

**Shasta County Department of Resource Management
Air Quality Management District
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**Evaluation Report
and
Statement of the Legal and Factual Basis
Regarding Proposed Renewal of a
Title V Operating Permit to
City of Redding
Redding Power Plant**

for Equipment Located at:

**17120 Clear Creek Road
Redding, CA 96001**

AUGUST, 2015

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Title V Operating Permit
City of Redding, Redding Power Plant**

Introduction

The District proposes to issue a renewal of the Title V operating permit for the City of Redding, Redding Power Plant. The renewal will incorporate several condition modifications requested in the renewal application and subsequent written communications. The evaluation, application, and the proposed Title V operating permit, sets forth the legal and factual basis for the conditions contained in the proposed renewed permit.

Facility Description

The City of Redding operates the Redding Power Plant on Clear Creek Road in southwest Redding. The plant was originally issued an Authority to Construct (ATC) by the Shasta County Air Quality Management District to California-Bio Resources on November 18, 1985. This ATC was issued for a 26-megawatt resource recovery project that included a sawmill. A name change occurred in 1987. A Permit to Operate was issued for the facility in 1989. The City of Redding purchased the facility in 1991, after it went into receivership. In 1993, an Authority to Construct was granted by the District to modify the boilers to be fired on natural gas or propane. The District Permit to Operate for the natural gas boilers was issued in 1994. This Permit to Operate limits facility-wide criteria pollutant emissions to less than the PSD major source threshold of 100 tons per year. These utility boilers were decommissioned in January, 2012.

The City of Redding received a District issued ATC dated July 13, 1993, to add three gas-fired turbine generators for use during peak power demands. Construction of the three units was completed in 1996.

The City of Redding was issued an ATC for the combined cycle turbine generator (Unit 5) on March 30, 2001. The unit includes a 43 MW generator and steam generating capability to turn the existing power turbine associated with the utility boilers. Emissions from this plant are subject to Title IV Acid Rain regulations. This unit was completed in 2002, and received a District-issued Permit to Operate in 2003. The District issued an Authority to Construct on February 10, 2004, for the installation of a steam dump condenser to allow operation of Unit 5 during periods when the utility boiler turbine is unavailable. On February 3, 2009, the District received an application for Authority to Construct for a modification to Unit 5 that would allow operation at higher capacity with no change in emission limits of conventional or hazardous pollutants. A modified District Permit to Operate was issued for Unit 5 on January 12, 2010, and this turbine was deemed subject to 40 CFR part 60, subpart KKKK as a modified source.

Redding Electric Utility submitted an application for Authority to Construct for another gas-fired turbine generator on November 3, 2006. The District issued an Authority to Construct for the new turbine on February 16, 2007, after the City of Redding obtained approval of a negative declaration from the Board of Administrative Review.

The Authority to Construct was for one (1) 45 MW Siemens SGT800 Gas Turbine (508 MM Btu/Hr), one (1) 155,000 lbs/hr ATX Express Heat Recovery Steam Generator, one (1) EMx™ Emission Control System for NOx and CO, one (1) 600 gal/min Water Cooling Tower for Turbine Lube Oil, and one (1) mist eliminator.

The facility's Title V permit was reissued on December 27, 2010, and modified to include Unit 6.

On October 25, 2012, the District received the Title V modification application for Redding Power's Unit 6 to allow a longer startup time. The renewal application was deemed administratively complete on October 29, 2012, with notification sent to EPA, CARB, and Redding Power. A revised District-only Permit to Operate was issued to Redding Power for Unit 6 (Permit #06-PO-42) to allow the longer startup time. The startup period for the turbine exempts the required BACT determined NOx emission limit for a specified time. The modified Title V permit was issued by the District on February 4, 2013.

Permit Modification at Renewal

Many permit conditions will require modification or deletion due to the elimination of propane as a fuel, old startup conditions, shut-down of the Unit 4 boilers, and redundancy.

EMISSIONS

Emissions (tons/yr) are summarized below for the last three years.

<i>YEAR</i>	PM10	NOx	CO	SOx	VOC
<i>2012</i>	0.60	2.00	1.72	0.13	0.53
<i>2013</i>	1.22	3.49	1.85	0.39	0.88
<i>2014</i>	3.00	4.16	1.02	1.21	0.98

APPLICABLE FEDERAL REQUIREMENTS:

Based upon information submitted in the application and the District's review, the following applicable federal requirements apply to this facility:

SIP Requirements:

Rule 1:2 Definitions

This rule lists the definitions used throughout the District rule book. This rule is an administrative rule. The District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 2:1A Permits Required

These are the District's requirements for preconstruction permits and permits to operate. This rule is an administrative rule. The District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 2:5 Exemptions

This rule lists the types of devices or operations that the Air Pollution Control Officer may exempt. This rule is addressed in Rule 5, Attachment 1 (insignificant activities), therefore, the District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 2:6 Open Burning (2:6.a.4.c & 2:6.b)

This rule lists the regulations required to conduct open burning operations. However, the City of Redding Power Plant does not conduct open burning operations at this facility and the District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 2:7 Conditions for Open Burning

This rule lists the regulations required to conduct open burning operations. However, the City of Redding Power Plant does not conduct open burning operations at this facility and the District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 2:12 Expiration of Applications

This rule required that an Authority to Construct application will expire after the Permit to Operate has been issued or eighteen (18) months after the Authority to Construct was issued unless construction has commenced on the site or a time extension is granted by the Air Pollution Control Officer. It also states that a Permit to Operate application will expire two (2) years after being issued. This rule is an administrative rule and the District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 2:14 Testing Facilities

This rule requires the operator to provide and maintain testing and sampling facilities as specified in the Authority to Construct or Permit to Operate. This requirement is included in the proposed modified Title V permit.

Rule 2:21 Defacing Permit (formerly Rule 2:24)

This rule requires that a permit not be defaced. This requirement is included in the proposed modified Title V permit.

Rule 2:23 Posting of Permit

This rule requires that the permit be posted. This requirement is included in the proposed modified Title V permit.

Rule 2:25 Public Records

This rule lists the requirements for what may or may not be public records and includes labeling requirements. This requirement is included in the proposed modified Title V permit.

Rule 3:1 Applicability of State Laws

This rule adopts by reference all state and federal rules for air contaminants. This requirement is included in the proposed modified Title V permit.

Rule 3:2 Specific Air Contaminants

This rule specified limits for emissions of:

- 1) Combustion particulate matter in gr/dscf;
- 2) Particulate matter less than or equal to 10 microns in gr/dscf;
- 3) All other particulate matter in gr/dscf;
- 4) Particulate matter process weight: maximum hourly emissions as a function of process weight in tons per hour;

- 5) Oxides of Sulfur (as SO₂) in ppm;
- 6) Oxides of Nitrogen (as NO₂) in ppm; and
- 7) Opacity.

The requirements of this rule are included in the proposed modified Title V permit. Other permit conditions found in this Title V permit which limit emissions from Redding Power Plant are more stringent than the emission limitations of this rule, therefore, subsume the requirements of this rule for the particular emission unit. (See section below titled “New Source Performance Standards.”)

Rule 3:4 Industrial Use of Organic Solvents

This rule requires that a control device achieving 85 percent (85%) control be utilized unless listed lb/day emission limits of solvents into the atmosphere are met. This requirement is included in the proposed modified Title V permit.

Rule 3:6 Circumvention

This rule requires that emissions cannot be concealed by circumvention. This requirement is included in the proposed modified Title V permit.

Rule 3:9 Recommendations of Control Officer

This rule states that no recommendation of the Air Pollution Control Officer is a guarantee that the recommended device or process will result in compliance. This rule is an administrative rule, and the District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 3:11 Local Rules

This rule states that any city or public agency, having authority to do so, may enact by ordinance more restrictive rules than contained in the District’s rule book. Because this permit is a federal permit and does not concern local rules, the District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 3:17 Organic Solvent Degreasing Operations

This rule required degreasing operations to meet design and operating practice specifications. This rule was repealed by the District when the District adopted a revised organic solvent operations rule. The new Rule 3:17 has not been submitted for inclusion into the SIP and, therefore, the District feels that the environmental benefits are not such that this rule should be included in the proposed modified Title V permit.

Rule 5 Additional procedures for issuing permits to operate for sources subject to Title V of the Federal Clean Air Act Amendments of 1990

This rule lists the requirements of the Title V program. All specific applicable requirements imposed by this rule are included in the proposed modified Title V permit.

NON-SIP Requirements:

40 CFR 82.131

This regulation requires that equipment utilizing ozone depleting substances be maintained by certified technicians. These requirements are included in the proposed modified Title V permit.

New Source Performance Standards (NSPS)

This facility is subject to 40 CFR Part 60 – Standards of Performance for New Stationary Sources Subparts A, GG, KKKK, Appendix A, Appendix B, and Appendix F. The requirements contained in Subpart Db no longer apply due to the decommissioning of the gas-fired power boilers. The requirements of these standards are included and are, in some instances, subsumed by other more stringent conditions in the proposed modified Title V permit. Units 5 & 6 are subject to Subpart KKKK.

Subpart A Section 60.1 through 60.19

The general provisions of the New Source Performance Standards apply to Units 1 through 6. Unit 5 & 6 requirements are generally subsumed by requirements in 40 CFR parts 72, 73, 75, 77, and 78.

Subpart GG

Only the peaking plant, Units 1, 2, and 3 will be subject to Subpart GG.

Subpart KKKK

The following applicability and streamlining demonstration for 40 CFR Part 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines will compare and identify where a more stringent rule applies to this facility. This Unit 6 turbine was constructed or modified after February 18, 2005. Unit 5 is also now subject to Subpart KKKK since it was modified in 2009.

60.4305 Applicability – Subpart KKKK applies to Units 5 and 6.

60.4310 Exemptions – Units 5 and 6 not exempt from Subpart KKKK.

60.4315-60.4330 Emission Limits – These sections set the standard for nitrogen oxide (NO_x) and sulfur dioxide (SO₂). The NO_x emission limit listed in Table 1 of this Subpart is 25 ppm at 15 percent (15%) O₂ or 1.2 lb/MWH. The Unit 5 NO_x limit is subsumed by the BACT limit for NO_x contained in the District issued permit of 2.5 ppmvd, 1-hour block average @ 15% O₂. The Unit 6 NO_x limit is subsumed by the BACT limit for NO_x contained in the District issued Permit to Operate of 2.0 ppmvd, 1-hour block average @ 15% O₂. The startup period of 4 hours exempts the BACT emission limits only for both Units 5 & 6, but not the NSPS limit of 25 ppm @ 15% O₂ for the 4-hour rolling average and 30-day rolling average. The startup period of approximately 4 hours is run at around 25% load at which Table 1 of Subpart KKKK lists the NO_x limit of 96 ppm at 15% O₂. At a maximum emission rate of 40 lbs/hr, a NO_x calculation of 86 ppm @ 15% O₂ subsumes the below 75% load NO_x limit in Table 1 of 96 ppm. These standards were recently reaffirmed for startups of gas turbines by EPA in the Federal Register on October 26, 2012.

The revised 4-hour startup NO_x mass emission limit is based on the permit's original 80 pounds for the first two hours plus 3.7 pounds per hour for the final two hours of the four hour startup period. Therefore, no permitted emission increase has occurred.

60.4333 General Requirements – Emissions must be minimized at all times including startup, shutdown and malfunction. A condition is included in the Title V permit requiring that emissions be minimized at all times.

The heat recovery system for Units 5 & 6 will use a common steam header but emissions will be measured by separate CEMS operating on separate emissions stacks. Compliance with each individual unit will be demonstrated utilizing separate analyzers and data acquisition.

60.4335 Water or Steam Injection – Units 5 & 6 do not use water or steam injection for NO_x control.

60.4340-60.4350 Demonstrate continuous compliance for NO_x emissions – The use of NO_x and O₂ CEMS will be utilized to demonstrate continuous compliance. The modification incorporated into the February 4, 2013 permit revision includes NO_x and O₂ CEMS's meeting the requirements of Section 60.4345. The data generated will be evaluated using the procedures described in Section 60.4350. These requirements are included in the proposed modified Title V permit.

60.4355 Parameter Monitoring Plan – This monitoring method will not be utilized.

60.4375-60.4395 Reporting – Excess emission reporting requirements are contained in the Title V permit.

60.4420 Definitions – This section will not be included in the Title V permit.

40 CFR Part 63 – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines; Proposed Rule

The proposed rule was published in the Federal Register on January 14, 2003. It has been signed as of August 29, 2003, as Subpart YYYY, but not yet published. It is similar to the Industrial/Commercial/Institutional boiler rule in that it applies to a major HAP facility. It would implement HAP reductions on all gas turbines. On April 7, 2004, EPA published a proposal (finalized on August 18, 2004) to stay this regulation for turbines in the lean premix and diffusion flame categories. The Unit 6 at Redding Power Plant is a diffusion flame turbine and will not be subject to this Subpart. Additionally, the City of Redding, Redding Power Plant is not subject to Part 63 since the facility potential to emit HAP's are below the 10 ton single limit and the 25 ton aggregate limit.

40 CFR Part 72, 73, 75, 77, and 78 – Acid Rain Program, Title IV of the 1990 Clean Air Act

The requirements of the acid rain program will be modified for clarity as requested by REU. .

Prevention of Significant Deterioration (PSD) Permitting

This regulation sets the procedures for the review of new or modifications of existing major stationary emission sources. The Redding Power Plant is no longer a PSD major source. However, since the Redding Power Plant was originally issued a PSD permit as the Authority to Construct for the facility, the conditions of the Authority to Construct are incorporated in the proposed modified Title V permit unless a specific condition was revised (or added) in subsequently issued Permits to Operate for the utility boilers. This permit was last revised on March 25, 2002, when the Shasta County Air Quality Management District still had delegated PSD authority.

Risk Management Plans Preparation and Registration, 112(r)

Section 112(r), Accidental Release Prevention and Management Program, affects facilities at which certain substances are present above the specified annual threshold. Redding Power Plant, is not required to submit a 112(r) Risk Management Plan.

Requirements That Do Not Apply

Rule 2:4 Permit to Sell or Rent (Incinerators)

This rule pertains to the selling and/or use of incinerators. There are no incinerators at this facility. Therefore, this requirement is not applicable to this facility.

Rule 2:8 Agricultural Burning

This rule applies only to agricultural burning operations. This facility does not conduct agricultural operations. Therefore, this requirement is not applicable to this facility.

Rule 3:5 Agricultural Uses

This rule exempts discharges in the course of applying agricultural materials. This facility does not apply agricultural materials. Therefore, this requirement is not included in the proposed modified Title V permit.

Rule 3:12 Reduction of Matter of Animal Origin (Except Curing of Glue)

This rule mandates controls for reducing animal matter. This facility does not reduce animal matter as part of the process. Therefore, this requirement is not included in the proposed modified Title V permit.

Rule 3:14 Petroleum Dry Cleaners

This rule mandates control and operating practices for dry cleaning operations. This facility does not operate a dry cleaning machine. Therefore, this requirement is not included in the proposed modified Title V permit.

Rule 3:15 Cutback Asphalt

This rule requires that certain types of cutback asphalt not be used. This facility does not apply cutback asphalt. Therefore, this requirement is not included in the proposed modified Title V permit.

MACT Standards for Halogenated Solvent Cleaning Operations, Section 63.460

This regulation requires degreasers using certain halogenated solvents to meet certain requirements. Because the degreaser does not use solvents regulated by the standard, the maximum achievable control technology (MACT) standard is not an applicable requirement for this facility. The permit is conditioned so that the permittee notifies the District prior to changing the type of solvent used at the facility.

MACT Standards for Industrial Process Cooling Towers, Section 63.400

This regulation applies to major source cooling towers utilizing chromium compounds for water treatment. Redding Power Plant does not use chromium compounds for water treatment of its cooling water.

MACT Standards for Reciprocating Internal Combustion Engines.

The facility operates a 126 hp natural gas fired internal combustion engine for emergency for emergency power generation. This engine is subject to 40 CFR Part 63, Subpart ZZZZ. It is an existing emergency spark ignited engine at an area source. A condition will be added to the Title

V permit to require Change oil and filter every 500 or annually; inspect spark plugs every 1,000 hours.

Statement of the Legal and Factual Basis for the Terms of the Proposed Permit

Statutory and Regulatory Authorities: Pursuant to Shasta County AQMD Rule 5, ADDITIONAL PROCEDURES FOR ISSUING PERMITS TO OPERATE FOR SOURCES SUBJECT TO TITLE V OF THE FEDERAL CLEAN AIR ACT AMENDMENTS OF 1990 (adopted 9-28-93 and amended 5-8-01), 40 CFR 70, 72, 73, 74, 75, 76, 77, and 78 and Title IV and V of the Clean Air Act the Shasta County Air Quality Management District issues this permit.

I. BACKGROUND

The 1990 Federal Clean Air Act Amendments established a federal permit system for power plants under Title IV known as the “Acid Rain Program.” Shasta County AQMD Rule 5, Section I, implements the Clean Air Act requirements for acid rain units. This implementation is accomplished by including all the Title IV requirements in the Title V permit.

The Shasta County AQMD received the Acid Rain Permit Application for the City of Redding Unit 6 on November 8, 2006, and the application was deemed complete in a letter sent to the City of Redding Designated Representative on August 2, 2007.

II. ACID RAIN PERMIT REQUIREMENTS

Once the Acid Rain permit application is deemed complete, the District shall prepare:

- A. (i) A draft Title V permit incorporating the Title IV requirements. The draft Acid Rain permit shall include the following as specified in District Rule 5.IV.19:
 - a. The sulfur dioxide emissions from an acid rain unit shall not exceed the annual emissions allowances (up to one ton per year of sulfur dioxide may be emitted for each emission allowance allotted), that the source lawfully holds for that unit under Title IV of the CAA, or the regulations promulgated pursuant to Title V.
 - b. Any increase in an acid rain unit’s sulfur dioxide emissions authorized by allowances acquired pursuant to Title IV of the CAA shall not require revision of the acid rain portion of the operating permit provided that such increases do not require permit revision under and other applicable Federal requirement.
 - c. Although there is no limit on the number of sulfur dioxide allowances held by a source, a source with an acid rain unit shall not use these emission allowances as a defense for noncompliance with any applicable Federal requirement or District requirement, including District Rule 2:1.

- d. An acid rain unit's sulfur dioxide allowances shall be accounted for according to the procedures established in regulations promulgated pursuant to Title IV of the CAA.
 - (ii) A statement of basis which contains the elements set forth in 40 CFR 72.62 (incorporated herein by this reference).
- B. After the draft Acid Rain permit modification and statement of basis have been prepared, the District shall submit a copy of these documents to U.S. EPA.
- C. Public notice and comment on the Acid Rain/Title V permit modification shall thereafter be performed pursuant to the provisions contained in Shasta County AQMD Rules, Rule 5.V.D.1.b. (1-5).
- D. Following the close of the public comment period, the District shall incorporate all necessary changes into the draft Acid Rain/Title V permit and issue a proposed modified Acid Rain/Title V permit.
- E. Following the issuance of the proposed modified Acid Rain permit, the District shall submit the proposed Acid Rain/Title V permit to U.S. EPA for review.
- F. Following U.S. EPA review of the proposed modified Acid Rain/Title V permit, the District shall incorporate any required changes and issue or deny the modified Acid Rain/Title V permit or, in alternative, allow U.S. EPA to issue or deny the modified Acid Rain/Title V permit.
- G. No Acid Rain permit (including a draft or proposed permit) shall be issued unless U.S. EPA has received a certificate of representation for the designated representative of the facility containing an affected unit in accordance with 40 CFR 72.25 inclusive.
- H. The District shall issue, pursuant to the provisions of Rule 5, Acid Rain permits to all facilities containing an affected unit and subject to Phase II of the Acid Rain Program so long as:
 - (i) The Federal Operating Permit Program for the District has been approved, including partial or interim approval, by U.S. EPA.
 - (ii) The designated representative for the facility submitted a timely and complete Acid Rain permit application.

- (iii) Have an effective date which is the later of January 1, 2000, or where the affected unit is subject to the provisions of 40 CFR 72.6(a)(3), the deadline for monitor certification under 40 CFR 75.
- (iv) An Acid Rain permit issued pursuant to Rule 5, shall be effective for a period of five (5) years after the date of issuance.
- (v) An Acid Rain permit issued pursuant to Rule 5, shall be binding on any new owner or operator or upon any new designated representative of any facility containing an affected unit governed by the permit.
- (vi) Invalidation of the Acid Rain portion of a Federal Operating permit shall not affect the continuing validity of the remainder of the Federal Operating permit, nor shall invalidation of any other portion of the Federal Operating permit affect the continuing validity of the Acid Rain Portion of the Federal Operating permit.

III. CONCLUSIONS AND RECOMMENDATION

The proposed modified Title IV Acid Rain Permit for the Redding Power Plant owned by the City of Redding, Redding Electric Utility is an affected facility with respect to the requirements of District Rule 5, ADDITIONAL PROCEDURES FOR ISSUING PERMITS TO OPERATE FOR SOURCE SUBJECT TO TITLE V OF THE CLEAN AIR ACT AMENDMENTS OF 1990 (adopted 9-28-93 and amended 5-8-01), 40 CFR Parts 72, 73, 74, 75, 77, and 78 and Title IV of the Clean Air Act.

Therefore, it is recommended that this modified Title V Federal Acid Rain Operating Permit be issued.