

Bay Area Air Quality Management District

375 Beale Street, Suite 600

San Francisco, CA 94105

(415) 749-5000

**Permit Evaluation
and
Statement of Basis
for
RENEWAL of the**

MAJOR FACILITY REVIEW PERMIT

for

Creed Energy Center, LLC

Facility # B4414

Facility Address:

6150 Creed Road

Suisun City, CA 94585

Mailing Address:

2425 Cordelia Road

Fairfield, CA 94534

Application Engineer: Simrun Dhoot

Site Engineer: Alfonso Borja

Application Number: 28229

December 2017

TABLE OF CONTENTS

A.	Background	3
B.	Facility Description	3
C.	Permit Content.....	3
I.	Standard Conditions	3
II.	Equipment	4
III.	Generally Applicable Requirements	4
IV.	Source-Specific Applicable Requirements.....	5
V.	Schedule of Compliance.....	8
VI.	Permit Conditions.....	8
VII.	Applicable Limits and Compliance Monitoring Requirements	9
VIII.	Test Methods	15
IX.	Title IV Acid Rain Permit	15
X.	Permit Shield:.....	15
XI.	Revision History.....	16
XII.	Glossary.....	16
D.	Alternate Operating Scenarios:	16
E.	Compliance Status.....	16
F.	Differences Between the Application and the Proposed Permit	17
	APPENDIX A GLOSSARY.....	18

Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a Phase II Acid Rain facility as defined by BAAQMD Regulation 2-6-217. It is an Acid Rain facility because it burns fossil fuel, serves a generator that is over 25 MW that is used to generate electricity for sale, and was built after November 15, 1990. It is not a “major facility” as defined by BAAQMD Regulation 2-6-212 because it does not have the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is B4414.

This facility received its initial Title V permit on March 6, 2003. This application is for a permit renewal. Although the current permit expired on February 26, 2017, it continues in force until the District takes final action on the permit renewal. The standard sections of the permit have been upgraded to include new standard language used in all Title V permits. The proposed permit shows all changes to the permit in strikeout/underline format.

Pursuant to Regulation 2, Rule 6, section 416, the District has reviewed the terms and conditions of this Major Facility Review permit and determined that they are still valid and correct. This review included an analysis of applicability determinations for all sources, including those that have been modified or permitted since the issuance of the initial Major Facility Review Permit. The review also included an assessment of all monitoring in the permit for sufficiency to determine compliance.

B. Facility Description

This site is a peaking power plant located in Solano County. The Authority to Construct was issued on June 18, 2001 under application # 2540 for a 49.9-megawatt “peaking” power plant to provide power and T&D (transmission and distribution) support to the electric grid during periods of high electricity demand. This facility consists of one simple-cycle, gas fired combustion turbine, one firewater pump driven by a diesel-fired engine, and one exempt cooling tower.

This facility is located at 6150 Creed Road, Suisun City, CA 94585.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for fossil-fuel fired electrical generating facilities or the accidental release (40

CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provision and Permitting rules.

Changes to permit:

The dates of adoption and approval of rules in Standard Conditions I will be updated as follows.

- The dates in Section I.B. will be updated.
- The reporting periods in Section I.F will be changed per the facility's request to align with other Title V permits. A monitoring report will be required from the date of issuance of the renewal until June 30th or December 31st.
- The mailing address was changed and an email address was added for section I.F
- The mailing address was changed and an email address was added for section I.G

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

Changes to permit

Table II B: For consistency between permit conditions, the limits for CO, POC, and NOx will indicate less than or equal to the applicable numerical limit.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit

This table will be updated to reflect current regulation adoption dates and new regulations that have been adopted since the original Title V permit was issued.

Changes to Permit:

The following Generally Applicable Requirement will be added:

- SIP Regulation 8, Rule 3, Organic Compounds – Architectural Coatings (11/21/01)
- BAAQMD Regulation 11, Rule 8, Reduction of Risk from Air Toxic Emissions at Existing Facilities (11/15/17)

The following Generally Applicable Requirements will be deleted to conform with current practice:

- BAAQMD Regulation 2, Rule 2
- SIP Regulation 2, Rule 2
- BAAQMD Regulation 2, Rule 4
- SIP Regulation 2, Rule 4
- BAAQMD Regulation 2, Rule 5
- BAAQMD Regulation 2, Rule 6
- SIP Regulation 2, Rule 6

The date of adoption of Regulation 8, Rule 3 was changed.

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District’s or EPA’s websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Complex Applicability Determinations

Compliance Assurance Monitoring (CAM) – 40 CFR Part 64

The gas turbine is exempt from CAM requirements for NO_x per 40 CFR Part 64.2(b)(iii) since the facility is subject to the acid rain permit program. The facility is subject to the Acid Rain program because it is a utility unit that serves a generator with a capacity greater than 25 MW in accordance with 40 CFR Part 72.6.

The gas turbine is exempt from CAM requirements for CO per 40 CFR Part 64.2(b)(vi) because the turbine has a continuous compliance method, the CO CEMs, that is specified by a part 70 permit.

40 CFR Part 72, Acid Rain Program

Part 72, Subpart A, establishes general provisions and operating permit program requirements for sources and affected units under the Acid Rain program, pursuant to Title IV of the Clean Air Act. The gas turbines are affected units subject to the program in accordance with 40 CFR Part 72, Subpart A, Section 72.6(a)(3)(i). The facility continues to meet 72.9 Standard Requirements which requires the submission of a complete acid rain permit application, the possession of a valid acid rain permit, meeting the monitoring requirements of part 75, and holding sufficient allowances. The facility must hold sufficient SO₂ allowances by March 1 (February 29 of a leap year) of every year to offset each ton of SO₂ emitted for the previous calendar year. The facility is expected to comply with the excess emissions, recordkeeping and reporting requirements in 72.9(e) and 72.9(f).

Part 72, Subpart C, contains requirements for acid rain permit applications and compliance plans. The facility is expected to continue to meet these requirements.

Part 72, Subpart E, contains the requirements for the acid rain permit which must include all elements of a complete acid rain application.

40 CFR Part 75, Continuous Emission Monitoring

Part 75, Subpart A, contains the applicability criteria, compliance dates, and prohibitions. The emissions units at the facility are subject to Part 72 and are therefore subject to Part 75. The NO_x monitoring is subject to part 75 per 75.2(c). The facility is expected to continue to meet the compliance dates and prohibitions contained in part 75 Subpart A.

Part 75, Subpart B, contains specific monitoring provisions for each pollutant subject to part 75. The emissions units at this facility are required to meet the SO₂, NO_x, and CO₂ monitoring requirements contained in 75.10(a)(1), 75.10(a)(2), and 75.10(a)(3). Opacity monitoring under 75.10(a)(4) is not required for gas fired units in accordance with 75.14(c). 75.10(b) requires each CEM to meet equipment, installation, and performance specification in part 75 Appendix A and quality assurance/quality control in Appendix B. 75.10(c) requires heat input rate monitoring to meet requirements contained in part 75 Appendix F. The facility is expected to continue to comply with the requirements contained in 75.10(b) and (c).

75.10(d) contains primary equipment hourly operating requirements that require the CEM to monitor emissions when the emissions unit combusts fuel except as specified in 75.11(e) and during periods of calibration, quality assurance, or preventive maintenance, performed pursuant to §75.21 and appendix B of this part, periods of repair, periods of backups of data from the data acquisition and handling system, or recertification performed pursuant to §75.20. This section also contains requirements for calculating hourly averages from four 15-minute periods and validity of data and data substitution. Emission concentrations for a given hour are not considered valid unless it is based on four valid measurements. The data substitution requirements are contained in Subpart D. The facility is expected to continue to comply with the requirements contained in 75.10(d). 75.10(f) specifies minimum measurement capability requirement for CEMs and 75.10(g) contains the minimum recordkeeping and reporting requirements. The facility is expected to continue to meet 75.10(f) and (g).

75.11 contains specific provisions for SO₂ monitoring. 75.11(d)(2) allows the use of Appendix D to monitor SO₂ emissions from gas fired units. The facility monitors sulfur content of the natural gas to meet Part 75 SO₂ monitoring requirements.

75.12 contains specific provisions for NO_x emission rates. The facility uses a NO_x CEM and an O₂ monitor to meet this requirement.

75.13 contains CO₂ monitoring requirements. The facility monitors CO₂ in accordance with this section using the procedures in part 75, Appendix G.

75.14 contains opacity monitoring requirements. The facility is exempt from opacity monitoring under part 75 per 75.14(c).

Part 75, Subpart C, contains operation and maintenance requirements including certification and recertification of the CEMs, quality assurance/quality control requirements, reference test

methods, and out-of-control periods and adjustment for system bias. The facility is expected to continue to meet these requirements.

Part 75, Subpart D (75.30 through 75.36), contains Missing Data Substitution Procedures for SO₂, NO_x, flow rate, CO₂, and heat input procedures. The facility is expected to continue to meet these requirements.

Part 75, Subpart F, contains the recordkeeping requirements including the contents of a part 75 monitoring plan. This subpart requires the facility to record the operating time, heat input rate, and load for each emissions unit. Additionally, the facility must record emissions data for SO₂, NO_x, CO₂, and O₂ along with quality assurance/quality control information.

Part 75, Subpart G, contains the reporting requirements for affected facilities subject to part 75. The facility is expected to continue to meet these requirements.

BAAQMD Regulation 2, Rule 3, Power Plants

The facility is not subject to this rule because only power plants with a capacity of 50 MW or more are required to obtain a certification from the California Energy Commission (CEC). Since the Authority to Construct was not certified by the CEC, the District may change permit conditions for the facility before first seeking approval from the CEC.

California Greenhouse Gas Emission Performance Standard for Power Plants

Section 2902 of the Public Utilities and Energy Code of the California Code of Regulations (CCR), Title 20, Chapter 11, Article 1, limits the CO₂ emissions of baseload power plants to 1,100 lbs/MW-hr.

Following is the definition of baseload generation in Section 2901:

“ "Baseload generation" means electricity generation from a powerplant that is designed and intended to provide electricity at an annualized plant capacity factor of at least 60 percent.”

This standard was adopted in 2006 as Senate Bill 1368. The original permit for this facility was issued in 2003. At that time, the annual capacity was not limited. Initially, the District determined that because the turbine does not meet the standard of 1,100 lbs/MW-hr, the annual capacity must be limited to 60% of maximum. Therefore, Condition 20136, part 22, was amended to add a limit of 2,628,000 MMBtu/year. The basis was “CCR Title 20, Chapter 11, Article 1, Section 2902.”

Upon further review, the District determined that Creed Energy Center is not subject to the “Greenhouse Gas Emission Performance Standard for Power Plants,” because it is not a local publicly owned electrical utility or a “load-serving entity”. Where “load-serving entity” means every electrical corporation, electric service provider, or community choice aggregator serving end-use customers in state. Therefore, the old federally enforceable limit of 4,380,000 MMBtu/yr has been retained.

Condition 20136, part 22, will be amended to list the basis as “Cumulative Increase.”

Changes to Permit:

Table IV-A:

- For consistency between permits, 40 CFR 60, Subpart A requirements will include 60.4(a) and (b).

- The monitoring requirements of 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines have been updated.
- SIP Regulation 9, Rule 1 was added.

Table IV-B:

- The Ringlemann No. 2 Limitation regulation will cite SIP Regulation 6-303 and not 6-302.
- BAAQMD Regulation 9-8-330.2 has been deleted because it is obsolete.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

VI. Permit Conditions

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting requirements have been added to the permit.

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all ‘strike-out’ language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 *et seq.*, an order of abatement pursuant to H&SC § 42450 *et seq.*, or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

Conditions that are obsolete or that have no regulatory basis have been deleted from the permit.

Conditions have also been deleted due to the following:

- The event has already occurred (i.e. initial or start-up source tests).

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology requirement in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO, which limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- Regulation 2, Rule 5: This term is used for a condition imposed by the APCO to ensure compliance with limits based on Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants.

Changes to permit:

The following definitions will be added or updated:

- Condition 20136, part 21, will be amended to resolve a contradiction in the terms of the condition. The condition states that the limits in part 21 are on a calendar day and calendar year basis. However, the calculation for the calendar year limit was on a rolling 12-month basis. This calculation method has been removed.
- Condition 20136, Part 22 will be amended to include a basis of "Cumulative Increase."
- The deleted commissioning items in Condition #20136 will include Part 10. All subsequent parts will be renumbered as a result.

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The District has reviewed all applicable requirements for monitoring and has determined the existing monitoring is adequate.

The District also examined the limits for which there is no monitoring or potentially inadequate monitoring in the applicable requirements. These limits are contained in the tables below. The District has examined the monitoring for other limits and has determined that no further monitoring is needed to provide a reasonable assurance of compliance. The District's reasoning and supporting calculations are provided below. Calculations for potential to emit will be provided in the discussion when no monitoring is proposed due to the size of a source.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate.

PM Discussion:

<u>PM Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, Combustion Gas Turbine and S-3, Cooling Tower	BAAQMD Regulation 6-1-301	Ringelmann 1.0 for more than 3 min/hr	None
S-1, Combustion Gas Turbine and S-3, Cooling Tower	SIP Regulation 6-301	Ringelmann 1.0 for more than 3 min/hr	None
S-2, Diesel Fire Pump	BAAQMD Regulation 6-1-303.1	Ringelmann 2.0 for more than 3 min/hr	None
S-2, Diesel Fire Pump	SIP Regulation 6-303.1	Ringelmann 2.0 for more than 3 min/hr	None
S-1, Combustion Gas Turbine, S-2, Diesel Fire Pump, and S-3, Cooling Tower	BAAQMD Regulation 6-1-310	0.15 grain/dscf	None
S-1, Combustion Gas Turbine, S-2, Diesel Fire Pump, and S-3, Cooling Tower	SIP Regulation 6-310	0.15 grain/dscf	None
S-3, Cooling Tower	BAAQMD Regulation 6-1-311	40 lb/hr	None
S-3, Cooling Tower	SIP Regulation 6-1-311	40 lb/hr	None
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 18.5	3.0 lb/hr	Source test every 8,000 hrs. or every 3 yrs., whichever comes first
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 21	72 lb/hr and 13.1 tons/year	Source test every 8,000 hrs. or every 3 yrs., whichever comes first

BAAQMD Regulation 6, Rule 1, Particulate Matter, General Requirements

Visible Emissions:

BAAQMD Regulation 6-1-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Visible emissions are normally not associated with combustion of gaseous fuels, such as natural gas. Source S-1 burns natural gas exclusively therefore, per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for this source.

EPA's June 24, 1999 agreement with CAPCOA and ARB entitled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP" states that no monitoring will be required for opacity for diesel standby and emergency reciprocating engines if California diesel or other low-sulfur fuels are used. The reason is that the use of low-sulfur fuels reduces particulates. Also, these engines are used infrequently and therefore, are not large sources of particulate emissions. Because the S-2 Fire Pump Diesel Engine will utilize "California" diesel fuel, no monitoring is required to ensure compliance with the visible emissions limitation of Regulation 6-1-303.1.

S-3 Cooling Tower is not expected to emit visible particulate emissions. Therefore, monitoring is not required to ensure compliance with Regulation 6-1-301 for this source.

Particulate Weight Limitation Discussion:

BAAQMD Regulation 6-1-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Section 310.3 limits filterable particulate emissions from "heat transfer operations" to 0.15 gr/dscf @ 6% O₂. These are the "grain loading" standards.

Exceedances of the grain loading standards are normally not associated with combustion of gaseous fuels, such as natural gas. Source S-1 burns natural gas exclusively, therefore, per the EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for this source.

The grain loading from the S-3 Cooling Tower is expected to be much less than 0.15 grains per dscf. Therefore, monitoring is not required to ensure compliance with this limit for this source.

EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", proposes the following monitoring for the grain loading standard for non-utility distillate-oil-fueled emergency piston-type IC Engines: Maintain records of all engine usage (such as time or fuel meter readings) and maintenance. S-2 Fire Pump Diesel Engine is subject to such monitoring.

Cooling Tower Source S-3:

In addition to the limitation of Section 6-1-310, a person shall not discharge into the atmosphere from any general operation particulate matter from any emission point, at a rate in excess of that specified in Table 1 of Regulation 6-1-311 for the process weight rate indicated.

The allowable rate of emissions for the cooling tower with 4160 gals/min cooling capacity based on process weight rate should be above 40 lbs/hr. The following calculation shows that the emission at this cooling tower is 4.74 lb/hr. Therefore, monitoring is not required.

Gallon of water = 8.34 lbs

Cooling tower capacity = 4,160 gals/min

Particulate Emission Factors for wet cooling towers = 0.019 lb/10³ gal (AP-42 chapter 13.4 Wet Cooling Towers Table 13.4-1).

Process Weight Rate = (4160 gals/min) (8.34 lbs/gal)
 = (34694.4 lbs/min) ((60 min/hr)
 = 2081664 lbs/hr

Emissions = (4,160 gal/min) / (0.019 lb/10³ gal)
 = (0.07904 lb/min) (60 min/hr)
 = 4.74 lb/hr

<u>SO₂ Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, Combustion Gas Turbine, and S-2, Combustion Diesel Fire Pump	BAAQMD 9-1-301	Ground level concentrations of SO ₂ shall not exceed: 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours	None
S-1, Combustion Gas Turbine	BAAQMD 9-1-302	300 ppm (dry)	Total sulfur content analysis
S-2, Diesel Fire Pump	BAAQMD 9-1-304	Sulfur content of fuel < 0.5% by weight	None
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 18.6	1.39 lb/hr excluding startup and shutdown of turbines	Total sulfur analysis and source test every 8,000 hrs. or every 3 yrs., whichever comes first
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 21	33 lb/hr and 6 tons/year	Total sulfur analysis

SO₂ Discussion:

BAAQMD Regulation 9-1-301

Area monitoring to demonstrate compliance with the ground level SO₂ concentration requirements of Regulation 9-1-301 is at the discretion of the APCO (per BAAQMD Regulation 9-1-501). This facility does not have equipment that emits large amounts of SO₂ and therefore is not required by the APCO to have ground level monitoring.

All facility combustion sources are subject to the SO₂ emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. Therefore, no monitoring is necessary for this requirement.

The standby emergency reciprocating diesel engine uses low-sulfur fuels. Also, this engine is used infrequently and therefore, it is not a large source of SO₂ emissions. The S-2 Fire Pump Diesel Engine will utilize "California" diesel fuel. Therefore, monitoring is not required.

<u>NO_x Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, Combustion Gas Turbine	BAAQMD 9-9-301.1.3	9 ppmv @ 15% O ₂ , dry	CEM and Source test every 8,000 hrs or every 3 yrs, whichever comes first
S-1, Combustion Gas Turbine	BAAQMD 9-9-301.2	0.43 lbs/MW hr or 9 ppmv @ 15% O ₂ , dry	CEM
S-1, Combustion Gas Turbine	NSPS Subpart GG 40 CFR 60.334 (a)(1) and (b)	75 ppmv @ 15% O ₂ , dry	CEM
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 18.1	2.5 ppmv @ 15% O ₂ , dry, 3-hr rolling average except during turbine startup or shutdown	CEM and source test every 8,000 hrs. or every 3 yrs., whichever comes first
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 21	121 lb/day and 16.4 tons/yr	CEM

NO_x Discussion:**BAAQMD Regulation 9 Rule 9**

The turbine is subject to the NO_x emission limitations in District Regulation 9, Rule 9 (Monitoring and Recordkeeping Requirements). This facility has a stationary gas turbine with a heat input rate greater than 150 MMBtu/hr and may operate more than 4000 hours in a 36-month period. Therefore, it is required to have Continuous Emission Monitoring (CEM) (BAAQMD Regulation 9-9-301).

<u>CO Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, Combustion Gas Turbine	BAAQMD Condition #20136, Part 18.3	6 ppmv @ 15% O ₂ , dry 3-hr average except during turbine startup or shutdown	CEM and Source test every 8,000 hrs or every 3 yrs, whichever comes first
S-1, Combustion Gas Turbine	BAAQMD Condition #20136, Part 21	163 lbs/calendar day	CEM

CO Discussion:

BAAQMD Regulation 9 Rule 7

The turbine is subject to the CO emission limitations in District Regulation 9, Rule 7 (Monitoring and Recordkeeping Requirements). The CO limit prescribed in condition #20136 Part 18.3 is 6 ppmv @ 15% O₂. This facility has equipment that emits large amounts of CO. Therefore, is required to have CEM monitoring by the APCO and to complete a source test every 8000 hours or every 3 years whichever comes first.

<u>POC Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 18.4	2 ppmv @ 15% O ₂ , dry except during turbine startup or shutdown	Source test every 8,000 hrs or every 3 yrs, whichever comes first
S-1, Combustion Gas Turbine	BAAQMD Permit Condition No. 20136, Part 21	30.0 lbs/calendar day	Source test every 8,000 hrs or every 3 yrs, whichever comes first

POC Discussion:

BAAQMD Regulation 9-1-301.1.3

Precursor organic compound (POC) emissions from the gas turbine shall not exceed 2 ppmvd @ 15% O₂, except during periods of startup and shutdown as defined in this permit. The POC emission concentration shall be verified by a source test every 8000 hours or every 3 years, whichever comes first. Continuous Emission Monitoring (CEM) is not available for POC. Therefore, CEM monitoring is not required.

<u>NH₃ Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, Combustion Gas Turbine	BAAQMD Condition #20136, Part 18.2	10 ppmv @ 15% O ₂ , dry except during turbine startup or shutdown	Calculation based on source test and NH ₃ to NO _x ration at inlet to SCR
S-1 Combustion Gas Turbine	BAAQMD Condition #20136, Part 18.2	10 ppmv @ 15% O ₂ , dry except during turbine startup or shutdown	Source test every 8,000 hrs or every 3 yrs, whichever comes first

NH₃ Discussion:

BAAQMD Regulation 9-1-301.1.3

Continuous Emission Monitoring (CEM) is not available for NH₃. The NH₃ monitoring is based on the source test and NH₃ to NO_x ratio at the inlet to SCR. The slip calculation and correction factor is determined by source test every 8000 hours or every 3 years, whichever comes first.

Changes to permit:

Table VII-A: The monitoring frequency for limits requiring source test validations are incorrectly listed as, “Periodic/Annual” and will be updated to state, “Periodic/8000 hours or 3 years, whichever comes first.”

The Subpart GG NOx limit identifies the incorrect citation; it will be updated to NSPS 40 CFR 60.334(b).

Per BAAQMD Permit Condition 20136 Parts 18.2 and 23b, the monitoring type for NH3 will be use of a District approved calculation and verified by source test, not by molar ratio calculation.

The monitoring frequency for heat input will be corrected to align with BAAQMD Permit Condition 21036, Part 23d.

Incorrect citations of Condition 20057 have been changed to Condition 20136.

The requirements for certification of fuel sulfur for S-2, Diesel Firewater Pump, have been deleted because there is no permit condition for certification. In California, these certifications are unnecessary because the available diesel fuel contains 15 ppm sulfur.

Citations for SIP Regulation 9, Rule 1, sections 301 and 302 were added.

Table VII-B:

Citations for SIP Regulation 9, Rule 1, sections 301 and 302 were added.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to permit:

Table VIII will be changed as follows:

- The test method for determining the POC limit will be changed from ARB Method 100 to EPA Method TO-12, Method for the Determination of Non-Methane Organic Compounds (NMOC) in Ambient Air Using Cryogenic Preconcentration and Direct Flame Ionization Detection (PDFID). EPA Method TO-12 has a much lower detection limit and is designed to monitor ambient air. Method TO-12 allows the facility to speciate the results which can assist in determining the source of contamination.

IX. Title IV Acid Rain Permit

Changes in this action

The permit format has been updated to conform to current District practice.

X. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review

permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has the first type of permit shield.

XI. Revision History

This section contains the details of issuance and revisions for each permit.

Title-V permit renewal Application 28229 will be added to this Section.

XII. Glossary

This section contains terms that may be unfamiliar to the general public or EPA.

Changes in this action

None

D. Alternate Operating Scenarios:

No alternate operating scenarios have been requested for this facility.

E. Compliance Status

The responsible official for Creed Energy Center, LLC submitted a signed Certification Statement form dated December 14, 2017. On this form, the responsible official certified that the following four statements are true:

Based on information and belief formed after reasonable inquiry, the sources identified in the Applicable Requirements and Compliance Summary form that are in compliance will continue to comply with the applicable requirements;

Based on information and belief formed after reasonable inquiry, the sources identified in the Applicable Requirements and Compliance Summary form will comply with future-effective applicable requirements, on a timely basis;

Based on information and belief formed after reasonable inquiry, information on application forms, all accompanying reports, and other required certifications is true, accurate, and complete;

All fees required by Regulation 3, including Schedule P have been paid.

F. Differences Between the Application and the Proposed Permit

The Title V permit application was submitted on August 24, 2016. This version is the basis for constructing the proposed Title V permit. There are no differences between this renewal application and the proposed renewal permit.

APPENDIX A

GLOSSARY

ACT

Federal Clean Air Act

APCO

Air Pollution Control Officer

ARB

Air Resources Board

BAAQMD

Bay Area Air Quality Management District

BACT

Best Available Control Technology

Basis

The underlying authority that allows the District to impose requirements.

CAA

The federal Clean Air Act

CAAQS

California Ambient Air Quality Standards

CAPCOA

California Air Pollution Control Officers Association

CEM

Continuous Emission Monitor

CEQA

California Environmental Quality Act

CFR

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CO

Carbon Monoxide

Cumulative Increase

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District

The Bay Area Air Quality Management District

dscf

Dry Standard Cubic Feet

EPA

The federal Environmental Protection Agency.

Excluded

Not subject to any District regulations.

FDOC

Final Determination of Compliance (FDOC), prepared pursuant to District Regulation 2, Rule 3, Power Plants.

Federally Enforceable, FE

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

HAP

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

HRSG

Heat Recovery Steam Generator

Major Facility

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MFR

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

MOP

The District's Manual of Procedures.

NAAQS

National Ambient Air Quality Standards

NESHAPS

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC

Non-methane Hydrocarbons (Same as NMOC)

NMOC

Non-methane Organic Compounds (Same as NMHC)

NO_x

Oxides of nitrogen.

NSPS

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

Offset Requirement

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NO_x, PM₁₀, and SO₂.

Phase II Acid Rain Facility

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC

Precursor Organic Compounds

PM

Particulate Matter

PM₁₀

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

PUC

Public Utilities Commission (California)

SIP

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO₂

Sulfur dioxide

THC

Total Hydrocarbons (NMHC + Methane)

Title V

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC

Total Organic Compounds (NMOC + Methane, Same as THC)

TPH

Total Petroleum Hydrocarbons

TRMP

Toxic Risk Management Plan

TSP

Total Suspended Particulate

VOC

Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m ²	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year