

EVALUATION REPORT

PRELIMINARY DECISION ON PROPOSED PERMIT MODIFICATIONS

FOR

CALPINE KING CITY COGEN, LLC
750 METZ ROAD
KING CITY, CALIFORNIA

&

GILROY ENERGY CENTER, LLC FOR KING CITY
51 DON BATES WAY
KING CITY, CALIFORNIA

APPLICATION NUMBERS 14716, 14717, 14743, 14744, & TV38-02

PREPARED BY

MIKE SEWELL
AIR QUALITY ENGINEER

MONTEREY BAY UNIFIED
AIR POLLUTION CONTROL DISTRICT
24580 SILVER CLOUD COURT
MONTEREY, CA 93940
(831) 647-9411

AUTHORIZED FOR RELEASE ON:

September 24, 2010

APPROVED BY: _____

Lance Ericksen, Engineering Division Manager

DATE: _____

LE
9/23/10

TABLE OF CONTENTS

I.	PROJECT DESCRIPTION	3
II.	APPLICABLE REQUIREMENTS	3
III.	PROPOSED CHANGES & DISTRICT ANALYSIS	4
IV.	EQUIPMENT LIST	5
V.	AIR QUALITY IMPACT ANALYSIS	5
VI.	EMISSIONS CALCULATIONS	7
	Review of New or Modified Sources	7
VII.	CONCLUSIONS	9
VIII.	RECOMMENDATION	12
IX.	PROPOSED PERMITS	12

EVALUATION DATA

Company:	Calpine King City Cogen, LLC	Appl #s: 14716, 14717, 14743, 14744, & TV38-02
Address:	750 Metz Road King City, CA 93930	UTM Coordinates: Horizontal: 668.8 Vertical: 4010.9
Contact Person:	Maria Barroso	SIC Code: 4911
District Engineer:	Mike Sewell	SCC Code: 1-01-006-01
Start:	8/27/10	
Finish:	9/24/10	
Site Location:	750 Metz Road & 51 Don Bates Way King City, California	

I. PROJECT DESCRIPTION

Calpine King City Cogeneration, LLC (CKCC) and Gilroy Energy Center, LLC for King City (GEC) have submitted applications to amend their District permits and the combined Title V permit for these facilities.

CKCC and GEC have requested a number of permit amendments to address required federal and state mandated performance testing, along with periodic turbine and boiler tuning activities which conflict with existing permit requirements. These requested amendments are identified and discussed later in this document. However, none of the requested changes will impact cumulative emissions from the facilities.

II. APPLICABLE REQUIREMENTS

- 200 Permits Required
- 203 Application
- 205 Provision Of Sampling And Testing Facilities
- 206 Standards For Issuing Authorities to Construct and Permits to Operate
- 207 Review Of New Or Modified Sources
- 213 Continuous Emissions Monitoring
- 214 Breakdown Conditions
- 218 Title V: Federal Operating Permits
- 219 Title IV: Acid Deposition Control
- 300 District Fees
- 301 Permit Fee Schedules
- 302 Source Testing And Analyses: Fees And Requirements
- 305 Fees For Risk Assessments, Risk Notifications, & Risk Reduction Plans & Reports
- 306 Asbestos Investigation Fees
- 308 Title V: Federal Operating Permit Fees
- 400 Visible Emissions
- 402 Nuisances
- 403 Particulate Matter
- 404 Sulfur Compound And Nitrogen Oxides
- 412 Sulfur Content Of Fuels

- 415 Circumvention
- 421 Violations And Determination Of Compliance
- 423 New Source Performance Standards (NSPS)
- 424 National Emission Standards For Hazardous Air Pollutants (NESHAPS)
- 426 Architectural Coatings
- 1000 Permit Guidelines And Requirements For Sources Emitting Toxic Air Contaminants
- 1003 Air Toxics Emissions Inventory And Risk Assessments

III. PROPOSED CHANGES & DISTRICT ANALYSIS

The applicant has proposed the following changes:

1. *Revise the Title V Permit and the Permit to Operate for the Cogeneration Unit to include a condition that the hourly, daily, and concentration limits do not apply during periods of combustor tuning, balancing, and testing periods, or regulatory mandated performance testing periods. Testing shall not exceed 100 hours per year.*

Including this requested change will allow the facility to comply with all regulatory mandated testing and to ensure that the unit is operating as efficiently as possible. This change will have no impact on cumulative emissions from the facility. The District proposes to make this change; however, the condition will read as follows:

The hourly, daily, and concentration limits do not apply during periods of combustor tuning, balancing, or regulatory mandated performance testing periods. These periods shall not exceed 100 hours per year.

2. *Revise the Title V Permit and the Permit to Operate for the Cogeneration Unit to clarify the startup and shutdown condition. The facility has requested the condition be updated as follows:*

The turbine shall undergo no more than one cold startup and one shutdown per day ; provide, however, that if the Frame 7 turbine should experience an unanticipated shutdown event on a given day due to an equipment malfunction, operator error or any other reason, it may startup again and subsequently shutdown on that same day.

After discussing this requested condition change with the facility, the District and the facility agree that it would be appropriate to eliminate this condition. The removal of this condition will have no impact on actual emissions from the facility.

3. *Revise the Title V Permit and the Permit to Operate for the Peaker to include a condition that the hourly, daily, and concentration limits do not apply during periods of combustor tuning, balancing, and testing periods, or regulatory*

mandated performance testing periods. Testing shall not exceed 100 hours per year.

Including this requested change will allow the facility to comply with all regulatory mandated testing and to ensure that the unit is operating as efficiently as possible. This change will have no impact on cumulative emissions from the facility. The District proposes to make this change; however, the condition will read as follows:

The hourly, daily, and concentration limits do not apply during periods of combustor tuning, balancing, or regulatory mandated performance testing periods. These periods shall not exceed 100 hours per year.

4. *Revise the Title V Permit and the Permits to Operate for the Cogeneration Unit and the Peaker to allow 45 days (in lieu of 30 days) for the submittal of required reports.*

Allowing an additional 15 days for the submittal of reports is an administrative change and will have no impact. The District proposes to make these changes as requested.

5. *Revise the Title V Permit and the Permits to Operate for the Boilers to include a condition that the hourly, daily, and concentration limits do not apply during periods of boiler tuning. Boiler tuning shall not exceed 50 hours per year.*

Including this requested change will allow the facility to ensure that the boilers are operating as efficiently as possible. This change will have no impact on cumulative emissions from the facility. The District proposes to make this change as requested.

IV. EQUIPMENT LIST

No change in the listed equipment.

V. AIR QUALITY IMPACT ANALYSIS

Screen was run for each of the sources to determine maximum concentrations to perform an Air Quality Impact Analysis (AQIA). Although the points of maximum concentrations for each of the sources were different locations, each of the maximum concentrations were combined to be conservative.

The first table addresses the Air Quality Increment in Area E (where the facility is located and where maximum impacts occur), the second addresses the Air Quality Increment for Area A (the Pinnacles National Monument and the Ventana Wilderness Area). The third table is a comparison of the project impacts combined with background concentrations versus the ambient air quality standards.

Increment Analysis - Area E

Pollutant	Maximum Modeled Impact Area E (ug/m ³)	Designated Area E (ug/m ³)	Averaging Period	Below Allowable Increment Consumption
Carbon Monoxide (CO)	144.8	12,000	1-hour	yes
Nitrogen Dioxide (NO ₂)	1.2	25	annual	yes
TSP	0.0	19	annual	yes
	0.0	37	24-hour	yes
PM ₁₀	0.0	10.8	annual	yes
	0.0	21.1	24-hour	yes
Sulfur Dioxide (SO ₂)	0.0	20	annual	yes
	0.0	91	24-hour	yes
	0.0	512	3-hour	yes

Increment Analysis - Area A

Pollutant	Maximum Modeled Impact Area E ¹ (ug/m ³)	Designated Areas A (ug/m ³)	Averaging Period	Below Allowable Increment Consumption
Carbon Monoxide (CO)	144.8	4,000	1-hour	yes
Nitrogen Dioxide (NO ₂)	1.2	2.5	annual	yes
TSP	0.0	5	annual	yes
	0.0	10	24-hour	yes
PM ₁₀	0.0	2.8	annual	yes
	0.0	5.7	24-hour	yes
Sulfur Dioxide (SO ₂)	0.0	2	annual	yes
	0.0	5	24-hour	yes
	0.0	25	3-hour	yes

Note: ¹ - Maximum impact occurred in Area E. This maximum Area E impact was also utilized to determine increment consumption for Area A.

The two tables above indicate that this project does not exceed any air quality increment. Therefore, the project complies with the air quality increment provisions of Rule 207.

Cumulative Impacts Vs. Ambient Air Quality Standards

Pollutant	Avg. Period	Max. Project Impact (ug/m ³)	Bckgnd Conc. (ug/m ³)	Total Impact (ug/m ³)	State Standard (ug/m ³)	Federal Standard (ug/m ³)	Below Applicable Standard(s)
Carbon Monoxide (CO)	1-hour	144.8	4,255	4,399.8	23,000	40,000	yes
	8-hour	43.4	1,265	1,308.4	10,000	10,000	yes
Nitrogen Dioxide (NO _x)	1-hour	12.0	112.8	124.8	470	--	yes
	annual	1.2	11.28	12.48	--	100	yes

The table above identifies that the project emission concentrations when combined with background concentrations do not exceed the ambient air quality standards. Therefore, the project as proposed complies with the Ambient Air Quality Standard provisions of Rule 207.

Visibility Impacts

A visibility analysis of the project's gaseous emissions is required under Rule 207. The analysis addresses the contributions of gaseous emissions (primarily NO_x) and particulate (PM₁₀) emissions to visibility impairment on the nearest Class A areas, which are the Ventana Wilderness Area and the Pinnacles National Monument to the west and north, respectively. Calpine used the EPA approved model VISCREEN to assess the project's visibility impacts. The results from the VISCREEN modeling analysis indicated that the project's visibility impacts would be below the significance criteria for contrast and perception. Therefore the project's visibility impacts on these Class A areas are considered insignificant.

VI. EMISSIONS CALCULATIONS**Rule 207 Review of New or Modified Sources**

Daily emissions could increase from these proposed changes. The following tables list uncontrolled and controlled emissions and worst case emission increases based upon the assumption that each of the units could operate in start-up mode for a continuous 24 hour period.

Frame 7 Emissions

EQUIPMENT	POLLUTANT	EMISSION RATE (lb/hr)	DAILY EMISSIONS (lbs)	EMISSIONS INCREASE (lbs)
Frame 7 Baseload	NO _x	31.0	744.0	---
	SO _x	0.2	4.8	---
	VOC	1.5	36.0	---
	CO	22.9	549.6	—
	PM ₁₀ /TSP	2.5	60.0	---
Frame 7 Start-up	NO _x	155.0	3,720.0	2,976
	SO _x	0.2	SO _x	0.0
	VOC	1.5	36.0	0.0
	CO	22.9	549.6	0.0
	PM ₁₀ /TSP	2.5	60.0	0.0

LM6000 Emissions

EQUIPMENT	POLLUTANT	EMISSION RATE (lb/hr)	DAILY EMISSIONS (lbs)	EMISSIONS INCREASE (lbs)
LM6000 Baseload	NO _x	8.65	207.6	---
	SO _x	0.33	7.92	---
	VOC	1.20	28.8	---
	CO	6.31	151.44	---
	PM ₁₀ /TSP	2.50	60.0	—
LM6000 Start-up	NO _x	35.0	840.0	632.4
	SO _x	0.33	7.92	0.0
	VOC	0.89	21.36	7.44
	CO	27.0	648.0	496.56
	PM ₁₀ /TSP	2.50	60.0	0.0

Auxiliary Boilers

EQUIPMENT	POLLUTANT	EMISSION RATE (lb/hr)	DAILY EMISSIONS (lbs)	EMISSIONS INCREASE (lbs)
Aux Boilers Baseload	NO _x	5.59	134.16	---
	SO _x	0.28	6.72	---
	VOC	0.9	21.6	---
	CO	5.3	127.2	---
	PM ₁₀ /TSP	1.25	30.0	---
Aux Boilers Start-up	NO _x	5.59	134.16	0.0
	SO _x	0.28	6.72	0.0
	VOC	1.4	33.6	12.0
	CO	52.7	1,264.8	1136.6
	PM ₁₀ /TSP	1.25	30.0	0.0

Worst case daily emissions increases are 3,608.4 lbs of NO_x, 12.0 lbs of VOC and 1,633.16 lbs of CO. Just to reiterate, cumulative emissions from the facility will not change as the quarterly and annual emission limits remain in force.

VII. CONCLUSIONS
Compliance Check

200 Permits Required

CKCC and GEC have applied for and will be issued revised Permits to Operate. Therefore, the facility is in compliance with this Rule.

203 Application

CKCC and GEC supplied separate applications for each permit unit and utilized the District's permit application form as required by this Rule.

205 Provision Of Sampling And Testing Facilities

The present permits do and the revised permits will include conditions establishing sampling facilities as required by this Rule.

206 Standards For Issuing Authorities to Construct and Permits to Operate

The facility is in compliance with the requirements of this Rule..

207 Review Of New Or Modified Sources

Emissions may increase from these changes. The maximum emissions from this changes has been modeled to perform an air quality impact analysis and to verify compliance with the increments and the cumulative impact requirements of the rule. Operation for limited time periods without hourly, daily, and concentration limits for balancing, tuning, and regulatory mandated testing is a modification of the initial BACT determination for the facilities. As the quarterly and annual emissions caps remain in force, the offset provisions of the Rule are not triggered. This rule requires that the project be public noticed prior to issuance of the permits to ensure oversight of the BACT determinations and federal enforceability of the conditions.

213 Continuous Emissions Monitoring

The requirements of this Rule are applicable to this facility. These permits will be conditioned such that CEMs will be calibrated, maintained, and operated in accordance with District and EPA standards.

214 Breakdown Conditions

This is the implementing regulation in which the District has established the criteria for reporting breakdowns. The requirements imposed by this rule will be included on these permits.

218 Title V: Federal Operating Permits

Relaxation of the BACT requirement by allowing limited operations without hourly, daily, or concentration limits is a relaxation of the permit and is considered a "significant permit modification" and subject to the EPA and Public review prior to issuance. The proposed changes to the Title V permit will public noticed and forwarded to EPA for their review prior to permit issuance.

219 Title IV: Acid Deposition Control

The LM6000 at GEC is subject to these requirements. These requirements are included on the existing facilities permits and will be included on the revised permit.

300 District Fees

Historically, CKCC and GEC have complied with the requirements of this Rule. The District fully expects continued compliance with the provisions of this Rule.

301 Permit Fee Schedules

Prior to District review of these applications, the appropriate fees pursuant to this Rule were received from CKCC and GEC. Therefore, the facility is in compliance with this Rule.

302 Source Testing And Analyses: Fees And Requirements

Historically, CKCC and GEC have complied with the requirements of this Rule. The District fully expects continued compliance with the provisions of this Rule.

305 Fees For Risk Assessments, Risk Notifications, & Risk Reduction Plans & Reports
Historically, CKCC and GEC have complied with the requirements of this Rule. The District fully expects continued compliance with the provisions of this Rule.

306 Asbestos Investigation Fees
Historically, CKCC and GEC have complied with the requirements of this Rule. The District fully expects continued compliance with the provisions of this Rule.

308 Title V: Federal Operating Permit Fees
This is the District's fee rule for Title V. Appropriate conditions are included on the existing Title V permit, and will be included on the revised Title V permit to ensure compliance with the fee provisions contained in this rule.

400 Visible Emissions
The equipment is natural gas fired, and therefore should easily comply with the 20% opacity standard from this Rule. Appropriate conditions will be included on the permits to ensure compliance with the requirements of this Rule.

402 Nuisances
With the equipment being fired on natural gas, nuisance type problems are not expected from this operation. However, appropriate conditions will be included on the permits to ensure compliance with the requirements of this Rule.

403 Particulate Matter
No change in emissions from the facility based upon the proposed changes. Prior evaluations have verified compliance with the requirements of this rule.

404 Sulfur Compound And Nitrogen Oxides
No change in emissions from the facility based upon the proposed changes. Prior evaluations have verified compliance with the requirements of this rule.

412 Sulfur Content Of Fuels
This rule which requires that the sulfur content of any gaseous fuel combusted contain 50 grains or less of sulfur per 100 cubic feet is applicable to this equipment. The sulfur content limits proposed in the application are 0.25 grains per 100 cubic feet of natural gas. This sulfur limit will be included on the permits.

415 Circumvention
The facility is in compliance with the provisions of this Rule.

421 Violations And Determination Of Compliance

This Rule provides standards for compliance determinations required by, or derived from federal law. The facility is in compliance with the requirements of this Rule.

423 New Source Performance Standards (NSPS)

Prior evaluations have verified compliance with the requirements of Subpart A and GG of this rule.

424 National Emission Standards For Hazardous Air Pollutants (NESHAPS)

40 CFR Part 61, Subpart M - National Emission Standard For Asbestos
The facility on occasion is subject to the requirements of 61.145 - 61.147 (Standards for Demolition and Renovation). Historically, the facility has been in compliance with these requirements and continued compliance is expected.

426 Architectural Coatings

This rule is applicable to all applications of architectural coatings and limits the VOC content of these coatings. Historically, the facility has been in compliance with this Rule and continued compliance is expected.

1000 Permit Guidelines And Requirements For Sources Emitting Toxic Air Contaminants

Allow emissions may increase on a daily basis due to these changes, cumulative emissions do not. Therefore, the existing toxics analysis for the facility is still applicable, which shows that the facility complies with the requirements of this rule.

1003 Air Toxics Emissions Inventory And Risk Assessments

Historically, CKCC and GEC have complied with the requirements of this Rule. The District fully expects continued compliance with the provisions of this Rule.

Conclusions

These proposed permit revisions will not impact the ability of CKCC and GEC to comply with all applicable rules of the District.

VIII. RECOMMENDATION

Issue a public notice on the preliminary permit decision and release the proposed permits for the required 30 day public comment period. Forward the proposed Title V permit to EPA for their 45-day review. Review and respond to comments prior to issuance of the permits as final documents.

IX. PROPOSED PERMITS

The proposed permits are attached.