



**TUOLUMNE COUNTY
AIR POLLUTION CONTROL DISTRICT
TITLE V OPERATING PERMIT RENEWAL
EVALUATION REPORT / STATEMENT OF BASIS**

Company Name: **Pacific Ultrapower Chinese Station**

Mailing Address: 8755 Enterprise Drive, Jamestown, CA 95327

Facility Location: 8755 Enterprise Drive, Jamestown, CA 95327

TCAPCD Federal Operating Permit No: 55-0032-TV-01

Type of Facility: Biomass Fired Electrical Power Generation

Responsible Officials: Steven Gross, Chief Executive Officer, IHI Power Services
Russ Johnston, VP Operations, West Region, Covanta Energy
Steve Arreguin, Plant Manager PUCS

Facility Contact: Steve Arreguin
Title: Plant Manager
Phone Number: (209) 984-4660

SIC: 4911 - Electric Services
NAICS: 221119 - Other Electric Power Generation

Application Processed by: Bill Sandman, Deputy APCO
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I. INTRODUCTION

The Tuolumne County Air Pollution Control District (District) intends to grant a Title V Operating Permit to Pacific Ultrapower Chinese Station for equipment located at its Tuolumne County biomass fired electrical generating facility, in Chinese Camp, California. This document sets forth the legal and factual basis for the conditions contained in the proposed Permit. The attached proposed Permit represents a renewal of the initial Permit and several amendments to permit conditions in accordance with Rule 500 - *Additional Procedures for Issuing Permits to Operate for Sources Subject to Title V of the 1990 Federal Clean Air Act Amendments, Amended 6/19/01, Final Approval by U.S. EPA 68FR65637, 11/21/2003* (Rule 500). A copy of the Permit application is in Appendix A.

II. FACILITY DESCRIPTION

Pacific-Ultrapower Chinese Station (PUCS) is located near the town of Chinese Camp off of SR 120 in Tuolumne County. PUCS is a 25.6 Gross MW electrical generating facility combusting wood fuel. It is the only biomass fired facility in Tuolumne County that operates exclusively for electrical generation purposes. The facility's main components are the boiler system to run the turbine generator. Ancillary equipment include: fuel and ash transfer systems; processing and storage systems; and, maintenance equipment. The facility is designed to utilize wood fuel from urban, agricultural, and forest biomass, burning over 210,000 bone dry tons per year.

This facility is a major source due to the source's potential and actual annual emissions of nitrogen oxides and carbon monoxide exceeding 100 tons per year. PUCS was issued a initial Title V permit on February 23, 2007. An Administrative Permit Amendment was granted and a revised Title V Permit was issued on April 10, 2009. The existing Permit expiration date was February 23, 2012.

The District approved PUCS' permit renewal application on July 7, 2011. The renewal application included a request for minor modifications of Permit 55-0032-TV-001. A copy of the document for is included in Appendix C and addressed in Section V below.

III. AMBIENT AIR QUALITY STATUS

Tuolumne County is designated nonattainment for the federal 8-hr 2008 and 2010 Ozone standards. Tuolumne is part of the Southern Mountain Counties Nonattainment Area (SMCNA) which includes Mariposa County. Due to the reconsideration of the 2008 Standard and no guidance received to date on the 2010 Standard, it is uncertain at this time what air quality classification the SMCNA will receive. Tuolumne County is also nonattainment for the California 1-hr and 8-hr Ozone standards. Tuolumne is either in attainment or unclassified for all other criteria pollutants.

IV. PROCESS AND CONTROL EQUIPMENT DESCRIPTION

The facility's main process equipment is a 370 MMBTU/hr fluidized bed combustion (FBC) boiler with a 13 MMBTU/hr propane fired start up burner. The boiler has a design rate of approximately 206,000 lbs/hour of steam. Support equipment include: receiving truck dumps; fuel and ash conveyors; fuel screening; fuel and ash storage; and, fuel grinders, and sand storage and conveying

for the FBC. Air pollution controls for the boiler consist of selective noncatalytic (ammonia) reduction, multiclones, and an electrostatic precipitator. Fuel and ash controls consist of wind screens, water sprays, enclosures, and stacker height minimization.

Each of the following emissions units have been constructed pursuant to the requirements of a approved Permit to Construct and have been issued in accordance with Rules 401 - *Permit Required* and/or Rule 501 - *Permit Required*. Each of the equipment listed is being operated in accordance with District Permit to Operate 55-0032. The following represents a summary of process equipment and control equipment:

Main Process Equipment:

- Two Biomass Fuel Receiving Truck Dumps: TD - 101, 102
- Nine Fuel Receiving/Feed Conveyors: CV- 101, 102, 103, 109, 112, 113, 114A, 114B, 115
- Two Reclaimers: CV - 107, 110
- Two Disk Screen (North & South)
- Two Hammer Mill/Knife Hogs
- One 370 MMBTU Biomass Fired Fluidized Bed Combustor/Boiler with 13 MMBTU - Propane Fired Startup Burner
- Eight Ash Handling Conveyors: CV - 100, 120, 121, 122, 123, 124, 125, 126
- One Ash Batch Loadout Bin
- One Sand Silo for Fluidized Bed Combustor

Control Equipment:

- Ammonia injection (SNCR)
- Tertiary Air Controls
- Multiclone
- Electrostatic Precipitator
- Water Sprays
- Conveyor Enclosures
- Wind Screens
- Vehicle Speed Limitations
- Stacker Drop Height Minimization

V. INSIGNIFICANT ACTIVITIES:

The list of insignificant activities provided by the applicant in the permit application has been approved by EPA. All exempt equipment is listed in Appendix A, Form H, pgs 33 and 34 of the Permit Application. References of exempt or insignificant equipment and activities are listed below pursuant to District Rule 402 - *Exemptions to Rule 401* and Rule 500 (*Title V*):

- Safety Kleen - Parts Cleaning Stoddard Solvent Tank; Capacity: NA; Controls: Separate Sump / Closed Lid

- Emergency IC Engine - Fire Water Pump; Capacity: 140 bhp; Controls: NA
- Brazing, Soldering, or Welding Equipment
- Comfort Air Conditioning Systems
- Vehicles used to Transport Passengers or Freight
- Plant maintenance, repair, and upkeep activities
- Combustion emissions from mobile sources
- Equipment use Exclusively for Steam Cleaning

VI. MINOR PERMIT MODIFICATION

As part of the Title V Permit Renewal process PUCS has requested several amendments to existing permit conditions. These amendments are intended to clarify emission limits during start up, shut down, and upset conditions; establish an averaging time for the foreign material weight percent limit of the fuel; fuel definitions; monitoring, testing, and reporting requirement amendments consistent with federal requirements; establishing clear and consistent definitions for start up and shut down, and providing relief from visible emissions requirements during start up, shutdowns, and upsets, consistent with SIP Rule 203.

With respect to the new start up/shutdown limits for NO_x and CO, the District is establishing these limits consistent with September 1999 EPA guidance, which allows enforcement discretion during start up/shutdown. The District and PUCS has based these new limits on actual emissions and what is technologically feasible of the control equipment and boiler during these periods. PUCS is and has been operating at these emissions levels since start up of the facility in the 1980s, and that these limits should have been incorporated in to the original Permit to Construct. The fact that the limits are new does not change existing operating parameters, but only allows equitable treatment consistent with EPA guidance. See Appendix C for PUCS document requesting the changes and the justification for those changes. A summary of the minor modification elements include:

- Administrative wording changes to clarify permit conditions, which include: deleting RATA reporting requirements for quarterly reports and amend the source test report submittal from 30 days to 60 days (approved, conditions 41, 45.c; consistent with 40CFR 60.8)
- A request for a start up and shut down (SU/SD) emissions limits for carbon monoxide and nitrogen oxides (approved, conditions 50, 52; consistent with September 20, 1999 Memo, *SIP Policy Regarding Excess Emissions During Malfunction, Start Up and Shutdown*);
- Revised definition of what constitutes a SU/SD condition (approved, condition 14, consistent with September 29, 1999 Memo);
- Revised foreign material in fuel condition to reflect an averaging period of one calendar year (approved, condition 28.c; consistent with SIP Rule 505 - *Conditional Approval*);
- Allowances for a maximum of 10% of the boiler steam capacity during source testing (approved, condition 45.a.i; consistent with 40CFR 60.8.c-"based on representative performance of the affected facility");
- Exemption for Rule 202 (Visible Emissions) of not more than 30 minutes in any 24 hour period during SU/SD conditions (approved, condition 47.b; consistent with Rule 203.J)

VII. DISTRICT ESTABLISHED PERMIT AMENDMENTS:

- Revised "Defense to Enforcement Action" and added Emergency Provisions (conditions 12, 13);
- Added Process Weight PM criteria per SIP Rule 211 and 212 (condition 24);
- Amended definition and clarified acceptable fuels. Disallowing wet fuel to be used as a affirmative defense to excess emissions (condition 28);
- Added portable equipment reporting requirements (condition 30);
- Added end of year administrative reporting requirements (condition 35);
- Amended emergency, upset/breakdown/malfunction condition for clarity and consistency with EPA policy (condition 38);
- Adding a condition that allows the APCO to require more frequent monitoring of CO (condition 45.);
- Adding SIP Rule (210, 407, and 408) that have not been referenced in previous permit (conditions 48 and 50); and,
- Adding ammonia testing and limits for SNCR system (conditions 45 and 53).

VIII. PERIODIC MONITORING REQUIREMENTS:

All Title V Permits are required to contain sufficient monitoring requirements to certify compliance of the source using reliable data from relevant time periods. 40 CFR Part 70 and Section 114 of the federal CAA sets the responsibility for the knowledge of source operations on the owner/operator. Emissions units subject to an applicable requirement must contain monitoring, compliance certification, and reporting provisions to assure compliance.

PUCS has included compliance certification forms and a certification statement as an attachment to its Title V Renewal application, along with a copy of the Compliance Assurance Monitoring Plan. Monitoring requirements consistent with the Periodic Monitoring criteria can be found in sections IV through IX of PUCS' proposed Permit and CAM Plan.

The District assessed the need whether continuous monitoring of CO from the boiler exhaust stack was required. The determination not to require additional monitoring was based on the fact that similar biomass fired fluidized bed boilers do not have the fuel moisture related CO issues such as spreader stoker boilers. The District also reviewed CO emissions data from an almost identical boiler with that has annual emissions less than 50 tons per year. PUCS when originally permitted was not required to monitor for CO emissions, since there have been no compliance issues or major modifications associated with boiler operations, there is deemed to not be a need for additional monitoring.

The District assessed the need for monitoring of ammonia slip from the SNCR process to reduce NOx emissions. The District determined that there was a need for both a slip limit of 20 ppmv and annual testing of excess ammonia. These requirements have been included in conditions 45 and 53.

IX. APPLICABLE FEDERAL REQUIREMENTS

Based upon information submitted in the application and the district's review, the following applicable federal requirements apply to PUCS. PUCS is in compliance with all applicable requirements unless otherwise noted:

Rule 202 - VISIBLE EMISSIONS (SIP approved on 12/6/79)
This rule specifies the allowable standards for opacity for all processes (20%).

Rule 203 - EXCEPTIONS - VISIBLE EMISSIONS (SIP approved on 5/27/82)
This rule allows exemptions for specific sources, including sources burning agricultural residues to produce energy, during start up, shut down, and upset conditions of up to 30 minutes in any 24 hour period.

Rule 205 - NUISANCE (SIP approved on 8/22/77)
This rule specifies that no source shall create a public nuisance and establishes standards for determining when a public nuisance has occurred.

Rule 207 - PARTICULATE MATTER (SIP approved on 5/18/81)
This rule specifies the standards for particulate matter processes exclusive of combustion processes.

Rule 210 - SULFUR EMISSIONS (SIP approved on 8/22/77)
This rule requires that a source not discharge from any single source, sulfur compounds calculated as sulfur dioxide (SO₂) emissions in excess of 0.2 percent.

Rule 211 - PROCESS WEIGHT PER HOUR (SIP approved on 8/22/77)
This rule requires that emissions of particulate matter do not exceed those limits as stated in Rule 212 - Process Weight Table.

Rule 212 - PROCESS WEIGHT TABLE (SIP approved on 8/22/77)
This rule specifies the allowable mass PM rate pursuant to Rule 211. This rule does not apply to combustion equipment deriving at least 80% of its fuel heat input from wood or associated wood waste.

Rule 213 - STORAGE OF PETROLEUM PRODUCTS (SIP approved on 12/6/79)
This rule specifies that any stationary gasoline tank with a capacity of 250 gallons or more is required to have at a minimum a submerged fill pipe if the tank was installed after December 31, 1970.

Rule 215 - ABRASIVE BLASTING (SIP approved on 12/6/79)
This rule was adopted by reference and specifies that abrasive blasting be

conducted in accordance with California Code of Regulations Title 17, subchapter 6, sections 92000 through 92530.

- Rule 218 - COMPLIANCE TESTS (SIP approved 5/18/81)*
This rule specifies that any performance tests undertaken to determine compliance of source subject to Regulation II shall comply with the provisions of 40 CFR Part 60 Appendix A, except that EPA Test Methods 201 and 202 shall be performed for PM rather than Method 5 and a modification to include the impinger train.
- Rule 407 - SPECIFIC CONTAMINANTS (SIP Approved 9/22/72)*
This rule requires that any source not discharge from any single source, sulfur compounds calculated as sulfur dioxide (SO₂) emissions in excess of 0.2 percent. This rule also requires combustion processes be limited to 0.1 gdsf of combustion contaminants (PM). This SIP rule is outdated and is considered too stringent for the District's sources and air quality. Measures will be taken to repeal this rule in 2013.
- Rule 408 - FUEL BURNING EQUIPMENT (SIP Approved 9/22/72)*
This rule requires that any combustion process be limited to: SO₂ - 200 pounds per hour; NO₂ 140 pounds per hour; and Combustion Contaminants (PM) - 10 pounds per hour. This SIP rule is outdated and the PM limit is considered too stringent for the District's sources and air quality. Measures will be taken to repeal this rule in 2013.
- Rule 500 - ADDITIONAL PROCEDURES FOR ISSUING PERMITS TO OPERATE FOR SOURCES SUBJECT TO TITLE V OF THE 1990 FEDERAL CLEAN AIR ACT AMENDMENTS - Amended 6/19/01, Final Approval by U.S. EPA 68FR65637, 11/21/2003 (TCAPCD Rule 500)].*
This rule implements the requirements of Title V of the Federal Clean Air Act as amended in 1990 for permits to operate.
- Rule 501 - PERMIT REQUIRED (SIP approved on 5/27/82)*
This rule specifies the requirements for sources of air contaminants in obtaining a permit to operate.
- Rule 505 - CONDITIONAL APPROVAL (SIP approved on 5/27/82)*
This rule specifies the air pollution control officer's authority to issue permit to operate conditions that will insure compliance with applicable regulations.
- Rule 510 - SEPARATION OF EMISSIONS (SIP approved on 5/27/82)*
This rule requires that emissions from two or more emissions points shall be quantified as if being emitted from a single emissions point. The total emitted quantity of any air contaminant shall be taken as the product of the

highest concentration measured.

- Rule 511 - COMBINATION OF EMISSIONS (SIP approved on 5/27/82)*
This rule requires that if emissions from two or more sources are emitted through a single emission point, then District Rules shall apply to each source separately only if there are reliable means to establish a separation of the components of the combined emissions to indicate the nature, extent, quantity, and degree from each source.
- Rule 512 - CIRCUMVENTION (SIP approved on 5/27/82)*
This rule requires that a person shall not superficially reduce or conceal emissions which would otherwise cause a violation of District Rules.
- Rule 513 - SOURCE RECORDKEEPING (SIP approved on 5/27/82)*
This rule specifies the requirements to maintain and submit records of the nature and amounts of emissions from the source or any other information deemed necessary by the APCO.
- Rule 515 - PROVISION OF SAMPLING AND TESTING (SIP approved on 5/27/82)*
This rule requires the operator to provide and maintain testing and sampling facilities as specified to disclose the nature, extent, quantity, degree of air contaminants discharged from the source.
- Rule 601 - PERMIT FEES (SIP approved on 5/27/82)*
This rule requires that authority to construct fees be paid based on an hourly schedule as adopted by the air pollution control board. The permit to operate fees is based on the District's anticipated costs of regulatory actions during the annual term of the permit.
- 40 CFR 61 - Subpart M NATIONAL EMISSIONS STANDARD FOR ASBESTOS*
This rule specifies the requirements for demolition and renovation activities under Sections 61.145 - 61.147, standards for the demolition and renovation of asbestos.
- 40 CFR 63 - Subpart DDDDD NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR MAJOR SOURCES INDUSTRIAL, COMMERCIAL, AND INDUSTRIAL BOILERS AND PROCESS HEATERS*
This source is an existing Major source for HAPS. However, EPA issued a "No-Action Assurance" on February 7, 2012 for this regulation. The No-Action Assurance is to remain in effect until December 31, 2012, or the effective date of a final rule addressing the proposed reconsideration of the Major Source Boiler MACT, whichever occurs earlier. The basic requirements of this rule include: emissions limits and work practice standards; start up, shutdown, and malfunction requirements; source testing

and initial compliance requirements; continuous compliance requirements; and, recordkeeping and reporting requirements.

40 CFR 64 - COMPLIANCE ASSURANCE MONITORING

This source is subject to the monitoring and compliance certification requirements to ensure that the monitoring is sufficient to yield reliable results to demonstrate ongoing compliance with emissions limitations and standards for particulate matter. The CAM addresses the operation of the ESP through performance indicators: voltage, currents, mechanical rappers, and opacity monitoring

40 CFR 68 - Section 112(r) RISK MANAGEMENT PLANNING - ACCIDENTAL RELEASE PREVENTION

This source is subject to Section 112(r), Accidental Release Prevention and Management Program. This Program affects sources at which certain substances found in 40 CFR Part 68 are present above the specified annual threshold.

40 CFR 82 - STRATOSPHERIC OZONE PROTECTION

This source is in compliance with the requirements of this part. An appropriate condition will be included in the permit to ensure compliance with the permit.

X. DISTRICT / SIP RULE COMPLIANCE DEMONSTRATIONS:

- A. TCAPCD Rule 207 - Particulate Matter: This rule requires that a person not discharge particulate matter emissions from any source or single processing unit, other than sources emitting combustion contaminants in excess of 0.1 grains per dry cubic foot of exhaust gas at standard conditions (gdscf). Condition 23 requires that PM emissions not exceed 0.1 gdscf from emissions units exclusive of sources emitting combustion contaminants. The facility is not required to test the grain loading limits for non-combustion contaminants. The facility is considered to be in compliance with the limits based on engineering calculations included in the Title V Operating Permit application. See Appendix A - Permit Application, Sample Emissions Calculations (Attachment 1 of Certification Statement, pgs i - iv)
- B. TCAPCD Rule 407 - Specific Contaminants (Section a): This rule requires that a source not discharge from any single source, sulfur compounds calculated as sulfur dioxide (SO₂) emissions in excess of 0.2% by volume (2,000 ppm) of exhaust gas. Results from source tests of the FBC Boiler indicate emission concentration averages of 3.30 ppmvd, which is far below the level required.
- C. TCAPCD Rule 407 - Specific Contaminants (Section b): This rule requires that a source not discharge combustion contaminants calculated at 12% CO₂ in excess of 0.1 gdscf of exhaust gas. Results from source tests of the FBC Boiler indicate the

PM emission concentration averages of .0050 gdscf, which is far below the level required.

- D. TCAPCD Rule 408 - Fuel Burning Equipment: This rule requires non-mobile fuel burning equipment to not discharge sulfur compounds calculated as sulfur dioxide (SO₂) in excess of 200 pounds per hour; nitrogen oxides calculated as nitrogen dioxide (NO₂) in excess of 140 pounds per hour; and, combustion contaminants in excess of 10 pounds per hour. Results from source tests indicate emissions rate averages for SO₂, NO₂, and PM have never exceeded the above limits with emissions rate (lbs/hr) averages for SO₂, NO₂, and PM at 9.01, 73.08, and 5.41, respectively.

XI. FEDERAL REQUIREMENTS NOT APPLICABLE

This section does not attempt to identify all applicable federal requirements that do not apply to the PUCS facility, but only discusses the major federal requirements that could have applied to this facility, but do not for the reasons discussed below.

40 CFR 52 - PREVENTION OF SIGNIFICANT DETERIORATION (PSD) PERMITTING
This regulation sets the procedures for the review of new stationary sources or the modification of existing stationary sources for federal attainment pollutants. All federal attainment pollutants are under PSD emissions thresholds with federally enforced emissions limitations. No major modifications have occurred since beginning operation. Therefore, the PSD regulation is not applicable to the Pacific Ultrapower facility.

40 CFR 60 - Subpart Db NEW SOURCE PERFORMANCE STANDARDS
This regulation sets the procedures for new sources or those sources constructed, modified, or reconstructed after June 19, 1984 for the operation of industrial steam generating units with a heat input of or greater than 100MMBTU/hr. This facility was determined to have commenced construction in 1983 and has had no major modifications since the June 19, 1984, promulgation date. Therefore the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (Subpart Db) do not apply at this time.

XII. STATEMENT OF BASIS:

Pursuant to 40 CFR Section 70.7(a)(5), the Tuolumne County Air Pollution Control District as the permitting authority for PUCS shall provide a statement that sets forth the legal and factual basis for the draft permit. The proposed Operating Permit includes conditions to ensure that all Federal requirements will be satisfied. Additionally, the permit was designed for adequate monitoring, record keeping, and reporting requirements to demonstrate continuous compliance with the permit conditions.

XIII. APPENDICES

Appendix A: Approved - Title V Operating Permit Application for Renewal

Appendix B: Completeness Determination Letter

Appendix C: PUCS Request for Modification and Permit Amendment Justification (Revised June 2012)

Appendix D: Proposed Title V Operating Permit

Appendix E: Public Notice / Public Comment / District Response