must be evaluated. However, this analysis cannot be conducted with commercially-available modelling software. ATCO also stated that a low frequency noise investigation is only required if it is identified as part of a noise complaint. In the event of a complaint, ATCO stated that it would take measurements to determine whether the dBC minus dBA value is equal to or greater than 20 dB and whether a clear tonal component exists at or below 250 hertz.¹¹

18. ATCO stated that *Historical Resources Act* approval from Alberta Culture and Tourism was not required as the alteration would occur entirely within the existing and disturbed site.

⁴ Exhibit 23936-X0001, Power Plant Application (Poplar Hill), PDF pages 87-88.

⁵ Exhibit 23936-X0001, Power Plant Application (Poplar Hill), PDF page 97.

⁶ Exhibit 23936-X0001, Power Plant Application (Poplar Hill), PDF page 99.

⁷ Exhibit 23936-X0008, PoplarHillIRresponsesRound1-21Nov2018, PDF page 11.

⁸ Exhibit 23936-X0010, Poplar Hill IR Responses Round 2, PDF page 5.

⁹ Exhibit 23936-X0008, PoplarHillIRresponsesRound1-21Nov2018, PDF page 9.

¹⁰ Exhibit 23936-X0001, Power Plant Application (Poplar Hill), PDF page 98.

¹¹ Exhibit 23936-X0008, PoplarHillIRresponsesRound1-21Nov2018, PDF page 12.

19. ATCO indicated that construction of the proposed alteration would begin in the first quarter of 2019 and the new natural gas combustion turbine-generating unit would be in operation by the second or third quarter of 2019. It anticipated an operational life of 25 years and that decommissioning would begin post 2044.

4 Findings

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

21. The Commission acknowledges that ATCO implemented a participant involvement program that was consistent with the requirements of Rule 007 and that there are no outstanding public or industry objections or concerns. No submissions were received in response to the notice of application.

22. The Commission finds that environmental impacts will be minimal as the alteration occurs entirely within the existing power plant boundary on disturbed land. In addition, the project will undergo review by AEP as part of its industrial approval amendment application process. The Commission is satisfied that no significant incremental environmental impacts are expected from the proposed alteration. The evidence before the Commission is that emissions from the project will meet the *Alberta Ambient Air Quality Objectives*. However, the Commission considers that any change to the equipment selection could alter the impacts of the project. Therefore, any approval for the project would require ATCO to file an application for minor alterations with the Commission that demonstrates that the project remains in compliance with emissions regulations if the final equipment selection differs from what was used in the air quality assessment.

23. The Commission also finds that the NIA submitted by ATCO fulfills the requirements of Rule 012. While the predicted cumulative nighttime sound levels exceed the permissible sound level at a noise receptor by 0.2 dB, the Commission finds that ATCO's rounding justification is reasonable. In addition, the Commission considers that ATCO used conservative assumptions in its noise modelling for the project. The Commission accordingly accepts that the predicted cumulative sound levels for the project are expected to comply with daytime and nighttime permissible sound levels.

24. With respect to low frequency noise analysis, the Commission does not accept ATCO's rounding justification in its analysis. There are two criteria to the Rule 012 test for whether a low frequency noise condition may exist: (a) the results of the dBC minus dBA value must be equal to or greater than 20 dB and (b), a clear tonal component between 20 hertz and 250 hertz must exist. Only when both criteria are fulfilled does Rule 012 indicate the potential for a low frequency noise issue to exist. The Commission finds that when rounded down to 20 dB, the dBC minus dBA value at noise receptor R1 in the NIA is equal to the threshold value and therefore meets criterion (a). With respect to criterion (b), the Commission acknowledges and accepts ATCO's explanation that it is not feasible to identify a clear tonal component using commercially-available modelling software. In summary, the Commission acknowledges that low frequency noise analysis at the prediction stage in the NIA could not produce a conclusive result.

25. Should a noise complaint relating to low frequency noise be filed after the project commences its operation, ATCO must take prompt action to address the complaint and investigate sound sources that might cause low frequency noise issues. In addition, ATCO has committed to adopting the noise control measures recommended in its NIA to ensure compliance with the permissible sound levels at all times. As stated above, the Commission considers that any change to the equipment selection could impact the sound power levels and, therefore, any approval for the project would require ATCO to submit documentation that demonstrates that the project remains in compliance with permissible sound levels if the final equipment selection differs from what was used in the NIA.

26. The Commission finds that, should it approve this project, it would be subject to the following conditions:

- ATCO shall submit a letter of confirmation to the Commission that revisions to the emergency response plan for the power plant have been completed and that the plan includes the natural gas pipeline facilities within the project plant site. The letter shall include confirmation of the final operating pressure of the pipelines as well as the finalized length and diameter of the pipelines. This letter is to be filed no later than one month before alteration of the power plant is scheduled to begin.
- Upon final selection of equipment for the power plant, ATCO must file an application for minor alterations with the Commission in which it identifies the make, model, and quantity of the equipment and includes a noise impact summary form, an updated site plan and confirmation the project remains in compliance with emissions regulations if the final equipment selection differs from what was used in the initial assessments. This application is to be filed no later than two months before construction is scheduled to begin.
- If the selected equipment is different from the make and model used in the application's NIA and air quality assessment, ATCO shall submit an updated NIA summary form that shows that the project still meets the requirements of Rule 012 and an emissions summary table that shows that the project emissions levels are still in compliance with the *Air Emission Standards for Electricity Generation* and the *Alberta Ambient Air Quality Objectives and Guidelines*. In the event that the noise or emissions levels are no longer in compliance with the respective standards and guidelines, ATCO must submit a letter to the Commission explaining the steps it will take to ensure compliance. This letter is to be filed no later than one month before alteration of the power plant is scheduled to begin.

27. 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*.

5 Decision

28. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants ATCO the approval set out in Appendix 1– Power Plant Approval 23936-D02-2019 – January 7, 2019, to alter and operate the Poplar Hill Power Plant (Appendix 1 will be distributed separately).

29. CU Power Canada Limited is the holder of Order HE 9830 to connect the Poplar Hill Power Plant to the ATCO Electric Ltd. Poplar Hill 790S Substation. An amendment to the order is required to reflect the current owner of the power plant and Poplar Hill 790S Substation.

30. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission grants ATCO the order set out in Appendix 2 – Connection Order 23936-D03-2019 – January 7, 2019, to connect the Poplar Hill Power Plant to the ATCO Electric Ltd. Poplar Hill 790S Substation (Appendix 2 will be distributed separately).

Dated on January 7, 2019.

Alberta Utilities Commission

(original signed by)

Joanne Phillips
Commission Member

Appendix A – Summary of Commission directions with required deliverables

This section is provided for the convenience of readers. In the event of any difference between the directions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

1. ATCO shall submit a letter of confirmation to the Commission that revisions to the emergency response plan for the power plant has been completed and that the plan includes the natural gas pipeline facilities within the project plant site. The letter shall include confirmation of the final operating pressure of the pipelines as well as the finalized length and diameter of the pipelines. This letter is to be filed no later than one month before alteration of the power plant is scheduled to begin. This direction will be a condition of Power Plant Approval 23936-D02-2019.
2. Upon final selection of equipment for the power plant, ATCO must file an application for minor alterations with the Commission in which it identifies the make, model, and quantity of the equipment and includes a noise impact summary form, an updated site plan and confirmation the project remains in compliance with emissions regulations if the final equipment selection differs from what was used in the initial assessments. This application is to be filed no later than two months before construction is scheduled to begin. This direction will be a condition of Power Plant Approval 23936-D02-2019.
3. If the selected equipment is different from the make and model used in the application's noise impact assessment and air quality assessment, ATCO shall submit an updated noise impact assessment summary form that shows that the project still meets the requirements of Rule 012 and an emissions summary table that shows that the project emissions levels are still in compliance with the *Air Emission Standards for Electricity Generation* and the *Alberta Ambient Air Quality Objectives and Guidelines*. In the event that the noise or emissions levels are no longer in compliance with the respective standards and guidelines, ATCO must submit a letter to the Commission explaining the steps it will take to ensure compliance. This letter is to be filed no later than one month before alteration of the power plant is scheduled to begin. This direction will be a condition of Power Plant Approval 23936-D02-2019.