San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

November 10, 2021

Mr. Michael Fallon
Northern California Power
12745 N Thornton Road
Lodi, CA 95242

**Re: Notice of Preliminary Decision – ATC / Certificate of Conformity**
**District Facility # N-2697**
**Project # N-1211670**

Dear Mr. Fallon:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The proposed project is to replace the existing dry low NOx combustor with an advanced ultra low NOx combustor for the gas turbine under permit N-2697-5.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Nick Peirce, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

Brian Clements
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email
cc: Laura Yannayon, EPA (w/enclosure) via EPS

**Samir Sheikh**
Executive Director/Air Pollution Control Officer

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# San Joaquin Valley Air Pollution Control District

## Authority to Construct Application Review

Gas Turbine Combustor Replacement Project

| | | | |
|---|---|---|---|
| Facility Name: | Northern California Power | Date: | November 9, 2021 |
| Mailing Address: | 12745 N Thornton Rd<br>Lodi, CA 95242 | Engineer: | Jag Kahlon |
| | | Lead Engineer: | James Harader |
| Contact Person: | Jeff Adkins, Consultant | | |
| Telephone: | (916) 273-5127 | | |
| Fax: | N/A | | |
| E-Mail: | jadkins@trinityconsultants.com | | |
| Application #(s): | N-2697-5-7 | | |
| Project #: | N-1211670 | | |
| Deemed Complete: | July 27, 2021 | | |

## I. Proposal

Northern California Power Agency (NCPA) operates a 294 MW combined-cycle electric generation plant (also referred as "Lodi Energy Center (LEC)") consisting of a Siemens natural gas-fired STG6-5000F "Flex Plant™ 30" turbine equipped with dry low NOx (DLN) combustors rated at a combined heat input rate of 2,142 MMBtu/hr, an unfired heat recovery steam generator (HRSG), and a steam operated gas turbine. The gas turbine system is equipped with a selective catalytic reduction (SCR) system to reduce NOx emissions and an oxidation catalyst system to reduce CO emissions.

The existing combustor DLN in the Siemens STG6-5000F gas turbine engine is nearing the end of its useful service life, so NCPA has proposed to replace the DLN combustor with an advanced ultra low-NOx (ULN) combustor per the recommendation of the gas turbine engine manufacturer, Siemens. This replacement combustor will reduce NOx emissions, reduce ammonia use, enhance the operational reliability, and reduce life cycle costs. Although the proposed combustor has the capability to facilitate use of hydrogen/natural gas fuel blends in the future, NCPA is not proposing to use hydrogen fuel blends as a part of this project. Furthermore, NCPA is not proposing any changes to turbine firing rate, rating capacity, fuel type, or emissions as a result of the proposed project.

NCPA received their renewed Title V Permit on January 7, 2020. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct (ATC). NCPA must apply to administratively amend their Title V permit.

## II. Applicable Rules

| | |
|---|---|
| Rule 2201 | New and Modified Stationary Source Review Rule (8/15/19) |
| Rule 2410 | Prevention of Significant Deterioration (6/16/11) |
| Rule 2520 | Federally Mandated Operating Permits (8/15/19) |
| Rule 4001 | New Source Performance Standards (4/14/99) |
| Rule 4002 | National Emissions Standards for Hazardous Air Pollutants (5/20/04) |
| Rule 4101 | Visible Emissions (2/17/05) |
| Rule 4102 | Nuisance (12/17/92) |
| Rule 4201 | Particulate Matter Concentration (12/17/92) |
| Rule 4301 | Fuel Burning Equipment (12/17/92) |
| Rule 4703 | Stationary Gas Turbines (9/20/07) |
| Rule 4801 | Sulfur Compounds (12/17/92) |
| CH&SC 41700 | Health Risk Assessment |
| CH&SC 42301.6 | School Notice |

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

## III. Project Location

The equipment is located at 12745 N Thornton Road in Lodi, California. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

## IV. Process Description

This facility uses Siemens' "Flex-Plant$^{TM}$ 30" technology to lower emissions from the combustion turbine during the startup period. An auxiliary boiler is being used as part of Flex-Plant package to pre-heat the combustion turbine fuel and to provide steam turbine sealing steam prior to the combustion turbine startup. This technology reduces the startup time, thereby, expected to reduce the startup emissions.

Combustion turbine air flows through the inlet air filters, evaporative cooler and associated air inlet ductwork, compressed in the gas turbine compressor section, and then enter the combustion turbine section. Natural gas fuel is injected into the compressed air in the combustion section and the mixture is ignited. The hot combustion gases expand through the power turbine section of the turbine, causing the shaft that drives both the electrical generator and the turbine compressor to rotate. The hot combustion gases exit the turbine section and enter the HRSG, where they heat up the feedwater that is being pumped into the HRSG. The feedwater is converted into superheated steam, which is delivered to the steam turbine at high pressure (HP), intermediate pressure (IP) and low pressure (LP). The use of multiple steam delivery pressures results in an increase in cycle efficiency and flexibility. High pressure steam is delivered to the HP section of the steam turbine, intermediate pressure steam is used to augment the reheat section of the HRSG and delivers this steam to the IP section of the steam turbine, and LP steam is injected at the beginning of the LP section of the steam turbine, and both flows (LP and IP)

expand in the LP steam turbine section. Steam leaving the LP section of the steam turbine enters the deaerating surface condenser and transfer heat to circulating cooling water, which condenses the steam to water. The condensed water is delivered to the HRSG feed water system. The condenser cooling water circulates through a mechanical draft evaporative cooling tower, where the heat absorbed in the condenser is rejected to the atmosphere.

Flue gases due to combustion of natural gas fuel in the gas turbine are vented through an SCR system for NOx emissions control, and an oxidation catalyst for CO control.

## V. Equipment Listing

Pre-Project Equipment Description:

N-2697-5-6: 294 MW (NOMINAL) COMBINED-CYCLE ELECTRIC GENERATION PLANT CONSISTING OF A SIEMENS INDUSTRIAL FRAME "FLEX PLANT 30" STG6-5000F NATURAL GAS-FIRED TURBINE ENGINE WITH DRY LOW-NOX COMBUSTORS, AN UNFIRED HEAT RECOVERY STEAM GENERATOR SERVED BY A SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION AND AN OXIDIZATION CATALYST AND A STEAM TURBINE GENERATOR

Proposed Modification:
The proposed project is to replace the existing DLN combustor with an advanced ultra-low NOx combustor system.

N-26987-5-7: MODIFICATION OF 294 MW (NOMINAL) COMBINED-CYCLE ELECTRIC GENERATION PLANT CONSISTING OF A SIEMENS INDUSTRIAL FRAME "FLEX PLANT 30" STG6-5000F NATURAL GAS-FIRED TURBINE ENGINE WITH DRY LOW-NOX COMBUSTORS, AN UNFIRED HEAT RECOVERY STEAM GENERATOR SERVED BY A SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION AND AN OXIDIZATION CATALYST AND A STEAM TURBINE GENERATOR: TO REPLACE THE EXISTING COMBUSTOR WITH ADVANCED ULTRA LOW-NOX COMBUSTOR SYSTEM.

Post-Project Equipment Description:

N-2697-5-7: 294 MW (NOMINAL) COMBINED-CYCLE ELECTRIC GENERATION PLANT CONSISTING OF A SIEMENS INDUSTRIAL FRAME "FLEX PLANT 30" STG6-5000F NATURAL GAS-FIRED TURBINE ENGINE WITH ADVANCED ULTRA LOW-NOX COMBUSTOR SYSTEM, AN UNFIRED HEAT RECOVERY STEAM GENERATOR SERVED BY A SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION AND AN OXIDIZATION CATALYST AND A STEAM TURBINE GENERATOR

## VI. Emission Control Technology Evaluation

The applicant is not proposing any changes to the existing emission control technologies. Therefore, a new emission control technology evaluation will not be conducted.

## VII. General Calculations

### A. Assumptions

- To streamline emission calculations, $PM_{2.5}$ emissions are assumed to be equal to $PM_{10}$ emissions. Only if needed to determine if a project is a Federal major modification for $PM_{2.5}$, then specific $PM_{2.5}$ emission calculations will be performed.
- Other assumptions will be stated as they are made during the evaluation.

### B. Emission Factors

#### 1. Pre-Project Emission Factors (EF1)

The following table summarizes the emission factors, except during startup, shutdown and combustor tuning periods:

| Pollutant | EF1 | Source |
|---|---|---|
| $NO_x$ | 2.0 ppmvd @ 15% $O_2$ & 15.54 lb/hr | Permit to Operate N-2697-5-6 |
| $SO_x$ | 6.1 lb/hr | |
| $PM_{10}$ | 9.0 lb/hr | |
| CO | 2.0 ppmvd @ 15% $O_2$ and 9.46 lb/hr | |
| VOC | 1.4 ppmvd @ 15% $O_2$ and 3.79 lb/hr | |
| $NH_3$ | 10.0 ppmvd @ 15% $O_2$ and 28.76 lb/hr | |

#### 2. Post-Project Emission Factors (EF2)

The applicant is not proposing any changes to the existing emission factors. Therefore, EF2 will be same as EF1.

### C. Calculations

#### 1. Pre-Project Potential to Emit (PE1)

The following table summarizes the daily emissions with or without startup/shutdown and or combustor tuning activities. Note that the permit limits emissions of each pollutant on a quarterly basis. These quarterly emissions are used to determine the annual emissions shown in the table below.

| Pollutant | PE1 (lb/day) with startup/shutdown/ combustor tuning activities | PE1 (lb/day) without startup/shutdown/ combustor tuning activities | PE1 (lb/yr) |
|---|---|---|---|
| $NO_x$ | 879.7 | 373.0 | 151,415 |
| $SO_x$ | 146.4 | 146.4 | 53,436 |
| $PM_{10}$ | 216.0 | 216.0 | 78,840 |
| CO | 5,570.3 | 227.0 | 198,000 |
| VOC | 164.2 | 91.0 | 33,003 |
| $NH_3$ | 690.3 | 690.3 | 251,938 |

## 2. Post-Project Potential to Emit (PE2)

The applicant is not proposing any changes to firing rate, emission factors, or mass emission rates (hourly, daily, quarterly or annual). Thus, PE2 is same PE1 for each pollutant.

## 3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site. Except for the permit unit in this project, potential emission for each permit are taken from the application review under project N-1200955.

| SSPE1 (lb/year) | | | | | |
|---|---|---|---|---|---|
| **Permit Unit** | **$NO_X$** | **$SO_X$** | **$PM_{10}$** | **CO** | **VOC** |
| N-2697-1-8 | 40,880 | 11,571 | 17,520 | 117,530 | 19,992 |
| N-2697-4-5 | 97 | 0 | 4 | 23 | 7 |
| **N-2697-5-6** | **151,415** | **53,436** | **78,840** | **198,000** | **33,003** |
| N-2697-6-2 | 0 | 0 | 8,176 | 0 | 0 |
| N-2697-7-2 | 1,240 | 416 | 1,108 | --* | 616 |
| ERC | 0 | 0 | 0 | 0 | 0 |
| **SSPE1** | **193,632** | **65,423** | **105,648** | **315,553** | **53,618** |

## 4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

| SSPE2 (lb/year) | | | | | |
|---|---|---|---|---|---|
| **Permit Unit** | **$NO_X$** | **$SO_X$** | **$PM_{10}$** | **CO** | **VOC** |
| N-2697-1-8 | 40,880 | 11,571 | 17,520 | 117,530 | 19,992 |
| N-2697-4-5 | 97 | 0 | 4 | 23 | 7 |
| **N-2697-5-5** | **151,415** | **53,436** | **78,840** | **198,000** | **33,003** |
| N-2697-6-2 | 0 | 0 | 8,176 | 0 | 0 |
| N-2697-7-2 | 1,240 | 416 | 1,108 | --* | 616 |
| ERC | 0 | 0 | 0 | 0 | 0 |
| **SSPE2** | **193,632** | **65,423** | **105,648** | **315,553** | **53,618** |

## 5. Major Source Determination

**Rule 2201 Major Source Determination:**

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- Any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

| Rule 2201 Major Source Determination (lb/year) | | | | | | |
|---|---|---|---|---|---|---|
| | **$NO_X$** | **$SO_X$** | **$PM_{10}$** | ***$PM_{2.5}$** | **CO** | **VOC** |
| SSPE1 | 193,632 | 65,423 | 105,648 | 105,648 | 315,553 | 53,618 |
| SSPE2 | 193,632 | 65,423 | 105,648 | 105,648 | 315,553 | 53,618 |
| Major Source Threshold | 20,000 | 140,000 | 140,000 | 140,000 | 200,000 | 20,000 |
| Major Source? | Yes | No | No | No | Yes | Yes |

*$PM_{2.5}$ assumed to be equal to $PM_{10}$

As seen in the table above, the facility is an existing Major Source for NOx, CO and VOC emissions, and will remain Major Source for these pollutants after this project.

**Rule 2410 Major Source Determination:**

The facility or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 100 tpy for any regulated NSR pollutant.

| PSD Major Source Determination (tons/year) | | | | | | |
|---|---|---|---|---|---|---|
| | $NO_2$ | VOC | $SO_2$ | CO | PM | $PM_{10}$ |
| Estimated Facility PE before Project Increase | 96.8 | 26.8 | 32.7 | 157.8 | 52.8 | 52.8 |
| PSD Major Source Thresholds | 100 | 100 | 100 | 100 | 100 | 100 |
| PSD Major Source? | No | No | No | Yes | No | No |

As shown above, the facility is an existing PSD major source for at least one pollutant.

## 6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

Otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

### a. BE $NO_X$

As shown in Section VII.C.5 above, the facility is a Major Source for $NO_X$ emissions.

Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

The District BACT guideline 3.4.2, gas turbine ≥50 MW uniform load with heat recovery, requires to achieve 2.5 ppmvd NOx @ 15% O2, or less (1-hour average, excluding startup and shutdown).

The gas turbine under permit N-2697-5 is required to comply with 2.0 ppmvd NOx @ 15% O2 over 1-hour average period, which is below the achieved-in-practice BACT standard (above). Therefore, this unit qualifies as a Clean Emission Unit, and the BE is set equal to PE1.

BE = PE1 = 151,415 lb-NOx/yr

**b. BE $SO_X$**

As shown in Section VII.C.5 above, the facility is not a Major Source for $SO_X$ emissions. Thus, BE is equal to PE1.

BE = PE1 = 53,436 lb-SOx/yr

**c. BE $PM_{10}$**

As shown in Section VII.C.5 above, the facility is not a Major Source for $PM_{10}$ emissions. Thus, BE is equal to PE1.

BE = PE1 = 78,840 lb-$PM_{10}$/yr

**d. BE CO**

As shown in Section VII.C.5 above, the facility is a Major Source for CO emissions. Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

The District BACT guideline 3.4.2, gas turbine ≥50 MW uniform load with heat recovery, requires to achieve 6.0 ppmvd CO @ 15% O2, or less emissions.

The gas turbine under permit N-2697-5 is required to comply with 2.0 ppmvd CO @ 15% O2, which is below the achieved-in-practice BACT standard (above). Therefore, this unit qualifies as a Clean Emission Unit, and the BE is set equal to PE1.

BE = PE1 = 198,000 lb-CO/yr

**e. BE VOC**

Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

The District BACT guideline 3.4.2, gas turbine ≥50 MW uniform load with heat recovery, requires to achieve 2.0 ppmvd @ 15% O2 or less VOC (as methane).

The gas turbine under permit N-2697-5 is required to comply with 1.4 ppmvd @ 15% $O_2$ VOC (as methane), which is below the achieved-in-practice BACT standard (above). Therefore, this unit qualifies as a Clean Emission Unit, and the BE is set equal to PE1.

BE = PE1 = 33,003 lb-VOC/yr

**7. SB 288 Major Modification**

40 CFR Part 51.165 defines a SB 288 Major Modification as any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

Per section VII.C.5 above, this facility is a major source for NOx, VOC and CO emissions. Since San Joaquin Valley air basin is in attainment for CO emissions, no SB-288 threshold was established for CO emissions. This project's PE2 for NOx and VOC emissions is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if further SB 288 Major Modification calculation is required.

| SB 288 Major Modification Thresholds | | | |
|---|---|---|---|
| **Pollutant** | **Project PE2 (lb/year)** | **Threshold (lb/year)** | **SB 288 Major Modification Calculation Required?** |
| $NO_x$ | 151,415 | 50,000 | Yes |
| VOC | 33,003 | 50,000 | No |

Since the project's PE2 surpasses the SB 288 Major Modification Thresholds for NOx, the project Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The project NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

NEI = ∑(PE2 – AE)

Where: PE2 = The sum of all the PE2s for each permit unit in this project
AE = Actual emissions, as of a particular date, shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation

As seen in table above,

PE2 = 151,415 lb-NOx/yr

NCPA submitted NOx emissions data from January 2015 to May 2021. The data between November 2018 through October 2020 represents the normal source operation. The annual average NOx emissions were 49,852 pounds per year. Thus,

AE = 49,852 lb-NOx/yr

The PE2 and AE values used to calculate the NEI and make the SB 288 Major Modification determination in the following table.

| SB 288 Major Modification Calculation and Determination | | | | | |
|---|---|---|---|---|---|
| **Pollutant** | **PE2 (lb/year)** | **AE (lb/yr)** | **NEI (lb/yr)** | **Thresholds (lb/yr)** | **SB 288 Major Modification?** |
| NOx | 151,415 | 49,852 | 101,563 | 50,000 | Yes |

As demonstrated in the preceding table, this project does constitute an SB 288 Major Modification.

## 8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

As defined in 40 CFR 51.165, Section (a)(1)(v) and part D of Title I of the CAA, a Federal Major Modification is any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act. The significant net emission increase threshold for each criteria pollutant is included in Rule 2201.

NCPA is a Major Source for NOx, CO and VOC emissions. SJV is in attainment with the ambient air standard for CO; therefore, there is no significance threshold for CO in Table 3-1 of Rule 2201 and the CO project emissions increase will not be calculated. NOx and VOC emissions are estimated below.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. In step 1, emission decreases can not cancel out the increases. Step 2 allows consideration of the project's net emissions increase as described in 40 CFR 51.165 and the Federal Clean Air Act Section 182 (e), as applicable.

**Step 1: Project Emissions Increase**

For modified existing emissions units, according to 40 CFR 51.165(a)(2)(ii)(C), the project's emission increase for each pollutant is equal to the sum of the differences between the projected actual emissions (PAE) and the baseline actual emissions (BAE). Please note that in step 1, since the District is classified as extreme non-attainment for ozone, no NOx and VOC emission decreases associated with the proposed project shall be accounted for.

Project Emissions Increase = ∑(PAE – BAE)

As described in 40 CFR 51.165(a)(1)(xxviii)(B), when using historical data and company's expected business activity to determine PAE, the portion of the emissions after the project that the existing unit could have accommodated (Unused Baseline Capacity, UBC) before the project (during the same 24-month baseline period used to determine BAE) and that are unrelated to the particular project (including emissions increases due to product demand growth) are to be excluded.

Otherwise, according to 40 CFR 51.165(a)(1)(xxvii)(B)(4), when determining PAE, in lieu of using the method described in 40 CFR 51.165 (a)(1)(xxviii)(B)(1)-(3), *Projected Actual Emissions*, the owner/operator may elect to use emissions unit's Potential to Emit. If appropriate projected actual emissions are not provided by the applicant, then the emissions unit's Potential to Emit is used to calculate the emissions increase.

Since the project proponent has provided the required historical and projected operation data required to calculate PAE, the project emissions increase will be calculated as follows:

Project Emissions Increase = PAE – BAE – UBC

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

The following table summarizes PAE, BAE, UBC and EI for NOx and VOC emissions from the modified unit. Refer to **Appendix E** for detailed calculations.

| **Project Emissions Increase For Modified Emissions Units (EI)** | | | |
|---|---|---|---|
| **Permit Unit** | **Item** | **NOx** | **VOC** |
| N-2697-5 | PAE (lb/yr) | 151,415 | 33,003 |
| | BAE (lb/yr) | 54,651 | 9,801 |
| | UBC (lb/yr) | 96,764 | 23,202 |
| | EI (lb/yr) | 0 | 0 |

As seen in the table above, the proposed project will not have any emissions increase for NOx or VOC emissions.

## 9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

### I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

### II. Project Emission Increase – Significance Determination

#### a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no futher PSD analysis is needed.

| PSD Significant Emission Increase Determination: Potential to Emit (tons/year) | | | | | |
|---|---|---|---|---|---|
| **Category** | **$NO_2$** | **$SO_2$** | **CO** | **PM** | **$PM_{10}$** |
| Total PE from New and Modified Units | 75.7 | 26.7 | 99.0 | 39.4 | 39.4 |
| PSD Significant Emission Increase Thresholds | 40 | 40 | 100 | 25 | 15 |
| PSD Significant Emission Increase? | Yes | No | No | Yes | Yes |

As demonstrated in the table above, because the post-project potential to emit from all new and modified emission units is greater than for at least one PSD significant emission increase threshold, further analysis is required to determine if the project will result in an increase greater than the PSD significant emission increase thresholds, see step b. below for further analysis.

**b. Evaluation of Calculated Emission Increases vs PSD Significant Emission Increase Thresholds**

In this step, the emission increase for each subject pollutant is compared to the PSD significant emission increase threshold, and if the emission increase for each subject pollutant is below their threshold, no futher analysis is required.

For existing emissions units, the increase in emissions is calculated as follows:

Emission Increase = PAE – BAE - UBC

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

The project's total emission increases, as calculated in **Appendix E**, are listed below and compared to the PSD significant emission increase thresholds in the following table.

| PSD Significant Emission Increase Determination: Emission Increase (tons/year) | | | | | |
|---|---|---|---|---|---|
| **Category** | **$NO_2$** | **$SO_2$** | **CO** | **PM** | **$PM_{10}$** |
| Emission Increases (only) | 0 | 0 | 0 | 0 | 0 |
| PSD Significant Emission Increase Thresholds | 40 | 40 | 100 | 25 | 15 |
| PSD Significant Emission Increase? | No | No | No | No | No |

As seen in the table above, the emission increases from the project, for all new and modified emission units, does not exceed any of the PSD significant emission increase thresholds. Therefore, the project does not result in a PSD major modification and no further discussion is required.

**10. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in **Appendix F**.

## VIII. Compliance Determination

## Rule 2201 New and Modified Stationary Source Review Rule

### A. Best Available Control Technology (BACT)

#### 1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

##### a. New emissions units – PE > 2 lb/day

No new emission unit is proposed under project. Thus, this section does not apply.

##### b. Relocation of emissions units – PE > 2 lb/day

No emissions unit is being relocated from one stationary source to another; therefore BACT is not triggered.

##### c. Modification of emissions units – AIPE > 2 lb/day

AIPE = PE2 – HAPE

Where,
AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 ∗ (EF2 / EF1))

NCPA is not proposing any changes to the existing emission factors or potential emissions. Thus,

PE2 = PE1 and EF2= EF1; therefore, AIPE is zero for each pollutant.

Since the AIPE is not greater than 2.0 lb/day for any pollutant, BACT is not triggered under this section.

**d. SB 288/Federal Major Modification**

As discussed in Sections VII.C.7 , this project does constitute an SB 288 Major Modification for NOx emissions. Thus, BACT is triggered for NOx emissions.

**2. BACT Guideline**

BACT Guideline 3.4.2, applies to gas turbines equal to or greater than 50 MW uniform load with heat recovery (See **Appendix C**).

**3. Top-Down BACT Analysis**

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see **Appendix D**), BACT has been satisfied with the following:

$NO_X$: 2.0 ppmvd @ 15% $O_2$ (1-hour average, excluding startup and shutdown)

NCPA has proposed to comply with the above NOx standard. Thus, BACT requirements are satisfied.

**B. Offsets**

**1. Offset Applicability**

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

| Offset Determination (lb/year) | | | | | |
|---|---|---|---|---|---|
| | **$NO_X$** | **$SO_X$** | **$PM_{10}$** | **CO** | **VOC** |
| SSPE2 | 193,632 | 65,423 | 105,648 | 315,553 | 53,618 |
| Offset Thresholds | 20,000 | 54,750 | 29,200 | 200,000 | 20,000 |
| Offsets Triggered? | Yes | Yes | Yes | Yes | Yes |

## 2. Quantity of District Offsets Required

As seen in the table above, District offsets are triggered for NOx, SOx, $PM_{10}$, CO and VOC emissions under Rule 2201. Therefore, offsets analysis is required for these pollutants.

### 2.1 NOx

**District Offset Quantities Calculation**
As demonstrated above, the facility's SSPE2 for NOx is greater than the offset threshold. Therefore, offset calculations are required.

The quantity of offsets in pounds per year for $NO_X$ is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = ($\Sigma$[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post-Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

Otherwise,

BE = HAE

Per Section VII.C.6 above, BE is 151,415 lb-NOx/yr.

There is no increases in cargo carrier emissions. Therefore, offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 ($NO_X$) = 151,415 lb/year
BE ($NO_X$) = 151,415 lb/year
ICCE = 0 lb/year
DOR = 1.5 (assumed)

Offsets Required (lb/year) = ([151,415 – 151,405] + 0) x 1.5
= 0 lb-$NO_X$/year

## 2.2 SOx

**District Offset Quantities Calculation**
As demonstrated above, the facility's SSPE2 for SOx is greater than the offset threshold. Therefore, offset calculations are required.

The quantity of offsets in pounds per year for $SO_X$ is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = ($\Sigma$[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post-Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

Otherwise,

BE = HAE

Per Section VII.C.6 above, the BE is 53,436 lb-SOx/yr.

There is no increases in cargo carrier emissions. Therefore, offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 ($SO_X$) = 53,436 lb/year
BE ($SO_X$) = 53,436 lb/year
ICCE = 0 lb/year
DOR = 1.5 (assumed)

Offsets Required (lb/year) = ([53,436 – 53,436] + 0) x 1.5
= 0 lb-$SO_X$/year

## 2.3 PM10

**District Offset Quantities Calculation**

As demonstrated above, the facility's SSPE2 for $PM_{10}$ is greater than the offset threshold. Therefore, offset calculations are required.

The quantity of offsets in pounds per year for $PM_{10}$ is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = ($\Sigma$[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post-Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

Otherwise,

BE = HAE

Per Section VII.C.6 above, the BE is 78,840 lb-$PM_{10}$/yr.

There is no increases in cargo carrier emissions. Therefore, offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 ($PM_{10}$) = 78,840 lb/year
BE ($PM_{10}$) = 78,840 lb/year
ICCE = 0 lb/year

DOR = 1.5 (assumed)

Offsets Required (lb/year) = ([78,840 – 78,840] + 0) x 1.5
= 0 lb-$PM_{10}$/year

## 2.3 CO

As demonstrated above, the facility's SSPE2 for $PM_{10}$ is greater than the offset threshold. Therefore, offset calculations are required.

The quantity of offsets in pounds per year for $PM_{10}$ is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = ($\Sigma$[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post-Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

Otherwise,

BE = HAE

Per Section VII.C.6 above, the BE is 78,840 lb-$PM_{10}$/yr.

There is no increases in cargo carrier emissions. Therefore, offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 (CO) = 198,000 lb/year
BE (CO) = 198,000 lb/year
ICCE = 0 lb/year

DOR = 1.5 (assumed)

Offsets Required (lb/year) = ([198,000 – 198,000] + 0) x 1.5
= 0 lb-CO/year

## 2.4 VOC

As demonstrated above, the facility's SSPE2 for $PM_{10}$ is greater than the offset threshold. Therefore, offset calculations are required.

The quantity of offsets in pounds per year for $PM_{10}$ is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = ($\Sigma$[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post-Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

Otherwise,

BE = HAE

Per Section VII.C.6 above, the BE is 78,840 lb-$PM_{10}$/yr.

There is no increases in cargo carrier emissions. Therefore, offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 (VOC) = 33,003 lb/year
BE (VOC) = 33,003 lb/year
ICCE = 0 lb/year

DOR = 1.5 (assumed)

Offsets Required (lb/year) = ([33,003 – 33,003] + 0) x 1.5
= 0 lb-VOC/year

**District Offset Quantities**

As seen in the above section, District offsets are triggered, but are not required. In addition, as demonstrated in section VII.C.8 above, this project does not trigger Federal Major Modification or New Major Source requirements and no federal offset are required for this project. In conclusion, offsets will not be required for this project and no further discussion is required.

## C. Public Notification

### 1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

#### a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

As demonstrated in Section VII.C.7 of this evaluation, this project is an SB 288 Major Modification. Therefore, public noticing is required for this project.

#### b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

#### c. Offset Threshold

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

| Offset Thresholds | | | | |
|---|---|---|---|---|
| **Pollutant** | **SSPE1 (lb/year)** | **SSPE2 (lb/year)** | **Offset Threshold** | **Public Notice Required?** |
| $NO_X$ | 193,632 | 193,632 | 20,000 lb/year | No |
| $SO_X$ | 65,423 | 65,423 | 54,750 lb/year | No |
| $PM_{10}$ | 105,648 | 105,648 | 29,200 lb/year | No |
| CO | 315,553 | 315,553 | 200,000 lb/year | No |
| VOC | 53,618 | 53,618 | 20,000 lb/year | No |

As demonstrated above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

**d. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

| SSIPE Public Notice Thresholds | | | | | |
|---|---|---|---|---|---|
| **Pollutant** | **SSPE2 (lb/year)** | **SSPE1 (lb/year)** | **SSIPE (lb/year)** | **SSIPE Public Notice Threshold** | **Public Notice Required?** |
| $NO_x$ | 193,632 | 193,632 | 0 | 20,000 lb/year | No |
| $SO_x$ | 65,423 | 65,423 | 0 | 20,000 lb/year | No |
| $PM_{10}$ | 105,648 | 105,648 | 0 | 20,000 lb/year | No |
| CO | 315,553 | 315,553 | 0 | 20,000 lb/year | No |
| VOC | 53,618 | 53,618 | 0 | 20,000 lb/year | No |

As demonstrated above, the SSIPE for each pollutant is less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

**e. Title V Significant Permit Modification**

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V minor modification. Therefore, public noticing for Title V significant modifications is required for this project.

## 2. Public Notice Action

As discussed above, this project is an SB-288 major modification, consequently, public notice is required. Public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC.

## D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

***Proposed Rule 2201 (DEL) Conditions:***

- Emissions from the gas turbine system, on days when startup, shutdown and/or combustor tuning activities occur, shall not exceed the following limits: NOx (as NO2) - 879.7 lb/day; CO - 5,570.3 lb/day; VOC - 164.2 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201, 4.0]

- Emissions from the gas turbine system, on days when startup, shutdown and/or combustor tuning activities do not occur, shall not exceed the following: NOx (as NO2) - 373.0 lb/day; CO - 227.0 lb/day; VOC - 91.0 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201, 4.0]

## E. Compliance Assurance

### 1. Source Testing

In order to ensure that the new combustor complies with various emission limits in the permit, source testing is required to be conducted within 60 days of initial startup. Periodic source testing requirements are kept same as in their existing permit to operate (PTO).

### 2. Monitoring

No additional monitoring is required. Monitoring requirements from existing permit will be replicated in the ATC under this project.

### 3. Recordkeeping

No additional recordkeeping is required. Record keeping requirements from existing permit will be replicated in the ATC under this project.

### 4. Reporting

No additional reporting is required. Reporting requirements from existing permit will be replicated in the ATC under this project.

## F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a

violation of an air quality standard. Since the proposed project does not result an increase in any permitted emission rates, AAQA is not required.

**G. Compliance Certification**

Section 4.15.2 of Rule 2201 requires the owner of a New Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards.

This facility is not a new Major Source, rather, it is an existing Major Source. Further, as discussed in section VII.C.8 above, the proposed project is not a Federal Major Modification. Therefore, compliance certification is not required.

**H. Alternate Siting Analysis**

Section 4.15.1 of Rule 2201 requires the owner of a New Major Source or a source undergoing a Federal Major Modification to conduct alternate siting analysis for those sources for which an analysis of alternative sites, sizes, and production processes is required under Section 173 of the Federal Clean Air Act. The applicant shall prepare an analysis functionally equivalent to the requirements of Division 13, Section 21000 et. seq. of the Public Resources Code.

The current project occurs at an existing Major Source facility. Further, as discussed in section VII.C.8 above, the proposed project is not a Federal Major Modification. Therefore, alternate siting analysis is not required.

Compliance is expected with this rule.

**Rule 2410 Prevention of Significant Deterioration**

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

**Rule 2520 Federally Mandated Operating Permits**

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit. In accordance with Rule 2520, Minor Permit Modifications are permit modifications that:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;

   The proposed project is not expected to violate any federally enforceable local or federal requirements.

2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;

NCPA is not proposing to relax or making any changes to the existing monitoring, reporting, or recordkeeping requirements.

3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;

   NCPA is not proposing any changes to the existing emission limitation(s) or standards.

4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:

   a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of title I of the Federal Clean Air Act, prevention of significant deterioration (PSD) provisions of the CAA, or EPA PSD regulations; and

   b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act;

   NCPA is not requesting to establish a new or change any existing permit requirement under this project.

5. Are not Title I modifications as defined in this rule, modifications as defined in section 111 or 112 of the Federal Clean Air Act, or major modifications under the prevention of significant deterioration (PSD) provisions of Title I of the CAA or under EPA PSD regulations; and

   Title I modifications
   Section 3.31 of Rule 2520 defines “Title I Modification” to be same as defined in District Rule 2201. An older version of District Rule 2201 (4/25/02) defined Title I modification. Since that time state and federal laws required the District to amend it’s Rule 2201 multiple times. These amendments led to the removal of Title I Modification, instead, the District incorporated a separate state and federal provisions - “SB-288 Major Modification” (state based provision) and “Federal Major Modification” (federal regulation (40 CFR 51.165) based provision) in the latest District Rule 2201.

   Since Title V permit is a federally mandated operating permit, identifying changes to a Title V permit as “minor” or “significant” are based on results of a “Federal Major Modification”. If a project is a “Federal Major Modification” under Rule 2201, then that project is a “major modification” under federal regulations, and the permit changes are considered “significant” modifications; otherwise, the permit changes are considered “minor” modifications.

As discussed in section VII.C.8 above, the proposed project is not a “Federal Major Modification”. Thus, the proposed changes to the Title V permit are classified as “minor” modifications.

Section 111 or 112 of the Federal Clean Air Act
Section 111, U.S. Code 7411, Standards of performance for new stationary sources[1], section (a)(4) defines "modification" as any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.

Section 112, U.S. Code 7412, Hazardous air pollutants[2], section (a) defines "modification" as any physical change in, or change in the method of operation of, a major source which increases the actual emissions of any hazardous air pollutant emitted by such source by more than a de minimis amount or which results in the emission of any hazardous air pollutant not previously emitted by more than a de minimis amount.

The proposed project does not result in an increase in permitted emissions, or results in the emission of any air pollutant not previously permitted. Thus, this project is not considered “modification” under this section.

Prevention of significant deterioration (PSD) provisions
As seen in section VII.C.9 above, the proposed project does not result in emission increase of any pollutant above the PSD significance thresholds. Consequently, the project is not a major modification under the PSD provisions.

6. Do not seek to consolidate overlapping applicable requirements;

   NCPA is not proposing to consolidate any applicable requirements.

7. Do not grant or modify a permit shield.

   NCPA will not be granted any permit shield. Further, the company is not requesting to modify any of the existing permit shields (if any).

Based on the discussion in each section, it is concluded that the proposed project does violate any of the above criteria. Thus, this project is a “Minor Modification” to a Title V permit under Rule 2520.

The facility has requested to process this project with COC. The following conditions will be included in the permit:

[1] https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7411.htm

[2] https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7412.htm

- This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201]

- Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Compliance is expected with this rule.

**Rule 4001 New Source Performance Standards (NSPS)**

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60.

NCPA's Title V permit was renewed in January 2020 (District project #N-1181055), and included all requirements from the applicable NSPSs. These requirements will be replicated in the draft ATC under this project. Therefore, continued compliance is expected.

**Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)**

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.

NCPA's Title V permit was renewed in January 2020 (District project #N-1181055). This permit include all requirements from the applicable NESHAPs. These requirements will be replicated in the draft ATC under this project. Therefore, continued compliance is expected.

**Rule 4101 Visible Emissions**
**Rule 4102 Nuisance**
**Rule 4201 Particulate Matter Concentration**
**Rule 4301 Fuel Burning Equipment**
**Rule 4703 Stationary Gas Turbines**
**Rule 4801 Sulfur Compounds**

NCPA's Title V permit was renewed in January 2020 (District project #N-1181055). This permit include all requirements from the above rules. These requirements will be replicated in the draft ATC under this project. Therefore, continued compliance is expected.

**California Health & Safety Code 42301.6 (School Notice)**

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

## California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

## District CEQA Findings

The California Energy Commission (CEC) is the public agency having principal responsibility for approving the turbine upgrade to ultra low NOx combustion project (Project) for the Lodi Energy Center (08-AFC-10C), which covers this ATC project. The CEC has the exclusive power to certify all thermal electric power plants greater than 50 MW in the State of California (Public Resources Code § 25500). While the CEC siting process is exempt from CEQA (14 CCR § 15251(j)), it is functionally equivalent to CEQA. The CEC reviewed the proposed project (08-AFC-10C) and determined that the activities are not subject to Title 20, California Code of Regulations, section 1769, and therefore do not require approval of a post-certification petition. This is because the proposed activities will not change the project design, operation or performance requirements in the Final Commission Decision.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District prepared an engineering evaluation (this document) conferring the rights and privileges of an Authority to Construct upon certification by the CEC, where the CEC certificate contains the conditions set forth in this engineering evaluation (20 CCR § 1744.5 and Rule 2201 § 5.8.8).

## Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

## IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue ATC N-2697-5-7 subject to the permit conditions on the attached draft ATC in **Appendix A.**

## X. Billing Information

| Annual Permit Fees | | | |
|---|---|---|---|
| **Permit Number** | **Fee Schedule** | **Fee Description** | **Annual Fee** |
| N-2697-5-7 | 3020-08B H | 294,000 kW | $15,843 |

## Appendixes

A: Draft ATC
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# Appendix A
# Draft ATC

*San Joaquin Valley*
*Air Pollution Control District*

# AUTHORITY TO CONSTRUCT



**PERMIT NO:** N-2697-5-7 **ISSUANCE DATE:** DRAFT

**LEGAL OWNER OR OPERATOR:** NORTHERN CALIFORNIA POWER
**MAILING ADDRESS:** 12745 N THORNTON RD
LODI, CA 95242

**LOCATION:** 12745 N THORNTON RD
LODI, CA 95242

**EQUIPMENT DESCRIPTION:**
MODIFICATION OF 294 MW (NOMINAL) COMBINED-CYCLE ELECTRIC GENERATION PLANT CONSISTING OF A SIEMENS INDUSTRIAL FRAME "FLEX PLANT 30" STG6-5000F NATURAL GAS-FIRED TURBINE ENGINE WITH DRY LOW-NOX COMBUSTORS, AN UNFIRED HEAT RECOVERY STEAM GENERATOR SERVED BY A SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION AND AN OXIDIZATION CATALYST AND A STEAM TURBINE GENERATOR: TO REPLACE THE EXISTING COMBUSTOR WITH ADVANCED ULTRA LOW-NOX COMBUSTOR SYSTEM

## CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Particulate matter emissions from the gas turbine system shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the required monitoring devices to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit
5. The start-up time shall not exceed 100 minutes for each event during any startup mode (i.e., hot start < 16 hour downtime, warm start - 16 to 64 hour downtime, or cold start > 64 hour downtime). [District Rules 2201, 4.0 and 4703, 5.3.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO



Brian Clements, Director of Permit Services
N-2697-5-7 : Nov 8 2021 8:19AM -- KAHLONJ : Joint Inspection NOT Required

6. During all types of operation, including startup (cold, warm and hot), shutdown, and combustor tuning periods, ammonia injection into the SCR system shall occur once the minimum temperature of 406°F at the catalyst face has been reached to ensure NOx emission reductions can occur with a reasonable level of ammonia slip. The District may administratively modify the temperature as necessary following any replacement of the SCR catalyst material. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

7. The SCR system shall be equipped with a continuous temperature monitoring system to measure and record the temperature at the catalyst face. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

8. The oxidation catalyst shall be equipped with a continuous temperature monitoring system to measure and record the temperature at the inlet face of the oxidation catalyst. [40 CFR Part 64] Federally Enforceable Through Title V Permit

9. The oxidation catalyst shall be maintained between 450°F and 1,350°F except during startup, shutdown, and combustor tuning periods. Upon detecting any excursion, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. The District may administratively re-establish temperature range as necessary following any replacement of the oxidation catalyst material. [40 CFR Part 64] Federally Enforceable Through Title V Permit

10. The owner or operator shall measure and record temperature at the inlet face of the oxidation catalyst during each source test while measuring VOC emissions. [40 CFR Part 64] Federally Enforceable Through Title V Permit

11. During start-up, and shutdown and combustor tuning periods, the emissions shall not exceed any of the following limits: NOx (as NO2) - 160.00 lb/hr; CO - 1,500.00 lb/hr; VOC (as methane) - 16.00 lb/hr; PM10 - 9.00 lb/hr; SOx (as SO2) - 6.10 lb/hr; or NH3 - 28.76 lb/hr. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

12. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. [District Rule 4703, 3.29] Federally Enforceable Through Title V Permit

13. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status ending when the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26] Federally Enforceable Through Title V Permit

14. Combustor tuning periods are any periods, not to exceed 8 hours in any calendar day or 40 hours in any calendar year, when combustor tuning activities are taking place. Combustor tuning activities are defined as any testing, adjustment, tuning, and calibration activities recommended by the gas turbine manufacturer to ensure safe and reliable steady-state operation of the gas turbine following replacement of the combustor components, during seasonal tuning events, or at other times when recommended by the turbine manufacturer or necessary to maintain low emissions performance. This includes, but is not limited to, adjusting the amount of fuel distributed between the combustion turbine's staged fuel systems to simultaneously minimize NOx and CO production while minimizing combustor dynamics and ensuring combustor stability. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

15. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup, shutdown and combustor tuning periods. [District Rules 2201, 4.0 and 4703, 5.3.2] Federally Enforceable Through Title V Permit

16. Except during startup, shutdown and combustor tuning periods, emissions from the gas turbine system shall not exceed any of the following limits: NOx (as NO2) - 15.54 lb/hr and 2.0 ppmvd @ 15% O2; CO - 9.46 lb/hr and 2.0 ppmvd @ 15% O2; VOC (as methane) - 3.79 lb/hr and 1.4 ppmvd @ 15% O2; PM10 - 9.0 lb/hr; or SOx (as SO2) - 6.10 lb/hr. NOx (as NO2) emission limits are based on 1-hour rolling average period. All other emission limits are based on 3-hour rolling average period. [District Rules 2201, 4.0; 4001; and 4703, 4.1.2 and 5.2] Federally Enforceable Through Title V Permit

17. NH3 emissions shall not exceed any of the following limits: 10.0 ppmvd @ 15% O2 over a 24-hour rolling average period and 28.76 lb/hr. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

18. Each 3-hour rolling average period will be compiled from the three most recent one hour periods. Each one hour period shall commence on the hour. Each one hour period in a twenty-four hour rolling average for ammonia slip will commence on the hour. The twenty-four hour rolling average shall be calculated using the most recent twenty-four one-hour periods. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit



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19. Emissions from the gas turbine system, on days when startup, shutdown and/or combustor tuning activities occur, shall not exceed the following limits: NOx (as NO2) - 879.7 lb/day; CO - 5,570.3 lb/day; VOC - 164.2 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

20. Emissions from the gas turbine system, on days when startup, shutdown and/or combustor tuning activities do not occur, shall not exceed the following: NOx (as NO2) - 373.0 lb/day; CO - 227.0 lb/day; VOC - 91.0 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

21. Gas turbine system shall be fired on PUC-regulated natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dscf of natural gas. [District Rule 2201, 4.0 and 40 CFR 60.4330(a)(2)] Federally Enforceable Through Title V Permit

22. NOx (as NO2) emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 38,038 lb; 2nd quarter: 38,411 lb; 3rd quarter: 37,126 lb; 4th quarter: 37,840 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

23. CO emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 142,312 lb; 2nd quarter: 142,539 lb; 3rd quarter: 86,374 lb; 4th quarter: 113,660 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

24. VOC emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 8,086 lb; 2nd quarter: 8,177 lb; 3rd quarter: 8,417 lb; 4th quarter: 8,323 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

25. NH3 emissions from the SCR system shall not exceed any of the following: 1st quarter: 62,122 lb; 2nd quarter: 62,812 lb; 3rd quarter: 63,502 lb; 4th quarter: 63,502 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

26. PM10 emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 19,440 lb; 2nd quarter: 19,656 lb; 3rd quarter: 19,872 lb; 4th quarter: 19,872 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

27. SOx (as SO2) emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 13,176 lb; 2nd quarter: 13,322 lb; 3rd quarter: 13,469 lb; 4th quarter: 13,469 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

28. The total CO emissions from the gas turbine system (N-2697-5) and the auxiliary boiler (N-2697-7) shall not exceed 198,000 pounds in any 12-consecutive month rolling period. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

29. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine system. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

30. The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators or equivalent technology sufficient to limit the visible emissions from the lube oil vents to not exceed 5% opacity, except for a period not exceeding three minutes in any one hour. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

31. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit

32. Source testing shall be witnessed or authorized by District personnel and samples shall be collected by a California Air Resources Board (CARB) certified testing laboratory or a CARB certified source testing firm. [District Rule 1081, 7.2] Federally Enforceable Through Title V Permit



CONDITIONS CONTINUE ON NEXT PAGE

33. Source testing to measure startup and shutdown NOx, CO, and VOC mass emission rates shall be conducted within 60 days of initial startup under this permit and at least once every seven years. CEM relative accuracy for NOx and CO shall be determined during startup and shutdown source testing in accordance with 40 CFR 60, Appendix F (Relative Accuracy Audit). If CEM data is not certifiable to determine compliance with NOx and CO startup emission limits, then startup and shutdown NOx and CO testing shall be conducted every 12 months. If an annual startup and shutdown NOx and CO relative accuracy audit demonstrates that the CEM data is certifiable, the startup and shutdown NOx and CO testing frequency shall return to the once every seven years schedule. [District Rule 1081] Federally Enforceable Through Title V Permit

34. Source testing to determine compliance with the NOx, CO, VOC and NH3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted within 60 days of initial startup under this permit and at least once every 12 months thereafter. [District Rules 2201, 4.0 and 4703, 6.3.1; and 40 CFR 60.4400(a)] Federally Enforceable Through Title V Permit

35. The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored weekly. If the sulfur content is less than or equal to 1.0 gr/100 dscf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume until compliance is demonstrated for eight consecutive weeks. [District Rule 2201, 4.0; and 40 CFR 60.4360, 60.4365(a) and 60.4370(c)] Federally Enforceable Through Title V Permit

36. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; VOC - EPA Method 18 or 25; PM10 - EPA Method 5 (front half and back half) or 201 and 202a; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20 or CARB Method 100. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 5.0 and 4703, 6.3.1, 6.4.1 thru 6.4.3; and 40 CFR 60.4400(a)(1)(i)] Federally Enforceable Through Title V Permit

37. Fuel sulfur content shall be monitored using one of the following methods: ASTM Methods D1072, D3246, D4084, D4468, D4810, D6228, D6667 or Gas Processors Association Standard 2377. [40 CFR 60.4415(a)(1)(i)] Federally Enforceable Through Title V Permit

38. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.2 & 7.3] Federally Enforceable Through Title V Permit

39. A mass or volumetric fuel flow meter that meets the requirements of 40 CFR Part 75 shall be installed, utilized and maintained to measure the amount of natural gas combusted in the unit. [District Rules 2201, 4.0 and 4703] Federally Enforceable Through Title V Permit

40. The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx, CO and O2 concentrations. Continuous emissions monitor(s) shall monitor emissions during all types of operation, including during startup and shutdown periods, provided the CEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of CEMS cannot be demonstrated during startup conditions, CEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this document. [District Rules 1080, 4.0 & 5.0; 2201, 4.0 and 4703, 6.2.1; 40 CFR 60.4340(b)(1) and 40 CFR 60.4345(a)] Federally Enforceable Through Title V Permit

41. The NOx and O2 CEMS shall be installed and certified in accordance with the requirements of 40 CFR Part 75. The CO CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specification 4A (PS 4A), or shall meet equivalent specifications established by mutual agreement of the District, the CARB, and the EPA. [District Rule 1080, 6.3, 6.5 & 6.6, and 40 CFR 60.4345(a)] Federally Enforceable Through Title V Permit

42. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour or shall meet equivalent specifications established by mutual agreement of the District, the CARB and the EPA. [District Rule 1080, 6.4; and 40 CFR 60.4345(b) and 40 CFR 60.13(e)(2)] Federally Enforceable Through Title V Permit



CONDITIONS CONTINUE ON NEXT PAGE

43. The CEMS data shall be reduced to hourly averages as specified in 40 CFR 60.13(h) and in accordance with 40 CFR 60.4350, or by other methods deemed equivalent by mutual agreement with the District, the CARB, and the EPA. [District Rule 1080, 7.2 and 40 CFR 60.4350(a)(b)(c)(e) & (f)] Federally Enforceable Through Title V Permit

44. In accordance with 40 CFR Part 60, Appendix F, 5.1, the CO CEMS must be audited at least once each calendar quarter, by conducting cylinder gas audits (CGA) or relative accuracy audits (RAA). CGA or RAA may be conducted three of four calendar quarters, but no more than three calendar quarters in succession. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 8.0 and 40 CFR Part 60 Appendix F, 5.1.2] Federally Enforceable Through Title V Permit

45. The owner/operator shall perform a RATA for CO as specified by 40 CFR Part 60, Appendix F, 5.1.1, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080, 8.0 and 40 CFR Part 60 App. F, 5.1.1] Federally Enforceable Through Title V Permit

46. The NOx and O2 CEMS shall be audited in accordance with the applicable requirements of 40 CFR Part 75. Linearity reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit

47. Upon written notice from the District, the owner or operator shall provide a summary of the data obtained from the CEMS. This summary shall be in the form and the manner prescribed by the District. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

48. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEMS data polling software system and shall make CEMS data available to the District's automated polling system on a daily basis. Upon notice by the District that the facility's CEMS is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEMS data is sent to the District by a District-approved alternative method. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain the following records: the date, time and duration of any malfunction of the continuous monitoring equipment; dates of performance testing; dates of evaluations, calibrations, checks, and adjustments of the continuous monitoring equipment; date and time period which a continuous monitoring system or monitoring device was inoperative. [District Rules 1080, 7.3 and 2201, 4.0; and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

50. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit

51. Monitor Downtime is defined as any unit operating hour in which the data for NOx, O2 concentrations is either missing or invalid. [40 CFR 60.4380(b)(2)] Federally Enforceable Through Title V Permit

52. The owner or operator shall maintain records of the following items on the combustor tuning activities: (1) date on which combustor tuning activity occurs, (2) description of each combustor tuning activity, (3) reason why each combustor tuning activity is required, (4) documentation (such as operating manuals, letters, e-mails, etc.) showing that each combustor tuning activity is necessary. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

53. The owner or operator shall maintain records of the following items: (1) hourly and daily emissions, in pounds, for each pollutant listed in this permit on the days startup, shutdown and/or combustor tuning activities of the gas turbine system occur, (2) hourly and daily emissions, in pounds, for each pollutant in this permit on the days startup, shutdown and/or combustor tuning activities of the gas turbine system do not occur, (3) quarterly emissions, in pounds, for each pollutant listed in this permit, and (4) the combined CO emissions (12 consecutive month rolling total) , in pounds, for permit unit N-2697-5 and N-2697-7. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit



CONDITIONS CONTINUE ON NEXT PAGE

54. The owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local startup and stop time, total hours of operation, the type and quantity of fuel used, mode of start-up (cold, warm, or hot), duration of each start-up, duration of each shutdown, and duration of each combustor tuning event. [District Rules 2201, 4.0 and 4703, 6.26, 6.28, 6.2.11] Federally Enforceable Through Title V Permit

55. The owner or operator shall maintain all records of required monitoring data and support information for a period of five years from the date of data entry and shall make such records available to the District upon request. [District Rules 2201, 4.0 and 4703, 6.2.4; 40 CFR 60.7(f)] Federally Enforceable Through Title V Permit

56. The owner or operator shall submit a written report of CEM operations for each calendar quarter to the District. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Date, time intervals, data and magnitude of excess NOx emissions, nature and the cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0; 40 CFR 60.4375(a) and 40 CFR 60.4395] Federally Enforceable Through Title V Permit

57. The owner or operator shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when the CEMS is not operating properly. [District Rule 4703, 6.2.5] Federally Enforceable Through Title V Permit

58. The owners and operators of each affected source and each affected unit at the source shall have an Acid Rain permit and operate in compliance with all permit requirements. [40 CFR 72.9(a)(2)] Federally Enforceable Through Title V Permit

59. The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75. [40 CFR 75] Federally Enforceable Through Title V Permit

60. The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program. [40 CFR 75.1] Federally Enforceable Through Title V Permit

61. The owners and operators of each source and each affected unit at the source shall: (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 73 and 40 CFR 72.9(c)(1)] Federally Enforceable Through Title V Permit

62. Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 77] Federally Enforceable Through Title V Permit

63. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72.9(c)(4)] Federally Enforceable Through Title V Permit

64. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73.35 and 40 CFR 72.9(c)(5)] Federally Enforceable Through Title V Permit

65. An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72] Federally Enforceable Through Title V Permit

66. An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72.2] Federally Enforceable Through Title V Permit



CONDITIONS CONTINUE ON NEXT PAGE

67. The designated representative of an affected unit that has excess emissions of sulfur dioxide in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77. [40 CFR 77.3 and 40 CFR 72.9(e)(1)] Federally Enforceable Through Title V Permit

68. The owners and operators of an affected unit that has excess emissions of sulfur dioxide or nitrogen oxides in any calendar year shall: (i) Pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77. [40 CFR 77.4(k); 40 CFR 77.6; and 40 CFR 72.9(e)(2)] Federally Enforceable Through Title V Permit

69. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72.9(f)(1)(i) and 40 CFR 72.9(f)(1)(ii-iv)] Federally Enforceable Through Title V Permit

70. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75.3(c) and 40 CFR 72.9(f)(2)] Federally Enforceable Through Title V Permit

71. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit

# Appendix B
# Current PTO

# *San Joaquin Valley*
# *Air Pollution Control District*

**PERMIT UNIT:** N-2697-5-6 **EXPIRATION DATE:** 05/31/2024

**EQUIPMENT DESCRIPTION:**
294 MW (NOMINAL) COMBINED-CYCLE ELECTRIC GENERATION PLANT CONSISTING OF A SIEMENS INDUSTRIAL FRAME "FLEX PLANT 30" STG6-5000F NATURAL GAS-FIRED TURBINE ENGINE WITH DRY LOW-NOX COMBUSTORS, AN UNFIRED HEAT RECOVERY STEAM GENERATOR SERVED BY A SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION AND AN OXIDIZATION CATALYST AND A STEAM TURBINE GENERATOR

# PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions from the gas turbine system shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the required monitoring devices to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit
3. The start-up time shall not exceed 100 minutes for each event during any startup mode (i.e., hot start < 16 hour downtime, warm start - 16 to 64 hour downtime, or cold start > 64 hour downtime). [District Rules 2201, 4.0 and 4703, 5.3.3] Federally Enforceable Through Title V Permit
4. During all types of operation, including startup (cold, warm and hot), shutdown, and combustor tuning periods, ammonia injection into the SCR system shall occur once the minimum temperature of 406°F at the catalyst face has been reached to ensure NOx emission reductions can occur with a reasonable level of ammonia slip. The District may administratively modify the temperature as necessary following any replacement of the SCR catalyst material. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit
5. The SCR system shall be equipped with a continuous temperature monitoring system to measure and record the temperature at the catalyst face. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit
6. The oxidation catalyst shall be equipped with a continuous temperature monitoring system to measure and record the temperature at the inlet face of the oxidation catalyst. [40 CFR Part 64] Federally Enforceable Through Title V Permit
7. The oxidation catalyst shall be maintained between 450°F and 1,350°F except during startup, shutdown, and combustor tuning periods. Upon detecting any excursion, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. The District may administratively re-establish temperature range as necessary following any replacement of the oxidation catalyst material. [40 CFR Part 64] Federally Enforceable Through Title V Permit
8. The owner or operator shall measure and record temperature at the inlet face of the oxidation catalyst during each source test while measuring VOC emissions. [40 CFR Part 64] Federally Enforceable Through Title V Permit
9. During start-up, and shutdown and combustor tuning periods, the emissions shall not exceed any of the following limits: NOx (as NO2) - 160.00 lb/hr; CO - 1,500.00 lb/hr; VOC (as methane) - 16.00 lb/hr; PM10 - 9.00 lb/hr; SOx (as SO2) - 6.10 lb/hr; or NH3 - 28.76 lb/hr. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit
10. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. [District Rule 4703, 3.29] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status ending when the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26] Federally Enforceable Through Title V Permit

12. Combustor tuning periods are any periods, not to exceed 8 hours in any calendar day or 40 hours in any calendar year, when combustor tuning activities are taking place. Combustor tuning activities are defined as any testing, adjustment, tuning, and calibration activities recommended by the gas turbine manufacturer to ensure safe and reliable steady-state operation of the gas turbine following replacement of the combustor components, during seasonal tuning events, or at other times when recommended by the turbine manufacturer or necessary to maintain low emissions performance. This includes, but is not limited to, adjusting the amount of fuel distributed between the combustion turbine's staged fuel systems to simultaneously minimize NOx and CO production while minimizing combustor dynamics and ensuring combustor stability. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

13. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup, shutdown and combustor tuning periods. [District Rules 2201, 4.0 and 4703, 5.3.2] Federally Enforceable Through Title V Permit

14. Except during startup, shutdown and combustor tuning periods, emissions from the gas turbine system shall not exceed any of the following limits: NOx (as NO2) - 15.54 lb/hr and 2.0 ppmvd @ 15% O2; CO - 9.46 lb/hr and 2.0 ppmvd @ 15% O2; VOC (as methane) - 3.79 lb/hr and 1.4 ppmvd @ 15% O2; PM10 - 9.0 lb/hr; or SOx (as SO2) - 6.10 lb/hr. NOx (as NO2) emission limits are based on 1-hour rolling average period. All other emission limits are based on 3-hour rolling average period. [District Rules 2201, 4.0; 4001; and 4703, 4.1.2 and 5.2] Federally Enforceable Through Title V Permit

15. NH3 emissions shall not exceed any of the following limits: 10.0 ppmvd @ 15% O2 over a 24-hour rolling average period and 28.76 lb/hr. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

16. Each 3-hour rolling average period will be compiled from the three most recent one hour periods. Each one hour period shall commence on the hour. Each one hour period in a twenty-four hour rolling average for ammonia slip will commence on the hour. The twenty-four hour rolling average shall be calculated using the most recent twenty-four one-hour periods. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

17. Emissions from the gas turbine system, on days when startup, shutdown and/or combustor tuning activities occur, shall not exceed the following limits: NOx (as NO2) - 879.7 lb/day; CO - 5,570.3 lb/day; VOC - 164.2 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

18. Emissions from the gas turbine system, on days when startup, shutdown and/or combustor tuning activities do not occur, shall not exceed the following: NOx (as NO2) - 373.0 lb/day; CO - 227.0 lb/day; VOC - 91.0 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

19. Gas turbine system shall be fired on PUC-regulated natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dscf of natural gas. [District Rule 2201, 4.0 and 40 CFR 60.4330(a)(2)] Federally Enforceable Through Title V Permit

20. NOx (as NO2) emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 38,038 lb; 2nd quarter: 38,411 lb; 3rd quarter: 37,126 lb; 4th quarter: 37,840 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

21. CO emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 142,312 lb; 2nd quarter: 142,539 lb; 3rd quarter: 86,374 lb; 4th quarter: 113,660 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

22. VOC emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 8,086 lb; 2nd quarter: 8,177 lb; 3rd quarter: 8,417 lb; 4th quarter: 8,323 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

23. NH3 emissions from the SCR system shall not exceed any of the following: 1st quarter: 62,122 lb; 2nd quarter: 62,812 lb; 3rd quarter: 63,502 lb; 4th quarter: 63,502 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

24. PM10 emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 19,440 lb; 2nd quarter: 19,656 lb; 3rd quarter: 19,872 lb; 4th quarter: 19,872 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

25. SOx (as SO2) emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 13,176 lb; 2nd quarter: 13,322 lb; 3rd quarter: 13,469 lb; 4th quarter: 13,469 lb. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

26. The total CO emissions from the gas turbine system (N-2697-5) and the auxiliary boiler (N-2697-7) shall not exceed 198,000 pounds in any 12-consecutive month rolling period. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

27. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine system. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

28. The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators or equivalent technology sufficient to limit the visible emissions from the lube oil vents to not exceed 5% opacity, except for a period not exceeding three minutes in any one hour. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

29. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit

30. Source testing shall be witnessed or authorized by District personnel and samples shall be collected by a California Air Resources Board (CARB) certified testing laboratory or a CARB certified source testing firm. [District Rule 1081, 7.2] Federally Enforceable Through Title V Permit

31. Source testing to measure startup and shutdown NOx, CO, and VOC mass emission rates shall be conducted at least once every seven years. CEM relative accuracy for NOx and CO shall be determined during startup and shutdown source testing in accordance with 40 CFR 60, Appendix F (Relative Accuracy Audit). If CEM data is not certifiable to determine compliance with NOX and CO startup emission limits, then startup and shutdown NOx and CO testing shall be conducted every 12 months. If an annual startup and shutdown NOx and CO relative accuracy audit demonstrates that the CEM data is certifiable, the startup and shutdown NOx and CO testing frequency shall return to the once every seven years schedule. [District Rule 1081] Federally Enforceable Through Title V Permit

32. Source testing to determine compliance with the NOx, CO, VOC and NH3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted at least once every 12 months thereafter. [District Rules 2201, 4.0 and 4703, 6.3.1; and 40 CFR 60.4400(a)] Federally Enforceable Through Title V Permit

33. The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored weekly. If the sulfur content is less than or equal to 1.0 gr/100 dscf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume until compliance is demonstrated for eight consecutive weeks. [District Rule 2201, 4.0; and 40 CFR 60.4360, 60.4365(a) and 60.4370(c)] Federally Enforceable Through Title V Permit

34. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; VOC - EPA Method 18 or 25; PM10 - EPA Method 5 (front half and back half) or 201 and 202a; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20 or CARB Method 100. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 5.0 and 4703, 6.3.1, 6.4.1 thru 6.4.3; and 40 CFR 60.4400(a)(1)(i)] Federally Enforceable Through Title V Permit

35. Fuel sulfur content shall be monitored using one of the following methods: ASTM Methods D1072, D3246, D4084, D4468, D4810, D6228, D6667 or Gas Processors Association Standard 2377. [40 CFR 60.4415(a)(1)(i)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

36. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.2 & 7.3] Federally Enforceable Through Title V Permit

37. A mass or volumetric fuel flow meter that meets the requirements of 40 CFR Part 75 shall be installed, utilized and maintained to measure the amount of natural gas combusted in the unit. [District Rules 2201, 4.0 and 4703] Federally Enforceable Through Title V Permit

38. The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx, CO and O2 concentrations. Continuous emissions monitor(s) shall monitor emissions during all types of operation, including during startup and shutdown periods, provided the CEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of CEMS cannot be demonstrated during startup conditions, CEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this document. [District Rules 1080, 4.0 & 5.0; 2201, 4.0 and 4703, 6.2.1; 40 CFR 60.4340(b)(1) and 40 CFR 60.4345(a)] Federally Enforceable Through Title V Permit

39. The NOx and O2 CEMS shall be installed and certified in accordance with the requirements of 40 CFR Part 75. The CO CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specification 4A (PS 4A), or shall meet equivalent specifications established by mutual agreement of the District, the CARB, and the EPA. [District Rule 1080, 6.3, 6.5 & 6.6, and 40 CFR 60.4345(a)] Federally Enforceable Through Title V Permit

40. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour or shall meet equivalent specifications established by mutual agreement of the District, the CARB and the EPA. [District Rule 1080, 6.4; and 40 CFR 60.4345(b) and 40 CFR 60.13(e)(2)] Federally Enforceable Through Title V Permit

41. The CEMS data shall be reduced to hourly averages as specified in 40 CFR 60.13(h) and in accordance with 40 CFR 60.4350, or by other methods deemed equivalent by mutual agreement with the District, the CARB, and the EPA. [District Rule 1080, 7.2 and 40 CFR 60.4350(a)(b)(c)(e) & (f)] Federally Enforceable Through Title V Permit

42. In accordance with 40 CFR Part 60, Appendix F, 5.1, the CO CEMS must be audited at least once each calendar quarter, by conducting cylinder gas audits (CGA) or relative accuracy audits (RAA). CGA or RAA may be conducted three of four calendar quarters, but no more than three calendar quarters in succession. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 8.0 and 40 CFR Part 60 Appendix F, 5.1.2] Federally Enforceable Through Title V Permit

43. The owner/operator shall perform a RATA for CO as specified by 40 CFR Part 60, Appendix F, 5.1.1, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080, 8.0 and 40 CFR Part 60 App. F, 5.1.1] Federally Enforceable Through Title V Permit

44. The NOx and O2 CEMS shall be audited in accordance with the applicable requirements of 40 CFR Part 75. Linearity reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit

45. Upon written notice from the District, the owner or operator shall provide a summary of the data obtained from the CEMS. This summary shall be in the form and the manner prescribed by the District. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

46. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEMS data polling software system and shall make CEMS data available to the District's automated polling system on a daily basis. Upon notice by the District that the facility's CEMS is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEMS data is sent to the District by a District-approved alternative method. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

47. The owner or operator shall maintain the following records: the date, time and duration of any malfunction of the continuous monitoring equipment; dates of performance testing; dates of evaluations, calibrations, checks, and adjustments of the continuous monitoring equipment; date and time period which a continuous monitoring system or monitoring device was inoperative. [District Rules 1080, 7.3 and 2201, 4.0; and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

48. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit

49. Monitor Downtime is defined as any unit operating hour in which the data for NOx, O2 concentrations is either missing or invalid. [40 CFR 60.4380(b)(2)] Federally Enforceable Through Title V Permit

50. The owner or operator shall maintain records of the following items on the combustor tuning activities: (1) date on which combustor tuning activity occurs, (2) description of each combustor tuning activity, (3) reason why each combustor tuning activity is required, (4) documentation (such as operating manuals, letters, e-mails, etc.) showing that each combustor tuning activity is necessary. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

51. The owner or operator shall maintain records of the following items: (1) hourly and daily emissions, in pounds, for each pollutant listed in this permit on the days startup, shutdown and/or combustor tuning activities of the gas turbine system occur, (2) hourly and daily emissions, in pounds, for each pollutant in this permit on the days startup, shutdown and/or combustor tuning activities of the gas turbine system do not occur, (3) quarterly emissions, in pounds, for each pollutant listed in this permit, and (4) the combined CO emissions (12 consecutive month rolling total) , in pounds, for permit unit N-2697-5 and N-2697-7. [District Rule 2201, 4.0] Federally Enforceable Through Title V Permit

52. The owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local startup and stop time, total hours of operation, the type and quantity of fuel used, mode of start-up (cold, warm, or hot), duration of each start-up, duration of each shutdown, and duration of each combustor tuning event. [District Rules 2201, 4.0 and 4703, 6.26, 6.28, 6.2.11] Federally Enforceable Through Title V Permit

53. The owner or operator shall maintain all records of required monitoring data and support information for a period of five years from the date of data entry and shall make such records available to the District upon request. [District Rules 2201, 4.0 and 4703, 6.2.4; 40 CFR 60.7(f)] Federally Enforceable Through Title V Permit

54. The owner or operator shall submit a written report of CEM operations for each calendar quarter to the District. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Date, time intervals, data and magnitude of excess NOx emissions, nature and the cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0; 40 CFR 60.4375(a) and 40 CFR 60.4395] Federally Enforceable Through Title V Permit

55. The owner or operator shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when the CEMS is not operating properly. [District Rule 4703, 6.2.5] Federally Enforceable Through Title V Permit

56. The owners and operators of each affected source and each affected unit at the source shall have an Acid Rain permit and operate in compliance with all permit requirements. [40 CFR 72.9(a)(2)] Federally Enforceable Through Title V Permit

57. The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75. [40 CFR 75] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

58. The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program. [40 CFR 75.1] Federally Enforceable Through Title V Permit

59. The owners and operators of each source and each affected unit at the source shall: (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 73 and 40 CFR 72.9(c)(1)] Federally Enforceable Through Title V Permit

60. Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 77] Federally Enforceable Through Title V Permit

61. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72.9(c)(4)] Federally Enforceable Through Title V Permit

62. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73.35 and 40 CFR 72.9(c)(5)] Federally Enforceable Through Title V Permit

63. An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72] Federally Enforceable Through Title V Permit

64. An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72.2] Federally Enforceable Through Title V Permit

65. The designated representative of an affected unit that has excess emissions of sulfur dioxide in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77. [40 CFR 77.3 and 40 CFR 72.9(e)(1)] Federally Enforceable Through Title V Permit

66. The owners and operators of an affected unit that has excess emissions of sulfur dioxide or nitrogen oxides in any calendar year shall: (i) Pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77. [40 CFR 77.4(k); 40 CFR 77.6; and 40 CFR 72.9(e)(2)] Federally Enforceable Through Title V Permit

67. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72.9(f)(1)(i) and 40 CFR 72.9(f)(1)(ii-iv)] Federally Enforceable Through Title V Permit

68. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75.3(c) and 40 CFR 72.9(f)(2)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

69. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit

# Appendix C
# BACT Guideline

# San Joaquin Valley
# Unified Air Pollution Control District

## Best Available Control Technology (BACT) Guideline 3.4.2*

Last Update: 10/1/2002

## Gas Turbine - = or > 50 MW, Uniform Load, with Heat Recovery

| Pollutant | Achieved in Practice or contained in the SIP | Technologically Feasible | Alternate Basic Equipment |
|---|---|---|---|
| VOC | 2.0 ppmv @ 15% O2 | 1.5 ppmv @ 15% O2 | |
| SOx | 1. PUC-regulated natural gas or 2. Non-PUC-regulated gas with no more that 0.75 grains S/100 dscf, or equal. | | |
| PM10 | Air inlet filter cooler, lube oil vent coalescer and natural gas fuel, or equal | | |
| NOx | 2.5 ppmv dry @ 15% O2 (1-hr average, excluding startup and shutdown), (Selective catalytic reduction, or equal) | 2.0 ppmv dry @ 15% O2 (1-hr average, excluding startup and shutdown), (Selective catalytic reduction, or equal) | |
| CO | 6.0 ppmv @ 15% O2 (Oxidation catalyst, or equal) | 4.0 ppmv @ 15% O2 (Oxidation catalyst, or equal) | |

** Applicability lowered to > 50 MW pursuant to CARB Guidance for Permitting Electrical Generation Technologies. Change effective 10/1/02. Corrected error in applicability to read 50 MW not 50 MMBtu/hr effective 4/1/03.

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a State Implementation Plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

# Appendix D
# BACT Analysis

# Top-Down BACT Analysis

## Step 1: Identify All Possible Control Technologies

BACT Guideline 3.4.2 lists the following control technologies to reduce $NO_x$ emissions:

Achieved-in-Practice (AIP):
2.5 ppmv dry @ 15% O2 (1-hr average, excluding startup and shutdown, selective catalytic reduction, or equal)

Technologically Feasible:
2.0 ppmv dry @ 15% O2 (1-hr average, excluding startup and shutdown, selective catalytic reduction, or equal)

Alternate Basic Equipment:
None

## Step 2: Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

## Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. 2.0 ppmv dry @ 15% O2 (Technologically feasible)
2. 2.5 ppmvd dry @ 15% O2 (Achieved-in-Practice)

## Step 4: Cost Effectiveness Analysis

Currently, NCPA is required to comply with 2.0 ppmvd NOx @ 15% $O_2$. The applicant has proposed to comply with this limit after replacing the combustor. Therefore, cost effectiveness analysis is not required.

## Step 5: Select BACT

BACT is to comply with 2.0 ppmvd NOx @ 15% O2. The applicant has proposed to comply with this limit. Thus, BACT requirements are satisfied.

# Appendix E
# Project Emission Increase Calculations

# Project Emission Increase Calculations

Project Emissions Increase = PAE – BAE – UBC

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

Projected Actual Emissions (PAE)

NCPA has projected monthly fuel usage and number of starts each month from June 2021 through December 2028. However, given the nature of energy markets, there is a chance that the plant could operate more or less depending on the demand in a given month. Therefore, it is reasonable to estimate emissions using the maximum number of startups and the maximum heat input rating.

NCPA has projected a maximum of up to 20 startups/month and could use up to monthly heat input rate of 1,523,181 MMBtu.

NOx:
= 20 startups/month x 160 lb-NOx/start + (1,523,181 MMBtu/month – 20 startups/month x 1,071 MMBtu/start) x 0.0073 lb-NOx/MMBtu
= 3,200 lb-NOx/month + 10,963 lb-NOx/month
= 14,163 lb-NOx/month

Historical monthly records in the past 5 year (January 2015 through May 2021) indicate that the plant have operated at 275 MW (~ 94% of it's design capacity) in some months. The equipment, that is, compressor, turbine, HRSG, steam turbine and all other auxiliary components at this plant have been and will be maintained according to manufacturer suggested intervals such that it's generation capacity stays at it's design capacity.

As evident from historical records, this plant was operated near at it's design capacity of 294 MW. The plant can be operated up to 12 months in a given year should there be need to fulfill electric demand in that year. Thus, the project annual emission would be:

= 14,163 lb-NOx/month x 12 months/yr
= 169,956 lb-NOx/yr

This unit is permitted to emit up to 151,415 lb-NOx/yr. In this case, the projected emissions could be above the permitted levels; therefore, project emissions are reduced to the levels of the maximum allowable emissions.

PAE = 151,415 lb-NOx/yr

SOx:
= 20 startups/month x 6.1 lb-SOx/start + (1,523,181 MMBtu/month – 20 startups/month x 1,071 MMBtu/start) x 0.00285 lb-SOx/MMBtu

= 122 lb-SOx/month + 4,280 lb-SOx/month
= 4,402 lb-SOx/month

= 4,402 lb-SOx/month x 12 months/yr
= 52,824 lb-SOx/yr

$PM_{10}$:
= 20 startups/month x 9.0 lb-PM10/start + (1,523,181 MMBtu/month – 20 startups/month x 1,071 MMBtu/start) x 0.0042 lb-PM10/MMBtu
= 180 lb-PM10/month + 6,307 lb-PM10/month
= 6,487 lb-PM10/month

= 6,487 lb-$PM_{10}$/month x 12 months/yr
= 77,844 lb-$PM_{10}$/yr

CO:
= 20 startups/month x 1,500 lb-CO/start + (1,523,181 MMBtu/month – 20 startups/month x 1,071 MMBtu/start) x 0.0044 lb-CO/MMBtu
= 30,000 lb-CO/month + 6,608 lb-CO/month
= 36,608 lb-CO/month

= 36,608 lb-CO/month x 12 months/yr
= 439,296 lb-CO/yr

This unit is permitted to emit up to 198,000 lb-CO/yr. In this case, the projected emissions are above the permitted levels; therefore, project emissions are reduced to the levels of the maximum allowable emissions.

PAE = 198,000 lb-CO/yr

VOC:
= 20 startups/month x 16 lb-VOC/start + (1,523,181 MMBtu/month – 20 startups/month x 1,071 MMBtu/start) x 0.0018 lb-VOC/MMBtu
= 320 lb-VOC/month + 10,963 lb-VOC/month
= 3,023 lb-VOC/month

= 3,023 lb-VOC/month x 12 months/yr
= 36,276 lb-VOC/yr

This unit is permitted to emit up to 33,003 lb-VOC/yr. In this case, the projected emissions are above the permitted levels; therefore, project emissions are reduced to the levels of the maximum allowable emissions.

PAE = 33,003 lb-VOC/yr

| Projected Actual Emissions (PAE) | |
|---|---|
| Pollutant | PAE (lb/year) |
| NOx | 151,415 |
| SOx | 52,824 |
| $PM_{10}$ | 77,844 |
| CO | 198,000 |
| VOC | 33,003 |

Baseline Actual Emissions (BAE)

For electric utility steam generating units, according to according to 40 CFR 51.165(a)(1)(xxxv)(B), the BAE are calculated as the average, in tons/year, at which the emissions unit actually emitted during any 24-month period selected by the operator within the previous 5-year period. Note that a different consecutive 24-month period can be used for each regulated NSR pollutant.

NOx:

NCPA have chosen to use 24-month period between January 2018 through December 2019. During this period, per CEMS data, the emission rates were 54,651 lb-NOx/yr. Thus,

BAE = 54,651 lb-NOx/yr

SOx:

Baseline period from March 2015 to Feb 2017 (24-month period) appears to represent normal source operation. The 24-month annual average heat input rate is 6,773,871 MMBtu. During October 21, 2015 source test, SOx emissions were 0.0004 lb/MMBtu. Thus,

BAE = 0.0004 lb-SOx/MMBtu x 6,773,871 MMBtu/yr
= 2,710 lb-SOx/yr

$PM_{10}$:

Baseline period from March 2015 to Feb 2017 (24-month period) appears to represent normal source operation. The 24-month annual average heat input rate is 6,773,871 MMBtu. During October 21, 2015 & October 31, 2016 source tests, average PM emissions were 0.0015 lb/MMBtu & 0.0039 lb/MMBtu, respectively. Average value of two results is 0.0027 lb/MMBtu.

BAE = 0.0027 lb-PM10/MMBtu x 6,773,871 MMBtu/yr
= 18,290 lb-$PM_{10}$/yr

CO:

Baseline period from March 2015 to Feb 2017 (24-month period) appears to represent normal source operation. The 24-month annual average heat input rate is 6,773,871 MMBtu. During October 31, 2016 source test, average CO emissions were 0.000041 lb/MMBtu (0.08 lb-CO/hr ÷1,963.6 MMBtu/hr). CO emissions were zero during the October 21, 2015.

BAE = 0.000041 lb-CO/MMBtu x 6,773,871 MMBtu/yr
= 276 lb-CO/yr

VOC:
NCPA have chosen to use 24-month period between September 2018 through August 2019 During this period, emission rates were estimated to be 9,801 lb-VOC/yr. Thus,

BAE = 9,801 lb-VOC/yr

| Baseline Actual Emissions (BAE) | |
|---|---|
| Pollutant | BAE (lb/year) |
| NOx | 54,651 |
| SOx | 2,710 |
| $PM_{10}$ | 18,290 |
| CO | 276 |
| VOC | 9,801 |

Unused Baseline Capacity (UBC)
As described in 40 CFR 51.165(a)(1)(xxviii)(B), when using historical data and company's expected business activity and highest projections of business activity to determine PAE, the portion of the emissions after the project that the existing unit could have accommodated before the project (during the same 24-month baseline period used to determine BAE) and that are unrelated to the particular project (including emissions increases due to product demand growth) are to be excluded.

The following table shows the plant's generation capacity each month during baseline period (noted above). The equipment, that is, compressor, turbine, HRSG, steam turbine and all other auxiliary components at this plant has been and will be maintained according to manufacturer suggested intervals such that it's generation capacity stays at it's designed capacity. The plant could have been operated near it's design capacity should there be a there be need to fulfill electric demand in that year.

| Electric Generation (MW)* | | |
|---|---|---|
| Month/Year | $MW_{Actual}$ | $MW_{Actual}/MW_{Designed}$ |
| March 2015 | 257 | 87.4% |
| April 2015 | 257 | 87.4% |
| January 2016 | 249 | 84.7% |
| Feb 2016 | 251 | 85.4% |
| October 2018 | 274 | 93.2% |
| November 2018 | 271 | 92.2% |
| December 2018 | 272 | 92.5% |
| January 2019 | 268 | 91.2% |
| February 2019 | 268 | 91.2% |
| December 2019 | 272 | 92.5% |
| Average: | | 90% |

*Electric generation (MW-hr) ÷ Operating hours (hr)

As noted in the above table, this plant operated close to 90% of it's designed capacity during the baseline period. There are no physical or operational limitations that would prevent this plant from achieving it's designed capacity rating of 294 MW should there be a demand to generate more electricity. Consequently, this plant could have accommodated all of its unused baseline emissions.

The unused baseline capacity (UBC) for this project is the difference between the emissions the units could have accommodated (maximum designed capacity emission rate) and the baseline actual emissions as summarized in the following table:

| **Unused Baseline Capacity (UBC)** | | | |
|---|---|---|---|
| Pollutant | Max design emission rates (lb/yr) | BAE (lb/yr) | UBC (lb/year) |
| NOx | 151,415 | 54,651 | 96,764 |
| SOx | 53,436 | 2,710 | 50,726 |
| $PM_{10}$ | 78,840 | 18,290 | 60,550 |
| CO | 198,000 | 276 | 197,724 |
| VOC | 33,003 | 9,801 | 23,202 |

Project Emissions Increase For Modified Emission Units

Project Emissions Increase (EI) = PAE – BAE – UBC; Negative EI values are equated to zero.

| **Project Emissions Increase For Modified Emissions Units (EI)** | | | | | | |
|---|---|---|---|---|---|---|
| Permit Units | Item | $NO_X$ | SOx | $PM_{10}$ | CO | VOC |
| N-2697-5 (Modified emission unit) | PAE (lb/yr) | 151,415 | 52,824 | 77,844 | 198,000 | 33,003 |
| | BAE (lb/yr) | 54,651 | 19,306 | 28,450 | 29,805 | 9,801 |
| | UBC (lb/yr) | 96,764 | 50,726 | 60,550 | 197,724 | 23,202 |
| | EI (lb/yr) | 0 | 0 | 0 | 0 | 0 |

As seen in the table above, the proposed project will not have any emissions increase for NOx, SOx, PM10, CO or VOC emissions.

# Appendix F
# Quarterly Net Emissions Change

# Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

N-2697-5-7:
For each pollutant, pre and post project quarterly emissions are same. Thus, QNEC is zero for each pollutant.

| Quarterly NEC [QNEC] | |
|---|---|
| **Pollutant** | **QNEC (lb/qtr)** |
| $NO_X$ | 0 |
| $SO_X$ | 0 |
| $PM_{10}$ | 0 |
| CO | 0 |
| VOC | 0 |