



**1195714 Alberta Ltd.**

**Empress Industrial System Designation, Power Plant and  
Interconnection Project**

**February 25, 2021**

**Alberta Utilities Commission**

Decision 26123-D01-2021

1195714 Alberta Ltd.

Empress Industrial System Designation, Power Plant and Interconnection Project

Proceeding 26123

Applications 26123-A001 to 26123-A003

February 25, 2021

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## **1 Decision summary**

1. In this decision, the Alberta Utilities Commission approves applications from 1195714 Alberta Ltd. to construct and operate a new cogeneration power plant, to connect the cogeneration power plant to the Alberta Interconnected Electric System and for an industrial system designation that encompasses all electrical facilities at the existing Empress Natural Gas Liquids Straddle Plant.

## **2 Introduction and background**

2. 1195714 Alberta Ltd., a subsidiary of Pembina Pipeline Corporation (Pembina), owns and operates the Empress Natural Gas Liquids (NGL) Straddle Plant in Cypress County in its capacity as the managing partner of Pembina Empress NGL Partnership. Pembina, on behalf of 1195714 Alberta Ltd., filed applications 26123-A001 to 26123-A003, requesting approval of a new 45-megawatt (MW) natural gas-fuelled cogeneration power plant at the Empress NGL Straddle Plant, approval to connect the cogeneration power plant to the Alberta Interconnected Electric System (AIES), and approval of an industrial system designation for the electrical system at the Empress NGL Straddle Plant.

3. Pembina stated that it notified parties located within a two-kilometre radius of the project and consulted with parties located within 0.8 kilometres of the project, and that no persons consulted or notified about the project expressed any concerns.

4. The Commission issued a notice of applications in accordance with Rule 001: *Rules of Practice* on December 11, 2020. No statements of intent to participate were received in response to the notice.

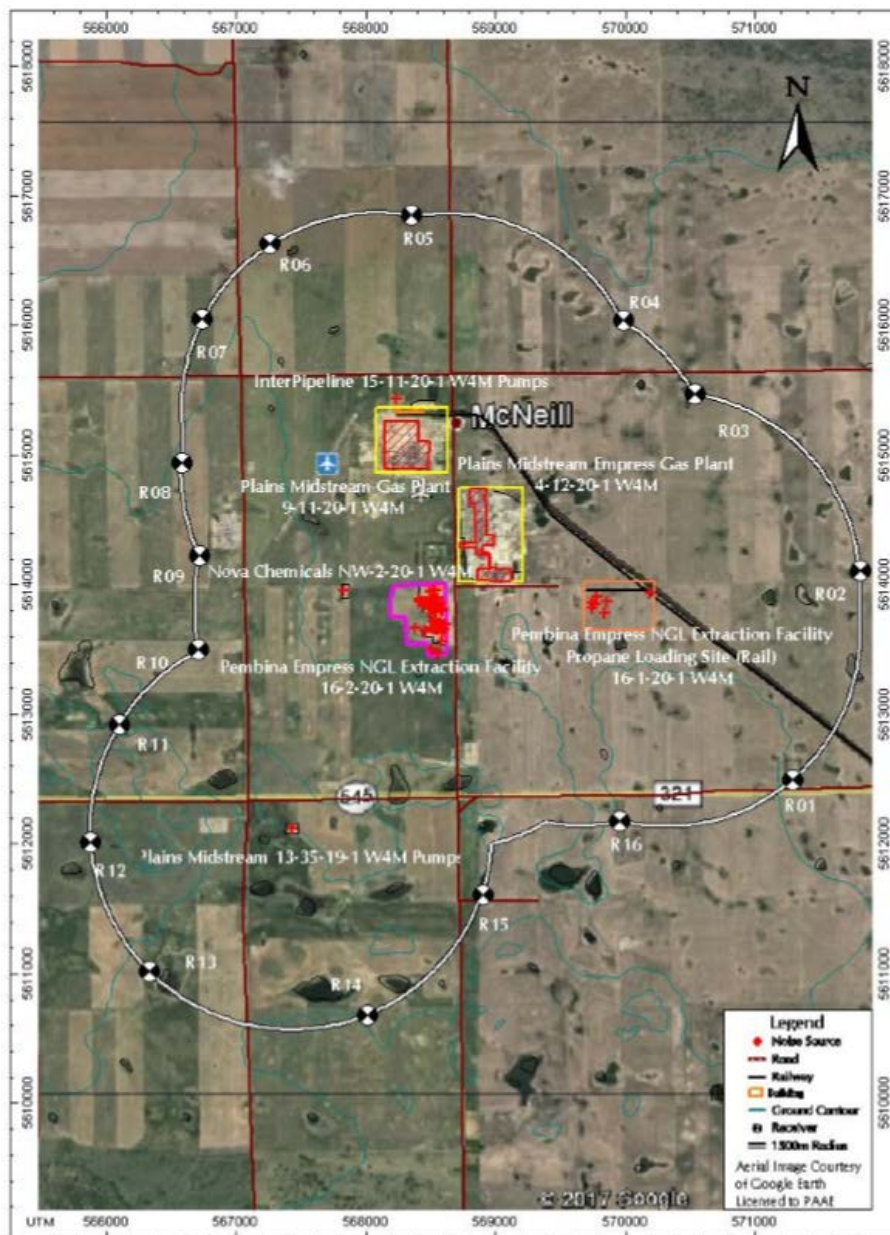
## **3 Application for a new cogeneration power plant**

### **3.1 Discussion**

5. Pembina stated that the cogeneration power plant would consist of a natural gas-fuelled turbine generator and a heat recovery unit to capture thermal energy from the turbine's exhaust gas. Pembina stated that the power plant would provide 45 MW of electricity and 40 MW of thermal energy for use by the Empress NGL Straddle Plant's extraction and fractionation operations. The proposed cogeneration power plant would be powered by fuel gas blended with regeneration gas from on-site propane and butane treating. The power plant would be located within the existing boundaries of the Empress NGL Straddle Plant. Pembina expected the power plant to be in service in January 2023.

6. Pembina retained Patching Associates Acoustical Engineering Ltd. to prepare a noise impact assessment (NIA) for the proposed cogeneration power plant. Patching Associates identified that there are no existing residences located within 1.5 kilometres of the Empress NGL Straddle Plant, therefore the cumulative sound level was assessed at 16 theoretical receptor locations 1.5 kilometres from the Empress NGL Straddle Plant. Patching Associates assessed noise compliance by comparing predicted cumulative sound levels to the permissible sound levels (PSL) at the 16 theoretical receptor locations. The PSLs used in the NIA were 40 A-weighted decibels (dBA)  $L_{eq}$  nighttime and 50 dBA  $L_{eq}$  daytime. The NIA predicted that three of these theoretical receptor locations would experience cumulative sound levels higher than the nighttime PSL of 40 dBA. Specifically, these locations would experience cumulative sound levels of 40.1 dBA, 40.5 dBA and 41.2 dBA. The closest actual residence identified in the NIA was 2.0 kilometres away from the Empress NGL Straddle Plant's fenceline.

7. The NIA attributed the dominant noise source at the three theoretical receptor locations that would experience exceedances of the nighttime PSL to nearby facilities owned by Plains Midstream Canada ULC. A map of the study area used to develop the NIA is shown in Figure 1, and illustrates the Plains Midstream facilities (in yellow squares) in proximity to the Empress NGL Extraction Facility (in pink square).

Figure 1. NIA study area<sup>1</sup>

8. The NIA stated that it is not feasible to reduce the sound levels at the most impacted receptor locations to below the nighttime PSL of 40 dBA without incorporating noise mitigation at other facilities, however, the NIA identified recommended best practices to limit further sound level increases. Pembina stated that it will implement all of the best practices recommended in the NIA, and that it has implemented a general noise management plan at a corporate level.

9. Pembina included a letter from the Alberta Energy Regulator with its application materials stating that an environmental impact assessment report for the proposed cogeneration power plant is not required.

<sup>1</sup> Exhibit 26123-X0006, Noise Impact Assessment, PDF page 8.

10. Stantec Consulting Ltd. conducted an air quality assessment to evaluate the effects of the addition of the proposed cogeneration power plant on ambient air quality. The assessment determined that maximum ambient nitrogen dioxide (NO<sub>2</sub>) and sulphur dioxide (SO<sub>2</sub>) concentrations associated with the Empress NGL Straddle Plant would be below the *Alberta Ambient Air Quality Objectives* (AAAQO) for all relevant average periods.

11. Stantec stated that when other regional emission sources in the study area are taken into consideration, the maximum predicted cumulative NO<sub>2</sub> and SO<sub>2</sub> concentrations would be less than their respective AAAQO, except for the 24-hour SO<sub>2</sub> concentrations. However, the air quality assessment identified the nearby Plains Midstream Empress Straddle Gas Plant as the main contributor to SO<sub>2</sub> emissions in the region. The air quality assessment also concluded that changes in ambient air quality associated with the addition of the proposed cogeneration power plant are predicted to remain acceptable relative to AAAQO, and where exceedances are predicted, the proposed cogeneration power plant's contribution is negligible.

12. Pembina stated that an application for an approval under the *Environmental Protection and Enhancement Act* for the cogeneration power plant was approved by the Alberta Energy Regulator on June 24, 2020. The *Environmental Protection and Enhancement Act* application included a copy of the air quality assessment report.

### **3.2 Commission findings**

13. In determining if the application is in the public interest the Commission must take into account the *Hydro and Electric Energy Act*, the requirements of Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments* and Rule 012: *Noise Control*. An applicant must obtain all approvals required by other applicable provincial or federal legislation.

14. For the following reasons, the Commission considers the cogeneration power plant to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act* and approves its construction and operation.

15. The Commission finds that Pembina's participant involvement program satisfies the requirements of Rule 007. In addition, no parties submitted any objections to the proposed cogeneration power plant.

16. The Commission notes that while the NIA identifies cumulative sound levels at certain theoretical receptor locations to be above the nighttime PSL of 40 dBA, these predicted exceedances are largely attributed to the nearby Plains Midstream facilities. These facilities fall under the Alberta Energy Regulator's Directive 038: *Noise Control* and are regulated by the Alberta Energy Regulator. In response to the predicted exceedances, Pembina has committed to implementing a series of recommended acoustical best practices and has implemented a general noise management plan at a corporate level.

17. The Commission is prepared to approve the project notwithstanding the predicted exceedances at three theoretical receptor locations, given the following circumstances: (a) the Plains Midstream facilities are the dominant noise sources in the area; (b) Pembina has committed to implementing mitigation measures that will limit further sound level increase; and (c) there are no residences within 1.5 kilometres of the Empress NGL Straddle Plant. Nevertheless, in the event of a future noise complaint, the Commission would initiate a

co-operative investigation with the Alberta Energy Regulator of all energy-related facilities in the area.

18. The Commission notes that the proposed cogeneration power plant would be located within the boundaries of the existing Empress NGL Straddle Plant. Taking into account Stantec's conclusion that the project would not contribute materially to AAAQO exceedances in the study area, the environmental impacts of the project are not likely to be significant and the Commission finds that the project complies with the environmental requirements of Rule 007.

## **4 Connection application**

### **4.1 Discussion**

19. The Empress NGL Straddle Plant is connected to the AIES at the AltaLink Management Ltd. Empress 394S Substation, via two dedicated 138/13.8-kilovolt (kV) transformers, at a voltage level of 13.8 kV.

20. Pembina, on behalf of 1195714 Alberta Ltd., applied to connect the proposed cogeneration power plant, located within the Empress NGL Straddle Plant site, to the AIES to facilitate the export of excess electricity.

21. Pembina stated that it filed a system access service request (SASR) with the Alberta Electric System Operator (AESO) on May 13, 2019, seeking a "Behind the Fence" addition of the proposed cogeneration power plant. Pembina stated that there is no change to the existing demand transmission service (DTS) contract for the Empress NGL Straddle Plant, and that it has requested a new supply transmission service (STS) contract.

22. Pembina provided a copy of an agreement dated March 27, 2019, that it has with FortisAlberta Inc., which provides FortisAlberta's approval for Pembina to manage the connection directly with the AESO. Pembina stated that no additional agreements with FortisAlberta are envisioned.

23. Pembina stated that it is working with AltaLink through the AESO connection process to address any issues associated with the proposed connection.

### **4.2 Commission findings**

24. The Commission finds that the application for the proposed connection meets the requirements set out in Rule 007, and that approval of the connection is in the public interest.

## **5 Industrial system designation application**

### **5.1 Legislative scheme**

25. When deciding whether to approve the industrial system designation (ISD) application the Commission must take into account the *Hydro and Electric Energy Act*, the *Electric Utilities Act*, and the requirements of Rule 007. More specifically, the Commission must consider the ISD application in accordance with the principles and criteria set out in Section 4 of the *Hydro and Electric Energy Act*. Subsection 4(2) sets out a number of principles that the Commission must have regard for when considering an application for an ISD. Subsection 4(3) sets out specific



criteria for determining whether a project should be designated as an industrial system, subsections 4(4) and 4(5) set out further criteria for the Commission to consider when a project does not meet the criteria set out in Subsection 4(3). Subsections 4(2) to (5) read as follows:

**4(2)** Where the Commission is considering an application for designation as an industrial system, the Commission shall have regard to the following principles:

- (a) the designation must be consistent with the objective of giving appropriate economic signals so that integrated industrial processes can develop their own internal supply of electricity where that is the most economical source of generation;
- (b) the designation must support
  - (i) the development of the economical supply of generation to meet the requirements of integrated industrial processes,
  - (ii) the efficient exchange, with the interconnected electric system, of electric energy that is in excess of the industrial system's own requirements, and
  - (iii) the making of decisions respecting the location of generation and consumption facilities so that the efficiency of the interconnected electric system is improved, including improved voltage stability and reduction of losses and congestion on transmission lines;
- (c) the designation must not facilitate
  - (i) the development of independent electric systems that attempt to avoid costs associated with the interconnected electric system, and
  - (ii) uneconomical by-pass of the interconnected electric system;
- (d) duplication of the interconnected electric system must be avoided where it is more economical to use the transmission facilities or electric distribution systems owned by persons in whose service area the industrial system is or will be located.

**(3)** The Commission may make a designation under subsection (1) if the Commission is satisfied that all of the following criteria have been met:

- (a) the electric system includes a generating unit located on the property of the one or more industrial operations it is intended to serve, there is a high degree of integration of the electric system with one or more industrial operations the electric system forms part of and serves, and there is a high degree of integration of the components of the industrial operations;
- (b) the industrial operations process a feedstock, produce a primary product or manufacture a product;
- (c) there is a common ownership of all of the components of the industrial operations;

- (d) the whole of the output of each component within the industrial operation is used by that operation and is necessary to constitute its final products;
  - (e) there is a high degree of integration of the management of the components and processes of the industrial operations;
  - (f) the application to the Commission for a designation under subsection (1) demonstrates significant investment in both the expansion or extension of the industrial operations processes and the development of the electricity supply;
  - (g) where an industrial operation extends beyond contiguous property, the owner of the industrial operation satisfies the Commission that the overall cost of providing the owner's own distribution or transmission facilities to interconnect the integral parts of the industrial operation is equal to or less than the tariffs applicable for distribution or transmission in the service area where the industrial operation is located.
- (4) Where the Commission is not satisfied that subsection (3)(c) or (d) has been met, the Commission may make a designation under subsection (1) if the Commission is satisfied that all of the separately owned components and all of the industrial operations are components of an integrated industrial process.
- (5) Where the Commission is not satisfied that all of clauses (a) to (g) of subsection (3) have been met, the Commission may make a designation under subsection (1) if the Commission is satisfied that
- (a) all of clauses (a) to (g) of subsection (3) and subsection (4) have been substantially met, and
  - (b) there is a significant and sustained increase in efficiency in a process of the industrial operation or in the production and consumption of electric energy by the industrial operation as a result of the integration of the electric system with the industrial operations the electric system forms part of and serves.

26. The Commission has stated that read broadly, Section 4 permits an ISD where the development of on-site generation is a component of an efficient, highly integrated industrial process where on-site generation represents the most economical source of generation for on-site operations.<sup>2</sup>

## 5.2 Discussion

27. Pembina requested approval for an ISD that would encompass all of the electrical facilities at the Empress NGL Straddle Plant, including the plant distribution system and the proposed cogeneration power plant.

28. Pembina explained that the Empress NGL Straddle Plant extracts liquids from natural gas. After extraction, the natural gas liquids are fractionated into sub-components, including ethane, liquified petroleum gas (LPG) and condensate. Ethane and condensate are sold to Alberta markets, while LPG is transported to Sarnia, Ontario for further processing. Both the extraction

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<sup>2</sup> Decision 25044-D01-2020: Horseshoe Power GP Ltd., Gull Lake Cogeneration Power Plant Expansion Project, Proceeding 25044, Applications 25044-A001 to 25044-A003, August 6, 2020, paragraph 86.

operation and the fractionation operation at the Empress NGL Straddle Plant would be served by the electricity and heat generated by the proposed cogeneration power plant.

29. As described above, the proposed cogeneration power plant would be powered by fuel gas blended with regeneration gas from on-site propane and butane treating. Pembina stated that the power plant would provide up to 45 MW of electricity and 40 MW of thermal energy for use by the Empress NGL Straddle Plant's extraction and fractionation operations. Pembina identified that the ethane recovery compressors and residual gas compressors, which it stated are integral elements of the fractionation and extraction processes, are the largest electrical loads at the Empress NGL Straddle Plant. Pembina also stated that the Empress NGL Straddle Plant would still require a net electricity import of approximately 4 MW from the AIES under normal operating conditions to satisfy its total electrical load of 48 MW. Pembina stated that the Empress NGL Straddle Plant's thermal load is 40 MW.

30. The Empress NGL Straddle Plant consists of an extraction facility and a fractionation facility. Pembina stated that the Empress NGL Extraction Facility is co-owned by Pembina Empress NGL Partnership by its managing partner 1195714 Alberta Ltd. (ownership share of 88.75 per cent), and AltaGas Extraction and Transmission Limited Partnership (ownership share of 11.25 per cent). It stated that the Empress NGL Fractionation Facility is 100 per cent owned by Pembina Empress NGL Partnership, which will also own 100 per cent of the proposed cogeneration power plant. Pembina stated that 1195714 Alberta Ltd. functions as the sole operator of the Empress NGL Straddle Plant and would be the sole operator of the cogeneration power plant.

31. Pembina stated that it has applied to the AESO for an STS contract to facilitate export of electricity from the proposed cogeneration power plant to the AIES. It explained that it is not anticipating significant changes to the Empress NGL Straddle Plant's operations in the future, but requires the ability to export electricity to the AIES if a load rejection event results in excess generated electricity from the cogeneration power plant. Pembina estimated that the duration of any temporary power exports would typically be less than one hour, depending on the nature of the initiating event. Pembina clarified that except for a load rejection event it does not intend to export electricity to the AIES and that the Empress NGL Straddle Plant's total electrical load exceeds the proposed cogeneration power plant's full generation capability.

32. Pembina provided an economic assessment of the proposed project and stated that the capital cost for the proposed cogeneration power plant is estimated at \$120 million, excluding interest, with the asset having a life of 25 years.

33. Pembina compared the cost of providing heat and electricity to the Empress NGL Straddle Plant's operations via the proposed cogeneration power plant to the cost of importing electricity from the AIES and generating heat on-site using natural gas-fired heaters. This comparison indicated that the proposed cogeneration power plant would result in savings with a net present value of \$63.7 million. These projected savings are realized without including revenue from the export of electricity to the AIES.

### **5.3 Commission findings**

34. As previously stated, the Commission must consider Pembina's ISD application in accordance with the principles and criteria set out in Section 4 of the *Hydro and Electric Energy*

*Act.* For the reasons below, the Commission finds that granting an ISD designation would be consistent with the principles in Subsection 4(2) and each of the criteria found in Subsection 4(3).

35. The Commission accepts that Pembina is seeking an ISD because the use of its own internal supply of electricity would be the most economical source of generation to meet its integrated industrial processes. The Commission is also satisfied that Pembina's proposal to export excess electricity in the case of a load rejection event (which can be characterized as an abnormal operating condition) will facilitate the efficient exchange, with the interconnected electric system, of electric energy that is in excess of Pembina's own requirements.

36. Subsection 4(2)(c)(i) requires the Commission to have regard for the principle that an ISD must not facilitate the development of independent electric systems that attempt to avoid costs associated with the AIES. Subsection 4(2)(c)(ii) requires the Commission to have regard for the principle that an ISD must not facilitate an uneconomical bypass of the AIES.

37. The Commission is satisfied that Pembina is not seeking an ISD to avoid system costs and that such a designation will not result in an uneconomic bypass. Pembina's projected savings by installing and operating the cogeneration power plant did not include revenue from the export of electricity of AIES. The Commission notes that Pembina would continue to import electricity from the AIES via an existing DTS contract to satisfy the Empress NGL Straddle Plant's load requirement. Further, Pembina has applied for an STS contract with the AESO. Pembina would pay tariffs for its exchange of electricity with the AIES in accordance with its DTS contract and applied-for STS contract.

38. The Commission is also satisfied that subsections 4(3)(a) and 4(3)(b) have been met. As described by Pembina, the industrial complex's electric system would include a cogeneration power plant that produces heat and electricity to serve the Empress NGL Straddle Plant's operations. The cogeneration power plant would be fuelled by fuel gas blended with regeneration gas from propane and butane treating. There is a high degree of integration of the electric system with the industrial operations it forms part of and serves, and there is a high degree of integration of the components of the industrial operations.

39. The Commission finds that Subsection 4(3)(c) has not been met because there is not common ownership of all of the components of the industrial operations. While 1195714 Alberta Ltd. has sole ownership of the proposed cogeneration power plant and the Empress NGL Fractionation Facility, AltaGas Extraction and Transmission Limited Partnership has a minor ownership interest in the Empress NGL Extraction Facility and did not object to the application for an ISD. The Commission is nonetheless satisfied that all of the separately owned components and all of the industrial operations are components of an integrated industrial process. Consequently, it finds that the proposed ISD meets the requirements of Subsection 4(4) of the *Hydro and Electric Energy Act*.

40. Pembina stated that the proposed cogeneration power plant would provide 45 MW of electrical energy and 40 MW of thermal energy for use by the Empress NGL Straddle Plant's extraction and fractionation facilities which produce the sub-components of natural gas liquids sold to Alberta markets or transported to Ontario for further processing. Pembina indicated that the Empress NGL Straddle Plant's total electricity load is 48 MW and its total thermal load is 40 MW. The Commission is satisfied that the whole of the output of each component within the industrial operation is used by that operation and is necessary to constitute its final products, and therefore Subsection 4(3)(d) is met.

41. The Commission considers that Subsection 4(3)(e) is met because Pembina stated that 1195714 Alberta Ltd. is the sole operator of the Empress NGL Straddle Plant and will be the sole operator of the proposed cogeneration power plant.

42. Pembina's economic assessment noted that the proposed cogeneration power plant would require an investment of \$120 million. The application referenced prior investments at the Empress NGL Straddle Plant, including deepcut expansions, condensate extraction and the fractionation expansion project, which resulted in capital expenditures totalling \$250 million. The Commission considers that Pembina has demonstrated significant investment in both the expansion or extension of the industrial operations processes and in the development of the electricity supply system. The Commission finds that Subsection (4)(3)(f) is met.

43. Pembina stated that all of the facilities to be included within the ISD are within the existing boundary of the Empress NGL Straddle Plant. The industrial operation does not extend beyond contiguous property and therefore Subsection 4(3)(g) is not applicable.

44. In conclusion, having considered the applicable principles and criteria set out in Section 4 of the *Hydro and Electric Energy Act*, the Commission finds that Pembina's proposal meets the principles and criteria for an ISD.

## 6 Decision

45. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the application for a new 45-MW cogeneration power plant and grants to 1195714 Alberta Ltd. the approval set out in Appendix 1 – Power Plant Approval 26123-D02-2021, to construct and operate the Empress NGL Cogeneration Power Plant – February 25, 2021.

46. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves the application to connect the cogeneration power plant to the AIES and grants to 1195714 Alberta Ltd. the approval set out in Appendix 2 – Connection Order 26123-D03-2021 – February 25, 2021, to connect the Empress NGL Cogeneration Power Plant to AltaLink Management Ltd.'s existing Empress 394S Substation.

47. 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 for an industrial system designation and grants to 1195714 Alberta Ltd. an industrial system designation as set out in Appendix 3 – Industrial System Designation Order 26123-D04-2021 – February 25, 2021.

48. The appendices will be distributed separately.

Dated on February 25, 2021.

**Alberta Utilities Commission**

*(original signed by)*

Carolyn Dahl Rees  
Chair

*(original signed by)*

Cairns Price  
Commission Member

*(original signed by)*

Vera Slawinski  
Commission Member