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Subject: EPA comments on Fairbanks 189(d) plan
Date: Thursday, October 29, 2020 5:15:08 PM
Attachments: [EPA comments Fairbanks draft 189d 5 percent plan final 10.29.2020.pdf](#)

Please find attached EPA's comments on the proposed Fairbanks plan to meet Clean Air Act 189(d) requirements (2020 Amendment). We appreciate the opportunity to provide comment and are available to discuss any questions.

Thank you,
Matt Jentgen

Matt Jentgen
EPA – Region 10
Ph: (206) 553-0340



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

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AIR & RADIATION
DIVISION

October 29, 2020

Ms. Alice Edwards
Director, Division of Air Quality
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 303
Juneau, Alaska 99811-1800

Dear Ms. Edwards:

The U.S. Environmental Protection Agency, Region 10 appreciates the opportunity to comment on the Alaska Department of Environmental Conservation's 2020 proposed regulations and State Implementation Plan amendments, released to the public on September 10, 2020 for the Fairbanks North Star Borough fine particulate matter (PM_{2.5}) Nonattainment Area.

We support Alaska's continued efforts to develop and implement a plan to attain the fine particulate matter ambient air quality standards as expeditiously as practicable, taking into consideration the needs and interests of all stakeholders and the local community. We reviewed the proposed plan and have enclosed our comments for your consideration.

We commit to continue working with you as you develop the Fairbanks PM_{2.5} Attainment Plan to protect public health through improved air quality in the Fairbanks North Star Borough. We are also available to discuss and clarify our attached comments on the proposed plan. Please contact me at (206) 553-0218 or Matthew Jentgen, of my staff, at (206) 553-0340 with any questions you may have or to arrange a meeting.

Sincerely,

Krishna Viswanathan
Director

Enclosure

cc: Ms. Cindy Heil
Program Manager, Alaska DEC

EPA Comments on 2020 DEC Proposed Regulations & SIP Amendments

Summary of 2020 DEC Proposed Regulations & SIP Amendments

The Alaska Department of Environmental Conservation (ADEC) submitted the Serious Area Plan for the Fairbanks PM_{2.5} nonattainment area on December 13, 2019. The EPA determined the plan met the completeness criteria on January 9, 2020 (85 FR 7760). Subsequently, the EPA found that the Fairbanks PM_{2.5} nonattainment area failed to attain by the applicable Serious area attainment date of December 31, 2019 (85 FR 54509). Alaska is now proposing this plan, comprised of revisions to state regulations and the State Air Quality Control Plan, to meet the requirements of CAA Section 189(d), in addition to the requirements of CAA sections 172 and 189(b) (“Proposed 189(d) Plan”).

Scope and Basis of EPA’s Review

The EPA shares these comments to provide continuing guidance and support to the state in the development of the Proposed 189(d) Plan and any necessary subsequent plans or support materials for the Fairbanks PM_{2.5} nonattainment area.

The EPA reviewed the Proposed 189(d) Plan against the requirements of Sections 171-173, and 188-189 of the Clean Air Act (CAA), 42 U.S.C. § 7501-7503 & 7513-7514, and EPA’s implementing regulations at 40 CFR part 51, subpart Z and associated guidance. These comments are not necessarily exhaustive, however, and thus the absence of discussion of certain plan requirements should not be construed as a determination that the plan meets those requirements. The EPA’s full evaluation of the Proposed 189(d) Plan must be based on the actual SIP submission ultimately made by DEC to the agency and will be subject to notice and public comment process at that time.

The comments are organized by planning requirement. Comments that raise potential approvability issues are denoted by the “***” symbol. Other comments are intended to strengthen or clarify portions of the SIP.

An attainment plan that meets the requirements of the CAA and EPA’s regulations will be important to the area’s success in reaching attainment as expeditiously as possible. Mindful of the resources necessary to develop and implement such a plan, the EPA will continue to support planning efforts in the nonattainment area through technical support and regulation development. Where possible, the agency may provide financial assistance, through grant programs such as Targeted Air Sheds grants.

Comments on the Proposed 189(d) Plan

i. Emissions Inventory Requirements

The Proposed 189(d) Plan includes a 2019 baseline inventory and a 2024 attainment projection inventory that includes all relevant emissions sources in the nonattainment area.

- a) Gridded emissions plots are an important visual tool for quality assurance and to determine whether the requirements under 40 CFR § 51.1008(c) have been met. Please consider including these in the final 189(d) plan SIP submission.

ii. Pollutants to be addressed in the plan

The Proposed 189(d) Plan includes ADEC's determination that sulfur dioxide (SO₂) and ammonia (NH₃) are significant precursors in the Fairbanks nonattainment area. The Proposed 189(d) Plan includes precursor demonstrations for VOCs and NO_x supporting ADEC's determination that these pollutants do not significantly contribute to PM_{2.5} concentrations. The Proposed 189(d) Plan includes an additional precursor demonstration model run for NO_x that replaces a semi-quantitative analysis that was previously conducted for the Serious Area Plan. The EPA provides the following comments on ADEC's determination of pollutants to be addressed in the plan:

- a) We agree with Alaska's finding in the Serious Area Plan that SO₂ emissions are a significant precursor to PM_{2.5}.
- b) The additional model run in the Proposed 189(d) Plan provides further weight of evidence for ADEC's prior conclusion in the Serious Area Plan that NO_x from all anthropogenic sources is insignificant, to meet the requirements under 40 CFR 51.1006, except 40 CFR 51.1006(a)(3) with respect to nonattainment new source review, and the guidance in the 2019 EPA memorandum, "*Fine Particulate Matter (PM_{2.5}) Precursor Demonstration Guidance*."
- c) In addition to the NO_x model run in the Proposed 189(d) Plan, ADEC is relying on the results of the precursor demonstration in the Serious Area Plan to meet the requirements under 40 CFR 51.1006. Please confirm that the Proposed 189(d) Plan builds upon the analysis in the Serious Area Plan, Section 7.8.12.

iii. Control Strategy requirements

***The Proposed 189(d) Plan includes a suite of control measures that ADEC states will achieve attainment as expeditiously as practicable and that will achieve at least a 5 percent reduction in emissions of direct PM_{2.5} or a plan precursor. Aside from the new contingency measure, the control strategy for the Proposed 189(d) Plan is comprised of the same suite of measures ADEC proposed as meeting the Best Available Control Measures (BACM) requirement for the Serious Area Plan.¹ The Proposed 189(d) Plan includes an updated control measure analysis as required under 40 CFR 51.1010(c) in support of ADEC's determination that no additional controls are necessary. Specifically, ADEC surveyed other state's SIPs for any new control measures adopted after ADEC submitted the Serious Area Plan and reevaluated BACM and Most Stringent Measures (MSM) that the state rejected as technologically or economically infeasible to implement in the Serious Area Plan.² Below are comments on the Control Strategy provisions of the Proposed 189(d) Plan based on EPA's evaluation of these provisions against the requirements of Sections 189(b) and 189(d) of the CAA, as well as 40 CFR 51.1010(a) and (c).

- a) ***The Proposed 189(d) Plan includes control measures, identified in the Serious Area Plan, that will not be implemented until as late as 2024, as outlined in Table 7.7-28. These measures include a requirement to remove all uncertified woodstove devices, outdoor hydronic heaters, and coal heaters by December 31, 2024 (18 AAC 50.077(i) and 18 AAC 50.079(f)); a requirement to shift from #2 oil (i.e., 2,566 parts per million sulfur content) to #1 oil (i.e., 1,000 parts per million sulfur content) for residential and commercial space heating by September 1, 2022 (18 AAC 50.078(b)); a requirement that

¹ Note that EPA has yet to determine whether this suite of controls, as incorporated into the previously submitted Serious Area Plan, meets the BACM requirement in Section 189(b) of the CAA and 40 CFR 51.1010(a).

² As discussed further below, ADEC did not conduct this analysis for previously rejected best available control technologies applicable to certain stationary sources.

- after October 1, 2021, commercially sold wood must be dry before sale (18 AAC 50.076(k)). In accordance with 40 CFR 51.1010(c), the State shall adopt and implement all control measures that collectively achieve attainment of the standard as expeditiously as practicable. We suggest that the Proposed 189(d) Plan includes a re-evaluation of the implementation schedule of these control measures to determine whether attainment could be achieved more expeditiously than December 31, 2024.
- b) ***The Proposed 189(d) Plan identifies Measure 51, requiring ultra-low sulfur diesel (ULSD) for liquid fuel heating devices in the nonattainment area, as technologically and economically feasible, yet the Proposed 189(d) Plan does not adopt this control measure. Alaska's justification for not adopting and implementing Measure 51 is inconsistent with the regulation under 40 CFR 51.1010 or CAA Section 189. To approve Alaska's control measure analysis in the Proposed 189(d) Plan, Alaska would need to adopt and implement this control measure or provide additional justification, consistent with the applicable regulations, for why this measure is technologically or economically infeasible.
 - c) The Proposed 189(d) Plan includes an updated analysis of Measure 67, emissions controls for coffee roasters. As written, state rule 18 AAC 50.078(d) purporting to implement this measure does not appear to be enforceable as a practical matter. The rule does not require use of emissions controls once installed, specify any emission limits, nor monitoring requirements with which the subject sources must comply. In addition, the rule contains a waiver provision based on the facility providing information demonstrating that the control technology is technologically or economically infeasible. This provision is not adequately specific or bounded and, thus, may bar effective enforcement. See 81 FR 58010, 58047. In addition, the state must adopt permanent and enforceable control measures for this source category even if certain sources within the source category have existing emissions controls.
 - d) ADEC should provide an explanation for its projections of enhanced compliance and penetration rates, particularly for the updated episodic solid fuel burning device curtailment program. ADEC should explain whether its projections are attributable to planned enhanced enforcement, educational outreach, or some other initiative.

iv. Control Strategy requirements – Best Available Control Technology (BACT)

***The Serious Area Plan included a BACT analysis for applicable sources in which the state rejected several control technologies as technologically or economically infeasible. The Proposed 189(d) Plan does not include an updated BACT analysis. In accordance with 40 CFR 51.1010(c)(2)(ii), ADEC must reconsider and reassess any measure previously rejected by the state during the development of any Moderate area or Serious area attainment plan control strategy. The EPA provided comments about Alaska's BACT analysis in our July 19, 2019, comment letter during the development of the Serious Area Plan (along with previous correspondence dating back to 2013). Many of the comments in our July 19, 2019, comment letter are still applicable, most importantly our comments regarding the absence of site-specific vendor quotes or cost estimates for SO₂ control technologies. Appendix A contains EPA's latest comments on ADEC's BACT analysis and determinations in the Serious Area Plan. The EPA is providing these comments to assist the state in reevaluating previously rejected BACT in accordance with 40 CFR 51.1010(c)(2)(ii) and identifying, adopting, and implementing BACT consistent with Section 189(b) of the CAA and 40 CFR 51.1010(a).

v. *Attainment demonstration and modeling requirements*

***The Proposed 189(d) Plan includes an updated precursor demonstration and an updated attainment demonstration with a projected attainment date of 2024. The attainment demonstration is based on estimating improved air quality from updated 24-hour PM_{2.5} Design Value calculations, using the most recent air quality monitor data through 2019. As required in 40 CFR 51.1003(c) and 40 CFR 51.1010(c), the Proposed 189(d) Plan includes a demonstration that the area will achieve at least 5% annual reductions of PM_{2.5} or a PM_{2.5} precursor through 2024, see Table 7.9-6. Below are additional comments:

- a) Now that the Fairbanks PM_{2.5} nonattainment area is subject to CAA section 189(d) requirements, the attainment demonstration chapter in the Proposed 189(d) Plan (State Air Quality Control Plan, Vol II, Section III.D.7.9) should reference 40 CFR 51.1004(a)(3) and demonstrate that the projected attainment date reflects attainment “as expeditiously as practicable,” in compliance with this regulation.
- b) ***As noted in the control strategy section, Alaska’s Serious Plan included revisions to the solid fuel burning appliance episodic curtailment program. Table 7.9-3 of the Proposed 189(d) Plan presents the Control Measure Phase-In Forecast for Inventory Years 2020-2024, including percent compliance with certain control measures. ADEC should include its basis for the compliance rate assumptions for each control measure category. With respect to compliance with the solid fuel burning appliance episodic curtailment program, ADEC states in Table 7.9-2, “Solid Fuel Burning Appliance (SFBA) Episodic Curtailment Program, reflects enhanced compliance by future attainment date.” ADEC should provide an explanation for its projection of enhanced compliance with this program, such as enforcement initiatives and educational outreach.
- c) ***The Proposed 189(d) Plan describes ongoing work to improve the attainment demonstration modeling, including collecting updated speciation data at the Hurst Rd. (North Pole) monitor, updating the meteorological and photochemical modeling platforms, and performing a quantitative performance evaluation for the Hurst Rd. site. We support these efforts, as they will address deficiencies with the current attainment demonstration in the Proposed 189(d) Plan and can be used to corroborate the proposed attainment date of 2024. These updated modeling efforts align with requirements under 40 CFR 51.1011, Appendix W modeling guidelines, and the 2018 EPA memorandum, “*Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM_{2.5} and Regional Haze.*”

vi. *Reasonable Further Progress/ Quantitative Milestones*

The Proposed 189(d) Plan includes updated Reasonable Further Progress (RFP) and Quantitative Milestones (QMs) based on the updated model attainment projections. Below are comments:

- a) ***The RFP/ QMs are based on the current model, described in Section 7.8.14. We anticipate the RFP and QMs will be updated again once the model is updated, based on the “future modeling efforts” mentioned in Section 7.8.14.4 of the Proposed 189(d) Plan.
- b) ***The RFP section includes a stepwise reduction for SO₂ emissions. According to 40 CFR 51.1012(a)(4), pollutant emissions can be at levels that reflect either generally linear progress or stepwise progress in reducing emissions on an annual basis between the base year and the attainment year. However, a demonstration of stepwise progress must be accompanied by an appropriate justification for the selected implementation schedule. We suggest that the Proposed 189(d) Plan includes a justification for the stepwise reduction for SO₂ emissions.

- i. As part of this justification, ADEC may need to consider our comments about the phase-in schedule for transitioning to ULSD at the GVEA North Pole power plant and the requirement, under 18 AAC 50.078(b), that permits use of fuel oil containing no more than 1,000 ppmw sulfur. The requirements of 18 AAC 50.078(b) are not applicable until September 1, 2022 and do not require fuel sulfur content equal to ULSD sulfur levels (approximately 15 ppmw).

vii. *Contingency Measures*

***The Proposed 189(d) Plan includes a contingency measure in the proposed updated Emergency Episode Plan. This measure, once triggered, would lower the Stage 2 Alert from 30 $\mu\text{g}/\text{m}^3$ to 25 $\mu\text{g}/\text{m}^3$, restricting the operation of wood-fired heating devices during periods of expected high $\text{PM}_{2.5}$ concentrations.

- a) This proposed contingency measure appears to include the appropriate trigger mechanisms required by 40 CFR 51.1014. Accordingly, this contingency measure will be triggered upon any of the EPA determinations enumerated in 40 C.F.R. 1014, including that the area has failed to meet any RFP requirement in an attainment plan approved in accordance with 40 C.F.R. § 51.1012. Given this potential trigger, the EPA recommends ADEC consider adopting additional contingency measures that can be implemented with minimal further effort following any of the applicable EPA determinations.
- b) ***Under CAA Section 172(c)(9) and 40 CFR 51.1014(a), the contingency measures need to be implemented to achieve emissions reductions consistent with the overall RFP requirement, which is the need to make annual incremental reduction in emissions in the nonattainment area necessary to achieve attainment. According to the 2016 $\text{PM}_{2.5}$ Implementation Rule (81 FR 58010), the EPA's "longstanding guidance is that contingency measures should provide approximately 1 year's worth of RFP, but this amount may vary based upon appropriate facts and circumstances of each unique nonattainment area. As discussed, states should explain the amount of anticipated emissions reductions to be accomplished by the contingency measures outlined in the plan. In the rare event that an area is unable to identify contingency measures to account for approximately 1 year's worth of emissions reductions, the state should provide a reasoned justification why the smaller amount of emissions reductions is appropriate" (81 FR 58010, 58068).
 - i. We suggest that the Proposed 189(d) Plan identifies or supplies the information documenting the quantification of emissions reductions associated with this measure with particular emphasis on how the triggering of the measure will achieve sufficient reductions in $\text{PM}_{2.5}$ emissions consistent with RFP. If the Proposed 189(d) Plan's contingency measure does not meet 1 year's worth of RFP emissions reductions, we suggest including additional contingency measures to achieve these reductions or provide justification why additional contingency measures cannot feasibly be implemented.
- c) ***In accordance with 40 C.F.R. § 51.1014(b), the contingency measures shall consist of control measures that are not otherwise included in the control strategy or that achieve emissions reductions not otherwise relied upon in the control strategy for the area. Accordingly, ADEC should include an explanation for (1) why the lower curtailment threshold is not required to meet the control strategy requirements of 40 C.F.R. § 51.1010 and (2) if earlier implementation of the lower threshold would advance the projected

attainment date by one year or more.

viii. Nonattainment New Source Review

- a) ***The Proposed 189(d) Plan does not address the nonattainment new source review element, 40 CFR 51.1003(c)(viii). Please certify in the submission whether or not the SIP-approved nonattainment new source review program (84 FR 45419) for the area meets 189(d) plan requirements, similar to Section 7.7.9 in the Serious Area Plan.

Appendix A

Below are EPA's updated, detailed comments on ADEC's BACT analysis and determinations in the Serious Area Plan. The EPA is providing these comments to assist the state in reevaluating previously rejected BACT in accordance with 40 CFR 51.1010(c)(2)(ii) and identifying, adopting, and implementing BACT consistent with Section 189(b) of the CAA and 40 CFR 51.1010(a). Comments that raise potential approvability issues are denoted by the "****" symbol.

- a) ****Site-Specific Quotes. EPA is unable to provide detailed comments on the BACT analysis in the absence of site-specific quotes/vendor cost estimates for each SO₂ control technology previously identified in EPA comments. Site-specific quotes/vendor cost estimates are necessary in order to provide the cost and technical feasibility information that is needed to assess and select BACT, especially for retrofit applications. Where available, site-specific cost information must be used for purposes of the BACT analysis in favor of generic cost information. In the absence of a BACT analysis based on site-specific quotes/vendor cost estimates, any control technologies successfully implemented nationwide on similar sources will be considered technologically and economically feasible. See 40 CFR 51.1010(a)(3), 81 FR 58081-85.
- b) ****Facility and Control Equipment Life. We recommend that the submittal document ADEC's assumptions for facility and control equipment life especially where they diverge from current assumptions in the EPA control cost manual (EPA CCM) and other EPA technical support documents. The discussion of proposed shorter control equipment lifetimes in the current plan does not contain supporting information for those lifetimes. We recommend that this evidence include such information as the actual age of currently operating or recently retired relevant process or control equipment, and design documents for such equipment.
- c) ****Control Efficiency. Calculations for each control technology must be based on a reasonable and demonstrated high end control efficiency achievable by the technology in question at other emission units, or as stated in writing by a control equipment vendor in a site-specific analysis. If a lower pollutant removal efficiency is used as the basis for the analysis, detailed technical justification must be provided establishing why a higher control efficiency is not achievable for the specific emission unit. Such technical justification is needed if the facility's analysis includes control efficiency assumptions different from those in the EPA CCM and other EPA technical support documents.
- d) ****Evaluation of available control technologies. ADEC found these SO₂ controls to be technologically feasible for the coal fired boilers: Wet Flue Gas Desulfurization (WFGD), Spray Dry Absorption (SDA), Dry Sorbent Injection (DSI). ADEC did not evaluate Circulating Dry Scrubbers (CDS) even though this is an available technology that is generally technologically feasible for coal fired boilers, can achieve up to 98% SO₂ control, and is marketed by vendors as suitable for retrofit projects for such boilers. For all technologically feasible control options, ADEC must either impose the most efficient control or demonstrate why each rejected SO₂ control is not economically feasible (i.e., cost effective or affordable).
- e) ****Economic feasibility. An economic infeasibility determination, establishing that a control technology is not cost effective or not affordable, is a possible outcome of the BACT process. Developing an adequate economic assessment to support an approvable BACT determination should include the following:

- i. We recommend at least two site specific vendor quotes for each control technology. Site-specific quotes or vendor cost estimates must then be used to conduct cost effectiveness analyses producing estimates of at least study level (+/- 30%) accuracy, in accordance with the CCM.
- ii. We recommend economic feasibility/affordability assessments developed using standard economic theories that include appropriate analysis of potential impacts on relevant markets and products (e.g., price elasticity of demand for fuels).
- iii. Financial information/discussion for the facility that, when compared to the cost of the control, helps address the question concerning the economic feasibility/affordability of the control technology for the specific source. If such information is considered to be CBI, then there are mechanisms by which that information can be collected and protected from public disclosure.
- iv. Given the technical nature of these analyses, we recommend that an economist or someone with equivalent training or expertise be involved in the development of any economic assessment intended to demonstrate the economic infeasibility/affordability of a particular control option.

f) *Aurora – Chena Power Plant**

- v. Under the Serious Area Plan, Alaska identified DSI as a technically feasible and cost-effective control measure for Aurora’s coal-fired boilers, but ultimately rejected this measure based on economic infeasibility/affordability. Site-specific vendor quotes or cost estimates were not provided for the more effective SO₂ control technologies. Neither the facility nor ADEC have adequately demonstrated that more stringent controls are either technically infeasible to install or not cost effective, as required by the Clean Air Act (CAA) and EPA’s regulations. Additional information to help justify this determination includes:
 - 1. Study level (+/- 30% accuracy) site-specific vendor quotes or detailed cost estimates for: WFGD, SDA, and CDS.
 - 2. Cost-effectiveness calculations based on the site-specific vendor cost info.
- vi. Our review of the affordability assessment of BACT for the Chena Power Plant indicates that the financial documentation provided by Aurora does not provide a comprehensive picture of the costs of installation and operation of potential BACT controls. We recommend that the plan include an economic feasibility/affordability assessment, developed by an economist or someone with equivalent training or expertise, to substantiate the state's conclusion. It would be helpful for that assessment to address a number of factors, including economic viability given the current and projected customer base and recent financials, supporting documentation for cost estimate increases based on potential BACT controls, an assessment of price elasticity of demand, substitution possibilities, etc.

g) *Ft. Wainwright – Doyon**

- vii. Under the Serious Area Plan, Alaska identified DSI as BACT. However, neither the facility nor ADEC have adequately demonstrated that more effective controls are either technically infeasible to install or not cost effective, as required by the Clean Air Act (CAA) and EPA’s regulations. Additional information to help justify this determination includes:
 - 1. Study level (+/- 30% accuracy) site-specific vendor quotes or detailed cost estimates for: WFGD, SDA, and CDS.
 - 2. Cost-effectiveness calculations based on the site-specific vendor cost info.

h) *University of Alaska-Fairbanks**

- viii. Under the Serious Area Plan, Alaska identified DSI as cost effective for the new dual fuel (coal/ biomass) boiler at UAF but rejected this control selection based on economic infeasibility/affordability. Although UAF provided site-specific vendor quotes or cost estimates for both DSI and SDA, Alaska did not utilize the vendor cost information for SDA. Site-specific vendor quotes or cost estimates were not provided for the more effective SO₂ control technologies. Neither the facility nor ADEC have adequately demonstrated that controls with a higher control efficiency are either technically infeasible to install or not cost effective, as required by the Clean Air Act (CAA) and EPA's regulations. Additional information to help justify this determination includes:
1. Study level (+/- 30% accuracy) site-specific vendor quotes or detailed cost estimates for: WFGD, SDA, and CDS.
 2. Cost-effectiveness calculations based on the site-specific vendor cost info.
- ix. In order for EPA to review ADEC's finding that additional SO₂ controls are economically infeasible/not affordable, the state or UAF will need to provide an appropriate and comprehensive infeasibility/affordability assessment based on standard economic theory.

i) *GVEA – North Pole**

- x. According to the Serious Area Plan, ultra-low sulfur diesel (ULSD) is technologically and economically feasible to immediately implement at emission units 1 and 2 at the North Pole Power Plant. Nevertheless, the Serious Area Plan allows GVEA to burn fuel with a sulfur content of up to 1,000 ppmw until October 1, 2023, and thereafter only requires GVEA to burn ULSD between October 1 and March 31. Also, the Serious Area Plan requires GVEA, prior to October 1, 2023, to “begin taking delivery of fuel oil with a sulfur content no greater than 1,000 ppmw (S1000) immediately after the Air Quality Stage Alert 1 and 2 are announced and remain taking deliveries of exclusively S1000 for as long as the air episode exists.”
1. ADEC should provide additional justification to explain why 2023 is the earliest date feasible for GVEA to burn only ULSD, why this requirement is seasonal rather than year-round, and further clarify how imposing a fuel requirement after an air alert is called will reduce emissions during an air alert. We note that 2017-2019 air quality data indicate that the North Pole site has a PM_{2.5} annual average of 13.7 ug/m³ and therefore is also exceeding the annual standard. Accordingly, a requirement to burn ULSD year-round would help Fairbanks reduce annual average PM_{2.5} levels. Additional site-specific cost information and a development of an enforceable agreement for a future switch to lower sulfur fuel is necessary to support the assertion that this meets BACT requirements. Moreover, the pre-October 1, 2023, requirement to only take deliveries of fuel oil with a sulfur content no greater than 1,000 ppmw (S1000) does not appear enforceable as a practicable matter.
- xi. The BACT analysis in the Serious Area Plan evaluating the cost effectiveness of ULSD includes significant capital costs for an entirely new Bulk Fuel Tank Farm and Terminal Facility and purchase of 85 railcars. The inclusion of these costs appears to be based on the assumption that ULSD would be required at all times, including supply interruption due to causes generally considered “force majeure”

such as landslides, etc. In fact, the BACT requirement to switch to ULSD could be structured to allow use of locally available fuel during periods of supply interruption, with appropriate documentation. The cost effectiveness analysis for ULSD should be revised to include only the costs necessary to switch fuels, such as the delivered fuel cost difference, and specific necessary equipment at each facility to accommodate ULSD.

j) *GVEA – Zehnder**

- xii. According to ADEC's BACT findings in the Serious Area Plan, GVEA must submit a Title I permit application to ADEC limiting the Potential to Emit (PTE) of SO₂ emissions from the Zehnder facility to less than 70 tons per year. ADEC also states that, once the SO₂ limit goes into effect, the facility will then be subject to BACM measures, including the requirement under 18 AAC 50.078(b) that permits use of fuel oil containing no more than 1,000 ppmw sulfur by September 1, 2022.
- xiii. While ADEC concludes that the Zehnder facility is subject to BACM, an evaluation of available control technologies is still required for the emissions source. For the simple cycle turbines at the Zehnder facility, ADEC determined that the cost of switching from the 1,000 ppmw limit to ULSD is \$8,753/ ton. Similar to our comments about the North Pole facility, the significant capital costs to switch to ULSD may not be necessary. A requirement to switch to ULSD could be structured to allow use of locally available fuel during periods of supply interruption, with appropriate documentation. Therefore, the cost effectiveness analysis for ULSD should be revised to include only the costs necessary to switch fuels, such as the delivered fuel cost difference, and specific necessary equipment at each facility to accommodate ULSD.