

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY CONTROL MINOR PERMIT

Permit AQ0323MSS01

Preliminary August 5, 2010

Revises Conditions 2, 4, 6, 15, 18, 19, 20, 21, 22, and 23 of Permit AQ0323CPT01 Revision 1

The Alaska Department of Environmental Conservation (Department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit AQ0323MSS01 to the Permittee listed below.

Operator and Permittee: Naknek Electric Association
P. O. Box 118
Naknek, AK 99633

Owner: Naknek Electric Association

Stationary Source Naknek Power Plant

Location: Latitude 58° 43'North, Longitude 157° 00'West

Physical Address: 1 School Road, Naknek, AK 99633

Permit Contact: Donna Vukich, (907) 246 4261, dvukich@bristolbay.com

Project: Revision of Stack Heights

This permit is issued under 18 AAC 50.508(6) to revise or rescind terms and conditions of a Title I permit issued under 18 AAC 50. The permit satisfies the obligation of the Permittee to obtain a minor permit under these provisions.

This permit authorizes the Permittee to operate under the terms and conditions of this permit, and as described in the original permit application and subsequent application supplements listed in Section 8 except as specified in this permit.

The Permittee shall not operate under the terms and conditions of this minor permit until the Department issues a revised operating permit that includes the provisions of this permit.

John F. Kuterbach
Manager, Air Permits Program

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Section 1. Permit Administration

1. Construction Permit AQ0323CPT01, Revision 1 remains in effect except as revised in Minor Permit AQ0323MSS01.

Section 2. Emission Fees

2. Condition 2 of Construction Permit AQ0323CPT01 Revision 1 is rescinded and replaced with Condition 3.
3. **Assessable Emissions.** The Permittee shall pay to the Department an annual emission fee based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is the lesser of
 - 3.1 the stationary source's assessable potential to emit of 1,252 TPY; or
 - 3.2 the stationary source's projected annual rate of emissions that will occur from July 1st to the following June 30th, based upon actual annual emissions emitted during the most recent calendar year or another 12-month period approved in writing by the Department, when demonstrated by
 - a. an enforceable test method described in 18 AAC 50.220;
 - b. material balance calculations;
 - c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or
 - d. other methods and calculations approved by the Department.

Section 3. Ambient Air Quality Standards and Increments

4. Conditions 4, and 6 of Construction Permit AQ0323CPT01, Revision 1 are rescinded and replaced with Condition 5.
5. **Stack Parameters:** The Permittee shall maintain a release height above grade for each exhaust stack that equals or exceeds the heights shown in Table 1.

Table 1: Minimum Stack Height Requirements

Unit ID	Unit Description	Rating (kW)	Minimum Stack Height (ft)
1	Caterpillar 3512	865	35.3
2	Caterpillar 3512	865	35.3
3	Caterpillar 3512	865	35.3
4	Caterpillar 3516B	1,322	35.3
5a	Caterpillar 3512B	1,050	34.2
6a	Caterpillar 3512B	1,050	34.2
7a	Caterpillar 3512B	1,050	34.2
8	White Superior 40SX16	1,000	36.5
9	Caterpillar3516B	1,135	38.3
10	Caterpillar 3516B	1,135	38.3

6. **Operational Limits:** The Permittee shall protect the annual average nitrogen dioxide (NO₂) ambient air quality standard and increment, and the annual average sulfur dioxide (SO₂) ambient air quality standard and increment, by limiting the hours of operation of Unit IDs 1, 2, and 3 to no more than 6,000 hours per unit per rolling 12-month period and Unit ID 4 to no more than 1,500 hours per rolling 12-month period.

The Permittee shall comply with Condition 6 as follows:

- 6.1 Install, maintain and operate a dedicated hour meter accurate to within five percent on each unit listed in Condition 6.
- 6.2 At the end of each calendar month, record the monthly hours of operation for each unit listed in Condition 6 and calculate the total operating hours for each unit for the previous 12-month rolling period;
- 6.3 Include in the semi-annual operating report described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50 the following items for each month covered under the operating report:
 - a. The hours of operation of each unit listed in Condition 6, and
 - b. The total operating hours per 12-month rolling period.

- 6.4 Report Excess Emissions and Permit Deviations as described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, if the total operating hours per 12-month rolling period exceeds the applicable limit specified in Condition 6.
- 7. Fuel Sulfur Content:** The Permittee shall protect the 3-hour, 24-hour and annual average SO₂ ambient air quality standards and increments by burning diesel fuel that contains no more than 0.20 percent sulfur by weight in the units listed in Table 1.
- 7.1 To demonstrate compliance with Condition 7, the Permittee shall obtain and keep certified statements or receipts from the fuel supplier that documents the fuel sulfur content.
- 7.2 The Permittee shall include the sulfur content of all fuel received during the reporting period in the operating report required in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.
- 7.3 The Permittee shall report Excess Emissions and Permit Deviations as described in semi annual operating report required in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, if the sulfur content of any fuel received exceeds 0.20 percent by weight.

Section 4. State Emission Standards

- 8.** Sub-conditions 15.1 through 15.3 of Construction Permit AQ0323CPT01, Revision 1 is rescinded and replaced with Condition 9.
- 9.** The Permittee shall demonstrate compliance with Condition 15 of Construction Permit AQ0323CPT01 by complying with the fuel sulfur limit in Condition 7 of Minor Permit AQ0323MSS01.

Section 5. Owner Requested Limits to Avoid PSD Modification for Previous Action

10. Condition 18 of Construction Permit AQ0323CPT01 Revision 1, is rescinded and replaced with Condition 11.

11. **Nitrogen Oxides (NO_x) Limits.** The Permittee shall limit the total combined NO_x emissions from Unit IDs 1, 2, 3, 4, 8, 9, and 10 to no more than 578 per consecutive 12-month period. To demonstrate compliance with this limit, the Permittee shall:

11.1 Measure the fuel consumed by each unit listed in Condition 11 using a fuel meter accurate to within 5 percent;

11.2 At the end of each calendar month record the fuel consumed that month by each unit listed in Condition 11;

11.3 By the end of each calendar month:¹

- a. calculate the tons of NO_x emissions from each of Units 1, 2, 3, 4, 8, 9, and 10 for the previous month, based on the fuel consumption recorded in Condition 11.2 and the NO_x emission factors listed in Table 2; and

Table 2: NO_x Emission Factors (pounds per gallons)

Emission Units	Emission Factor
1, 2, and 3	0.70
4	0.59
8	0.47
9 and 10	0.64

- b. calculate the total NO_x emissions (in tons) from each Unit ID for the 12-month rolling period ending with the previous month, based on the monthly emissions calculated in Condition 11.3a.

11.4 Include the 12-month rolling NO_x emissions calculated in Condition 11.3b in the operating report required in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

11.5 If the combined 12-month rolling total NO_x emissions in Condition 11.3b for Unit IDs 1, 2, 3, 4, 8, 9, and 10 exceeds the limit specified in Condition 11, report as excess emissions as required in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

¹ Minor Permit AQ0323MSS01 changed the method of calculating NO_x emissions from an hours of operation basis to a fuel consumption basis. The Permittee may retroactively apply this change in order to avoid the need for conducting both sets of NO_x calculations during the initial 12-months of operation under Minor Permit AQ0323MSS01.

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- 11.6 If the 12-month rolling total NO_x emissions calculated in Condition 11.5 exceed 520 tons, then within 180 days of first discovery, conduct source tests on any one of Unit IDs 1, 2, or 3, Unit ID 4, Unit ID 8, and Unit IDs 9 or 10 to verify the NO_x emission factors listed in Table 2. Units that operate for less than 500 hours in a 12-month rolling period are exempt from the source testing.
- a. Conduct the source tests at three operating loads within the normal operating range of the unit (including minimum and maximum loads). Monitor and record the fuel consumption and average load during the test.
 - b. Determine the NO_x emissions factors, in pounds per hour and pounds per gallon using exhaust properties determined by either Method 19 or Method 1 through 4. If using Method 19, then use the higher heating value of the fuel throughout the analysis.
 - c. Report source test results as required in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.
 - d. After Department approval of the source test results, calculate the combined total monthly and the 12-month rolling NO_x emissions for Unit IDs required in conditions 11.3b using the emission factors derived from the source tests in condition 11.6.
 - e. If the source test results indicate an emission factor exceeds the limit specified in Table 2, submit an excess emission report as described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.
12. Sub-conditions 19.1 through 19.5 of Construction Permit AQ0323CPT01 Revision 1 are rescinded and replaced with Condition 13.
13. The Permittee shall demonstrate compliance with Condition 19 of Construction Permit AQ0323CPT01 by complying with the hourly operating limits in Condition 6 of Minor Permit AQ0323MSS01.
14. Sub-conditions 20.1 through 20.3 of Construction Permit AQ0323CPT01, Revision 1 are rescinded and replaced with Condition 16.
15. The Permittee shall demonstrate compliance with Condition 20 of Construction Permit AQ0323CPT01 by complying with the fuel sulfur limit in Condition 7 of Minor Permit AQ0323MSS01.

Section 6. Best Available Control Technology (BACT)

- 16.** Sub-condition 21.3 and Sub-condition 22.3 of Construction Permit AQ0323CPT01, Revision 1, are rescinded.
- 17.** Sub-conditions 23.1 through 23.3 of Construction Permit AQ0323CPT01 Revision 1, are rescinded and replaced with Condition 18.
- 18.** The Permittee shall demonstrate compliance with Condition 23 of Construction Permit AQ0323CPT01 by complying with the fuel sulfur limit in Condition 7 of Minor Permit AQ0323MSS01.

Section 7. Standard Terms and Conditions

- 19.** The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for
 - 19.1 an enforcement action; or
 - 19.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.
- 20.** It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.
- 21.** Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.
- 22.** The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- 23.** The permit does not convey any property rights of any sort, nor any exclusive privilege.

Section 8. Permit Documentation

- July 13, 2010 In an email to the Department, Jeanette Brena revised the application to limit the sulfur content of fuel burned in any unit to 0.20 percent by weight or less.
- December 3, 2009: Kwame Agyei of ADEC and Jeanette Brena of Entrix discussed operation hours for units. Jeanette confirmed NEA does not want operating hours limitation for Units through E10 because they are backups.
- October 27, 2009: Application determined complete.
- October 27, 2009: Application received by mail.