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&
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Submitted via Electronic Mail – Delivery Receipt Requested

February 27, 2020



Title I Permit Program Intake Clerk
c/o Yesenia Camarena via email: yesenia.camarena@alaska.gov
Alaska Department of Environmental Conservation
Air Permits Program
555 Cordova Street, Anchorage, 99501

Subject: Amendment to Minor Permit Application AQ0215MSS05 for Dutch Harbor Power Plant

Dear Sir or Madam:

The City of Unalaska submitted a minor permit application to the Department on January 6, 2020 to modify the operations at the Dutch Harbor Power Plant (DHPP).

In accordance with the responses to the permit application from Kathie Mulkey on February 6 and 24, 2020, we are submitting the attached amendment to the permit application. The purpose of the amendment is to submit a revised PSD applicability analysis per 40 CFR 52.21(a)(2)(iv) based on the 2 step process.

This proposed re-write of Section 4.1 of the permit application would replace the existing text. We do not believe that any other portions of the application would need to be revised.

We appreciate your assistance in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan Winters".

Dan Winters,
Director of Public Utilities
City of Unalaska

Attachment: Replacement Section 4.1 of DHPP Minor Source Permit Application,
AQ0215MSS05

Cc:

Kathie Mulkey, ADEC, Air Permits Program via email

Patrick Dunn, ADEC, Air Permits Program via email

Jim Plosay, ADEC, Air Permits Program via email

Dan Winters, Director of Public Utilities

Steve Tomkins, DHPP, Deputy Director of Public Utilities

Rick Owen, DHPP, Powerhouse Supervisor

J.R. Pearson, DHPP, Assistant City Manager

Erik Haas, Principal, HMM Consulting, LLC

Applicability of PSD Permitting under 40 CFR 52.21

According to the definition of major modification set out under 40 CFR 52.21(b)(2)(i), projects must satisfy both of the following components to be classified as PSD major modification:

- Significant emission increase of a criteria pollutant; and
- Significant net emission increase of a criteria pollutant.

Affirmative responses with both components mean that the project is a PSD major modification; a negative response for one or both components means the project is not a major modification.

Sections 4.1.1 and 4.1.2 include assessments of the emissions increases associated with the two components of the definition of major modification to determine whether the proposed project will result in a PSD major modification.

The City's proposed project will operationally restrict EUs 7 and 16 under an Owner Requested Limit (ORL) where the combined NO_x emissions from EU 7 and EU 16 are limited to 161.7 tons per year to avoid triggering an affirmative response to both of the major modification criteria listed above.

The aggregate NO_x ORL will provide flexibility for the City to selectively use EU 7 and EU 16 to meet the North American Electrical Reliability Corporation's (NERC) N-1 redundancy requirements and to strategically pair DHPP's various engine sizes to most efficiently produce electricity responsive to actual and anticipated power demands.

The NO_x ORL is designed to combine an EU 7 NO_x allowance derived from the actual emissions for EU 7 for the two-year period of January 2009 through December of 2010 (the two year average was 121.8 tons of NO_x) with a new NO_x allowance of 39.9 tons acquired through the minor source permit approval process.

To comply with the ORL emission caps, the City will calculate and monitor NO_x emissions on a monthly basis.

The Project does not affect any changes to existing emission units at DHPP other than EU 7. Thus, the PSD applicability analysis presented below is limited to the proposed operation of EU 16, the new emission unit, and the modified operation of existing EU 7.

To determine if the project is subject to PSD review, the City is following the procedure set out in 40 CFR 52.21(a)(2)(iv)(a) – (f).

The first step, as described in subsection (b), is to determine if the project will result in a significant emission increase for any New Source Review (NSR) pollutant. If so, then the analysis must proceed to a Step 2 analysis to determine if the project will result in a significant net emission increase at the facility. If the project will result in both a significant emission increase and a significant net emission increase for any NSR pollutant, then the project is subject to a PSD review for those pollutants.

4.1.1 Major Modification Analysis, Step 1: Is There a Significant Emissions Increase?

While the project involves changes to the operations of existing EU 7 it will not have an emission increase due to the proposed project. Thus, for purposes of the PSD analysis the project is considered as involving only a new emissions unit, EU 16. Based upon the subsections of 40 CFR 52.21(a)(2)(iv), the actual-to-potential test of subsection (d) applies to this project. The hybrid test set out in subsection (f) is not being applied and considered unnecessary for inclusion in the analysis.

For purposes of the applicability analysis, The City has chosen to present the emission calculations based upon a full allocation of the ORL emissions cap assigned to EU 16. Based upon the characteristics of the ORL as an aggregate limit that applies to the summed emissions of both units, we believe that the choice of assigning emissions to just one, or split among the two units makes no substantive difference in the outcome of the analysis presented below. From an operational perspective, the City will most likely give preference to operation of EU 16, while EU 7 will largely serve as a supporting generator for handling incremental or short-term load demand changes.

The Potential Emission Increase from the proposed new source, EU 16, as restricted by the requested ORL, is shown in Table Error! No text of specified style in document.-1 below in accord with the definition of PTE as set out in §52.21(b)(4) of the rule (see Appendix A, Table A-3 for emission calculations). The NO_x emission factor used in the calculations of PTE rely on a 2015 source test of EU 16 when it was operating at 3,760 kWe, an 85% load condition. For purposes of optimizing fuel efficiency and minimizing engine maintenance cost, the City intends to target an 80% load condition as optimum yet may occasionally operate up to 85 % load.

Table Error! No text of specified style in document.-1: EU 16 Potential Emission Increase; tons per year

	Nitrogen Oxides	PM-2.5	PM-10	Carbon Monoxide	Sulfur Dioxide	Ozone via VOC
Actual Emissions	0	0	0	0	0	0
Potential Emissions (ORL)	161.7	5.2	5.2	8.4	0.70	13.1
Potential Emission Increase	161.7	5.2	5.2	8.4	0.70	13.1
Significant Emission Quantity	40	10	15	100	40	40

Significant Increase: Yes/No	Yes	No	No	No	No	No
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4.1.2 Major Modification Analysis, Step 2: Is There a Significant Net Emissions Increase

For the second step in the analysis, the City is applying other contemporaneous emission changes that have occurred during the contemporaneous period or will occur as part of this project.

The notable emission change is occurring for EU 7 which has previously operated as a mainline unit at DHPP. As discussed elsewhere in the application, DHPP desires to reduce its reliance on EU 7 for power generation in order to create the ability for EU 16 to operate. The City's chosen vehicle to achieve that goal is to apply the Baseline Actual Emissions of EU 7 to the joint operations of EU 16 and EU 7 in aggregate for an Owner Requested Limit. Table 4-2 below presents the Baseline Actual Emissions of EU 7 as an offsetting credit in calculating the project induced Net Emissions Increase.

Another component of the net emissions increase analysis is to consider any other contemporaneous emission changes that have occurred at DHPP. Emission Unit 15 was installed shortly after issuance of the 2011 AQ0215CPT03 permit. As part of that construction permit review EU 15 was subject to PSD review for emissions of nitrogen oxides and PM-2.5, but not for PM-10, carbon monoxide, sulfur dioxide or ozone via VOC emissions. Thus, the projected actual or the baseline actual emissions of EU 15 for PM-10, carbon monoxide, sulfur dioxide and VOCs are considered contemporaneous emission increases to be considered in this analysis as part of the net emission increases. As the EU 15 NOx and PM-2.5 emissions were subject to PSD review, these emissions are not considered contemporaneous emission increases.

Table Error! No text of specified style in document.-2: Project Induced Net Emissions Increases, tons per year

	Nitrogen Oxides	PM-2.5	PM-10	Carbon Monoxide	Sulfur Dioxide	Ozone via VOC
EU 16 Potential Emissions as limited by the ORL	161.7	5.2	5.2	8.4	0.7	13.1
EU 7 Baseline Actual Emissions¹	<121.8>	<2.2>	<2.2>	<32.8>	<0.4>	<3.2>
EU 15 Projected Actual Emissions; Contemporaneous²	0	0	13.1	35.1	1.7	24.7
Net Emission Increase	39.9	3.0	16.1	10.7	2.0	34.6
Significant Emission Quantity	40	10	15	100	40	40
Significant Net Emission Increase? Yes/No	No	No	Yes	No	No	No
Notes: 1) see information in Appendix F						
2) values were taken from Table 2 and 3 of TAR for AQ0215MSS04						

Conclusion: The installation of EU 16 will result in a significant emission increase for nitrogen oxides, however, there is not a significant net emission increase for nitrogen oxides. While there is a significant net emission increase for PM-10, there is not a significant emission increase for this pollutant. In summary, the project does not result in a significant emission increase and a significant net emission increase for any New Source Review pollutant and thus the project does not result in a significant modification of the Dutch Harbor Power Plant for any pollutant. Therefore, the project is not subject to a PSD new source review.