

From: [David Fish](#)
To: [Dec Air Comment](#)
Cc: [Rob Brown](#)
Subject: Aurora Energy, LLC Comments to SIP Amendments
Date: Thursday, October 29, 2020 4:57:07 PM
Attachments: [AE Comments to SIP Amendments 10292020.pdf](#)

To whom it may concern,

The DEC released proposed change regulations on air quality and the Serious State Implementation Plan (SIP) for the Fairbanks North Star Borough Fine Particulate Nonattainment Area on September 11th for public review. Public comments are due by 11:59 on October 29, 2020.

Attached are Aurora Energy, LLC's (Aurora) comments to the SIP amendments. Aurora appreciates the opportunity to provide comments and the collaborative effort with the ADEC in addressing this issue.

Regards,

David Fish
Environmental Manager

Aurora Energy, LLC
100 Cushman St., Suite 210 | Fairbanks, AK 99701-4674
Office 907-457-0230 | Fax 907-451-6543 | Cell 907-799-9464
dfish@usibelli.com



October 29th, 2020

c/o Rebecca Smith
Division of Air Quality
ADEC
PO Box 111800
Juneau, AK 99811-1800
dec.air.comment@alaska.gov

Submitted electronically

Subject: Aurora Energy, LLC's (Aurora) Formal Comment to Proposed Regulation Changes Relating to Fine Particulate Matter (PM_{2.5}); Including New and Revised Air Quality Controls and State Implementation Plan (SIP).

Dear Ms. Smith,

The DEC released proposed change regulations on air quality and the Serious State Implementation Plan (SIP) for the Fairbanks North Star Borough (FNSB) Fine Particulate (PM_{2.5}) Nonattainment Area (NAA) on September 11, 2020 for public review. Public comments are due by 11:59 pm on October 29, 2020. Aurora Energy, LLC (Aurora) appreciates the opportunity to comment on the SIP amendments and the collaborative effort with the Alaska Department of Environmental Conservation (DEC) to provide a means to attain the PM_{2.5} 24-hour standard that is sensitive to the economics of industries and the communities affected.

General Comments

The most significant change to the amended SIP are the updates to the emissions inventory, monitoring data, and modeling. As a result of the updates, the attainment projection date for the area is 2024 as opposed to the 2029 attainment date referenced in the Serious SIP submitted to the Environmental Protection Agency (EPA) in 2019. While the updates include the latest monitoring data results and emission inventory, based on section 7.9.4 "Future Efforts", the 2008 episodes were used as a basis for the attainment demonstration provided in the amended SIP. It is projected by the DEC that an updated model will result in better model performance in the future and lend additional accuracy to the attainment forecasts; as such, the plan (Serious SIP) may need to be updated to reflect findings based on the newer modeling platform.

After the DEC's submittal of the Serious SIP (2019), Aurora discussed reservations it had concerning the document with the DEC. Aurora was dissatisfied with the Best Available Control Technology (BACT) requirements for major stationary sources as published in the 2019 Serious SIP. Specifically, Aurora was subject to a (1) seemingly arbitrary sulfur dioxide (SO₂) emission

limit which was new to the final SIP; and (2) an unexpected implementation criteria for the facility's coal-sulfur requirement. The expectation of Aurora was that these issues were to be indirectly or directly addressed within the 5% SIP; that is, the current SIP amendment. However, neither consideration has been addressed within the SIP amendment.

Major Source SO₂ BACT

An emission limit for Aurora's SO₂ emissions was not mentioned in the proposed SIP; as such, Aurora had no opportunity to comment on that issue and its merit. Aurora expected due process would require substantive requirements and limits to be communicated prior to their implementation. Aurora's emission limit in the final Serious SIP was a surprise; particularly since the limit does not pose any added benefit to the DEC's attainment goal for the area. Once submitted to the EPA, there was no way for Aurora to negotiate its merit through public process. However, there was some anecdotal possibility that updated modeling platforms in the 'upcoming' 5% SIP could elucidate the impact of major point sources on the area's sulfur-based fine particulate contribution. The fact is, uncertain impacts to the nonattainment area from major source sulfur-based emissions is the main argument for the implementation of BACT requirements. With a better modeling platform and associated clarity, major source sulfur-based emissions impacts to the area could be evaluated for its significance. If the major source impacts to the area were not significant, then the justification for BACT on the facilities would be moot.

The impression given by the DEC in the Serious SIP (2019) was that the model performance run for all species and precursor gases were to be updated in the 2020 Amendment (5% SIP); including a potential update to the sensitivity analysis for sulfur dioxide emissions from major sources. The expectation was that the newer modeling platform and meteorology could provide better clarity to the PM_{2.5} contribution from major source sulfur dioxide emissions. It appears as if only the nitrogen oxide precursor demonstration was updated. The modeling efforts, while updated, have not been updated to the newest 'platform'. As such, the newest information for modeling has not been included in the SIP amendment. Therefore, the specific contributions to the NAA problem from major stationary source sulfur dioxide emissions cannot be modeled to determine whether they are significant (which is what has triggered BACT requirements for point sources). **If the newest modeling platforms show that major stationary sources are not significant contributors, it would be prudent for the DEC to address within the modeling section of this amendment that the DEC will reserve the right to retroactively amend the SIP to remove BACT requirements from the stationary source.**

If modeling could demonstrate that before the Serious SIP was submitted, major point sources were not significant contributors, then the application of BACT would have been instituted in excess. The Clean Air Act, while doesn't allow for backsliding, is silent to amending SIPs for the removal of provisions that were insignificant to meeting attainment in the first place. This is an important consideration for the community. Currently, the power producers within the area, with the exception of Aurora, are required to implement control measures for SO₂ emissions on their facilities and campuses. The power costs for consumers will have to increase to accommodate

the changes in an area. This is in addition to the already significantly higher than average power costs in comparison to the rest of the nation. The local Army installation, Fort Wainwright (USAG FWA), is evaluating energy alternatives within an Environmental Impact Statement that include the addition of between \$22 million and \$235 million in BACT control technology investment if a no action alternative is implemented.¹ Other alternatives include the construction of a new power plant and distributed heating. A primary consideration for proposing the project alternatives is to meet air quality regulations. Fairbanks is economically dependent on military presence; USAG FWA included. **Base Realignment and Closure (BRAC), is the congressionally authorized process DoD has used to reorganize its base structure to more efficiently and effectively support our forces. It would be a tragedy if BACT implementation, based on an ineffective modeling platform, were one of the driving factors to justify the realignment of Fort Wainwright in a future BRAC round which could cripple the local economy.** If major sources were deemed to be insignificant contributors to the NAA fine particulate matter problem as a result of updated modeling platforms, changes to BACT implementation should be a self-evident consideration.

BACT Averaging period for Usibelli (UCM) coal

After much discussion and concurrence with the DEC, a 0.25% coal-sulfur limit (as received) to be applied on a 6-month average basis was included in Aurora's and UCM's comments to the proposed SIP (2019). The provided limit was described as necessary to ensure the coal-sulfur limit would be met in the future while maximizing potential coal resources and minimizing economic burden to the consumers. The limit provided in the final SIP is 0.25% as received, on what appears to be, a per shipment basis. 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. The re-handling of the coal would require a significant economic adjustment, and likely increased costs to the consumers. Within the context of BACM/BACT selection process for implementation within a PM_{2.5} NAA, evaluating the economic feasibility of a potential control measure is part of the process.² This evaluation was not considered with the implementation of the 0.25% coal sulfur limit on what appears to be a per shipment basis. This limit is to be included in major source Title I permits for which applications were required by mid-year 2020.

After the final Serious SIP was published and effective in 2020, discussions with the DEC clarified that an averaging period was to be negotiated with Air Quality Permitting for each of the major sources through the implementation of the Title I permit process. Suggestions were made to the DEC concerning the averaging period which should be included in the anticipated draft Title I permits which have been ratcheted down from a bi-annual block averaging period to a quarterly block averaging period to demonstrate compliance with the 0.25% (as received) coal

¹ U.S. Army Garrison Alaska. (2020). Draft Environmental Impact Statement Addressing Heat and Electrical Upgrades at Fort Wainwright, Alaska.

² FR Vol. 81, No. 164, 58085.

sulfur limit. In order to be consistent with the Title I permit applications, Aurora suggests the DEC include more specificity regarding an averaging period within the amended SIP. Currently the Final Serious SIP is the defining document establishing the coal sulfur limit. Depending on one's interpretation of the referenced limit, it could be argued that the 0.25% coal sulfur limit be applicable on a per shipment basis. **It seems prudent that reference be made to a quarterly block averaging period to demonstrate compliance with the 0.25% coal sulfur limit within this amendment such that there is less likely to be confusion with the EPA in the future.**

Emission Inventory

While point source emissions in the modeling effort were updated to the 2019 emissions, there appears to be discrepancy with, at least, Aurora's actual annual emissions as that which is provided in the excel spreadsheets "appendix-iiid76-fairbanks-pm25-2020-amendment-sip-sector-emission-summary-calculation-spreadsheet.xlsx" and "appendix-iii-d79-2020-amendment-sip-sector-emission-summary-calculation-spreadsheet.xlsx". Actual submitted and validated emission inventory from Aurora for listed constituents based on the 2013 and 2019 emission are vastly different than what is referenced in the spreadsheets. This difference in emission representation, if consistent throughout the point source profiles, could account for a significant variation between projected emissions impact and actual emissions impacts from major stationary sources.

Below are highlighted discrepancies within the emission inventory as provided in the Amended SIP (Figure 1) and actual emission inventory for 2013 (Figure 2) and 2019 (Figure 3) submitted by Aurora:

- -PM_{2.5} annual emissions entries for 2013 (51.87 tpy) and 2019 (45.68 tpy) are inconsistent with Aurora submitted actual emissions (7.0 tpy and 6.6 tpy, respectively).
- -PM₁₀ annual emissions entries for 2013 (57.09 tpy) and 2019 (55.63 tpy) are inconsistent with Aurora submitted actual emissions (18.7 tpy and 19.5 tpy, respectively).
- -SO₂ and NO_x are also not consistent with the most dramatic discrepancy being SO₂ annual emissions for 2019 (507.39 tpy) as opposed to Aurora's emissions (221.9 tpy).

INVENTORY			ANNUAL EMISSIONS (TONS/YEAR)						
YEAR	FACIL ID	FACILITY NAME	PM25-PRI	PM10-PRI	SO2	NOx	VOC	CO	NH3
2008	71	Flint Hills North Pole Refinery	11.68	11.68	7.23	238.03	28.09	28.15	-
2008	109	GVEA Zehnder Facility	16.01	16.01	42.78	55.37	0.14	-	0.33
2008	110	GVEA North Pole Power Plant	121.39	121.39	287.93	709.97	0.76	-	11.48
2008	264	Eielson Air Force Base	8.14	8.14	312.57	885.24	32.35	485.09	1.00
2008	315	Aurora Energy Chena Power Plant	70.34	70.34	701.16	597.52	5.56	-	0.06
2008	316	UA Fairbanks Campus Power Plant	24.79	24.79	261.33	336.38	2.01	-	0.39
2008	1121	Doyon Utilities Privatized Fort Wainwright Units	85.82	85.82	779.78	1083.50	6.16	-	0.07
2013	71	Flint Hills North Pole Refinery	4.61	4.61	12.38	72.64	151.36	23.28	-
2013	109	GVEA Zehnder Facility	23.16	23.16	60.99	78.31	0.05	-	0.48
2013	110	GVEA North Pole Power Plant	68.51	68.51	142.87	527.42	0.68	-	10.44
2013	264	Eielson Air Force Base	5.80	5.80	260.30	758.50	36.60	425.00	-
2013	315	Aurora Energy Chena Power Plant	51.87	57.09	618.02	577.55	1.88	-	0.06
2013	316	UA Fairbanks Campus Power Plant	22.90	22.90	215.76	310.93	1.84	-	0.32
2013	1121	Doyon Utilities Privatized Fort Wainwright Units	100.61	112.88	808.37	1270.29	7.22	-	0.08
2019	71	Flint Hills North Pole Refinery	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	109	GVEA Zehnder Facility	1.04	1.04	27.98	76.32	0.04	-	0.50
2019	110	GVEA North Pole Power Plant	26.45	26.45	247.31	1046.50	0.90	-	14.98
2019	264	Eielson Air Force Base	12.80	19.54	267.66	312.29	29.70	102.25	0.12
2019	315	Aurora Energy Chena Power Plant	45.68	55.63	507.39	623.70	1.96	-	0.06
2019	316	UA Fairbanks Campus Power Plant	9.08	10.08	154.52	246.51	1.56	-	0.65
2019	1121	Doyon Utilities Privatized Fort Wainwright Units	66.58	73.98	481.13	485.30	4.91	-	0.06
2020	71	Flint Hills North Pole Refinery	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	109	GVEA Zehnder Facility	1.10	1.10	29.52	80.52	0.04	-	0.53
2020	110	GVEA North Pole Power Plant	27.91	27.91	260.93	1104.13	0.95	-	15.81
2020	264	Eielson Air Force Base	13.50	20.62	282.40	329.49	31.33	107.89	0.13
2020	315	Aurora Energy Chena Power Plant	48.20	58.69	535.33	658.05	2.07	-	0.07
2020	316	UA Fairbanks Campus Power Plant	9.58	10.64	163.03	260.09	1.65	-	0.69
2020	1121	Doyon Utilities Privatized Fort Wainwright Units	70.25	78.05	507.62	512.03	5.18	-	0.06

Figure 1: 2020 Amended SIP Spreadsheet

EU ID	Emission Sources	Particulate Matter _{2.5}	Particulate Matter ₁₀	Sulfur Dioxide	Nitrogen Oxides	Carbon Monoxide	Volatile Organic Compounds	Hazardous Air Pollutants
EU 1	Coal Preparation Plant	0.3	0.3	0.0	0.0	0.0	0.0	0.0
EU 2	Coal Stock Pile	0.1	0.1	0.0	0.0	0.0	0.0	0.0
EU 3	Ash Vacuum Pump Exhaust	0.2	0.2	0.0	0.0	0.0	0.0	0.0
EU 4	Coal-Fired Boiler #1	0.8	2.2	78.7	73.6	43.6	0.2	0.9
EU 5	Coal-Fired Boiler #2	0.7	2.0	71.4	66.7	39.5	0.2	0.8
EU 6	Coal-Fired Boiler #3	0.6	1.8	64.6	60.4	35.7	0.2	0.7
EU 7	Coal-Fired Boiler #5	4.2	12.1	439.5	410.8	243.3	1.3	5.7
EU 8	Truck Bay Loadout	3.9E-04	3.9E-04	0.0	0.0	0.0	0.0	0.0
Totals		7.0	18.7	654.2	611.5	362.1	2.0	8.0

Figure 2: 2013 Aurora Energy Emissions

The entries are seemingly very different from the actual emissions as submitted to the DEC from Aurora. It would seem reasonable for the DEC to use information required by permit and submitted by the major sources in establishing current and accurate emission inventories.

Aurora respectfully requests DEC update the emissions inventories to actual emissions as provided by Aurora to the DEC to maintain a level of consistency for purposes of compliance, modeling, and inventories.

<i>Aurora Energy, LLC Emission Inventory for Calendar Year 2019</i>								
<i>EU ID</i>	<i>Emission Sources</i>	<i>Particulate Matter_{2.5}</i>	<i>Particulate Matter₁₀</i>	<i>Sulfur Dioxide</i>	<i>Nitrogen Oxides</i>	<i>Carbon Monoxide</i>	<i>Volatile Organic Compounds</i>	<i>Hazardous Air Pollutants</i>
EU 1	Coal Preparation Plant	0.1	0.2	0.0	0.0	0.0	0.0	0.0
EU 2	Coal Stock Pile	0.1	0.5	0.0	0.0	0.0	0.0	0.0
EU 3	Ash Vacuum Pump Exhaust	0.0	0.2	0.0	0.0	0.0	0.0	0.0
EU 4	Coal-Fired Boiler #1	0.8	2.4	28.7	77.1	48.4	0.3	1.0
EU 5	Coal-Fired Boiler #2	0.9	2.7	31.9	85.7	53.8	0.3	1.1
EU 6	Coal-Fired Boiler #3	0.8	2.3	27.3	73.3	46.1	0.3	0.9
EU 7	Coal-Fired Boiler #5	3.9	11.3	134.0	360.1	226.1	1.2	5.3
EU 8	Truck Bay Loadout	2.3E-05	1.5E-04	0.0	0.0	0.0	0.0	0.0
Totals		6.6	19.5	221.9	596.3	374.4	2.1	8.2

Figure 3: 2019 Aurora Energy Emissions

Conclusion

In summary, Aurora appreciates the effort the DEC has put into the amended Serious SIP and looks forward to working with you and the community to help bring the FNSB into attainment with the EPA standards. Below are key points included in the above comments:

- Changes to BACT implementation should not be required if major sources are deemed insignificant contributors to the NAA fine particulate matter problem.
- Utilize a quarterly block averaging period to demonstrate compliance with the 0.25% coal sulfur limit
- Update the emissions inventories to actual emissions as provided by Aurora to the DEC. This update will maintain consistency in compliance, modeling, and inventories.

Sincerely,

David Fish

David Fish
 Environmental Manager
 Aurora Energy, LLC