CALIFORNIA ENERGY COMMISSION
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www.energy.ca.gov

DATE: October 10, 2014

TO: Interested Parties

FROM: Eric Veerkamp, Compliance Project Manager

SUBJECT: **Calpine King City Cogeneration (85-AFC-5C)**
Staff Analysis of Petition Requesting Amendments to Air Quality Conditions of Certification

The Calpine King City Cogeneration (KCC) is a nominal 130 MW natural gas fired power plant consisting of one 85.7 MW electrical output "Frame 7" combustion turbine generator, one 37.6 MW steam turbine generator, two auxiliary boilers, and one heat recovery steam generator. The KCC was certified by the Energy Commission in its original decision dated June 1987, and has been in commercial operation since 1989. The facility is located in the city of King City, California, in Monterey County approximately 50 miles south of the city of Salinas on State Highway 101.

On February 23, 2011, Calpine filed a petition with the California Energy Commission (Energy Commission) requesting to amend the Final Decision for the KCC. The petition proposed to delete a Condition of Certification that limits the combustion turbine to one start up and one shutdown per day, allowing the facility to come back on line and subsequently shut down again in an unanticipated event (**AQ-40**). The petition also proposed to add two new conditions of certification that would: 1) exempt the two auxiliary boilers from specified emission limits during boiler tuning (**AQ-52**); and 2) exempt the combustion turbine from specified emission limits during defined periods of combustion tuning and testing (**AQ-53**). The request was necessitated by the need to effectively test and tune the combustion turbine and boilers before returning to service after a major maintenance outage that may involve multiple startups and shutdowns.

California Energy Commission staff reviewed the petition and assessed the impacts of this proposal on environmental quality and on public health and safety. In a first draft of the Staff Analysis, completed in April 2012, Air Quality staff proposed to support the applicant's request to eliminate the limiting condition, and to include the requested two new conditions of certification. During the staff review, a number of conditions of certification were discovered to be numbered incorrectly and/or obsolete, and/or in need of overdue modifications due to changes in regulatory requirements. These items were not addressed in the owner's Petition. Energy Commission staff requested clarifying information in an email to the owner on May 8, 2012. Several phone calls were conducted during the summer of 2012 culminating with a revised Petition being submitted on September 30, 2012. The revised Petition raised additional questions from staff, who then performed extensive research regarding the conditions of certification during late 2012 and early 2013. This led staff to send two requests to the owner for

additional information, one in July 2013 and one in October 2013. A final revised Petition, dated March 17, 2014, was then submitted by the owner. Staff subsequently proceeded to prepare the final Staff Analysis.

It is staff's opinion that, with the implementation of the modified and new conditions of certification, and the elimination of several outdated conditions of certification, the project would remain in compliance with applicable laws, ordinances, regulations, and standards (LORS), and the proposed changes to conditions of certification would not result in any significant adverse direct, indirect, or cumulative impacts to the environment (20 Cal. Code of Regs., § 1769).

The amendment petitions and Final Staff Analysis have been posted on the project's docket log on the Energy Commission's KCC webpage https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=85-AFC-05C. Energy Commission staff intends to recommend approval of the petition at the November 12, 2014, Business Meeting of the Energy Commission. After the Final Decision, the Energy Commission's Order regarding this petition will also be posted on the Commission's KCC webpage.

This Notice is being provided to interested parties and property owners adjacent to the KCC site. This Notice has been mailed to the KCC mail list and sent electronically to the KCC list serve.

Any person may comment on the Staff Analysis. Those who wish to comment on the analysis are asked to submit their comments by November 10, 2014 using the Energy Commission's e-commenting feature as follows: Go to the Energy Commission's KCC webpage and click on the "Submit e-Comment" link. In the form, provide the required information—your full name, e-mail address, the comment Title, and either a comment or an attached document. The comment Title should be "[Your Name]'s Comments re KCC Staff Analysis]." Type your comments into the "Comment Text" field, or upload and attach a document with your comments. The maximum upload file size is 10MB, and only .doc, .docx, or .pdf attachments will be accepted. Enter the CAPTCHA that is used to prevent spamming. Then click on the "Agree and Submit your Comments" button to submit your comments to the Energy Commission Dockets Unit for review. When your comments are approved and docketed, you will receive an e-mail with a link to them on the facility webpage.

Written comments may also be mailed or hand-delivered to:

California Energy Commission
Dockets Unit, MS-4
Docket No. 85-AFC-5C
1516 Ninth Street
Sacramento, CA 95814-5512

All comments and materials filed with and approved by the Dockets Unit will be added to the KCC Docket Log and become publically accessible on the Energy Commission's webpage for the facility.

If you have questions about this Notice, please contact Eric Veerkamp, Compliance Project Manager, at (916) 654-4611, or by fax to (916) 654-3882, or via e-mail at eric.veerkamp@energy.ca.gov.

For information on participating in the Energy Commission's review of the proposed modification to the KCC decision, please contact the Energy Commission Public Adviser's Office at (800) 822-6228 (toll-free in California). The Public Adviser's Office can also be contacted via e-mail at publicadviser@energy.ca.gov. News media inquiries should be directed to the Energy Commission Media Office at (916) 654-4989, or by e-mail at mediaoffice@energy.ca.gov.

Mail List 719
Calpine King City Cogeneration List Serve

CALPINE KING CITY COGENERATION (85-AFC-5C)
Petition to Amend the Final Decision
EXECUTIVE SUMMARY
Eric Veerkamp

INTRODUCTION

On February 23, 2011, Calpine King City Cogeneration, filed a petition with the California Energy Commission (Energy Commission), requesting to amend the June 1987 Final Decision for the Calpine King City Cogeneration plant (KCC). The petition proposed to delete one condition limiting turbine start-ups and shut-downs, and to add two new conditions that would facilitate tuning and testing of the auxiliary boilers and the turbine generator.

During staff's review, multiple inconsistencies were noted in the conditions of certification necessary to reflect the most current Monterey Bay Unified Air Pollution Control District operating permits. After working with the owner throughout the spring and summer of 2012 to procure additional information, Energy Commission staff received a revised petition dated September 20, 2012. Staff performed extensive research on the Conditions of Certification and sent requests for information to the applicant throughout 2013. The owner submitted a final revised Petition to Amend on March 17, 2014, and the final Staff Analysis was subsequently completed.

The purpose of the Energy Commission's review process is to assess the impacts of this petition on environmental quality and on public health and safety. The review process includes an evaluation of the consistency of the proposed changes with the Energy Commission's Final Decision and a determination on whether the facility, as modified, would remain in compliance with applicable laws, ordinances, regulations, and standards (20 Cal. Code of Regs., § 1769).

Energy Commission staff has completed its review of all materials received. The Staff Analysis is staff's independent assessment of the project owner's proposal to modify the project description.

PROJECT DESCRIPTION AND LOCATION

The natural gas-fired 130-megawatt electricity-generating cogeneration facility was certified by the Energy Commission in its Decision in June 1987, and began commercial operation in 1989. The facility is located in the City of King City, California in Monterey County approximately 50 miles south of the City of Salinas on State Highway 101.

DESCRIPTION OF PROPOSED MODIFICATIONS

Elimination of one condition would allow performance testing/ model validation for the combustion turbine, lifting a limit of one startup and shutdown of the turbine per day. The addition of two new modification(s) proposed in the petition (new conditions) would

exempt the gas turbines and auxiliary boilers from short-term emission limits during limited periods for tuning and performance testing. Additional administrative modifications to various conditions, or in some cases changes to or deletions of conditions that are obsolete or incorrectly numbered, are necessary.

NECESSITY FOR THE PROPOSED MODIFICATIONS

As stated by Calpine in their original petition, dated February 23, 2011, the proposed modifications (one deleted condition and two new conditions) are needed to update the Decision. Changes were incorporated into the revised 2010 Monterey Bay Unified Air Pollution Control District (MBUAPCD) Title V permit, which was then renewed in 2011 by the MBUAPCD in a separate action.

STAFF'S ASSESSMENT OF THE PROPOSED PROJECT CHANGES

The technical area section contained in this Staff Analysis includes modified conditions of certification as follows: 1) deleting Conditions of Certification **AQ-3, AQ-9, AQ-17, AQ-24, AQ-25, AQ-32, AQ-33, AQ-37, AQ-40 and AQ-52** (added 5/28/88); 2) adding Conditions of Certification **AQ-54** and **AQ-55** and extending reporting time requirements in **AQ-35, AQ-44 and AQ-53**,providing relief from the short-term mass emission and mass concentrations limits during limited periods of equipment tuning and regulatory performance testing; and 3) modifying Air Quality Conditions of Certification **AQ-10, AQ-18, AQ-19, AQ-21, AQ-22, AQ-28, AQ-29, AQ-30, AQ-31, AQ-34 and AQ-50** to clean up language However, staff does not recommend making the requested changes to Conditions of Certification **AQ-6** and **AQ-23**.

Staff believes the changes would be beneficial because they would allow required equipment tuning and regulatory performance testing after a return from an extended maintenance outage, and would result in a comprehensively updated and current final list of conditions of certification in the Decision. Staff has concluded that the environmental impacts associated with the revisions to Air Quality conditions of certification would not result in an exceedance of ambient air quality standards and that the total impact, using current background concentrations, would remain below current ambient air quality standards and that the revisions would not result in any other adverse environmental impacts or risks to public health.

Staff's conclusions in each technical area are summarized in **Executive Summary Table 1**, below.

Energy Commission technical staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations and standards (LORS). Staff has determined that the technical or environmental areas of Alternatives, Biological Resources, Cultural Resources, Efficiency, Facility Design, Geological Resources, Hazardous Materials Management, Land Use, Noise and Vibration, Paleontological Resources, Public Health, Reliability, Socioeconomics, Soil and Water

Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Transmission System Engineering, Visual Resources, Waste Management, and Worker Safety and Fire Protection are not affected by the proposed changes, and no revisions or new conditions of certification are needed to ensure the project remains in compliance with all applicable LORS for these areas.

Executive Summary Table 1
Summary of Impacts for Each Technical Area

TECHNICAL AREAS REVIEWED	STAFF RESPONSE			Revised or New Conditions of Certification Recom-mended
	Technical Area Not Affected	No Significant Environmental Impact*	Process As Amendment	
Air Quality			X	X
Alternatives	X			
Biological Resources	X			
Cultural Resources	X			
Efficiency	X			
Facility Design	X			
Geological Resources	X			
Hazardous Materials Management	X			
Land Use	X			
Noise & Vibration	X			
Paleontological Resources	X			
Public Health	X			
Reliability	X			
Socioeconomics	X			
Soils & Water Resources	X			
Traffic & Transportation	X			
Transmission Line Safety & Nuisance	X			
Transmission System Engineering	X			
Visual Resources	X			
Waste Management	X			
Worker Safety & Fire Protection	X			

*There is no possibility that the proposed modifications would have a significant effect on the environment, and the modifications would not result in a change in or deletion of a condition adopted by the Commission in the Final Decision, or make changes that would cause project noncompliance with any applicable laws, ordinances, regulations, or standards (20 Cal. Code Regs., § 1769 (a)(2)).

STAFF RECOMMENDATIONS AND CONCLUSIONS

Staff concludes that the following required findings, mandated by Title 20, California Code of Regulations, section 1769 (a)(3) can be made, and staff recommends approval of the petition by the Energy Commission:

- The proposed modification(s) would not change the findings in the Energy Commission's Final Decision pursuant to Title 20, California Code of Regulations, section 1755;
- There would be no new or additional unmitigated, significant environmental impacts associated with the proposed modification(s);
- The facility would remain in compliance with all applicable laws, ordinances, regulations, and standards;
- The modification(s) proposed have the potential to increase short term emissions; however, the changes would not result in an exceedance of the ambient air quality standards and would not cause an undue negative consequence on air quality;
- The proposed modification(s) would be beneficial to the public, because the facility would be free to perform the necessary testing and tuning activities that would result in the least polluting and most efficient operation possible; and
- The proposed modification(s) are justified because there has been a substantial change in circumstances since the Energy Commission certification, in that there is a need to conduct required testing and tuning consistent with revisions made by the MBUAPCD to their Title V Operating Permit.

CALPINE KING CITY COGENERATION (1985-AFC-05)
Request to Amend Final Commission Decision
Air Quality Analysis
Nancy Fletcher

INTRODUCTION

On April 20, 2011, Energy Commission staff docketed a petition from Calpine King City Cogeneration (KCC), (CALPINE 2011), requesting minor amendments to the Air Quality Conditions of Certification for the Calpine King City Cogeneration Project (KCC). KCC is a nominal 130-megawatt natural gas-fired power plant consisting of one 85.7 MW electrical output Frame 7 gas turbine, one heat recovery steam generator, one 37.6 MW electrical output steam turbine and two 143 MMBtu/hr auxiliary boilers, located in King City, Monterey County. The original Commission Decision approving KCC was issued in June 1987 and the cogeneration plant has been in commercial operation since 1989.

Calpine is requesting revisions to the Air Quality Conditions of Certification to provide relief from the existing hourly and daily mass emission and emission concentration limits during periods of equipment tuning and regulatory performance testing, not to exceed 100 hours per year per turbine and 50 hours per year per boiler. Specifically, Calpine is proposing to add two new conditions of certification **AQ-54** and **AQ-55**. The first condition of certification would exempt the turbine from specified emission limits during defined periods of combustion tuning and testing. The second condition of certification would exempt the two auxiliary boilers from specified emission limits during boiler tuning. These changes are necessary in order to conduct performance testing and effective tuning of the turbine and boilers. Tuning ensures optimum performance during normal operation. The performance testing and tuning can require multiple startups and shutdowns, and operation at specified loads where emission compliance may not be maintained.

Calpine is also requesting additional changes to specific Air Quality Conditions of Certification. Calpine requests to delete Condition of Certification **AQ-40**, which limits the turbine to one startup and one shutdown per day. This would allow the facility to come back on-line and subsequently shutdown again, in the event of an unanticipated shutdown. Calpine is also requesting an extension of the due date for reports that are submitted to the Monterey Bay Unified Air Pollution Control District (MBUAPCD or district) and the California Energy Commission.

Calpine submitted an application to the MBUAPCD to incorporate the changes discussed above in the Title V Permit and Permits to Operate. These amendments were approved by MBUAPCD in 2010. In addition, the Title V permit was renewed by MBUAPCD in 2011. These revisions do not increase the quarterly or annual emission limits in the conditions of certification or in MBUAPCD permits.

During the review of the requested changes, staff noted inconsistencies between the Energy Commission's approved Air Quality Conditions of Certification and MBUAPCD permits. In the original petition to amend filed, Calpine requested additional conditions of certifications and

proposed numbering them as Conditions of Certification 52 and 53. According to California Energy Commission records, Energy Commission-approved Air Quality Conditions of Certification already contain conditions numbered **AQ-52** and **AQ-53**. Energy Commission staff further noted multiple conditions which had these numbers. Staff also noted additional inconsistencies pertaining to monitoring, testing requirements, start up and shutdown exemptions, and emission limits. Staff discussed these inconsistencies with representatives from Calpine Corporation. Staff sent an email to Calpine Corporation requesting additional information that was needed by staff to proceed with the amendment.

On September 20, 2012 Calpine filed an updated petition (Calpine 2012) with the Energy Commission which included responses to staff inquiries and requested additional conforming permit condition amendments to ensure the Energy Commission Air Quality Conditions of Certification would be consistent with MBUAPCD permit requirements. Calpine 2012 requests 17 additional amendment changes to resolve inconsistencies between California Energy Commission Air Quality Conditions of Certification and MBUAPCD permit conditions. Additional data requests were formally sent to Calpine on October 22, 2013 and responses were received from Calpine on March 17, 2014 (Calpine 2014).

LAWS, ORDINANCES, REGULATIONS AND STANDARDS COMPLIANCE

The 2010 MBUAPCD analysis identified the air quality laws, ordinances, regulations and standards (LORS), included in **Air Quality Table 1** below, as applicable to the proposed amendment. MBUAPCD reviewed the requested modifications in Calpine 2011 and determined the changes would comply with their regulations. The requested changes were evaluated by staff for consistency with the following LORS. The conditions of certification in the original Energy Commission Decision and any and all amendments thereafter must ensure that the facility will remain in compliance with all LORS.

Air Quality Table 1
Monterey Bay Unified Air Pollution Control District
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal	**U.S. Environmental Protection Agency**
40 CFR Part 60 Subpart A – New Source Performance Standards, General Provisions	General Provisions - Outlines general requirements for facilities subject to Standards of Performance including, notification, work practice, monitoring and testing requirements.
40 CFR Part 60, Subpart Db – Standards of Performance for Industrial –Commercial – Institutional	Establishes emission standards and requires monitoring, notification, and reporting of emissions and operation of the natural gas fired auxiliary boilers.
40 CFR Part 60, Subpart GG – Standards of Performance for Stationary Gas Turbines	Establishes emission standards and requires monitoring, notification, and reporting of emissions and operation of the turbine.
Local	**Monterey Bay Unified Air Pollution Control District**
Rule 200, Permits Required	Requires any person constructing, altering, replacing, or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct and a Permit to Operate, unless exempted by Rule 201. Calpine applied for and was issued revised Permits to Operate.

Applicable Law	Description
Rule 203, Application	Establishes provisions for permit applications. Specifies a separate application must be submitted for each permit unit. Calpine submitted separate MBUAPCD approved applications for each permit unit.
Rule 205, Provision of Sampling and Testing Facilities	Establishes provisions for sampling and testing facilities. The conditions of certification include conditions establishing sampling facilities as required by this rule.
Rule 206, Standards for Issuing Authorities to Construct and Permits to Operate	Establishes the regulatory framework for issuing MBUAPCD Authorities to Construct and Permits to Operate.
Rule 207, Review of New or Modified Sources	Provides for the review of new and modified stationary air pollution sources to meet the requirements under the provisions of the federal and California Clean Air Acts. Included in these requirements are the requirements for new source review (NSR) and Prevention of Significant Deterioration (PSD). The intent of the rule is to insure that the most stringent requirements of these programs shall be applied. The rule provides mechanisms for granting Authorities to Construct without interfering with the attainment or maintenance of ambient air quality standards. MBUAPCD determined the proposed changes may result in an increase in daily emissions.
Rule 213, Continuous Emissions Monitoring	Provides requirements and standards for continuous emissions monitoring systems (CEMS). The requirements are applicable to KCC and the conditions of certification will contain requirements for the CEMs to be operated in accordance with district and EPA standards.
Rule 214, Breakdown Conditions	Specifies conditions and procedures for breakdown. The requirements are included in conditions.
Rule 218, Title V: Federal Operating Permits	Establishes the permit application and compliance requirements for Federal Operating Permits. Federal Operating Permits contain all federally enforceable requirements for stationary sources as required under the provisions of Title V of the Federal Clean Air Act. Allowing limited operation without hourly, daily or concentration limits is a relaxation of the permit and is considered a significant permit modification subject to EPA and public review. The proposed changes have already been incorporated into the Title V permit.
Rule 300-308 District Program Fee Rules	These rules provide the mechanism and specifics for assessing fees for district programs.
Rule 400, Visible Emissions	Prohibits visible air contaminants of more than No. 1 on the Ringelmann chart or 20 percent opacity for more than three minutes in any one hour. Requirements are included in conditions of certification.
Rule 402, Nuisances	Prohibits any emissions which cause injury, detriment, or public nuisance.
Rule 403, Particulate Matter	Limits particulate emissions from any source.
Rule 404, Sulfur Compound and Nitrogen Oxides	Limits emissions of sulfur compounds, nitrogen oxides and nitrogen dioxide.
Rule 412, Sulfur Content of Fuels	Limits emissions of sulfur oxides from combustion sources.
Rule 415, Circumvention	Requires that control equipment installed to reduce emissions actually do reduce emissions and ensures source test are performed as scheduled and are not discontinued solely to avoid documenting periods of non-compliance.
Rule 421, Violations and Determination of Compliance	Provides standards by which compliance with the requirements derived from the federal Clean Air Act may be determined.
Rule 423, New Source Performance Standards (NSPS)	Provides clarity on the district's enforcement authority for the New Source Performance standards by incorporating provisions of 40 CFR Part 60 by reference.

Applicable Law	Description
Rule 424, National Emissions Standards for Hazardous Air Pollutants (NESHAPS)	Incorporates the National Emission Standards for Hazardous Air Pollutants (NESHAPs) from, Chapter I, Subpart C, Title 40 CFR Parts 61 and 63 and applies them to sources of HAPs.
Rule 1000, Permit Guidelines and Requirements for Sources Emitting Toxic Air Contaminants	Prevents the emission if toxic air contaminants. Short term emissions may increase under this amendment request; however, cumulative emissions will not.
Rule 1003 Air Toxics Emissions Inventory and Risk Assessments	Establishes and implements a program to inventory air toxics emissions to assess the risk to public health from exposure.

SETTING

Federal and state ambient air quality attainment status designations have changed since the original Energy Commission Decision in 1987. KCC is located in Monterey County and is considered part of the North Central Coast Air Basin, which is comprised of a single air district, MBUAPCD. For convenience, staff includes **Air Quality Table 2**, which summarizes the area's attainment status for current state and federal air quality standards for the North Central Coast Air Basin.

Air Quality Table 2
Federal and State Attainment Status
North Central Coast

Pollutant	State Classification	Federal Classification
Ozone (O_3) (1-hr and 8-hr)[a]	**Non-attainment**	Unclassified/Attainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
PM10	**Non-attainment**	Unclassified/Attainment
PM2.5	Attainment	Unclassified/Attainment

Source: http://www.arb.ca.gov/regact/2013/area13/area13appc.pdf
[a] Federal designation reflects the 8-hr standard. The national 1-hr standard was revoked June 15, 2005.
Notes: Unclassified means the area is treated the same as attainment.

ANALYSIS

Calpine requests the addition of two new conditions of certification to exempt the gas turbine and auxiliary boilers from short-term emission limits during limited periods for tuning and performance testing. Both the turbine and boilers require tuning to maintain optimum performance and compliance with emission limits. Tuning is performed seasonally or after major maintenance activities (Calpine 2011). During tuning, the system performance may be mapped over an operating range. Operating parameters are adjusted while performance data are recorded. Additionally, when system operating parameters are adjusted, the system may

take time to stabilize before conclusive performance data can be collected. Therefore, during tuning the system may not be operating under normal conditions and the system may not be able to achieve the short-term emission limits and mass concentration requirements.

The amendment petition requests removal of Condition of Certification **AQ-40** which currently limits the turbine to one start-up and shutdown per day. The Western Electricity Coordinating Council (WECC) requires performance testing/model validation for the turbine. As confirmed by Energy Commission staff through a phone call with the WECC, a determination of dynamic stability is required every five years to validate the system's performance parameters. During this testing, the turbine may be required to shutdown multiple times a day to simulate different operating environments to determine a full range of performance parameters. The performance testing may also require the unit to operate at low loads. The turbine may not be able to achieve the hourly emission limits and mass concentration limits when operating at low loads during the performance test. Calpine states that although the turbine may not be able to meet the short term hourly limits, the turbine will still be able to maintain compliance with the daily, quarterly and annual emission limits. Emissions during testing would be counted towards cumulative emission limits.

Calpine is proposing an additional Air Quality Condition of Certification **AQ-54** exempting the Frame 7 gas turbine during specified periods from hourly and daily emission limits and emission concentration limits outlined in Conditions of Certification **AQ-6**, **10**, **11,** and **12**. This proposed additional condition of certification for the turbine states the exemption only applies to combustor tuning, balancing, or non-district, regulatory-mandated performance testing. The proposed condition clearly distinguishes the exemption from the MBUAPCD mandatory compliance testing designed to ensure the unit is operating in compliance with the emission limits. This requested condition would limit this exemption for the turbine to no more than 100 hours per year. Specifying the exemption periods as proposed by Calpine provides limitations to the exemption request for the turbine.

Similarly, Calpine is proposing an additional Air Quality Condition of Certification **AQ-55** exempting the boiler from hourly emission limits and NO_2 emission concentration limits in Conditions of Certification **AQ-18** and **19** during specified periods. However upon review of the corresponding conditions added to the MBUAPCD permits (TV 58-01 condition 19, and 14743 and 14744 condition 8) the exemption also references the mass emission rates listed in **AQ-21** for No. 2 fuel firing (corresponding to TV 58-01 condition 14, and 14743 and 14744 condition 7). Staff recommends adding this condition to the proposed exemption language since the conditions of certification still include No. 2 fuel firing capabilities. Specifying the exemption periods as proposed by Calpine provides limitations to the exemption request for the boilers. The proposed condition of certification regarding the boilers limits the exemption to boiler tuning and includes a 50 hour per year operating limit per boiler.

Over the years, some of the amendment requests used the same conditions of certification numbers for different requirements. To minimize the confusion this causes, staff includes the amendment date behind each condition discussed below. The conditions of certification include total facility emission limits on a quarterly and annual basis for nitrogen oxide (NOx), carbon monoxide (CO), particulate matter less than 10 microns (PM10), volatile organic

compounds (VOC) and sulfur dioxide (SO_2). These limits are found in Condition of Certification **AQ-53** (added 6/21/00).The proposed exemption does not request exemption from the emission limits in Condition of Certification **AQ-53** (added 6/21/00). Therefore, there would be no increase in emissions on a quarterly or annual basis and emissions during testing and tuning would be counted towards the quarterly and annual emission limits. Condition of Certification **AQ-53** (added 6/21/00) requires the facility to verify compliance with these limits through continuous monitoring and tracking of fuel usage coupled with an emission factor established from the most recent source test data and the addition of start/stop increments (emissions from hot start, cold start or shutdown events). The turbine and boilers are equipped with continuous monitoring systems (CEMS) for nitrogen oxide (NOx), carbon monoxide (CO) and oxygen (O_2). As confirmed with MBUAPCD, the CEMS records emissions from the units during tuning activities and performance testing, as well as during routine operations.

Calpine submitted an application with the MBUAPCD requesting similar changes. Calpine has a Title V operating permit for the facility (TV 58-01) that includes both KCC and a simple cycle gas turbine emergency peaker, not certified by the Energy Commission. The Permits to Operate (PTOs) associated with this proposed amendment include one for the cogeneration facility Frame 7 turbine (14716), one for auxiliary boiler 1 (14744), and one for auxiliary boiler 2 (14743). MBUAPCD reviewed the proposed addition of new conditions and the deletion of **AQ-40** and consequently amended the Title V and PTO permits in 2010. Language was added to the permits exempting the Energy Commission-certified facility from the MBUAPCD's hourly, daily mass emissions and the emission concentration limits for the applicable turbine and boilers, the restriction limiting the number of start-up and shutdown periods in a day was removed, and the allowable time for report submittals was increased from 30 days to 45 days. (Similar changes were made to the simple cycle turbine, however the emergency peaker is not subject to Energy Commission jurisdiction and changes to the emergency peaker are not applicable to this petition.)

MBUAPCD determined the requested changes regarding turbine and boiler operation could potentially result in an increase in daily emissions. Modeling of worst case conditions, assuming each unit was operating in start-up mode for a continuous 24 hour period, combined with background concentrations, did not exceed respective ambient air quality standards. The total impact, using current background concentrations remains below current ambient air quality standards. Cumulative emissions would not increase because the quarterly and annual emission limits in Condition of Certification AQ-53 (added 6/21/00) would remain in effect. MBUAPCD determined the requested time extension for report submittals was considered an administrative change and therefore had no impact. The verification for Condition of Certification **AQ-53** (added 6/21/00) requires a reporting of the actual emission within 30 days from the end of the quarter. Similar MBUAPCD reporting requirements were extended to 45 days. Therefore staff recommends deleting Condition of Certification **AQ-40**, and adding two new Conditions of Certification **AQ-54** and **AQ-55** and extending the allowable time for report submittals in **AQ-53**.

During the review of Calpine 2011 petition, staff noticed additional numbering discrepancies. The Air Quality Conditions of Certification have been amended numerous times since the

original license was issued. After a review of Energy Commission Decisions regarding the conditions of certification, staff determined there were multiple conditions numbered **AQ-52** and **AQ-53**. The original license contained a Condition of Certification **AQ-52** regarding PM10 emissions from the cooling tower and a second Condition of Certification **AQ-52** (added 5/28/88), which included requirements for payment of a Growth Allowance Funding Fee to the MBUAPCD to fund a position for four years to develop and acquire emission reductions. MBUAPCD was required to provide a quarterly report on the Growth Allowance Funding Fee. The last payment was required in 1990. Because there is no further action required by this Condition of Certification **AQ-52** (added 5/28/88), staff is recommending deleting Condition of Certification for **AQ-52** (added 5/28/88) regarding the Growth Allowance Funding Fee.

Additionally, Conditions of Certification **AQ-53** were added both in 1995 and 2000. Condition of Certification **AQ-53** (added 11/29/95), exempts the boiler from emission requirements during specified start up and shutdown periods. At the time the facility was permitted, periods of startup and shutdown operation were not always considered part of 'normal operations'. Therefore many older projects did not include the necessary exemptions or separate emission limitations for startup and shutdown operations. Since the time of the original certification, startup and shutdown operations have been considered part of operations and are routinely addressed in the conditions of certification. It is not always appropriate to have the same emission limits apply for startup, shutdown and steady state operations. Therefore many conditions of certification have exemptions from normal operation requirements for steady state operations. When necessary, exemption language is added. These are often accompanied by language to minimize emissions from these exempted periods such as limits to the duration of start up and shutdown periods. Since the exemptions in **AQ-53** (added 11/29/95) reference Conditions of Certification **AQ-19** and **AQ-22**, it is acceptable to move these requirements of **AQ-53** (added 11/29/95) into **AQ-19** and **AQ-22**. This is the approach taken in the MBUAPCD Title V operating permit. The individual MBUAPCD boiler permits (14744 and 14743) however have the exemption listed in a separate condition number 18. Calpine 2012 states they believe the CEC permit ends with **AQ-51** and they do not have a record of either **AQ-53**. In addition, CALPINE 2012 requests exemption language to be added to **AQ-19** and **AQ-22**. For clarity of Energy Commission requirements, staff recommends moving the exemption language in **AQ-53** (added 11/29/95) to **AQ-19** and **AQ-22** and keeping **AQ-53** (added 2/21/00) as **AQ-53**.

Calpine 2012 includes Calpine responses to staff data requests regarding Calpine 2011. Staff noted there was a discrepancy between Energy Commission requirements outlined in **AQ-44** and MBUAPCD requirements (TV 58-01 condition 31 and Frame 7 turbine permit 14716 condition 28). Both Energy Commission and MBUAPCD conditions require an ambient monitoring station to be operated. MBUAPCD conditions require monitoring for PM10 and O_3 and Condition of Certification **AQ-44** requires monitoring of NO_2, PM10 and O_3. **AQ-44** includes language stating that monitoring will occur for the life of the facility or until the Air Pollution Control Officer (APCO) determines good cause exists to discontinue the monitoring of a pollutant. Calpine reported in Calpine 2012 that the MBUAPCD owns and operates the ambient air monitoring station. In Calpine 2014, Calpine reported that in 1996, MBUAPCD modified the pollutants it was monitoring after the original monitoring station was destroyed

and subsequently replaced and relocated. The monitoring agreement between MBUAPCD and Calpine was provided to Energy Commission staff in Calpine 2012 and Calpine 2014. Since the MBUAPCD owns and operates the monitoring station and conditions allow for the APCO to determine when the monitoring of any pollutant is discontinued, staff recommends amending the language in Condition of Certification **AQ-44** and corresponding verification to reflect the current monitoring requirements for the ambient monitoring station. The language in the verification would also be updated to ensure the information in the monthly reports and annual reports is accessible to Energy Commission staff. The monitoring cooperative agreement already requires monthly and annual monitoring reports to be generated.

In addition, Calpine 2012 recommends 17 additional conforming amendments addressing inconsistencies between California Energy Commission Air Quality Conditions of Certification and MBUAPCD permit conditions. **Air Quality Table 3** includes a summary of each request and Energy Commission staff's response based on staff's analyses.

Air Quality Table 3
Summary of Facility Owner Recommendations and Staff Response

Recommendation #1 Staff Response #1 (**AQ-3**)	Calpine requests deleting Condition of Certification **AQ-3**. Condition of Certification **AQ-3** requires the facility owner to obtain a Prevention of Significant Deterioration (PSD) permit or exemption from PSD requirements from the MBUAPCD and to comply with said permit. MBUAPCD's New Source Review (NSR) Rule 207 is considered PSD equivalent for criteria pollutants and therefore separate PSD permits are not required because PSD is incorporated into the NSR rules. A significant modification could trigger the need for a PSD permit. A significant modification would require an amendment and an evaluation would accompany the amendment which would address any potential PSD requirements. Therefore, Staff recommends deleting Condition of Certification **AQ-3**.
Recommendation #2 Staff Response #2 (**AQ-6**)	Calpine requests adding exemption language to Condition of Certification **AQ-6** for periods of start up and shutdown. Condition of Certification **AQ-6** limits emissions of carbon monoxide to 10 part per million by volume (ppmv) in the turbine exhaust. An exemption for start up and shutdown periods was added to the Air Quality Conditions of Certification in an amendment dated July 13, 2005. Staff recommends making no changes to Condition of Certification **AQ-6**, as language exempting start up and shutdown events was already added and is consistent with MBUACP permit conditions (TV 58-01condition 6, 14716 condition 7).
Recommendation #3 Staff Response #3	Calpine requests deleting Condition of Certification **AQ-9**. Condition of Certification **AQ-9** outlines initial source testing for the

(**AQ- 9**)	auxiliary boilers. This condition is duplicated as **AQ-35**. The condition as stated refers to initial testing only. Staff recommends deleting the Condition of Certification **AQ-9** as requested so there is no duplicate, however Staff recommends retaining Condition of Certification **AQ-35** (see discussion in **Staff Response #16**).
Recommendation #4 Staff Response #4 (**AQ- 10**)	Calpine requests making the hourly and daily emission rates for SO_2 from the Frame 7 turbine in Condition of Certification **AQ-10** consistent with MBUAPCD requirements. Condition of Certification **AQ-10** limits emissions of NOx, CO, ammonia (NH3), PM10, VOC, and SO_2 for the Frame 7 turbine, on an hourly and daily basis during natural gas firing. The limitations in pounds per hour (lb/hr) have one significant figure except for SO_2 which has two. The daily limit listed in the MBUAPCD permits (TV 58-01 condition 1 and 14716 condition 2) has one significant figure. Changing the limit from 0.49 to 0.5 lbs/hour would not result in additional emissions from the facility because emissions of SO_2 are a function of how much sulfur is in the fuel and does not depend on the operating load point of the turbine. In addition, the allowable mass emission rate for SO_2 in the exhaust for the turbine is 116.1 lbs/hr when the turbine is fired with No.2 fuel oil. Maximum impacts occur during No. 2 fuel oil operation and are not impacted by a change in significant figures for natural gas operations. Staff recommends amending the hourly SO_2 emission rate in **AQ-10** to 0.5 lbs/hr for consistency with the limits in the MBUAPCD permits.
Recommendation #5 Staff Response #5 (**AQ- 17**)	Calpine requests deleting Condition of Certification **AQ-17**. Condition of Certification **AQ-17** requires details of the selective catalytic reduction (SCR) system to be submitted to the APCD and be approved prior to construction. The verification was completed prior to construction. Any major change to the emission control system that affected emissions would require an amendment. Therefore staff recommends deleting the condition.
Recommendation #6 Staff Response #6 (**AQ- 18**)	Calpine requests making the hourly emission rate for total suspended solids (TSP) for the auxiliary boilers in Condition of Certification **AQ-18** consistent with MBUAPCD requirements. Condition of Certification **AQ-18** limits emissions of “TSP” to 0.63 lb/hr from each auxiliary boiler during natural gas combustion. MBUAPCD’s individual permits to operate for the boilers limit hourly “PM10” emissions to 0.63 lbs/hour (permits 14743 and 14744, condition 2). However the Title V permit limits the hourly PM10 emissions to 0.60 lbs/hour (TV 58-01, condition 2). Particulate emissions from natural gas combustion are generally assumed to be less than 1.0 micrometer in diameter so it is

	appropriate to change the label “TSP” to “PM10” emissions. The Title V requirement is slightly more restrictive. MBUAPCD and Energy Commission requirements only specified initial boiler compliance tests for “PM” but do not specify ongoing testing to demonstrate compliance with the hourly PM limit. Particulate emissions from natural gas combustion are typically low and the facility is currently required to–and is able to–meet the lower particulate emission limit. Staff recommends amending the hourly particulate emission rate. In addition, MBUAPCD permits to operate and the facility’s Title V permit include exemptions to the limit during specified shutdown and startup periods. In the permits to operate the exemption language is in a separate condition (Condition 18). However, the Title V permit includes the exemption language in each individual condition it applies to (Conditions 2, 4, 14 and 16). This exemption language was added to the Energy Commission conditions of certification as **AQ-53** in 1995 and references **AQ-19** (NOx emissions for natural gas firing of auxiliary boilers) and **AQ-22** (fuel oil firing of auxiliary boiler) but does not include **AQ-18** (other pollutant emissions for natural gas firing of auxiliary boilers). Staff recommends adding the same exemption language from **AQ-53** to **AQ-18** for consistency. In addition, staff recommends extending the record retention period from 2 years to five years, consistent with the requirements for the Title V permit.
Recommendation #7 Staff Response #7 (**AQ- 19**)	Calpine requests making the requirements for the NOx emission limit for auxiliary boiler firing using natural gas consistent with MBUAPCD requirements. Condition of Certification **AQ-19** limits emissions of NOx from the auxiliary boiler during natural gas combustion to 40 or 100 ppmvd depending on the operating load. The limits in MBUAPCD individual and Title V permits (TV 58-01, condition 4; permits 14744 and 14733, condition 5) are consistent with Condition of Certification **AQ-19**. However the MBUAPCD Title V permit includes further clarification of the requirements during boiler shutdown and start up. In 1995, the same language was added to the Energy Commission Decision as Condition of Certification **AQ-53**. Staff is recommending moving the language in Condition of Certification **AQ-53** to condition **AQ-19** for clarity. In addition, staff recommends extending the record retention period from 2 years to five years, to be consistent with requirements in the Title V permit.
Recommendation #8	Calpine requests making the hourly emission rate when firing with No. 2 oil for sulfur SO_2 for the boilers in Condition of Certification **AQ-21** consistent with MBUAPCD requirements including exemptions for start up and shutdown.

Staff Response #8 (**AQ- 21**)	Condition of Certification **AQ-21** limits emissions of SO_2 to 7.54 lb/hr from each auxiliary boiler during periods of No. 2 fuel oil firing. This limit was approved in a 1988 amendment. The limit listed in MBUAPCD individual and Title V permits is 7.55 lb/hr (TV 58-01, condition 14; permits 14743 and 14744, condition 7). In addition the MBUAPCD permits include exemption language for start up and shutdown operations. This exemption language is the same as the language in **AQ-53;** however the exemption language is not included for **AQ-21**. At the time the facility was permitted, start up and shutdown operations were not always considered part of 'normal operations' and therefore many older projects did not include exemptions or separate emission limitations for start up and shutdown operations. It is appropriate to apply the exemption language in **AQ-53** to **AQ-21** consistent with MBUAPCD requirements. The SO_2 emission rate is dependent on the amount of sulfur in the fuel. The sulfur content of No. 2 fuel oil is regulated by both the EPA and ARB. Condition of Certification **AQ- 23** requires the fuel to have a sulfur content lower than 0.05 percent by weight. The SO_2 emission rate in **AQ-21** was correspondingly revised. Adjusting the emission rate so that it is consistent with the MBUAPCD requirement would not result in any change to SO_2 emissions. Staff recommends amending the SO_2 emission rate in **AQ-21** for consistency with MBUAPCD requirements and adding the exemption language from **AQ-53** to **AQ-21**. In addition, staff recommends extending the record retention period from 2 years to five years, to be consistent with requirements in the Title V permit.
Recommendation #9 Staff Response #9 (**AQ- 22**)	Calpine requests making the NOx emission concentration restriction for boiler No. 2 fuel oil operation consistent with MBUAPCD requirements. Condition of Certification **AQ-22** limits NOx emissions during No. 2 fuel oil operations. In the request Calpine noted **AQ-22** did not include a clock hour average, an exemption for start up and shutdown, or restrict the condition to loads greater than 40 percent. **AQ-22** was amended in 1995 and includes the 40 percent load restriction, a one hour averaging provision and the exemption for start up and shutdown was added as **AQ-53**. For greater clarity and consistency with MBUAPCD permit (TV 58-01, condition 16), staff recommends changing the term "one hour" to "clock hour", adding the term "emission concentration" and striking the term "emissions" and moving the start up and exemption language from **AQ-53** to **AQ-22**. In addition, staff recommends extending the record retention period from 2 years to five years, to be consistent with requirements for the Title V permit.
Recommendation #10	Calpine requests making the fuel oil sulfur limit consistent with MBUAPCD requirements.

Staff Response #10 (**AQ- 23**)	The sulfur limit in Condition of Certification **AQ- 23** was amended in 1988 and is currently consistent with the limit MBUAPCD lists in the Title V permit (TV 58-01, condition 17) and the individual permits (permit 14716, condition 15 and permits 14744 and 1474, condition 10). Therefore staff does not propose making any changes to Condition of Certification **AQ-23**.
Recommendation #11 Staff Response #11 (**AQ- 24**)	Calpine recommends deleting Condition of Certification **AQ-24**. Condition of Certification **AQ-24** requires details of the auxiliary boiler oxidation catalyst system be submitted to the APCD and receive approval prior to construction. Any major change to the emission control system that affected emissions would require an amendment. The verification was to be completed prior to construction. Therefore staff recommends deleting the condition.
Recommendation #12 Staff Response #12 (**AQ- 25**)	Calpine recommends deleting Condition of Certification **AQ-25**. Condition of Certification **AQ-25** requires details of the auxiliary boilers' low NOx burners and flue gas recirculation be submitted to the APCD and receive approval prior to construction. Any major change to the equipment that affected emissions would require an amendment. Therefore staff recommends deleting **AQ-25**.
Recommendations #13 and #14 Staff Responses #13 and #14 (**AQ- 32** and **AQ-33**)	Calpine recommends deleting Conditions of Certification **AQ-32** and **AQ-33** Condition of Certification **AQ- 32** requires sampling ports on the turbine exhaust stack and **AQ-33** requires sampling ports on the auxiliary boiler stacks. The condition also requires the locations to be approved prior to installation. Condition of Certification **AQ-34** requires annual source testing to be performed for the turbine and proposed **AQ-35** requires annual source testing of each auxiliary boiler. MBUAPCD currently requires ongoing source testing for the turbine and boilers. Although the sampling ports are still necessary, they are already installed. Therefore, staff recommends deleting **AQ-32** and **AQ-33**.
Recommendation #15 Staff Response #15 (**AQ- 34**)	Calpine recommends deleting Condition of Certification **AQ-34**. Condition of Certification **AQ-34** was amended in 2005 to incorporate MBUAPCD annual testing requirements for the turbine (TV 58-01 condition 34 and 14716 condition 20). Annual source testing ensures the equipment is in compliance with the specified emission limits. MBUAPCD testing requirements are however currently different than Energy Commission requirements. **AQ-34** specifies baseline performance testing but includes language indicating additional testing can be required. **AQ-34** currently specifies testing for NOx, CO, oxides of sulfur (SOx), particulates,

	ammonia, volatile organic compounds (VOCs), and other system parameters. MBUAPCD permit requirements do not require on-going testing for particulates or SOx. Energy Commission staff contacted MBUAPCD to determine when the testing requirements for particulates and SOx were removed from the MBUAPCD permits. MBUAPCD staff did not recall and was not certain if there was paperwork available documenting the change. MBUAPCD staff commented it could have been when the No. 2 fuel oil tanks were removed and the facility no longer had the physical ability to combust No. 2 fuel oil. SOx emissions from a turbine are a result of the sulfur content in the fuel and sulfur content in the permitted fuel is regulated. In addition, particulate emissions are considered negligible from the combustion of natural gas and only marginally significant from No. 2 fuel oil combustion. Condition of Certification **AQ-34** requires the testing to be performed in accordance with MBUAPCD test procedures and a testing protocol is required to be submitted and approved prior to the tests. The condition does not specify testing in regard to fuel type but requires natural gas consumption to be monitored during the testing. It is unclear if the testing condition applies to both natural gas and No. 2 fuel oil. It is common for equipment designed to combust different fuel types to only require testing for the fuel type actually being combusted. The verification requires a testing protocol to be submitted and approved by MBUAPCD and Energy Commission's CPM prior to testing. The testing protocol details the specifics of the scheduled tests such as testing parameters and test methods. The approval or disapproval of the testing protocol provides a process for requiring testing of additional pollutants and fuel types if necessary. Therefore staff recommends retaining **AQ-34** but amending the requirements. Staff recommends deleting the testing requirements for particulates and SOx and adding language to the verification specifying additional testing will be required if the turbine combusted No. 2 fuel oil during the previous year.
Recommendation #16 Staff Response #16 (**AQ- 35**)	Calpine recommends deleting Condition of Certification **AQ-35**. Condition of Certification **AQ-35** is currently a duplicate of **AQ-9**. Staff recommends deleting Condition of Certification **AQ-9** and retaining Condition of Certification **AQ-35**. Condition of Certification **AQ-35** required initial source testing of the auxiliary boilers. The condition does not specify ongoing testing requirements. MBUAPCD Title V and individual boiler operating permits require ongoing annual testing of the boilers for NOx and CO (TV 58-01, condition 36; permits 14743 and 14744, condition 13). Ongoing testing is important to ensure the equipment is properly maintained and operating in compliance with the emission limitations in the conditions of certification. Staff recommends retaining **AQ-35** and

	amending the language to reflect the ongoing testing requirements for NOx and CO in the MBUACD permits.
Recommendation #17 Staff Response #17 (**AQ- 37**)	Calpine recommends deleting Condition of Certification **AQ-37**. Condition of Certification **AQ-37** requires the facility owner to provide emission offsets for the project. The facility was required to submit the emission offset package to MBUAPCD and Energy Commission prior to construction. Staff recommends deleting **AQ-37** because the offsets were already provided.

For consistency with other Energy Commission projects, staff proposes to use updated terminology and make additional editorial changes as needed. The conditions of certification and verifications reference previous facility owners and use outdated terms. It is therefore appropriate to update the language for consistency with other Energy Commission projects. The language changes would not change the requirements and would apply to the complete list of conditions and verifications regardless of whether or not the verification has been completed.

In addition staff is proposing to modify verification language in **AQ-28**, **29**, **30**, **31** and **50** to require the specified records to be retained for 5 years for consistency. Current requirements specify 2 years. These conditions are included in the MBUAPCD Title V operating permit (TV 58-01 conditions 48, 47, 50, 51 and 39). Per Title V requirements (condition 56) records and monitoring data are to be retained for a period of 5 years. Therefore, this change does not impose any new requirements for KCC.

CONCLUSIONS AND RECOMMENDATIONS

The California Energy Commission staff (staff) recommends approval of the requested changes in CALPINE 2011 to the Air Quality conditions of certification for KCC. Specifically staff recommends deleting Condition of Certification **AQ-40**, adding Conditions of Certification **AQ-54** and **AQ-55** and extending reporting time requirements in **AQ-35, 44 and 53**. Relief from the short-term mass emission and mass concentrations limits during limited periods of equipment tuning and regulatory performance testing, and the removal of the start-up/shutdown limitations, would allow KCC to maintain the equipment and emission control systems and conduct performance/validation testing required by WECC.

In addition staff recommends modifying Air Quality Conditions of Certification **AQ-10**, **18**, **19**, **21**, **22**, **34**, **34** and **44** as described in **Table 3,** deleting Conditions of Certification **AQ-3, 9**, **17**, **24**, **25**, **32**, **33**, **37** and **52** (added 5/28/88) however staff does not recommend making the requested changes to Conditions of Certification **AQ-**, **6** and **23** with only minimal administrative change if necessary. Specific changes to each condition have been outlined in the **Table 3,** above.

Staff also recommends modifying the record retention period outlined in Conditions of Certification **AQ-28**, **29**, **30**, **31** and **50** and other administrative changes as described below.

The requested changes will conform with the applicable LORS related to air quality and will not result in significant air quality impacts. In addition, the request to extend the allowable time for report submittals will not impact air quality. The requested changes have already been incorporated into MBUAPCD permits or do not add any addition requirements.

PROPOSED AND AMENDED CONDITIONS OF CERTIFICATION

Staff recommends amending the following Air Quality conditions of certification. **Bold underline** is used to indicate new language, and ~~strikethrough~~ shows language that has been deleted. The referenced conditions of certification affected by these changes are included in the following appendix to set the context for these changes.

AQ-1: Before implementing any major change in the Air Pollution Control (APC) systems identified in Determination of Compliance (DOC) Conditions **8**, **15**, and **16**, the Emissions Monitoring Systems (EMS) identified in DOC Conditions 17 through **24**, or if any changes to any Conditions of Certification related to air quality are proposed, ~~Basic American Foods~~ **the project owner** shall submit the proposed change to the Monterey Bay Unified Air Pollution Control District (MBUAPCD **or District**) and the ~~CEC~~ **Energy Commission** for approval. Examples of major changes are the use of alternative APC systems, EMS, or equipment, or a major change in the performance criteria specified in the referenced DOC Conditions.

Verification: One hundred and twenty (120) days before implementing any major change, ~~Basic American Foods~~ **the project owner** shall submit to the MBUAPCD and the ~~CEC~~ **California Energy Commission's Compliance Project Manager (CPM)** the design details of the proposed change and a discussion of the potential change in air emissions from the project. ~~Basic American Foods~~ **The project owner** shall receive written approval from the ~~CEC~~ **Energy Commission** prior to implementing any major change.

AQ-2: ~~Basic American Foods~~ **The project owner** shall report any minor change in the APC systems identified in DOC Conditions 8, 15, and 16, or the EMS identified in DOC Conditions 17 through 24, to the MBUAPCD and ~~CEC~~ **Energy Commission** staff. Examples of minor changes are modifications grade during initial start up of the facility to ensure compliance with applicable emission limitations or use of alternative hardware to meet the required performance criteria.

Verification: ~~Basic American Foods~~ **The project owner** shall notify the MBUAPCD and the ~~CEC staff~~ **CPM** in writing ~~forty-eight (48)~~ hours in advance of making any minor change, whenever possible, but in no event later than ~~seven (7)~~ working days after implementing the change.

AQ-3: ~~Basic American Foods shall obtain a Prevention of Significant Deterioration (PSD) permit or an exemption from the MBUAPCD and comply with said permit.~~ **Deleted.**

~~**Verification:** Within 30 days of receipt of the PSD permit or exemption from MBUAPCD, Basic American Foods shall submit a copy of the PSD permit or exemption to the CEC staff.~~

AQ-4: All areas disturbed by on-site or off-site construction, and under ~~Basic American Foods~~ **the project owner's** responsibility, shall be properly treated for dust control by water application, or the use of another dust palliative, with the intent of minimizing fugitive dust emissions. If any dust palliative other than water is proposed, ~~Basic American Foods~~ **the project owner** shall obtain approval from the MBUAPCD.

Verification: ~~Basic American Foods~~ **The project owner** shall make the construction site available to the MBUAPCD and the ~~CEC staff~~ **CPM** for inspection and monitoring.

AQ-5: The MBUAPCD shall monitor all activities related to site preparation and construction, and monitor operation of the ~~Basic American Foods American 1 Cogeneration P~~**p**roject to ensure compliance with the Conditions of Certification contained in the Commission Decision relating to Air Quality. The MBUAPCD shall perform all duties and functions normally performed by the MBUAPCD and shall have the authority to issue a Permit to Operate. The conditions of the Permit to Operate will be consistent with the Certification Conditions in the Commission Decision.

Verification: The MBUAPCD and ~~the CEC~~ **Energy Commission** staff ~~wall~~ **will**, at the request of either party, meet to review the status of project compliance. ~~The CEC~~ **Energy Commission** staff shall be allowed to review the MBUAPCD's enforcement and project files except for trade secrets as defined in MBUAPCD rules. ~~Basic American Foods~~ **The project owner** shall submit to the ~~CEC~~ **CPM** a report on the status of compliance for each condition related to air quality in the Commission Decision on the ~~Basic American Foods American 1 Cogeneration~~ project. These reports shall be submitted quarterly during construction and during the first two years of operation, and shall be submitted annually thereafter.

AQ-6: Emissions of carbon monoxide in the turbine exhaust discharge to the atmosphere shall not exceed 10 ppmv calculated as a three hour rolling clock average at 15 percent O_2, dry. This limit shall not apply during start-up, which is not to exceed ~~five (5)~~ hours, or shutdown, which is not to exceed ~~two (2)~~ hours. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

Verification: The terms of this condition shall be monitored as described in DOC Condition 17.

AQ-7: The annual emissions of the gas turbine shall not exceed 130 tons per year of NOx and 82 tons per year of CO.

Verification: The terms of this Condition shall be monitored as described in DOC Conditions 17, 19, 29, and 30.

AQ-8: The maximum annual NOx emission cap for the combined or individual operation of the gas turbine and/or the boiler(s) shall not exceed 133.40 tons per year.

Protocol: The ~~owner/operator~~ **project owner** shall monitor and record in a log on site for each month of operation, the following information for natural gas and oil firings: 1) the hours of simultaneous operation of either one or both boilers with the gas turbine; and 2) the total number of tons of NOx emission from the operation of the turbine and/or boilers.

Verification: The ~~owner/operator~~ **project owner** shall submit an Annual Compliance Report to the MBUAPCD and the ~~CEC~~ CPM prior to the time of operating permit renewal. Records will be available on-site for both the District and ~~CEC~~ **Energy Commission** review for a period of three years. The terms of this condition shall be monitored as described in DOC conditions 17, 19, 29 and 30.

AQ-9: ~~Within 60 days after achieving the maximum auxiliary boiler operating conditions, but not later than 180 days after initial start up, performance tests shall be conducted in accordance with the MBUAPCD test procedures, and written results of the performance tests shall be provided to the District within 30 days after testing. A testing protocol shall be submitted to the District 30 days prior to testing, and the District shall be notified at least 10 days prior to the actual testing date so that a District representative can be present to observe. The performance test shall be done on each auxiliary boiler at 50 percent load and shall include, but will not be limited to, a test of the exhaust stream directly before the oxidation catalyst and in the auxiliary boiler exhaust stack for:~~

~~a. Carbon Monoxide, ppm at 3 percent O2 and lb/hr.~~
~~b. Non-methane Hydrocarbons, ppm and lb/hr.~~
~~c. Oxides of Nitrogen, ppm at 3 percent O2 and lb/hr.~~
~~d. Oxides of Sulfur, ppm at 3 percent O2 and lb/hr. and a test of the exhaust stack for:~~
~~e. Particulates, gr/sdcf and lb/hr. and the following process parameter:~~
~~f. Natural gas consumption.~~ **Deleted.**

~~**Verification:** Basic American Foods shall submit for approval a performance test protocol to the MBUAPCD and CEC staff 30 days before beginning testing of the auxiliary boilers. Basic American Foods shall notify the District at least 10 days before the test date and shall submit to the MBUAPCD and CEC staff a written report on the results of such performance test no later than 30 days after the test is concluded.~~

AQ-10: DOC Condition 1: The gas turbine pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits:

Pollutant	lb/hr	lb/day
NOx	30.1	722
CO	20.0	480
NH_3	13.9	334
TSP	2.5	60
NMHC	1.0	24
SO_2	0.4~~9~~**5**	12

These limits shall not apply during start up, which is not to exceed ~~five (5)~~ hours, or shut down, which is not to exceed ~~two (2)~~ hours, or during periods of oil firing. SCR catalytic controls, steam injection, and good engineering practices shall be used to the fullest extent practical during start up to minimize pollutant emissions.

Verification: The terms of this Condition shall be monitored as described in DOC Conditions 17, 19 through 21, and 25.

AQ-11: DOC Condition 2: While firing on natural gas the emissions of oxides of nitrogen, as NO_2, in the turbine exhaust discharged to the atmosphere shall not exceed 9 ppmvd, calculated as a clock hour average at 15 percent O_2 dry. This limit shall not apply during start-up, which is not to exceed ~~five (5)~~ hours, or shutdown, which is not to exceed ~~two (2)~~ hours. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

Verification: The terms of this Condition shall be monitored as described in DOC Condition 17 and 25.

AQ-12: DOC Condition 3: Emissions of ammonia in the turbine exhaust discharged to the atmosphere shall not exceed 10 ppmv calculated as a three hour rolling clock average at 15 percent O_2, dry.

Verification: The terms of this Condition shall be monitored as described in DOC Conditions 20, 25, and 27.

AQ-13: DOC Condition 4: The gas turbine shall only be fired on natural gas, except that No. 2 fuel oil may be used during periods of natural gas curtailment by the utility, or in the event of natural gas supply malfunction or disruption. In any event, No. 2 fuel oil shall not be used for more than 240 hours per year.

Verification: The terms of this Condition shall be monitored as described in DOC Condition 29.

AQ-14: DOC Condition 5: During periods of No. 2 fuel oil firing, the gas turbine pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits:

Pollutant	lb/hr	lb/day
SO_2	48.38	1161
CO	22.0	528
NOx	47.8	1147
NH_3	13.9	334
~~TSP~~**PM10**	10.0	240
NMHC	1.0	24

These limits shall not apply during start up, which is not to exceed ~~five (5)~~ hours, or shut down, which is not to exceed ~~two (2)~~ hours. SCR catalytic controls, steam injection, and good engineering practices shall be used to the fullest extent practical during start up to minimize pollutant emissions.

Verification: The terms of this Condition shall be monitored as described in DOC Conditions 18 and 26.

AQ-15: DOC Condition 6: While firing on No.2 fuel oil the emissions of oxides of nitrogen, as NO_2, in the turbine exhaust discharged to the atmosphere shall not exceed 15 ppmvd, calculated as a clock hour average at 15 percent O_2 dry. This limit shall not apply during start-up, which is not to exceed ~~five (5)~~ hours, or shutdown, which is not to exceed ~~two (2)~~ hours. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

Verification: The terms of this Condition shall be monitored as described in DOC Conditions 17 and 25.

AQ-16: DOC Condition 7: ~~Basic American Foods~~ **The project owner** shall submit a turbine start-up protocol for both hot and cold start-up, which details the procedures that will be used to minimize the pollutant emissions, prior to the initial start-up, and shall amend this protocol based on operating experience.

Verification: ~~Basic American Foods~~ **The project owner** shall submit a turbine start up protocol to the MBUAPCD and ~~CEC staff~~ **CPM** at least 60 days before the initial start up of the gas turbine. ~~Basic~~ **The project owner** will provide the ~~CEC staff~~ **CPM** a copy of the MBUAPCD's comments on the protocol and a revised protocol, based on operating experience, 30 days after receiving comments from the MBUAPCD and ~~CEC staff~~ **Energy Commission**~~.~~

AQ-17: ~~DOC Condition 8: Details of the selective catalytic reduction (SCR) system, including but not limited to manufacturer, catalyst type, linear velocity, catalyst~~

~~volume, ammonia injection rate; ammonia injection grid parameters, must be submitted to the Air Pollution Control District and receive District approval prior to starting construction.~~ **Deleted.**

~~**Verification:** Basic American Foods shall submit to the MBUAPCD the SCR system design details 120 days before construction begins. Basic American Foods shall submit to the CEC staff the MBUAPCD's approval 15 days after receipt of District approval~~.

AQ-18: DOC Condition 9: During periods of natural gas firing, the auxiliary boiler pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits from each boiler:

Pollutant	lb/hr
NOx	7.25
CO	2.65
~~TSP~~**PM10**	0.6**0**~~3~~
NMHC	0.20
SO_2	0.085

The emission limits shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start up, for a period not to exceed 30 minutes. During boiler shutdown or start up, and during operations at or below 40 percent load, procedures incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

Verification: The project owner shall maintain appropriate logs of start up and shutdown operation time periods as required by the above condition. Logs shall be maintained on site for 5 years and made available to the District and the CPM at any time. The terms of this Condition shall be monitored as described in DOC Conditions 18 and 26 **(AQ-27 and AQ-35).**

AQ-19: DOC Condition 10: During periods of natural gas firing, the emissions of oxides of nitrogen, as NO_2, in the auxiliary boiler exhaust discharged to the atmosphere shall not exceed the following concentrations, calculated as a **clock** ~~one~~ hour average at 3% O_2, dry:

At boiler loads greater than 40 percent	40	ppmvd
At boiler loads 40 percent or less	100	ppmvd

The emission limits shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start up, for a period not to exceed 30 minutes. During boiler shutdown or start up, and during operations at or below 40 percent load, procedures incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

Verification: The project owner shall maintain appropriate logs of start up and shutdown operation time periods as required by the above condition. Logs shall be maintained on site for 5 years and made available to the District and the CPM at any time. The terms of this Condition shall be monitored as described in DOC Conditions 18 and 26.

AQ-20: DOC Condition 11: The auxiliary boilers shall be fired on natural gas, except that No. 2 fuel oil may be used during training/testing, or periods of natural gas curtailment by the utility, or in the event of natural gas supply malfunction or disruption not within the control of the **project owner** ~~BAF Energy, Inc~~. In any event, No. 2 fuel oil shall not be used for more than 240 hours per year per boiler.

Protocol: Training/testing of the auxiliary boilers shall be allowed only under the following conditions:

a. Only one boiler may be tested in a calendar day,
b. The District has the authority to postpone training/testing of the auxiliary boilers due to adverse ambient air-quality conditions.
c. Each boiler may be used for training/testing on fuel oil a maximum of ~~two (~~2~~)~~ times per calendar year, and
d. Individual training/testing episodes on fuel oil shall not exceed ~~two (~~2~~)~~ full-load equivalent hours.

Verification: The District shall be notified a minimum of 30 calendar days prior to the date of training/testing on No.2 fuel oil. ~~Basic American foods~~ **The project owner** shall submit the fuel oil firing records to the District at the time of permit renewal, and shall submit the records ~~to the CEC~~ in the~~ir~~ annual Compliance Report to the ~~CEC~~ CPM.

AQ-21: DOC Condition 12: During periods of No. 2 oil firing the auxiliary boiler pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits, per boiler:

Pollutant	lb/hr
NOx	13.8
CO	2.85
TSP	12.65
NMHC	0.25
SO_2	7.5**5**~~4~~

The emission limits shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start up, for a period not to exceed 30 minutes. During boiler shutdown or start up, and during operations at or below 40 percent load, procedures incorporating good

engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

Verification: **The project owner shall maintain appropriate logs of start up and shutdown operation time periods as required by the above condition. Logs shall be maintained on site for 5 years and made available to the District and the CPM at any time.** The terms of this Condition shall be monitored as described in DOC Conditions 18 and 26.

AQ-22: DOC Condition 13: During periods of No. 2 fuel oil firing at boiler loads greater than 40 percent, the emission~~s~~ **concentration** of oxides of nitrogen, as NO2, in the auxiliary boiler exhaust discharged to the atmosphere shall not exceed 69 ppmvd, calculated as a ~~one~~ **clock** hour average at 3% O2 dry.

The emission limits shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start up, for a period not to exceed 30 minutes. During boiler shutdown or start up, and during operations at or below 40 percent load, procedures incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

Verification: **The project owner shall maintain appropriate logs of start up and shutdown operation time periods as required by the above condition. Logs shall be maintained on site for 5 years and made available to the District and the CPM at any time.** The terms of this Condition shall be monitored as described in DOC Conditions 18 and 26 **(AQ-27 and AQ-35).**

AQ-23: DOC Condition 14: The sulfur content of any No. 2 oil used as fuel in the turbine or auxiliary boilers shall not exceed 0.05 percent by weight. All fuel received must be certified to contain 0.05 percent sulfur, or less, by weight.

Verification: ~~Basic American Foods~~ **The project owner** shall obtain and maintain records certifying the sulfur content of the fuel oil. These records shall be made available to the MBUAPCD on request and shall be provided to the MBUAPCD at the time of the annual permit renewal.

AQ-24: ~~DOC Condition 15: Details of the auxiliary boiler oxidation catalyst system, including but not limited to manufacturer, catalyst type, linear velocity, and catalyst volume must be submitted to the Air Pollution Control District and receive District approval prior to starting construction.~~ **Deleted.**

~~**Verification:** Basic American Foods shall submit to the MBUAPCD the oxidation catalyst system design details 120 days before construction begins. Basic American Foods shall submit to the CEC staff the MBUAPCD's approval 15 days after receipt of District approval.~~

AQ-25: ~~DOC Condition 16: Details of the auxiliary boiler low NOx burners and flue gas recirculation system must be submitted to the Air Pollution Control District and receive District approval prior to starting construction.~~ **Deleted.**

~~**Verification:** Basic American Foods shall submit to the MBUAPCD the low-NOx burners and flue gas recirculation system design details 120 days before construction begins. Basic American Foods shall submit to the CEC staff the MBUAPCD's approval 15 days after receipt of District approval.~~

AQ-26: DOC Condition 17: A continuous monitoring system must be installed, calibrated, and operated to measure the HRSG exhaust stack for NOx, CO, and O~~2~~$_2$. The system shall continuously record the measured concentrations, and shall calculate and continuously record the NOx and CO concentrations corrected to a value of 15 percent O~~2~~$_2$, dry, and NOx and CO mass emission rates in pounds per hour. District approval for the system installation must be received prior to installation.

Verification: ~~Basic American Foods~~ **The project owner** shall submit a continuous monitoring plan for the gas turbine to the MBUAPCD and ~~CEC staff~~ **CPM** staff 90 days before installing the monitoring system, but not later than 180 days before beginning operation of the facility. ~~Basic American Foods~~ **The project owner** shall submit to the ~~CEC staff~~ **CPM** a copy of MBUAPCD's comments on the plan, and approval or disapproval of the plan within 10 days of receipt from the MBUAPCD.

AQ-27: DOC Condition 18: A continuous monitoring system must be installed, calibrated, and operated to measure the auxiliary boiler exhaust for NOx, CO, and O2. The system shall continuously record the measured concentrations, and shall calculate and continuously record the NOx and CO concentrations corrected to a value of 3 percent O~~2~~$_2$, dry, and NOx and CO mass emission rates in pounds per hour. District approval for the system installation must be received prior to installation.

Verification: ~~Basic American Foods~~ **The project owner** shall submit a continuous monitoring plan for the auxiliary boilers to the MBUAPCD and ~~CEC staff~~ **CPM** 90 days before installing the monitoring system, but not later than 180 days before beginning operation of the facility. ~~Basic American Foods~~ **The project owner** shall submit to the ~~CEC staff~~ **CPM** a copy of MBUAPCD's comments on the plan, and approval or disapproval of the plan within 10 days of receipt from the MBUAPCD.

AQ-28: DOC Condition 19: A continuous monitoring system must be installed and operated to monitor and record the fuel consumption and the mass ratio of steam to fuel being fired in the turbine. This system must be accurate to within +/- 5 percent.

Verification: ~~Basic American Foods~~ **The project owner** shall maintain records of continuous fuel consumption and the steam to fuel mass ratio monitoring. These records shall be

maintained on file for at least ~~two~~ **5** years and shall be made available to the MBUAPCD and ~~CEC~~ **Energy Commission** staff upon request.

AQ-29: DOC Condition 20: The ammonia emissions shall be monitored by the using the following ammonia slip calculation:

NH~~3~~$_3$ slip (ppmvd @15% O~~2~~$_2$) = ((NH~~3~~$_3$ fed ppm – (NOx in ppm – NOx out ppm)) * ((20.9 – 15)/(20.9-O~~2~~$_2$)))/* b
Where:
NH3 fed in ppm = ((NH~~3~~$_3$ injection rate, lb/hr * a)/(Q*Fd*4.4096E-8)) ((20.9 – O~~2~~$_2$%)/20.9))

4.4096E-8 = (K-factor constant) corrects for the molecular weight of ammonia

a = Ammonia Concentration (in % by weight/100)
b = Correction Factor based on source test data
Q = Fuel Flow mmbtu/hr
Fd = 8710 scf/mmbtu

Verification: ~~Basic American Foods~~ **The project owner** shall maintain records of ammonia emissions. These records shall be maintained on file for at least ~~two~~ **5** years and shall be made available to the MBUAPCD and ~~CEC~~ **Energy Commission** staff upon request.

AQ-30: DOC Condition 21: Instrumentation shall be installed to measure SCR catalyst inlet temperature and pressure differential across the SCR catalyst.

Verification: ~~Basic American Foods~~ **The project owner** shall maintain records of the measured inlet temperature and pressure differences across the SCR catalyst. These records shall be maintained on file for at least ~~two~~ **5** years and shall be made available to the District and ~~CEC~~ **Energy Commission** staff upon request.

AQ-31: DOC Condition 22: Instrumentation shall be installed to measure the auxiliary boiler oxidation catalyst inlet temperature and pressure differences across the oxidation Catalyst.

Verification: ~~Basic American Foods~~ **The project owner** shall maintain records of the measured inlet temperature and pressure differences across the auxiliary boiler oxidation catalyst. These records shall be maintained on file for at least ~~two~~ **5** years and shall be made available to the District and ~~CEC~~ **Energy Commission** staff upon request.

AQ-32: ~~DOC Condition 23: Four sampling ports must be provided in the turbine exhaust stack, 8 to 10 duct diameters downstream and 2 duct diameters upstream of any flow disturbance, 90 degrees apart and shall consist of 4 inch NPT couplings welded to the stack and with 4 inch pipe plugs. A 5 foot wide sampling platform or other means of providing safe access to the sampling ports must be installed.~~

~~The location of the sampling ports and platform must be approved by the Air Pollution Control District prior to installation.~~ **Deleted.**

~~**Verification:** Basic American Foods shall submit the location of the sampling ports and platform for the gas turbine to the MBUAPCD and CEC 90 days before installation. Basic American Foods shall submit to the CEC staff a copy of MBUAPCD's comments on the locations, and approval or disapproval of the locations within 10 days of receipt from the MBUAPCD.~~

AQ-33: ~~DOC Condition 24: Four sampling ports must be provided in the auxiliary boiler exhaust stack, 8 to 10 duct diameters downstream and 2 duct diameters upstream of any flow disturbance, 90 degrees apart and shall consist of 4 inch NPT couplings welded to the stack and with 4 inch pipe plugs. A sampling platform or other means of providing safe access to the sampling ports must be installed. The location of the sampling parts and platform must be approved by the Air Pollution Control District prior to installation.~~ **Deleted.**

~~**Verification:** Basic American Foods shall submit the location of the sampling ports and platform for the auxiliary boilers to the MBUAPCD and CEC staff 90 days before installation. Basic American Foods shall submit to the CEC a copy of MBUAPCD's comments on the locations, and approval or disapproval of the locations within 10 days of receipt from the MBUAPCD.~~

AQ-34: DOC Condition 25: An annual compliance test shall be conducted prior to January 1 of each year in accordance with the MBUAPCD test procedures, and the written results of the compliance test shall be provided to the District within ~~sixty~~ **60** days after testing. A testing protocol shall be submitted to the District 30 days prior to testing and the District shall be notified at least 10 days prior to the actual testing day so that a District observer can be present. The performance test shall include, but will not be limited to, a test of the exhaust stream directly after the turbine and in the exhaust stack for:

a. Oxides of Nitrogen, ppm at 15 percent O2 dry and lb/hr.
b. Carbon Monoxide, ppm at 15 percent O2, dry and lb/hr.
~~c. Oxides of Sulfur, ppm and lb/hr.~~
~~and a test of the exhaust stack for:~~
~~d. Particulates and particle size distribution, gr/sdcf and lb/hr.~~
~~e~~**c**. Ammonia, ppm at 15 percent O2, dry and lb/hr.
~~f~~**d**. Volatile Organic Compounds: ppm and lb/hr.

and the following process parameters:

~~g~~**e**. Natural gas consumption.
~~h~~**f**. Electricity generated during the test.
~~i~~**g**. Ammonia injected.
~~j~~**h**. Steam injection rate and steam to fuel ratio.

Verification: The project owner shall submit for approval a performance test protocol to the MBUAPCD and ~~CEC staff~~ **CPM** 30 days before beginning testing of the gas turbine. The project owner shall submit to the MBUAPD and ~~CEC staff~~**CPM** a written report on the results of such performance tests within ~~sixty~~ **60** days after testing. **During years NO.2 fuel oil is combusted in the turbine additional testing will be required including testing for Sox and PM10. Written notice of the compliance test shall be provided to the MBUAPCD and CPM 10 days prior to the test so that an observer can be present.**

AQ-35: DOC Condition 26: ~~Within 60 days after achieving the maximum auxiliary boiler operating conditions, but not later than 180 days after initial start up, performance tests shall be conducted~~ **An annual compliance test shall be conducted on each auxiliary boiler prior to January 1 of each year,** in accordance with the MBUAPCD test procedures, and written results of the ~~performance~~ **compliance** tests shall be provided to the District within ~~30~~ **60** days after testing. A testing protocol shall be submitted to the District 30 days prior to testing and District notification at least 10 days prior to the actual testing date shall be provided so that a District observer can be present. The ~~performance~~ **compliance** test shall include, but will not be limited to, a test of the exhaust stream directly before the oxidation catalyst and in the auxiliary boiler exhaust stack for:

a. Carbon Monoxide, ppm at 3 percent O2 and lb/hr.
~~b. Non-methane Hydrocarbons, ppm and lb/hr.~~
~~c~~**b**. Oxides of Nitrogen, ppm at 3 percent O2 and lb/hr.
~~d. Oxides of Sulfur, ppm at 3 percent O2 and lb/hr.~~
~~and a test of the exhaust stack for:~~
~~e. Particulates and particle size distribution, gr/sdcf and lb/hr.~~

and the following process parameters:

~~f~~**c**. Natural gas consumption

Verification: ~~Basic American Foods~~ **The project owner** shall submit for approval a ~~performance~~ **compliance** test protocol to the MBUAPCD and ~~CEC staff~~ **CPM** 30 days before beginning testing of the auxiliary boilers. ~~Basic American Foods~~ **The project owner** shall submit to the MBUAPCD and ~~CEC staff~~ **CPM** a written report on the result of such ~~performance~~ **compliance** tests within ~~30~~ **60** days after testing. Written notice of the ~~performance~~ **compliance** test shall be provided to the MBUAPCD **and CPM** 10 days prior to the test so that an observer can be present.

AQ-36: DOC Condition 27: The project owner shall conduct quarterly tests in the first year, and on an annual basis to determine turbine stack discharge ammonia emissions. Tests shall be conducted in accordance with MBUAPCD test procedures and the District shall be notified at least seven (7) days prior to

testing. The test results shall be submitted to the District within sixty days after testing.

Verification: ~~Basic American Foods~~ **The project owner** shall submit to the MBUAPCD the results of the quarterly tests within thirty days of completing the tests. ~~Basic American Foods~~ **The project owner** shall provide the ~~CEC staff~~ **CPM** with a summary of the test results in the quarterly or annual compliance report. ~~Basic American Foods~~ **The project owner** shall provide written notification to MBUAPCD and the ~~CEC staff~~ **CPM** 7 days prior to conducting the test so that an observer may be present.

~~**AQ-37:** DOC Condition 3 Basic American Foods shall~~

~~a. Secure the NOx Emission Reduction Credits (ERC) purchased from AMSTAR Corp., and shall surrender them to the District, finalizing this acquisition of offsets as follows:~~

~~1. BAF Energy shall cause AMSTAR Corp., or its grantee, Spreckles Sugar Company, to submit to the District its ERC transfer request no later than 60 days from the issuance of the Authorities to Construct for the auxiliary boilers or as extended by the APCO for good cause shown.~~

~~2. BAF Energy shall surrender to the District the ERCs transferred to it from the date it receives notice from the District of the completion of the transfer.~~

~~b. Commit to this project any emission reductions of any kind achieved at either the BAF Energy Cogeneration plant, the boilers, or the Basic American Foods plant in King City, or acquired from any other source, for credit to this project as further offsets. This requirement shall terminate at the anniversary of the issuance of the Authorities to Construct in 1991, or upon the complete offsetting of the project's emissions by BAF Energy, whichever is earlier. BAF Energy will thus be ineligible to bank any ERC's until either of these events occurs. In the event of shutdown of the cogeneration plant, its emissions will be eligible for banking only to the extent they have been offset.~~ **Deleted.**

~~**Verification:** Basic American Foods shall submit to the MBUAPCD and CEC an emission offset package which contains the necessary offsets for the project 45 days before construction begins.~~

AQ-38: DOC Condition 29: ~~Basic American Foods~~ **The project owner** shall monitor and record all periods of oil firing in a log maintained on site and shall submit a summary of this data on an annual basis, at the time of permit renewal.

Verification: ~~Basic American Foods~~ **The project owner** shall submit the fuel oil firing records to MBUAPCD at the time of permit renewal, and shall submit the records to the ~~CEC~~ **CPM** in the~~ir~~ annual compliance report~~ to the CEC staff~~.

AQ-39: DOC Condition 30: ~~Basic American Foods~~ **The project owner** shall monitor and record all start-up, shut-down and operational profiles in a log maintained on site.

Verification: ~~Basic American Foods~~ **The project owner** shall submit the start-up and shut-down records to MBUAPCD upon request, and shall submit the records to the ~~CEC staff~~ **CPM** in the~~ir~~ annual compliance report ~~to the CEC staff~~.

AQ-40: ~~DOC Condition 31: The turbine shall undergo no more than one start-up and one shut-down per day.~~

~~**Verification:** The terms of this Condition shall be monitored as described in DOC Condition 30.~~ **Deleted**

AQ-41: DOC Condition 32: Operation must be conducted in compliance with all data and specifications submitted with the application.

Verification: ~~Basic American Foods~~ **The project owner** shall submit, in its quarterly or annual compliance report to the ~~CEC staff~~ **CPM**, a statement on the status of compliance with DOC Condition 32.

AQ-42: DOC Condition 33: Equipment must be properly maintained and kept in good operating condition.

Verification: ~~Basic American Foods~~ **The project owner** shall provide the MBUAPCD and CEC staff access to the project site to inspect all equipment. ~~Basic American Foods~~ **The project owner** shall submit, in its quarterly or annual compliance report to the ~~CEC staff~~ **CPM**, a statement on the status of compliance with DOC Condition 33.

AQ-43: DOC Condition 34: The equipment must not be operated unless it is vented to air pollution control equipment which is in full use.

Verification: ~~Basic American Foods~~ **The project owner** shall submit, in its quarterly or annual compliance report to the ~~CEC staff~~ **CPM**, a statement on the status of compliance with DOC Condition 34.

AQ-44: DOC Condition 35: ~~Basic American Foods~~ **The project owner** shall cause to be operated an ambient monitoring station at a site approved by the Air Pollution Control Officer, for ~~NO_2,~~ PM10, and O_3 and standard meteorological parameters on a continuous basis, in accordance with the EPA requirement contained in 40 CFR 58, and **as deemed necessary** in accordance with the California Air Resources Board guidelines ~~as deemed necessary,~~**. The monitoring station instrumentation shall be compatible with the District's daily data retrieval polling methods.**

The operation of the air monitoring station shall continue for the life of the project or until the Air Pollution Control Officer determines that good cause exists to discontinue the monitoring of a pollutant. **Good cause includes adequate technical justification submitted by the permitted that successfully proves that the continuation of all or part of the monitoring requirement is no longer necessary.**

Data gathered pursuant to this Condition shall be reported ~~to the Air Pollution Control District~~ on a monthly basis, no later than ~~30~~ **45** days from the end of the month during which the data is collected.

Verification: ~~Basic American Foods shall submit to the MBUAPCD and CEC staff for approval 90 days before initial start up of the facility, an ambient monitoring plan. Basic American Foods shall submit to the CEC staff CPM MBUAPCD's approval of the plan 15 days after receipt. Basic American Foods~~ **The project owner shall make the results of the monthly reports summarizing the entire operation of the station available to the CPM if requested. The project owner** shall submit ~~to the MBUAPCD the results of the monitoring on a monthly basis, no later than 30 days from the end of the month during which the data is collected, and summarize the results~~ **an annual data summary** report and status of the monitoring in the annual compliance report to the ~~CEC staff~~ **CPM. Any modification to the current air monitoring station cooperation agreement shall be submitted within 45 days to the CPM**.

AQ-45: DOC Condition 36: Any authorized representative of the ~~Monterey Bay Unified Air Pollution Control District~~ **MBUAPCD** shall be permitted:

a. to enter upon those premises where the source is located or in which any records are required to be kept under the terms and conditions of the Authority to Construct:
b. to have access to and copy any records required to be kept under the terms and conditions of this Authority to Construct;
c to inspect any equipment, operation, or process described or required in this Authority to Construct; and
d. to sample emissions from the source.

Verification: ~~Basic American Foods~~ **The project owner** shall provide the MBUAPCD and ~~CEC~~ **Energy Commission** staff access to the project site. ~~Basic American Foods~~ **The project owner** shall submit, in its quarterly or annual compliance report to the ~~CEC~~ **CPM**, a statement on the status of compliance with DOC condition 36.

AQ-46: DOC Condition 37: Ten (10) Proctor and Schwartz three stage vegetable dryers may not be fired with fossil-fuel upon start-up of the gas turbine or auxiliary boiler(s).

Verification: ~~Basic~~ **The project owner** shall submit to the ~~CEC~~ CPM a copy of the amended permit(s) to operate for the ten dryers by May 15, 1989.

AQ-47: The gas turbine and the auxiliary boilers must not be operated simultaneously for more than 6 full load equivalent hours during any 24-hour period.

Verification: ~~Basic~~ **The project owner** shall monitor and record all periods of simultaneous operation of the auxiliary boilers and gas turbine. The record shall include the hours of operation and percent of capacity of the auxiliary boilers. ~~Basic~~ **The project owner** shall maintain a log of these records on site and submit the records to MBUAPCD at the time of renewal of the permit. Basic shall submit the records to the ~~CEC staff~~ **CPM** in the~~ir~~ annual compliance report ~~to the CEC~~.

AQ-48: ~~Basic~~ **The project owner** shall purchase a cooling tower with a guaranteed drift rate not to exceed 0.002 percent of the flow rate of the circulating cooling water

Verification: ~~Basic~~ **The project owner** shall submit to the MBUAPCD and the ~~CEC staff~~ **CPM** the cooling tower manufacturer's design specifications and guaranteed drift rate at least 60 days prior to the construction of the cooling tower, and shall receive the MBUAPCD's and ~~CEC~~ **Energy Commission** staff's written approval prior to beginning construction of the cooling tower

AQ-49: ~~Basic~~ **The project owner** shall install and operate a flow meter to monitor the circulating cooling water flow rate, or equivalent method for measuring flow may be used as approved by the MBUAPCD.

Verification: ~~Basic~~ **The project owner** shall submit to the MBUAPCD a circulating cooling water flow rate monitoring plan at least 60 days before installation. The plan shall include, but not be limited to, the method of monitoring, reporting frequency, and the calibration techniques.

AQ-50: ~~Basic~~ **The project owner** shall conduct monthly compliance tests to measure the total dissolved solids (TDS) concentration of the cooling tower circulating water.

Verification: ~~Basic~~ **The project owner** shall submit the test results to the MBUAPCD and to the ~~CEC staff~~ **CPM** on a quarterly basis. ~~Basic~~ **The project owner** shall maintain the monitoring records on site for ~~two~~ **5** years and shall make them available to the MBUAPCD and ~~CEC~~ **Energy Commission** staff upon request.

AQ-51: ~~Basic~~ **The project owner** shall design and operate the cooling tower so that the PM10 emissions from the cooling tower does not exceed 20 pounds per day. The PM10 emissions shall be calculated as the product of circulating cooling tower flow rate times TDS concentration times the circulating cooling water drift rate, as follows:

(PM10 in lbs/day) = (flow rate in gpm) x (TDS in ppm) x (drift loss = 0.002 percent) x (conversion factor = 0.012)

Verification: The terms of this Condition shall be monitored as described in Conditions 49 and 50.

AQ-52: ~~Basic~~ **The project owner** may request approval from MBUAPCD and ~~CEC~~ **Energy Commission** staff for revisions to the PM10 daily emission limit from the cooling tower after the first year of operation provided that ~~Basic~~ **The project owner** can substantiate that the actual PM10 monitored pursuant to DOC Condition 35 shows a lower background 24-hours ambient concentration than the assumed existing value of 42 ug/m3.

Verification: The terms of this Condition shall be monitored as described in DOC Condition 35. ~~Basic~~ **The project owner** shall submit its request for approval of revising the TSP daily emission limit to MBUAPCD and ~~CEC staff~~ **CPM** no sooner than one year after start of operation. The request shall include ambient air quality monitoring data and justification for the requested revision.

AQ-52: ~~BAF Energy shall tender a growth allowance program funding fee to the District in the amount of $60,000, payable within 60 days of the issuance of the Authorities to Construct (AC), and $60,000 plus an increase each year based on the California Consumer Price Index, each year thereafter for three (3) years, on the anniversary date of the AC. (The last payment will be due on the AC anniversary date in 1990).~~

~~a. BAF Energy has acquired additional offsets for its cogeneration project in accordance with Condition 37 (b) above. The growth allowance value of any such additional offsets shall be deducted from the back end of any remaining growth allowance funding fee. The growth allowance value of additional offsets for this project is determined by dividing the annual funding fee by the total unoffset emissions of the project. Or,~~

~~b. An intervening rulemaking action or other action results in the District's receipt of significant additional funding for the unoffset emission growth allowance provided to BAF Energy for this project.~~ **Deleted**

~~**Verification:** The MBUAPCD shall submit to the CEC Compliance Project Manager, BAF Energy, and the Air Resources Board (if they so desire), on a quarterly basis, a report describing accomplishments resulting from the position funded by this condition. The quarterly reports will continue to be due for the term of the position as specified above (Condition 52).~~

AQ-53: ~~The emission limits contained in Conditions 19 and 22 shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start up, for a period not to exceed 30 minutes. During boiler shutdown or start up, and during operations at or below 40 percent load, procedures incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.~~ **Deleted**

~~**Verification:** The project owner shall maintain appropriate logs of start up and shutdown operation time periods as required by the above condition. Logs shall be maintained on site for two years and made available to the District and the CPM at any time.~~ **Deleted**

AQ-53: Cumulative emissions, including emissions generated during Start-ups and Shutdown, from all equipment at Calpine King City Cogen and the Gilroy Energy Center shall not exceed the following quarterly and annual limits:

	NOx (lb.)	CO (lb.)	PM10 (lb.)	VOC (lb.)	SO_2 (lb.)
1st Quarter	72,452	58,445	12,071	4,762	1,748
2nd Quarter	73,178	59,095	12,204	4,815	1,768
3rd Quarter	73,905	59,744	12,339	4,868	1,787
4th Quarter	73,905	59,744	12,339	4,868	1,787
Annual	293,440	237,028	48,953	19,313	7,090

Protocol: The total quarterly emission for NOx and CO shall be reported based on actual recorded CEM data. Quarterly emission of SOx (as SO_2), PM10 and VOC (as methane) shall be reported as follows:

Volume of natural gas consumed x Emission rate (lb/MMft^3) + Start/Stop Increment

Note: 1) Emissions rate (lb/MMft^3) is established by latest source test
2) Start/Stop Increment for each is event is:

Pollutant	Hot Start (lbs)	Cold Start (lbs)	Shutdown (lbs)
NOx	27.8	381.8	22.9
CO	59.5	149.4	41.3
SOx (as SO_2)	0	0	0
PM10	0	0	0
VOC	0.8	1.5	1.5

Note: During periods of oil firing as allowed for on the permits for the Frame 7 Turbine and the ~~B~~**b**oilers, the allowable emissions are increased by the incremental hourly limit for oil firing versus the natural gas hourly limit for all hours the equipment was actually operated on fuel oil.

Verification: The ~~owner/operator~~ **project owner** shall report the actual emissions to the District for each calendar quarter within ~~30 (thirty)~~ **45** days from the end of that quarter. The ~~owner/operator~~ **project owner** shall submit the four quarterly actual emissions reports to the CPM as part of the annual report.

AQ-54 **The emission limits contained in Conditions of Certification AQ-6, AQ-10, AQ-11 and AQ-12 shall not apply during periods of combustor tuning, balancing, or non-Air District regulatory mandated performance testing. These periods shall not exceed 100 hours per year per turbine.**

Verification: The project owner shall notify the District prior to initiating any of these activities, and shall monitor and record all periods of these activities in a log maintained on-site and shall submit a summary of this data to the District and CPM on an annual basis.

AQ-55 **The emission limits contained in Conditions of Certification AQ-18, AQ-19 and AQ-21 shall not apply during periods of boiler tuning. Boiler tuning shall not exceed 50 hours per year per boiler.**

Verification: The project owner shall notify the District prior to initiating any of these activities, and shall monitor and record all periods of boiler tuning in a log maintained on-site and shall submit a summary of this data to the District and CPM on an annual basis.

REFERENCES

Calpine 2011 - Petition to Amend Commission Decision Conditions of Certification, docketed April 20, 2011.

Calpine 2012 - Petition to Amend Commission Decision Conditions of Certification (TN 67521), docketed October 4, 2012.

Calpine 2014 - Additional Information Relating to Petition to Amend for Air Quality. March 17, 2014.

MBUAPCD 2005 - Monterey Bay Unified Air Pollution Control District. Evaluation Report, Preliminary Decision on Proposed Modifications for Calpine King City Cogeneration. March 14, 2005.

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