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**Subject: Comments to Doyon Utilities, LLC preliminary Air Quality Minor Permit AQ1121MSS04 and Operating Permit AQ1121TVP03.**

The Department of Environmental Conservation (DEC) released on April 25, 2021 for public review the Doyon Utilities, LLC (DU) preliminary Minor Permit AQ1121MSS04 and Operating Permit AQ1121TVP03. Public Comments are due by 11:59 PM May 25, 2021. Aurora/UCM appreciates the opportunity to comment on the preliminary Air Quality Control Minor Permit AQ1121MSS04 and Operating Permit AQ1121TVP03 for DU.

### **Background**

DU's minor permit application was submitted in response to a requirement associated with the Fairbanks PM<sub>2.5</sub> Serious State Implementation Plan (Serious SIP) control strategy for the Fairbanks Nonattainment Area (NAA). The major stationary sources (e.g., those with the potential to emit greater than 70 tons per year of PM<sub>2.5</sub> or precursor) within the NAA are being subject to Best Available Control Technology (BACT). The DEC's justification for control strategy implementation at DU and other major stationary sources within the NAA is based on an uncertainty as to whether the sources are significant contributors to the fine particulate problem from sulfur dioxide emissions as a precursor to sulfur-based fine particulates.

The SIP implementation requirements for DU within Minor Permit AQ1121MSS04 (Section 3) and the Title V Permit AQ1121TVP03 (Section 4) address sulfur dioxide (SO<sub>2</sub>) BACT limits for emitting sources (e.g., EU IDs 1-6, 8, 9, 14, 22, 23, 29a, 31a, and 34-36). Conditions 5 through 10 of the preliminary minor permit and Conditions 31 – 36 of the operating permit pertain to fuel sulfur content limits and emission limits for the various fuels used. Within DU's fleet of emission units, EU 1 – 6 are spreader-stoker boilers that use coal and are subject to a coal-sulfur limit.

Prior to the promulgation of the Serious SIP, UCM and Aurora provided comments to the DEC's Proposed Serious SIP (released on May 14, 2019) iterating an acceptable coal-sulfur limit (i.e., 0.25% coal-sulfur by wt. as-received) and an averaging period (i.e., six-months). The DEC's proposed coal-sulfur limit (i.e., 0.2% coal-sulfur by wt. as-received) had the potential of cutting off access to tens of millions of tons of coal as well as pose a potential threat of fuel supply interruption of the coal fired power plants. UCM/Aurora proposed coal-sulfur limit and averaging period were necessary to minimize re-handling of coal to verify out-going coal from the mine met the coal-sulfur limit. If out-going coal required re-handling, it would have the unintended consequence of increasing the cost of coal to the

consumer. As proposed, the UCM coal-sulfur limit of 0.25% and averaging period of 6-months would allow variability in the mined coal to an extent that it wouldn't significantly increase the cost of coal.

The limit provided by the DEC in the final Serious SIP was 0.25% coal-sulfur by weight on an as-received basis; however, it was silent on the averaging period. The lack of an averaging period, as stated, will cause the mine additional effort in handling the coal which could double the cost for the consumer. The coal over the past decade has had instances where out-going coal was greater than 0.25% coal-sulfur; therefore, additional care would need to be taken to ensure this limit isn't exceeded per shipment if an averaging period isn't implemented. Coal is mined and directly loaded onto the coal cars for shipment to Fairbanks. When the coal is loaded in the cars, samples are taken for analyses, including coal-sulfur content. The train and coal cars leave the facility and arrive in Fairbanks generally before the results of the analyses are complete. In some instances, the coal is burned prior to the results of the sample analyses. If the mine is required to ensure that the coal is under 0.25% per shipment, the coal would have to be sampled, stockpiled, and re-handled a second time prior to shipment.

UCM/Aurora discussed with the DEC the concern regarding the lack of an averaging period for coal-fired facilities within the Serious SIP after it was promulgated. Through discussion, it was determined that a quarterly block averaging period was appropriate. The DEC's intent of applying a quarterly block averaging period was communicated in an email dated August 13, 2020.<sup>1</sup> The block average would consider all the coal-sulfur associated with coal shipments for a facility from UCM provided within the quarter. The resulting average would be compared against the as-received standard of 0.25% by weight for compliance purpose.

UCM/Aurora has taken the time to review the preliminary minor and operating permits for DU. Concerns with sections and conditions of the SIP requirements in the permits are addressed by UCM/Aurora as issues below followed by an associated change request.

***Minor Permit AQ1121MSS04 – Section 3/Title V Permit AQ1121TVP03 – Section 4. State Implementation Plan (SIP) Best Available Control Technology (BACT) Requirements:***

***SO<sub>2</sub> BACT Requirements for EU IDs 1 through 6***

Minor Permit AQ1121MSS04 – Condition 5/ Title V Permit AQ1121 TVP03 – Condition 31. Fuel Sulfur Limits, June 9, 2021.

**Issue:** Under Minor Permit (MP) Condition 5 and Title V Permit (TVP) Condition 31, beginning on June 9, 2021, DU is subject to a coal-sulfur limit of 0.25 percent sulfur by weight (wt% $S_{fuel}$ ) of coal received at the stationary source for EU ID 1 – 6; no averaging period is proposed.

**Request:** Apply a quarterly block average limit of 0.25 percent sulfur by weight (wt% $S_{fuel}$ ) of coal received at the stationary source for EU ID 1 – 6 as communicated in an email dated August 13, 2020.<sup>1</sup> The language of MP Condition 5/TVP Condition 31 should be consistent with the language in the preliminary Minor Permit of Aurora Energy, LLC which is as follows:

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<sup>1</sup> Simpson, Aaron J (DEC). "Re: UCM – SIP Sulfur clarification for non-attainment area." Message to Glen Weaver (UCM). 13 August 2020.

**“Fuel Sulfur Content Limits, June 9, 2021.** Beginning no later than June 9, 2021, the Permittee shall limit the block quarterly average of the sulfur content of coal received at the stationary source to no greater than 0.25 percent by weight (%w) as received.”

MP Condition 5.1 – 5.6/TVP Condition 31.1 – 31.6. Coal Sulfur Content.

**Issue:** Under MP Condition 5.1 – 5.6/TVP Condition 31.1 – 31.6, DU is subject to monitoring, record keeping, and reporting requirements referencing a limit of 0.25 percent sulfur by weight (wt% $S_{fuel}$ ) of coal received at the stationary source with no reference to an averaging period to determine compliance with the standard. MP Condition 5.5/TVP Condition 31.5 requires the facility to report an excess emission whenever the as-received value of coal exceeds 0.25 wt%S.

**Request:** Apply within MP Condition 5.1 – 5.6/TVP Condition 31.1 – 31.6 instructions on how to determine compliance with the as received coal-sulfur limit of 0.25 wt%S based on a quarterly block averaging period. Aurora/UCM requests that DEC define an exceedance to the standard as a deviation from the limit based on the average sulfur content of each shipment of coal received during a given quarter. Also, define a calendar quarter consistent with a three-month period within a year starting from January 1. The language of MP Conditions 5.1 – 5.6/ TVP Condition 31.1 – 31.6 should be consistent with the language in the preliminary Minor Permit of Aurora Energy, LLC which is as follows [in parentheses and italicized are the corresponding equivalent DU conditions and relevant suggested insertions for the DU conditions]:

7.1 [MP 5.1/TVP 31.1] Upon receipt of each shipment of coal at the stationary source, obtain a certified statement from the supplier with the following information:

- a. the percent sulfur by weight as received of the coal;
- b. the method of the analysis;
- c. a statement that the analysis was representative of the coal shipped; and
- d. the total weight of the coal in the shipment.

7.2 At the end of each month, calculate and record the weighted average sulfur %w, as received, content of each coal shipment in the previous month.

7.3 [MP 5.2/TVP 31.2] If a certificate is not available from the supplier, analyze a representative sample of the fuel to determine the sulfur content using an appropriate method listed in 18 AAC 50.035(b)-(c) or 40 C.F.R. 60.17 incorporated by reference in 18 AAC 50.040(a)(1).

7.4 [MP 5.3/TVP 31.3] Keep records of the sulfur contents of each shipment of coal under Conditions 7.1 [MP 5.1/TVP 31.1] or 7.2.

7.5 [MP 5.4/TVP 31.4] Coal present on site before June 9, 2021 may be combusted at the stationary source at any time, at the discretion of the Permittee. [*Stockpiled coal present on site before June 9, 2021 may be combusted in EUs 1 through 6 at any time, at the discretion of the Permittee.*]

7.6 [MP 5.6/TVP 31.6] Include a summary of the sulfur content and total weight of each shipment of coal received on or after June 9, 2021, in each operating report required by Condition 13.

7.7 [MP 5.5/TVP 31.5] Report in accordance with Condition 12, whenever the limits in Conditions 5 or 6 are exceeded, or whenever any of the requirements in Conditions 7.1 through 7.6 are not met. *[Report in accordance with the Excess Emissions and Permit Deviation condition in the applicable operating permit issued for the stationary source under AS 46.14.130(b) and 18 AAC 50 whenever the sulfur content of a shipment of coal BASED ON A QUARTERLY BLOCK AVERAGING PERIOD, received on or after June 9, 2021, is more than 0.25% sulfur by weight.]*

#### MP Condition 6/ TVP Condition 32. Emission Limit and Dry Sorbent Injection

**Issue:** DU is required to install, operate, and maintain, according to manufacturer's specifications, a Dry Sorbent Injection (DSI) system on each of the EUs 1 through 6 beginning no later than October 1, 2023 to maintain an emission limit of 0.12 lb/MMBtu.

**Request:** This condition is being applied based on an uncertainty as to whether the major sources are significant contributors to the sulfur-based fine particulate concentration in the Fairbanks North Star Borough (FNSB) NAA. The EPA has not approved the BACT strategy that is being applied to the major stationary sources in the area, including DU's requirement to install and operate DSI. It does not seem reasonable to have DU design and build a multi-million dollar control system which hasn't been approved by the EPA. As such, the EPA could make a decision not to accept DSI as the appropriate technology to install based on additional information. This potential would have a very significant impact on the SIP BACT strategy as proposed to the EPA.

Lastly, there are several concurrent initiatives including the DEC's update of the air quality model for the NAA, the EPA's Regional Applied Research Effort (RARE) initiative to determine sulfur chemical pathways in Fairbanks, as well as an Alaskan Layered Pollution and Chemical Analysis (ALPACA) study concerning sulfur-based particulate formation in Fairbanks. All of these initiatives are exploring the formation of sulfur-based particles in Fairbanks for which the efforts will come to fruition in 2022. Aurora suggests that the DEC wait to implement BACT on the facility until after it is determined whether the major stationary sources are significant contributors to the sulfur-based fine particulate concentration in the FNSB NAA.

#### MP Conditions 5 – 10/ TVP Conditions 31 – 36.

**Issue:** These conditions are being applied to the facility because the DEC is uncertain as to whether the major stationary sources within the Fairbanks NAA are significant contributors to the sulfur-based component of the fine particulate concentration during excursions of the federal ambient air quality standard. If it were determined that major stationary sources, including DU, were not significant contributors to sulfur-based fine particulate concentration within the area, the implementation of these conditions would be moot with respect to achieving any progress towards attainment of the federal ambient air quality standard for fine particulate matter.

**Request:** Prior to applying these conditions, the DEC should determine whether sulfur emission from major stationary sources are significant contributors to the Fairbanks NAA through the use of a Major Stationary Source Precursor Demonstration for sulfur-based PM<sub>2.5</sub> per federal rules.<sup>2</sup>

**Conclusion**

In summary, UCM/Aurora is thankful to have the opportunity to comment on DU's preliminary Minor Permit AQ1121MSS04 and Operating Permit AQ1121TVP03. UCM/Aurora's main concerns expressed within these comments are the application of a common standard for coal-sulfur limit and averaging period to determine compliance with the BACT for the coal-fired facilities.

Sincerely,



Rob Brown

Vice President  
Business Development

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<sup>2</sup> Per 40 C.F.R. 51.1006 (a)(2)