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PETITION TO AMEND

CHANGE IN STARTUP AND SHUTDOWN OPERATION
MAGNOLIA POWER PROJECT
SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY
(01-AFC-6)

Submitted to:

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TABLE OF CONTENTS

Page

LIST OF TABLES iii

ACRONYMS AND ABBREVIATIONS vi

SECTION 1 INTRODUCTION 1-1

1.1 Background 1-1
1.2 Description of Project Amendment 1-3
1.3 Necessity of Proposed Changes 1-6
1.4 Summary of Environmental Impacts 1-7
1.5 Consistency of Amendment with License 1-7
1.6 Additional Information Included in the Amendment Application 1-7

SECTION 2 DESRIPTION OF PROJECT AMENDMENT 2-1

2.1 Description of Project Amendment/Modifications 2-1
2.1.1 Revised Startup Criteria Pollutant Emissions 2-1
2.1.2 Revision to Higher Heating Value (HHV) of Natural Gas 2-1
2.1.3 Revision to Monthly Emission Limits in COC AQ-11 2-2
2.1.4 Revisions to Specifications of Carbon Monoxide Catalyst 2-2
2.1.5 Modification to the Wording on the Frequency of the Ammonia Slip Testing (COC AQ-7) 2-2
2.2 Necessity of Proposed Changes 2-2

SECTION 3 ENVIRONMNETAL ANALYSIS OF THE PROJECT CHNAGES 3-1

3.1 Process Description 3-1
3.2 Emission calculations 3-2
3.2.1 Criteria Pollutants Emissions from Combustion Turbine and the Duct Burner 3-2
3.2.2 Maximum Daily Criteria Pollutant Emissions from Combustion Turbine and Duct Burner 3-3
3.2.3 Maximum Monthly Criteria Pollutant Emissions from Combustion Turbine and Duct Burner 3-3
3.2.4 Annual Criteria Pollutant Emissions from Combustion Turbine and Duct Burner 3-3
3.2.5 PM10 Emissions from the Cooling Tower 3-3
3.2.6 Criteria Pollutant Emissions Estimated and Licensed by the CEC (2003) 3-3

TABLE OF CONTENTS

Page

3.2.7 Revised Daily, Monthly, and Annual Average Emission Limits (2016).... 3-4
3.3 Air Toxics Emissions.... 3-4
3.4 Green House Gas Emissions.... 3-5
3.5 Air Quality Impact Analysis.... 3-5
3.5.1 Significance Criteria.... 3-5
3.5.2 Air Dispersion Modeling Analysis.... 3-6
3.5.3 Results of the Carbon Monoxide Air Dispersion Modeling Analysis.... 3-8
3.5.4 Results of the PM10 Air Dispersion Modeling Analysis.... 3-9
3.5.5 Results of the NOx Air Dispersion Modeling Analysis.... 3-10
3.5.6 Results of the SOx Air Dispersion Modeling Analysis.... 3-11
3.6 Mitigation Measures.... 3-11
3.7 Cumulative Impacts.... 3-12
3.8 Compliance with LORS.... 3-12
3.9 Conclusions.... 3-18
3.10 Public Health.... 3-18
3.10.1 Compliance with LORS.... 3-19
SECTION 4 PROPOSED MODIFICATIONS TO THE CONDITIONS OF CERTIFICATIN.... 4-1
SECTION 5 POTENTIAL EFFECTS ON THE PUBLIC.... 5-1
SECTION 6 LIST OF PROPERTY OWNERS.... 6-1
SECTION 7 POTENTIAL EFFECTS ON PROPERTY OWNERS.... 7-1
SECTION 8 REFERENCES.... 8-1

APPENDICES

APPENDIX A List of Property Owners within 1,000 Feet of the Magnolia Power Project
APPENDIX B Air Dispersion Modeling Protocol

LIST OF TABLES

Page

3-1 Summary of Proposed Operating Scenarios for the MPP Combustion Turbine 3-20
3-2 Summary of Proposed Operating Scenarios for the MPP Duct Burner..... 3-20
3-3 Normal MPP Operation Hourly Emissions (100% Load) Without the Duct Burner 3-21
3-4 MPP Duct Burner Operation Hourly Emissions..... 3-21
3-5 Normal MPP Operation Hourly Emissions (100% Load) With the Duct Burner..... 3-21
3-6 Emissions during Startup of the MPP (startup duration six hours) 3-22
3-7 Emissions during Shutdown of the MPP [Shutdown Duration 0.5 hr (30 minutes)] 3-22
3-8 Summary of Emissions During Startup, Shutdown, and Normal Operations..... 3-23
3-9 Summary of Daily, Monthly, and Annual Criteria Pollutant Emissions 3-23
3-10 MPP Maximum Hourly Emissions, lb/hr [Data from CEC Staff Report, MPP Project, October 2002 (01-AFC-6)] Air Quality Table 12] 3-24
3-11 MPP Estimated Maximum Daily, Monthly and Annual Emissions [Data from CEC Staff Report, MPP Project, October 2002 (01-AFC-6)] Air Quality Table 13]..... 3-25
3-12 Revised Daily, Monthly, and Annual Emission Limits (2016) 3-28
3-13 Post-Modification MPP Air Toxics Emissions..... 3-29
3-14 MPP GHG Emissions 3-29
3-15 Ambient Air Quality Significance Thresholds 3-30
3-16 Maximum 24-Hour and Annual Average PM10 Concentrations at the Burbank-West Palm Avenue (Burbank): District station Code 069, East San Fernando Valley..... 3-30
3-17 Maximum 1-Hour and 8-Hour Monitored CO Concentrations at the Burbank-West Palm Avenue (Burbank): District station Code 069 East San Fernando Valley..... 3-31
3-18 Maximum 1-Hour and Annual Monitored NO_2 Concentrations at the Burbank-West Palm Avenue (Burbank): District station Code 069 East San Fernando Valley..... 3-31
3-19 1-Hour NO_2 98^{th} Percentile Concentrations at the Burbank-West Palm Avenue (Burbank): District station Code 069, East San Fernando Valley 3-31
3-20 Maximum 1-Hour and 24-Hour Monitored SO_2 Concentrations at the Burbank-West Palm Avenue (Burbank): District station Code 069 East San Fernando Valley..... 3-32
3-21 1-Hour SO_2 99^{th} Percentile Concentrations at the Burbank-West Palm Avenue (Burbank): District station Code 069, East San Fernando Valley 3-32
3-22 CO Emission Rate (1-hour Average) and Other Source Release Parameters for Startup, Normal, and Shutdown Operating Scenarios..... 3-33

LIST OF TABLES (CONTINUED)

Page

3-23 PM10 Emission Rate (1-hour Average) and Other Source Release Parameters for Normal Operating Scenario (Ct + DB Operation) and Cooling Tower Cells 3-33

3-24 NOx Emission Rate (1-hour Average) and Other Source Release Parameters for Startup, Normal, and Shutdown Operating Scenarios 3-34

3-25 SOx Emission Rate (1-hour Average) and Other Source Release Parameters for Normal Operating Scenario (CT + DB Operation) 3-34

3-26 CO Emission Rate and Other Source Release Parameters Selected for Air Dispersion Modeling Analysis for Startup, Normal, and Shutdown Operating Scenarios 3-34

3-27 PM10 Emission Rate and Other Source Release Parameters Used for Estimating 24-hr Average Concentrations for the Normal Operating Scenario (CT + DB Operation) and Cooling Tower Six Cells 3-35

3-28 PM10 Emission Rate and Other Source Release Parameters Used for Estimating Annual Average Concentrations for the Normal Operating Scenario (CT + DB Operation) and Cooling Tower Six Cells 3-35

3-29 NOx Emission Rate and Other Source Release Parameters Selected for Air Dispersion Modeling Analysis for Startup, Normal, and Shutdown Operating Scenarios for demonstrating Compliance with 1-hr NOx CAAQS and NAAQS) 3-36

3-30 NOx Emission Rate and Other Source Release Parameters Used for Estimating Annual average Concentrations (CT + DB Operation) 3-36

3-31 SOx Emission Rate (1-hr Average) and Other Source Release Parameters Selected for Air Dispersion Modeling Analysis for Normal Operating Scenario (CT + DB Operation) 3-36

3-32 Operational Impact Analysis for CO Emissions 3-37

3-33 Operational Impact Analysis for PM10 Emissions SCAQMD Significance Criteria Analysis 3-37

3-34 Results of PM10 Annual Modeling Scenario Analysis Five Years of Meteorological Data 3-38

3-35 Operational Impact Analysis for PM10 Emissions CAAQS and NAAQS Analysis 3-48

3-36 Modeling Analysis for NOx Emissions (1-hr NOx CAAQS) 3-39

3-37 Modeling Analysis for NOx Emissions (1-hr NOx NAAQS) 3-39

3-38 Results of NOx Annual Modeling Scenario Analysis Five Years of Meteorological Data 3-40

3-39 Annual Modeling Analysis Results for NOx Emissions 3-40

LIST OF TABLES (CONTINUED)

Page

3-40 Modeling Analysis for SOx Emissions (1-hr and 24-hr SOx CAAQS) 3-41
3-41 Modeling Analysis for SOx Emissions (1-hr SOx NAAQS)..... 3-41

ACRONYMS AND ABBREVIATIONS

AFC	Application for Certification
BACT	Best Available Control Technology
BWP	Burbank Water and Power
CAM	Compliance Assurance Monitoring
CARB	California Air Resources Board
CCGF	Combined Cycle Electrical Power Generation Facility
CEC	California Energy Commission
CEMS	Continuous Emissions Monitoring System
CEQA	California Environmental Quality Act
CFH	cubic feet per hour
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COB	City of Burbank
COC	Condition of Certification
CT	combustion turbine
CTG	combustion turbine generator
DACFM	dry actual cubic feet per minute
DAHS	Data Acquisition & Handling System
DSCF	dry standard cubic feet
DSCFM	dry standard cubic feet per minute
EPA	United States Environmental Protection Agency
FSA	Final Staff Assessment
GHG	Greenhouse Gases
gpm	gallons per minute
GWP	Global Warming Potential
HAP	hazardous air pollutant
HHV	higher heat value
HI	Hazard Index
HRA	Health Risk Assessment
HRSG	Heat Recovery Steam Generator
Hz	Hertz
LADWP	Los Angeles Department of Water and Power
LAER	Lowest Achievable Emissions Reduction
LHV	lower heating value
LORS	Laws, Ordinances, Regulations, and Standards
MPP	Magnolia Power Project
MICR	maximum individual cancer risk
MW	megawatt
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	ammonia

ACRONYMS AND ABBREVIATIONS (CONTINUED)

NHMC	non-methane hydro-carbon
NO_2	nitrogen dioxide
NOx	oxides of nitrogen
N_2O	nitrous oxide
NSPS	New Source Performance Standard
O_2	oxygen
PFC	perflurocarbons
PM	particulate matter
PM2.5	particulate matter of 2.5 microns or less in diameter
PM10	particulate matter of 10 microns or less in diameter
ppbvd	parts per billion by volume, dry basis
ppmvd	parts per million by volume, dry basis
PSD	prevention of significant deterioration
PTE	Potential-to-Emit
RECLAIM	Regional Clean Air Incentives Market
rpm	revolutions per minute
RTCs	Reclaim Trading Credits
RTU	remote terminal unit
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCPPA	Southern California Public Power Authority
SCR	selective catalytic reduction
SIP	State Improvement Plan
SO_2	sulfur dioxide
SO_x	oxides of sulfur
STG	steam turbine generator
TAC	toxic air contaminant
tpy	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

SECTION 1
INTRODUCTION

1.1 Background

The Magnolia Power Project (MPP) is a 323-megawatt (MW) natural gas fired combined-cycle electrical power generating facility (CCGF) located at the site of an existing City of Burbank (COB) Power plant in Burbank, California. The power plant is built on approximately three acres of the existing 23-acre site. MPP is owned by the Southern California Public Power Authority (SCPPA) and operated by the COB's Water & Power (BWP) Department. The MPP was certified by the California Energy Commission (CEC or Commission) in March 2003 (CEC, 2003) and went in compliance phase in September 2005.

The startup and shutdown information, including emission estimates used to prepare the Application for Certification (AFC), and relied on by the CEC was based on the best available data, and included estimates by the equipment manufacturers. These emission estimates were used by the CEC to develop Conditions of Certification (COCs). During the normal startups of the CCGF (startups after commissioning of the CCGF), it was observed that the startup duration was about six hours and the oxides of nitrogen emission was about 440 pounds (during the full start of the CCGF). A comparison of the above observed startup duration with the COC AQ-13 indicated that the observed startup duration was significantly higher than the permitted startup durations of all the three types of startups (Cold Start = 4 hours; Warm Start = 2.1 hours; and Hot Start = 1.5 Hours). Oxides of nitrogen (NOx) emissions during the startup were also observed to be higher than the emissions used for preparing the Application for Certification.

The SCPPA submitted a permit application in December 2006 to the South Coast Air Quality Management District (SCAQMD) requesting the changes in the following permit conditions:

1. Redefine startup (all starts to be considered as cold starts).
2. Remove the terms "warm startup" and "hot startup."
3. Increase in startup duration.
4. Increase the allowed NOx emissions during the start.
5. Reduce the total number of starts to three per month.
6. Reduce the total number of shutdowns to three per month.
7. Make suitable associated changes in SCAQMD Permit Conditions.

The SCPPA also requested a change in the hours of duct burner operation from the permitted 240 hrs/month to 200 hrs/month. This change as well as the decrease in the number of startups and shutdowns was requested to demonstrate compliance with the permitted monthly emission limits. In addition, the SCPPA performed revised emission calculations using the SCAQMD's default higher heating value (HHV) for natural gas of 1050 Btu/scf. This is higher than the HHV of 1,020 Btu/scf used for preparing the 2001 SCPPA MPP initial permit application.

The revised permit for the MPP was issued in 2008 and the MPP has been in operation in compliance with the revised permit conditions.

The SCPPA further reviewed the operation of the MPP, including its integration with the intermittent renewable energy resources (e.g. wind and solar) and identified the need to shutdown the power plant more often than specified in the SCAQMD permit. This will also require an increase in the number of startups in comparison to the currently permitted startups of three per month.

The SCPPA submitted a permit application to the SCAQMD (permit application submitted in May 2015) requesting for changes in the following permit conditions:

1. Increase the number of allowed startups and shutdowns (from three to five per month and 36 to 60 per year).
2. Change in the hours of duct burner operation from the currently permitted 200 hrs/month to 240 hrs/month. Please note that the initial permit application for the MPP was based on the 240 hrs/month of duct burner operation.

The SCPPA also noted that the specifications of carbon monoxide (CO) oxidation catalyst provided in the Title V permit issued to the MPP facility are not correct. It may be noted that the original permit application for the MPP was submitted in 2001. This application was submitted during the development phase of the MPP and the CO oxidation catalyst was erroneously specified. The CO catalyst specified in the permit application was not installed at the MPP; however, the specifications mentioned in the permit application were not changed and the permit issued by the SCAQMD contained inaccurate CO catalyst specifications. According to the CO catalyst data provided in the MPP permit, CO catalyst was manufactured by Engelhard. However, CO catalyst manufactured by EmeraChem was installed in 2005 at the MPP. The SCPPA therefore requested the SCAQMD for replacing the incorrect CO catalyst specifications in the permit with the correct specifications. Please note there will be no changes in the criteria pollutant or toxic air contaminant emissions due to the proposed changes in the specifications of the CO catalyst.

Furthermore, the SCPPA requested the SCAQMD for a modification to the wording on the frequency of the ammonia slip testing from "at least annual thereafter" to "at least every calendar year thereafter." This modification will provide additional flexibility to the facility in complying with the source testing requirement. Please note there will be no changes in the criteria pollutant or toxic air contaminant emissions due to the proposed changes in the wording on the frequency of the ammonia slip testing.

The SCAQMD has issued the revised permit for the MPP modifications (SCAQMD, 2016b). A copy of the SCAQMD revised permit for the MPP modifications is provided in Appendix C.

The SCPPA is requesting amendment to the COCs associated with the changes suggested above for the operation of the MPP and also the changes already implemented conforming to the permit issued by the SCAQMD in 2008. A description of the COCs requiring amendments is provided below.

1.2 Description of Proposed Amendment

The purpose of this filing is to request the CEC's approval to amend the MPP's COCs listed below to conform to the recent revised permit issued by the SCAQMD (SCAQMD, 2016b). Additional information on these proposed changes are provided in Section 2.

CO Catalyst Specifications:

1,787 MMBtu/hr Gas Turbine (ID No. D4) (A/N 386305) No. 1 GE Model PG7241FA with Dry Low NOx combustors connected directly to a 181.1 MW Electric Generator (ID No. B5) and Heat Recovery Steam Generator (ID No. B7) with 583 MMBtu/hr Duct Burners (ID No. D6) connected to a 142 MW Steam Turbine (ID No. B8). Selective Catalytic Reduction (ID No. C10) (A/N 386306) with 1,100 cubic feet of total volume, 67 feet height, 1.33 feet long, 26 feet wide with an ammonia injection grid (ID No. B11) and CO oxidation catalyst (ID No. C9) with 360 cubic feet of total volume connected to an exhaust stack (ID No. S12) (A/N 386306) No. 1.

AQ-1 The project owner shall limit the fuel usage for the duct burner to no more than 572 MM cubic feet per year.

AQ-2 The project owner shall limit the fuel usage for the duct burner to no more than 6.86 MM cubic feet per day.

AQ-3 The project owner shall install and maintain a flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH_3).

The project owner shall also install and maintain a device to continuously record the parameter being measured. The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.

AQ-4 The project owner shall install and maintain a temperature gauge to accurately indicate the temperature in the exhaust at the inlet to the SCR reactor. The project owner shall also install and maintain a device to continuously record the parameter being measured. The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.

AQ-5 The project owner shall install and maintain a pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches water column. The project owner shall also install and maintain a device to continuously record the parameter being measured. The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.

AQ-6 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant	Method	Averaging Time	Test Location
NOx	District Method 100.1	1 hour	Outlet of the SCR
CO	District Method 100.1	1 hour	Outlet of the SCR
SOx	District Approved Method	District Approved Avg. Time	Fuel sample
ROG	District Approved Method	1 hour	Outlet of the SCR
PM	District Approved Method	District Approved Avg. Time	Outlet of the SCR
NH_3	District Method 207.1 and 5.3 or EPA Method 17	1 hour	Outlet of the SCR
Acetaldehyde	District Approved Method	District Approved Avg. Time	Outlet of the SCR
Benzene	District Approved Method	District Approved Avg. Time	Outlet of the SCR
Formaldehyde	District Approved Method	District Approved Avg. Time	Outlet of the SCR
PAH	District Approved Method	District Approved Avg. Time	Outlet of the SCR

The test shall be conducted after District approval of the source test protocol, but no later than 180 days after initial startup. The District shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine and the steam turbine generating output in MW.

The test shall be conducted in accordance with a District approved source test protocol. The protocol will be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the District before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted for all pollutants 1) when the gas turbine and the duct burner are operating simultaneously at 100 percent of maximum heat input and 2) when the gas turbine is operating alone at 100 percent of maximum heat input. In addition, tests shall

be conducted when the gas turbine is operating alone at loads of 75 and 50 percent of maximum heat input for NOx, CO, VOC and NH_3 tests.

AQ-7 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant	Method	Averaging Time	Test Location
NH_3	District Method 207.1 and 5.3 or EPA Method 17	1 hour	SCR Outlet

The test shall be conducted and the results submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the Continuous Emission Monitoring System (CEMS), shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable or not yet certified, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

AQ-11 The project owner shall limit emissions from this equipment as follows:

Containment	Emission Limit
CO	7,988 LBS IN ANY 1 MONTH
PM10	10,080 LBS IN ANY 1 MONTH
VOC	3,638 LBS IN ANY 1 MONTH
SOx	1,039 LBS IN ANY 1 MONTH

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from the gas turbine and duct burner.

The project owner shall calculate the emission limit(s) by using monthly fuel use data and the following emission factors: PM10 with duct firing 7.89 lbs/MMscf, PM10 without duct firing 6.86 lbs/MMscf, VOC with duct firing 2.63 lbs/MMscf, VOC without duct firing 2.62 lbs/MMscf, VOC startups 30 lbs/event, VOC shutdown 17 lbs/event, SOx 0.75 lbs/MMscf.

Duct burner fuel usage shall not exceed 222 MMscf per month and 618 MMscf per year. Written records of duct burner operation and fuel usage shall be maintained and made available upon request from AQMD.

The project owner shall calculate the emission limit(s) for CO, during the commissioning period, using the fuel use data and the following emission factors:

228 lbs/MMscf during the no load and part load tests when the turbine is operating at or below 60 percent load, and 14 lbs/MMscf during the mid load and full load tests when the turbine is operating at greater than 60 percent load.

The project owner shall calculate the emission limit(s) for CO, after the commissioning period and prior to the CO CEMS certification, using fuel use data and the following emission factors: 500 lbs/event for cold startups, 300 lbs/event for warm startups, 285 lbs/event for hot startups, 120 lbs/event for shutdowns, and 4.58 lbs/MMscf for all other operations.

The project owner shall calculate the emission limit(s) for CO, after the CO CEMS certification, based on readings from the certified CEMS. In the event the CO CEMS is not operating or the emissions exceed the valid upper range of the analyzer, the emissions shall be calculated in accordance with the approved CEMS plan.

AQ-13 The project owner may, at his discretion, chose not to use ammonia injection if any of the following requirement(s) are met:

The inlet exhaust exhaust temperature to the SCR is 450 degrees F or less, not to exceed 4 hours during a cold startup, 2.1 hours during a warm startup, 1.5 hours during a hot startup, and 0.5 hours during a shutdown.

AQ-16 The 2.0 PPM NOx emission limit(s) shall not apply during turbine commissioning, startup, and shutdown periods. Startup time shall not exceed 4 hours per startup and the number of startups shall not exceed one per day. Shutdown time shall not exceed 30 minutes per shutdown and the number of shutdowns shall not exceed one per day. The commissioning period shall not exceed 636 operating hours from the date of initial startup. The project owner shall provide the AQMD with written notification of the startup date. Written records of commissioning, startups, and shutdowns shall be maintained and made available upon request from AQMD.

AQ-17 The 2.0 PPM CO emission limit(s) shall not apply during turbine commissioning, startup, and shutdown periods. Startup time shall not exceed 4 hours per startup and the number of startups shall not exceed one per day. Shutdown time shall not exceed 30 minutes per shutdown and the number of shutdowns shall not exceed one per day. The commissioning period shall not exceed 636 operating hours from the date of initial startup. The project owner shall provide the AQMD with written notification of the startup date. Written records of commissioning, startups, and shutdowns shall be maintained and made available upon request from AQMD.

1.3 Necessity of Proposed Changes

Sections 1769(a)(1)(A), (B), and (C) of the CEC Siting Regulations require a discussion of the necessity for the proposed revision to the MPP project and whether the revision is based on information known by the petitioner during the CEC certification proceeding. During the licensing period, the SCPPA requested startup data from the turbine vendor. These data were used as the basis for project licensing and were considered the best available data at the time. In addition, the proposed changes in the increase in monthly startups and shutdowns are necessary to integrate the operation of the

MPP with the intermittent renewable energy resources (e.g. wind and solar), in compliance with applicable air quality regulations and permits.

1.4 Summary of Environmental Impacts

Section 1769 (a)(1)(E) of the CEC Siting Regulations requires that an analysis be conducted that addresses impacts that the proposed revisions may have on the environment and proposed measures to mitigate any significant adverse impacts. In addition, Section 1769(a)(1)(F) of the Siting Regulations requires a discussion of the impacts the proposed revisions may have on the facility's ability to comply with applicable laws, ordinances, regulations and standards (LORS).

Section 3 includes a detailed analysis of the potential environmental impacts of the proposed changes, as well as a discussion of the consistency of the proposed changes with LORS. Section 3 concludes that there will be no significant environmental impacts associated with the Amendment, and that the project as amended will comply with applicable LORS. Proposed modifications to the conditions of certification are provided in Section 4.

1.5 Consistency of Amendment with License

Section 1769 (a)(1)(D) of the CEC Siting Regulations requires a discussion of the consistency of each proposed revision with the assumptions, rationale, findings, or other basis of the Final Decision of the project and whether the revisions are based on new information that changes or undermines the basis of the Final Decision of the project. An explanation is also required why the revision(s) should be permitted. The proposed changes do not undermine the assumptions, rationale, findings, or other basis of the Final Decision for the project. In addition, the proposed project amendments are expected to comply with applicable LORS. Proposed modifications to the existing COCs listed in Section 1.2 are included in Section 4.

1.6 Additional Information Included in the Amendment Application

Emission calculations for the proposed changes are presented in Section 3. The details of the air dispersion modeling analysis performed for the criteria pollutant emissions are also provided in Section 3.

Potential effects of the proposed changes described in the amendment on the public are provided in Section 5. A list of property owners affected by the proposed changes is provided in Section 6. Potential effects on property owners are described in Section 7. All the references are listed in Section 8.

Appendix A includes a list of property owners within 1,000 feet of the MPP. Air dispersion modeling protocol, used for performing air quality impact analysis is included in Appendix B.

SECTION 2
DESCRIPTION OF PROJECT AMENDMENT

Consistent with CEC Siting Regulations, Sections 1769(a)(1)(A) and 1769(a)(1)(B), this section includes a description of the project changes, as well as the necessity for the changes.

2.1 Description of Project Amendments/Modifications

Revised Startup Duration

During the startup operation of the MPP, the BWP identified a couple of instances where the startup duration exceeded limitations contained in COCs AQ-13, AQ-16 and AQ-17. The startup duration was about six hours. A comparison of the above observed startup duration with the COC AQ-13 indicated that the observed startup duration was significantly higher than the permitted startup durations of all the three types of startups (Cold Start = 4 hours; Warm Start = 2.1 hours; and Hot Start = 1.5 Hours). The SCPPA has explored control measures with the turbine vendors and has not identified any practical solution, and is therefore requesting an increase in the duration of startup limit contained in COC AQ-13, AQ-16, and AQ-17. The SCPPA is proposing to redefine the startups for the MPP, and consider that all the starts will be of six hour duration.

The SCPPA is also proposing to have five starts per month and 60 starts per year. It may be noted that currently MPP is licensed to have one start per day (COC AQ-16 and AQ-17) and 104 starts per year [Air Quality Table 13, CEC (2002)].

2.1.1 Revised Startup Criteria Pollutant Emissions

During the startup operation of the MPP, the BWP identified a couple of instances where the startup NOx emission rate was about 440 pounds. A comparison of the above observed NOx emission rate with the startup NOx emissions used for preparing the Application for Certification indicated that the observed startup NOx emission was significantly higher than the NOx startup AFC emissions (145 lbs during cold startup; 90 lbs during warm start; and 50 lbs during hot start). The SCPPA has explored control measures with the turbine vendors and has not identified any practical solution, and is therefore requesting an increase in the startup NOx emissions. The SCPPA is proposing to redefine the startups for the MPP, and consider that all the starts will be of six hour duration and NOx emissions will be 440 lbs during each start.

2.1.2 Revision to Higher Heating Value (HHV) of Natural Gas

The Application for Certification was prepared using the natural gas higher heating value of 1,020 Btu/scf; however, the SCAQMD now requires the use of default higher heating value for natural gas of 1050 Btu/scf. The SCPPA is proposing to use the SCAQMD suggested higher heating value of 1,050 Btu/scf for all the emission and other calculations for the Amendment Application. The above change will result in lowering of the permitted fuel use by the duct burner in COCs AQ-1, AQ-2, and AQ-11.

2.1.3 Revision to Monthly Emission Limits in COC AQ-11

There will be changes in the monthly emissions due to the proposed changes in startup duration, criteria pollutant emissions during startups, higher heating value of the natural gas, and operating scenario during a month. The above changes will result in an increase in CO and VOC emissions and lowering of the PM10 and SOx emissions, in comparison to the emission limits specified in COC AQ-11.

2.1.4 Revision to Specifications of Carbon Monoxide Catalyst

The SCPPA noted that the specifications of carbon monoxide oxidation catalyst provided in the Commission Decision document are not correct. It may be noted that the original permit application for the MPP was submitted to the SCAQMD in 2001. This application was submitted during the development phase of the MPP and the CO oxidation catalyst was erroneously specified. The CO catalyst specified in the permit application was not installed at the MPP; however, the specifications mentioned in the permit application were not changed and the permit issued by the SCAQMD contained inaccurate CO catalyst specifications. According to the CO catalyst data provided in the MPP permit, CO catalyst was manufactured by Engelhard. However, CO catalyst manufactured by EmeraChem was installed in 2005 at the MPP. The SCPPA therefore has requested the SCAQMD for replacing the incorrect CO catalyst specifications in the permit with the correct specifications. Please note that there will be no changes in the criteria pollutant or toxic air contaminant emissions due to the proposed changes in the CO catalyst specifications.

2.1.5 Modification to the Wording on the Frequency of the Ammonia Slip Testing (COC AQ-7)

The SCPPA requested the SCAQMD for a modification to the wording on the frequency of the ammonia slip testing from “at least annual thereafter” to “at least every calendar year thereafter.” This modification will provide additional flexibility to the facility in complying with the source testing requirement. Please note there will be no changes in the criteria pollutant or toxic air contaminant emissions due to the proposed changes in the wording on the frequency of the ammonia slip testing.

The SCPPA requested amendment to COCs AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-6, AQ-7, AQ-11, AQ-13, AQ-16, and AQ17 associated with the changes suggested above for the operation of the MPP. In addition, a few new conditions have been suggested by the SCAQMD; these new conditions are listed in Section 4.

2.2 Necessity of Proposed Changes

Sections 1769(a)(1)(B) and 1769(a)(1)(C) of the CEC Siting Regulations require a discussion of the necessity for the proposed changes to the project and whether this modification is based on information that was known by the petitioner during the CEC certification proceeding. During the licensing period, the SCPPA requested startup data from the turbine vendor. These data were used as the basis for project licensing and were considered the best available data at the time.

SECTION 3
ENVIRONMENTAL ANALYSIS OF THE PROJECT CHANGES

The proposed Amendment was reviewed to determine if the proposed changes will result in any environmental impacts that were not originally analyzed by the CEC when it approved the project in 2003. It may be noted that the proposed changes to MPP will not require any construction or earth moving activities. Also, this request will not result in the increase in natural gas or water usage.

The proposed Amendment, requesting to increase the startup duration and criteria pollutant emission is only expected to impact air quality resources. No other resource areas are expected to be impacted from the proposed changes, and are therefore not analyzed. The following section presents the revised pollutant emissions, ambient air quality impact assessment, mitigation measures, cumulative impact assessment, and a discussion of LORS compliance.

3.1 Process Description

The MPP electric power generating facility consists of 1-on-1, combined cycle Power Island. The power island includes a natural gas fired, General Electric Model PG7241FA combustion turbine generator (CTG). The combustion turbine (CT) is rated at 1,787 MMBtu/hr (HHV). The CT exhausts into a fired (using a duct burner) heat recovery steam generator (HRSG). Steam from the HRSG is admitted into a steam turbine generator (STG). The duct burner (DB) is rated at 583 MMBtu/hr (HHV). Natural gas is the only fuel used by the combustion turbine and the duct burner. Total gross power output from the CTG (181.1 MW) and the STG (142.0 MW) is 323.1 MW.

A cooling tower consisting of six cells is also provided at the MPP, which is the source of PM10 emissions.

NOx emissions from the CT are controlled by dry low NOx combustors and a post-combustion emission control system. The post-combustion control system is a selective catalytic reduction (SCR) system. NOx emissions from the CT and the duct burner are limited to 2 parts per million volume (ppmv), 3-hour average, dry basis, at 15% O_2.

Carbon monoxide (CO) and volatile organic compounds (VOC) emissions from the CCGF are controlled by a CO oxidation catalyst. Emissions for both CO and VOC are limited to 2 ppmv, 1-hour average, dry basis, at 15% O_2.

The MPP is equipped with a 150-feet tall, 19-feet diameter stack. The base elevation for the stack is 560 feet.

3.2 Emission Calculations

The operation of the combustion turbine and the duct burner result in the emissions of criteria air pollutants, air toxics, and greenhouse gases (GHGs). Criteria pollutant emissions from the combustion turbine are affected by the mode of operation. The two basic operational modes for the MPP, from an emissions standpoint, are startup/shutdown and normal operation.

The SCPPA is requesting for the following changes in the parameters used for estimating criteria pollutant emissions:

1. All the startups will be of six hour duration.
2. There will be five starts per month and 60 starts per year.
3. There will be five shutdowns per month and 60 shutdowns per year.

The following operating parameters were used for calculating the criteria pollutants for the operation of the MPP: (a) normal operating schedule of the MPP: 24 hours/day, 7 days/week, 95% operation of the combustion turbine in a year i.e. 8,322 hours of operation in a year, and (b) duct burner operation: 12 hours in a day, 240 hours in a month, 1,000 hours in a year. The proposed normal operating schedules for the combustion turbine and the duct burner for the MPP are summarized in Tables 3-1 and 3-2. The cooling tower was assumed to operate 8,322 hours in a year. Please note that the normal operating schedule is same as was used for preparing the MPP AFC in 2001.

The above parameters were used for calculating the criteria air pollutants.

3.2.1 Criteria Pollutants Emissions from Combustion Turbine and the Duct Burner

The details of the criteria pollutant emissions are provided below for the various operating scenarios of the combustion turbine and the duct burner.

Normal Operation

The MPP can operate with and without the duct burner. Tables 3-3 through 3-5 present the hourly emissions of criteria pollutants during the normal operation of the MPP with and without the duct burner (SCAQMD, 2016a, page 31).

Startup

Table 3-6 presents the estimated emissions for the MPP during a startup (SCAQMD, 2016a, page 31).

Shutdown

Table 3-7 presents the estimated emissions for the MPP during a shutdown operation (SCAQMD, 2016a, page 31). Table 3-7 also presents emissions during the hourly (60 minute) operation, which includes 30 minutes of shutdown emissions and 30 minutes of normal operation with duct burner operation emissions.

A summary of criteria pollutant emissions is presented in Table 3-8 for the normal operating scenario of the MPP as well as for the startup and shutdown scenarios.

3.2.2 Maximum Daily Criteria Pollutant Emissions from Combustion Turbine and Duct Burner

For estimating maximum daily CO, NOx, and VOC emissions, it was assumed that the MPP will undergo one startup, one shutdown, and operate the remaining hours in normal operational mode. It was also assumed that the duct burner will operate for 12 hours in a day.

For estimating maximum particulate matter of 10 microns or less in diameter (PM10) and oxides of sulfur (Sox) emissions, it was assumed that the MPP will operate in normal operational mode for all the 24 hours of the day, which will include the duct burner operation for 12 hours in the day. Table 3-9 presents the estimated maximum daily criteria pollutant emissions for the MPP.

3.2.3 Maximum Monthly Criteria Pollutant Emissions from the Combustion Turbine and Duct Burner

For estimating maximum monthly CO and VOC emissions, it was assumed that the MPP will undergo five startups, five shutdowns, and operate the remaining hours in normal operational mode. It was also assumed that the duct burner will operate for 240 hours during the month.

For estimating maximum PM10 and SOx emissions, it was assumed that the MPP will operate in normal operational mode for the month, which will include the duct burner operation for 240 hours during the month. Table 3-9 presents the estimated maximum monthly criteria pollutant emissions for the MPP.

3.2.4 Annual Criteria Pollutant Emissions from the Combustion Turbine and Duct Burner

For estimating annual CO, NOx and VOC emissions, it was assumed that the MPP will undergo sixty startups, sixty shutdowns, and operate the remaining hours in normal operational mode. It was also assumed that the duct burner will operate for 1,000 hours during the year.

For estimating maximum PM10 and SOx emissions, it was assumed that the MPP will operate in normal operational mode throughout the year, which will include the duct burner operation for 1,000 hours during the year. Table 3-9 presents the estimated annual criteria pollutant emissions for the MPP.

3.2.5 PM10 Emissions from the Cooling Tower

PM10 emissions from the cooling tower were obtained from the CEC Final Staff Assessment (FSA), Table 12 (CEC October 2002) for the criteria pollutant analysis.

3.2.6 Criteria Pollutant Emissions Estimated and Licensed by the CEC (2003)

Tables 3-10 and 3-11 present a summary of the criteria pollutant emissions estimated and licensed by the CEC in 2002. These tables include PM10 emissions from the cooling tower.

A review of the criteria pollutant emission data presented above indicated the following:

- Revised (2016) hourly NOx emission during startup operation (73.33 lb/hr) is significantly higher in comparison with the licensed (CEC, 2003) NOx emission (42.86 lb/hr). In addition, revised maximum hourly NOx emission (17.48 lb/hr) during normal operation (with the duct burner) of the MPP is slightly higher than

the licensed (CEC, 2003) NOx emission (17.24 lb/hr). Furthermore, revised NOx emission (33.74 lb/day) during the shutdown operation is lower than the licensed (CEC, 2003) NOx emission (50 lb/hr).

- Revised (2016) CO emission (83.33 lb/hr) during startup operation is significantly lower in comparison with the licensed (CEC, 2003) CO emission (190 lb/hr). In addition, revised maximum hourly CO emission (10.64 lb/hr) during normal operation (with the duct burner) of the MPP is slightly higher than the licensed (CEC, 2003) CO emission (10.49 lb/hr). Furthermore, revised CO emission (125.32 lb/hr) during the shutdown operation is lower than the licensed (CEC, 2003) CO emission (240.0 lb/hr).

- Revised (2016) PM10 emission (11.79 lb/hr) during startup operation is slightly lower in comparison with the licensed (CEC, 2003) PM10 emission (12.0 lb/hr). In addition, revised maximum hourly PM10 emission (17.48 lb/hr with cooling tower) during normal operation (with the duct burner) of the MPP is slightly lower than the licensed (CEC, 2003) PM10 emission (19.26 lb/hr with cooling tower). Furthermore, revised PM10 emission (14.01 lb/hr) during the shutdown operation is higher than the licensed (CEC, 2003) PM10 emission (12.0 lb/hr). This is due to the assumption that duct burner will be operational for 30 minutes during the shutdown operation (revised emission, 2016).

- Revised (2016) SOx emission (1.28 lb/hr) during startup operation is slightly lower in comparison with the licensed (CEC, 2003) SOx emission (1.31 lb/hr). In addition, revised maximum hourly SOx emission (1.70 lb/hr) during normal operation (with the duct burner) of the MPP is slightly lower than the licensed (CEC, 2003) SOx emission (1.71 lb/hr). Furthermore, revised SOx emission (1.49 lb/hr) during the shutdown operation is higher than the licensed (CEC, 2003) SOx emission (1.31 lb/hr). This is due to the assumption that duct burner will be operational for 30 minutes during the shutdown operation (revised emission, 2016).

- Revised (2016) VOC emission (5 lb/hr) during startup operation is lower in comparison with the licensed (CEC, 2003) VOC emission (10 lb/hr). In addition, revised maximum hourly VOC emission (6.08 lb/hr) during normal operation (with the duct burner) of the MPP is slightly higher than the licensed (CEC, 2003) VOC emission (6 lb/hr). Furthermore, revised VOC emission (20.04 lb/hr) during the shutdown operation is lower than the licensed (CEC, 2003) VOC emission (34 lb/hr).

3.2.7 Revised Daily, Monthly, and Annual Average Emission Limits (2016)

The revised daily, monthly, and annual emission limits for the modified MPP are provided in Table 3-12. These emission estimates are based on the data provided in Tables 3-1 through 3-9.

3.3 AIR TOXICS EMISSIONS

Table 3-13 presents a summary of the post modification MPP air toxics emissions (SCAQMD, 2016a, page 40). These air toxics emissions are based on the following MPP

operating scenario: 1,000 hours of duct burner operation with combustion turbine, and the remaining period only combustion turbine in operation: Total MPP operating hours of 8,322 hours in the year (95% capacity factor). Annual ammonia emissions were estimated at 100,512 pounds (SCAQMD, 2016a).

3.4 GREEN HOUSE GAS EMISSIONS

Table 3-14 presents a summary of the MPP GHG emissions (SCAQMD, 2016a, page 35). The GHG emissions are based on the following MPP operating scenario: 1,000 hours of duct burner operation with combustion turbine, and the remaining period only combustion turbine in operation: Total MPP operating hours of 8,322 hours in the year (95% capacity factor).

3.5 AIR QUALITY IMPACT ANALYSIS

An air quality impact analysis was performed to compare the maximum ground-level impacts resulting from the operational phase of the project with the state of California and federal ambient air quality standards as well as with the applicable SCAQMD significance criteria.

3.5.1 Significance Criteria

MPP is located in the South Coast Air Basin (SCAB), which is currently designated as non-attainment with National Ambient Air Quality Standards (NAAQS) for ozone. The SCAB is also designated as non-attainment for the California Ambient Air Quality Standards (CAAQS) for particulate matter less than PM10 as well as for ozone. The SCAB is currently designated as attainment with PM10 NAAQS. It is also designated as attainment with CO, nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) NAAQS and CAAQS.

SCAQMD requires that for a project located in a non-attainment area, it should be demonstrated through modeling that the project will not cause exceedances of the significant change threshold concentrations specified in Rule 1303 (Table A-2, Appendix A). Thus, for demonstrating compliance for PM10 with the CAAQS, the significance threshold would be the significant change threshold concentrations specified in Rule 1303 (see Table 3-15 for the significant change threshold).

For a project located in an attainment area, SCAQMD requires that it should be demonstrated through modeling that the project concentrations plus the measured background concentration would not create a violation of the ambient air quality standard. Thus, for CO, PM10 (for demonstrating compliance with the NAAQS), NO_2 and SO_2 the significance threshold would be the CO, PM10, NO_2, and SO_2 ambient air quality standards (see Table 3-15 for ambient air quality standards). For this analysis, highest monitored background concentration levels in the area from the last three years are required. For the preparation of the permit application, which was submitted to the SCAQMD in May 2015 for the proposed operational changes at the MPP, historical ambient air quality data for the last three years: 2011, 2012, and 2013 [data from the SCAQMD Burbank-West Palm Avenue (Burbank); District Station Code 069, East San Fernando Valley)] was used. Because ambient air quality data for the Year 2014 was not available, it was not used for air quality analysis for the preparation of the permit application. However, now data for the Year 2014 is available; therefore, ambient air quality data for the last four years (2011-2014) was used for preparing this Petition to Amend.

The historical ambient air quality data for PM10 is provided in Table 3-16 for the last four years: 2011 through 2014. The historical ambient air quality data for CO, NO_2, and SO_2 are

provided in Tables 3-17 through 3-21 for the last four years: 2011 through 2014. Note: 1-hr CO ambient air quality data for the years 2011 through 2013 was provided by the SCAQMD. Also, 24-hr SO_2 data was obtained from the California Air Resources Board (CARB).

It may be noted that for NO_2 and SO_2, the form of 1-hr California and National Ambient Air Quality Standards (CAAQS and NAAQS) are different. The form for the 1-hr NO_2 NAAQS is the 3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations whereas for the CAAQS, it is based on the monitored NO_2 1-hr average concentrations.

The form for the 1-hr SO_2 NAAQS is the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations whereas for the CAAQS, it is based on the monitored SO_2 1-hr average concentrations.

The new major stationary sources and major modifications to existing major stationary sources are subject to additional dispersion modeling analysis requirements. A major source is a listed facility [one of the 28 Prevention of Significant Deterioration (PSD) source categories listed in the federal Clean Air Act] that emits at least 100 tons/year of a listed PSD pollutant, or any other facility that emits at least 250 tons/year of a listed PSD pollutant. The MPP area is currently classified as an attainment area for CO, PM10, NO_2, and SO_2. However, the existing MPP is not a major source under the PSD definitions, because its emissions are below 100 tons/year. Furthermore, the emission increases under the proposed Amendment do not constitute a major modification in and of themselves (SCAQMD, 2016a). Therefore, no additional modeling analysis relating to PSD major stationary sources was required nor it was performed.

3.5.2 Air Dispersion Modeling Analysis

Air dispersion modeling analysis was conducted to analyze potential ambient air quality impacts of emissions associated with the operation of the MPP. The air dispersion modeling methodology used for the MPP was based on generally accepted modeling practices and modeling guidelines of both the USEPA and the SCAQMD. All dispersion modeling was performed using the AERMOD dispersion model. Please note that AERMOD Version 14134 was used for CO and NO_2 modeling analysis. This modeling analysis was performed in April 2015 for the permit application submitted to the SCAQMD. Additional PM10 and SOx modeling analysis was performed in October 2015 using AERMOD Version 15181 for the preparation of this Amendment. All modeling analysis was performed following the modeling protocol approved by the SCAQMD for the MPP project. A copy of the modeling protocol is provided in Appendix B.

Additional details of the air dispersion modeling studies performed for the MPP project to demonstrate compliance with ambient air quality standards and SCAQMD significance criteria are presented below.

3.5.2.1 Model Selection

As mentioned above, the dispersion modeling methodology followed both USEPA and SCAQMD guidelines. The AERMOD model is a USEPA model used for simulating the transport and dispersion of emission sources in areas of flat as well as elevated terrains.

3.5.2.2 Modeling Options

USEPA regulatory default modeling options were selected for performing the dispersion modeling analysis. The AERMOD model was used in Urban Mode.

3.5.2.3 Meteorological Data

Five years (2008 through 2012) of meteorological data for the Burbank station, available at the SCAQMD's website were used for the modeling analysis.

3.5.2.4 Receptors for AERMOD

The modeling grid consisted of four parts: (1) receptors along the perimeter of the City of Burbank facility with a spacing of approximately 20 meters; (2) receptors spaced 25 meters apart extending from the previous receptors, in a 1,500 meter by 1,500 meter grid surrounding the project site; (3) receptors spaced 100 meters apart from 0.5 kilometer to 1.6 kilometer from the property line; and (4) receptors spaced 250 meters apart from one kilometer to 15 kilometers from the property line.

In addition to the above receptor coverage, a fine grid of receptors centered on the location of the maximum predicted impacts as determined from the results of coarse-grid (100 meter or higher distance grid) receptor modeling was also planned. It was also planned to cover an area of 250 meter by 250 meter with the fine grid with receptors spaced 30 meters apart. However, fine grid receptor modeling was not required and was not performed because the maximum modeled impacts were identified within the receptor grid of 1,500 meter by 1,500 meter surrounding the project site (receptors spaced 25 meters apart).

Discrete receptors within one mile (1.6 kilometer) of the MPP stack were also located at sensitive receptors (e.g., schools and hospitals, etc.). No receptors were placed within the power plant facility property line. All coordinates for sources and receptors were specified in North American Datum (NAD)83, Universal Transverse Mercator (UTM) Zone 11. Receptor grid points outside the AERMOD Modeling project boundary with grid spacing of 100 meters or more were placed so that individual grid points were placed at UTM coordinates ending in "00".

Receptor elevations and hill heights were assigned using USEPA AERMAP and commercially available digital terrain elevations developed by the United States Geological Survey by using its National Elevation Dataset (NED). The NED data provided terrain elevations with 1-meter vertical resolution and (1 arc-second) 30-meters horizontal resolution based on a UTM coordinate system. For each receptor location, the terrain elevation was set to the elevation for the closest NED grid point.

3.5.2.5 Building Downwash

The EPA's guidance was followed to address the potential influence on the concentrations from structures located near point emission sources. The latest building downwash program (BPIPPRM Version 04274) was used to identify the structures required to be included in the AERMOD model and it was used to address building downwash effect. This building downwash program was also used to estimate the direction-specific building dimensions, which are required as inputs by the AERMOD dispersion model, to address the influence of nearby structures on the ambient concentrations.

3.5.2.6 Source Parameters

The emissions from the MPP, including cooling tower (six cells) were modeled as point sources. The source release parameters included exit velocity, exit temperature, stack height, and stack diameter.

A summary of the CO 1-hour average emissions (g/sec) and other source release parameters for normal operation, startup and shutdown scenarios is provided in Table 3-22.

A summary of the PM10 1-hour average emissions (g/sec) and other source release parameters for normal operating scenario (combustion turbine plus duct burner operation, and cooling tower operation) is provided in Table 3-23.

A summary of the NOx 1-hour average emissions (g/sec) and other source release parameters for normal operation, startup and shutdown scenarios is provided in Table 3-24.

A summary of the SOx 1-hour average emissions (g/sec) and other source release parameters for normal operating scenario (combustion turbine plus duct burner operation) is provided in Table 3-25.

For estimating the worst-case 8-hour average CO concentration and 24-hour PM10 and SOx concentration, 1-hour average emissions were used for all the scenarios described above.

For estimating annual average PM10 concentration, it was conservatively assumed that the combustion turbine and the duct burner will operate together for 1,000 hours and only CT will operate for 7,322 hours during a year.

For estimating annual average NOx concentration, it was assumed that the MPP will undergo sixty startups, sixty shutdowns and operate the remaining hours in normal mode. It was also assumed that the duct burner will operate for 1,000 hours during the year.

To perform a conservative modeling analysis, lowest source release parameters (stack exit temperature and exit velocity) were used for all the scenarios described above.

Table 3-26 provides CO emission rates and source release parameters selected for air dispersion modeling analysis.

The 24-hour average PM10 concentrations were estimated assuming a constant emission rate of 2.044 g/sec from the combustion turbine and the duct burner, and 0.0265 g/sec from each cell of the cooling tower. Other source release parameters used for air dispersion modeling analysis are provided in Table 3-27.

A summary of the PM10 annual average emissions and other source release parameters is provided in Table 3-28.

Table 3-29 provides NOx emission rates and source release parameters selected for air dispersion modeling analysis for estimating 1-hour average concentrations.

A summary of NOx annual average emissions and other source release parameters used for modeling analysis is provided in Table 3-30.

Table 3-31 provides SOx emission rates and source release parameters selected for air dispersion modeling analysis for 1-hour and 24-hour average concentrations..

3.5.3 Results of the Carbon Monoxide Air Dispersion Modeling Analysis

Startup Scenario

The results of the modeling analysis for the startup scenario along with the applicable standards are provided in Table 3-32, which indicate that the maximum estimated CO 1-hr and 8-hr average concentrations during the startup scenario would not exceed the ambient air quality standards.

The maximum estimated CO concentrations (modeled concentration plus the background concentration; 3,483.1 $\mu g/m^3$ 1-hour average concentration and 3,475.2 $\mu g/m^3$ 8-hour average

concentration) would not result in violations of the 1-hour or 8-hour CO ambient air quality standards.

Normal Operation Scenario

The results of the modeling analysis for the normal operation scenario along with the applicable standards are provided in Table 3-32, which indicate that the maximum estimated CO 1-hour and 8-hour average concentrations during the normal operation scenario would not exceed the ambient air quality standards.

The maximum estimated CO concentrations (modeled concentration plus the background concentration; 3,454.2 $\mu g/m^3$ 1-hour average concentration and 3,453.2 $\mu g/m^3$ 8-hour average concentration) would not result in violations of the 1-hour or 8-hour CO ambient air quality standards.

Shutdown Scenario

The results of the modeling analysis for the shutdown scenario along with the applicable standards are provided in Table 3-32, which indicate that the maximum estimated 1-hour and 8-hour average CO concentrations during the shutdown scenario would not exceed the ambient air quality standards.

The maximum estimated CO concentrations (modeled concentration plus the background concentration; 3,499.8 $\mu g/m^3$ 1-hour average concentration and 3,487.9 $\mu g/m^3$ 8-hour average concentration) would not result in violations of the 1-hour or 8-hour CO ambient air quality standards.

3.5.4 Results of the PM10 Air Dispersion Modeling Studies

The results of the modeling analysis for 24-hour operating scenario described in Table 3-27 for five years of meteorological data are provided in Table 3-33.

The results of the modeling analysis for annual operating scenario described in Table 3-28 for five years of meteorological data are provided in Table 3-34. A review of the results of the modeling analysis indicated that highest annual average concentration of 0.41 $\mu g/m^3$ was associated with the Year 2011 meteorological data.

The 24-hour average PM10 concentration, and the highest annual average concentration (estimated for the annual average modeling scenario) along with the applicable standards are provided in Table 3-33, which indicate that the 24-hour PM10 concentration and the maximum estimated PM10 annual average concentration would not exceed the significance threshold established by the SCAQMD.

The results of the modeling analysis for the 24-hour operation scenario, along with the applicable federal standard are provided in Table 3-35, which indicate that the maximum estimated PM10 concentration (modeled concentration plus the background concentration; 63.3 $\mu g/m^3$ 24-hour average concentration) would not result in violation of the 24-hour PM10 federal ambient air quality standard.

The results of the modeling analysis for the 24-hour and the highest annual average PM10 concentration for the normal operation scenario, along with the applicable California standards are provided in Table 3-35, which show that the modified MPP would have the potential to exacerbate existing violation of PM10 standards. The project's PM10 24-hour concentration provided in Table 3-35 is the maximum concentration found any time during the

year and most likely does not correspond to the same day as the maximum PM10 background concentration presented in the table. It may be noted that PM10 impacts from the MPP were also found to be significant during the initial certification process of the MPP, and PM10 emission offsets were provided to mitigate the full increase in PM10 emissions.

As demonstrated in Tables 3-11 and 3-12, monthly and annual revised MPP PM10 emissions are estimated to be lower than the licensed MPP PM10 emissions; therefore, no additional PM10 emission offsets for the proposed MPP modifications are required.

3.5.5 Results of the NOx Air Dispersion Modeling Analysis

3.5.5.1 CAAQS Analysis

The results of the air dispersion modeling analysis, demonstrating compliance with NO_2 1-hr average CAAQS are provided in Table 3-36. It may be noted that the dispersion model predicted NOx concentrations were multiplied by the EPA's Tier 2 ambient ratio factor of 0.8 to determine the maximum ground level NO_2 concentrations. Additional details of the modeling analysis results are provided below.

Startup Scenario

The results of the modeling analysis for the startup scenario along with the applicable standard are provided in Table 3-36, which indicate that the maximum estimated NO_2 1-hour average concentration during the startup scenario would not exceed the CAAQS.

The results of the dispersion modeling studies also indicated that the maximum estimated NO_2 1-hour average concentration of 172.8 $\mu g/m^3$ (modeled concentration for the startup scenario plus the background concentration) would not result in violation of the 1-hour NO_2 ambient air quality standard of 339 $\mu g/m^3$ (CAAQS).

Normal Operation Scenario

The results of the modeling analysis for the normal operating scenario along with the applicable standard are provided in Table 3-36, which indicate that the maximum estimated NO_2 1-hour average concentration during the normal operation scenario would not exceed the CAAQS.

Shutdown Scenario

The results of the modeling analysis for the shutdown scenario along with the applicable standard are provided in Table 3-36, which indicate that the maximum estimated 1-hr average NO_2 concentration during the shutdown scenario would not exceed the CAAQS.

3.5.5.2 NAAQS Analysis

The results of the air dispersion modeling analysis, demonstrating compliance with NO_2 1-hour average NAAQS are provided in Table 3-37. It may be noted that the dispersion model predicted NOx concentrations were multiplied by the EPA's Tier 2 ambient ratio factor of 0.8 to determine the maximum ground level NO_2 concentrations. Additional details of the modeling analysis results are provided below.

Startup Scenario

The results of the modeling analysis for the startup scenario along with the applicable standard are provided in Table 3-37, which indicate that the maximum estimated NO_2 1-hour average concentration during the startup scenario would not exceed the NAAQS.

The results of the dispersion modeling studies also indicated that the maximum estimated NO_2 1-hour average 98^{th} percentile concentration of 129.8 $\mu g/m^3$ (modeled concentration for the

startup scenario plus the background concentration) would not result in violation of the 1-hour NO_2 ambient air quality standard of 188 µg/m^3 (NAAQS).

Normal Operation Scenario

The results of the modeling analysis for the normal operating scenario along with the applicable standard are provided in Table 3-37, which indicate that the maximum estimated NO_2 1-hour average concentration during the normal operation scenario would not exceed the NAAQS.

Shutdown Scenario

The results of the modeling analysis for the shutdown scenario along with the applicable standard are provided in Table 3-37, which indicate that the maximum estimated 1-hour average NO_2 concentration during the shutdown scenario would not exceed the NAAQS.

Compliance Analysis with NO_2 Annual Average AAQS

The results of the air dispersion modeling analysis for operating scenario described in Table 3-30 for five years of meteorological data are provided in Table 3-38. A review of the results of the modeling analysis indicated that highest annual average NOx concentration of 0.46 µg/m^3 (dispersion model predicted concentration) was associated with the Year 2011 meteorological data. The dispersion model predicted maximum NOx concentration (0.46 µg/m^3) was multiplied by the EPA's annual average ambient ratio factor of 0.75 to determine the maximum annual average ground level NO_2 concentration (0.35 µg/m^3).

The highest annual average concentration estimated for the annual average modeling scenario along with the applicable standard is provided in Table 3-39, which indicate that the maximum estimated NO_2 annual average concentration of 41.9 µg/m^3 (modeled concentration plus the background concentration) would not result in violation of the California or federal NO_2 ambient air quality standard (CAAQS of 57 µg/m^3 and NAAQS of 100 µg/m^3).

3.5.6 Results of the SOx Air Dispersion Modeling Analysis

The results of the modeling analysis for 1-hour and 24-hour operating scenario described in Table 3-31 for five years of meteorological data are provided in Table 3-40.

The results of the modeling analysis for the 1-hour and 24-hour SOx normal operation scenario, along with the applicable CAAQS are provided in Table 3-40, which indicate that the maximum estimated SO_2 1-hour average concentration (modeled concentration plus the background concentration; 29.0 µg/m^3 24-hour average concentration) would not result in violation of the 1-hour SO_2 California ambient air quality standard. In addition, the maximum estimated SO_2 24-hour average concentration (modeled concentration plus the background concentration; 5.4 µg/m^3 24-hour average concentration) would not result in violation of the 24-hour SO_2 CAAQS.

The results of the modeling analysis for the 1-hour SOx normal operation scenario, along with the applicable federal standard are provided in Table 3-41, which indicate that the maximum estimated SO_2 1-hour average concentration (modeled concentration plus the background concentration; 10.3 µg/m^3 1-hr average concentration) would not result in violation of the 1-hour SO_2 NAAQS.

3.6 Mitigation Measures

The SCPPA provided mitigation in the form of emission reduction credits (ERCs) for the operation of the MPP prior to the issuance of the license in 2003. The quantities of ERCs provided are reflected in COC AQ-11, on a monthly basis. Please note that no emission offsets are required for CO emissions because the MPP site is now classified as an attainment area for carbon monoxide. In addition, any increase in NOx emissions is required to be mitigated by demonstrating that the SCPPA holds sufficient Reclaim Trading Credits (RTCs) in amount equal to the annual NOx emissions. The details of the emission reduction credit (ERC) requirements for the MPP facility modifications are presented below.

The basic modes of operation of the MPP consist of startup, normal operation, and shutdown. Thus, ERC requirements have been analyzed for only these modes of operation.

Table 3-9 presents the monthly emissions of PM10, VOC and SOx for the modified MPP. Table 3-11 shows the monthly emission limits for these pollutants from COC AQ-11. A comparison of the monthly emissions (Table 3-11/COC AQ-11) with the estimated monthly emissions for the modified MPP indicates that there will be no increase in monthly PM10 and SOx emissions. However, there will be an increase of 106 lbs in VOC emissions. Therefore, ERC for only VOC emissions will be required for the proposed MPP modifications.

The average daily VOC emission corresponding to the monthly increase in VOC emissions was estimated at 3 lb (106 lb/30). Therefore, 4 lb/day of VOC ERC (3 lb x 1.2 offset ratio) will be required for the MPP modifications. The BWP/SCPPA has already purchased the required VOC ERC from the open market (ERC Certificate No. AQ005068).

3.7 Cumulative Impacts

Because no new ambient impacts are anticipated as a result of the proposed changes to the project, no significant changes to the original assessment of the cumulative air quality impacts are expected.

3.8 Compliance with LORS

The MPP is in compliance with all applicable LORS, with the exception of COC AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-6, AQ-7, AQ-11, AQ-13, AQ-16 and AQ-17. With the CEC approval of the proposed changes to COC AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-6, AQ-7, AQ-11, AQ-13, AQ-16 and AQ-17, the MPP will be in compliance with all applicable LORS. Additional details of LORS compliance are provided below.

Rule 401 – Visible Emissions

Visible emissions are not expected under normal operation. There is no indication of visible emission problems in the SCAQMD compliance database for the MPP.

Rule 402 – Nuisance

Use of ammonia for the SCR system can potentially result in odor problems. However, it is expected that if the facility maintains the 5 ppm ammonia slip level, odor will not be a problem. Furthermore, there have been no issues of odor or other nuisance problems with the plant since it began operating.

Rule 407 – Liquid and Gaseous Air Contaminants

This rule limits the CO emissions to 2000 ppm. Compliance with the CO limit has been demonstrated through stack testing. The turbine is also subject to a more stringent CO BACT limit of 2 ppm. The tests performed after the installation of the SCRs confirm that the unit can

comply with the 2 ppm limit as well. Furthermore, the facility is required to maintain a CO Continuous Emission Monitoring System (CEMS).

Rule 409 Combustion Contaminants

This rule limits particulate emissions to 0.1 gr/scf at 12% CO_2. The test results show that the actual particulate emissions are below this limit. The test results are summarized as follows:

Date of Testing	Test Load	Results, gr/scf at 12% CO_2
Initial testing Oct 2005	W/O Duct Firing	0.001
	W/Duct Firing	0.001
Periodic Testing Nov 2008	W/O Duct Firing	0.00079
	W/Duct Firing	0.00074
Periodic Testing Aug 2011	W/O Duct Firing	0.00007
	W/Duct Firing	0.00078

The following theoretical calculation also supports the conclusion that the units are in compliance (SCAQMD, 2016a, page 10):

Estimated grain loading at max load = 16.22 lbs/hr x (7000 gr/lb)/73 E6 scf/hr
= 0.0016 gr/scf

Rule 431.1 – Sulfur Content of Gaseous Fuel

The natural gas supplied to the turbine is expected to comply with the 16 ppmv sulfur limit (calculated as H_2S) specified in this rule. Commercial grade natural gas has an average sulfur content of about 4ppm. The applicant will also comply with reporting and record keeping requirements as outlined in subdivision (e) of this rule.

Rule 475 – Electric Power Generating Equipment

This rule applies to power generating equipment greater than 10 MW installed after May 7, 1976, and requires that the equipment meet a limit for combustion contaminants of 11 lbs/hr or 0.01 gr/scf. Compliance is achieved if either the mass limit or the concentration limit is met. Mass PM10 emissions from the turbine is estimated at about 16.22 lbs/hr, and 0.0048 gr/scf during natural gas firing at maximum firing load (see calculations below). Therefore, compliance is expected and has been verified through the initial and subsequent performance testing (SCAQMD, 2016a).

$$Stack\ Exhaust\ Flow\left(\frac{scf}{hr}\right) = F_d\ x\ \frac{20.9}{(20.9 - \%O_2)}\ x\ TFD$$

where:
Fd: Dry F factor for fuel type, 8710 dscf/MMBtu
O_2: Rule specific dry oxygen content in the effluent stream, 3%
TFD: Total fired duty measured at HHV, 2350 MMBtu/hr

$$Combustion\ Particulate\left(\frac{grain}{scf}\right) = \frac{PM_{10}, lb/hr}{Stack\ Exhaust\ Flow, scf/hr}\ x\ 7000\ \frac{gr}{lb}$$

Stack flow = 8710(20.9/17.9)*2350 = 23.9 mmscf/hr
Combustion particulate = (16.22/23.9E+06)*7000 = 0.0048 gr/scf

Regulation XIII – New Source Review

The MPP is subject to the Best Available Control Technology (BACT), modeling, and offsets requirements of New Source Review. A discussion is presented below on the applicability and compliance with these requirements.

Rule 1303(a) – Best Available Control Technology

MPP's BACT levels for all the criteria pollutants are in compliance with the SCAQMD's BACT requirements.

Rule 1303(b)(1) – Modeling

The details of the dispersion modeling analyses performed for the modified MPP are provided in Section 3.5, which demonstrate compliance with the CAAQS and NAAQS for CO emissions.

The results of the modeling analysis for the 24-hr and annual average PM10 concentration for the normal operation scenario showed that the modified MPP would have the potential to exacerbate existing violation of PM10 standards. It may be noted that PM10 impacts from the MPP were also found to be significant during the initial certification process of the MPP, and PM10 emission offsets were provided to mitigate the full increase in PM10 emissions.

Because the monthly and annual revised MPP PM10 emissions are estimated to be lower than the licensed MPP PM10 emissions; no additional PM10 emission offsets for the proposed MPP modifications are required.

Rule 1303(b)(2) – Emission Offsets

Rule 1303(b)(2) requires that all increases in emissions be offset unless exempt from offset requirements pursuant to Rule 1304. The emission offset ratios for PM10, SO_x, and VOC are 1.2 to 1.

A comparison of the permitted monthly emissions (facility permit issued in 2003) with the estimated monthly emissions for the modified MPP indicated that there will be no increase in monthly PM10 and SOx emissions. However, there will be an increase of 106 lbs in VOC emissions. Therefore, ERC for only VOC emissions will be required for the proposed MPP modifications. It may be noted that CO is an attainment pollutant; therefore, CO emission offsets are not required

The average daily VOC emission corresponding to the monthly increase in VOC emissions was estimated at 3 lb (106 lb/30). Therefore, 4 lb/day of VOC ERC (3 lb x 1.2 Offset Ratio) will be required for the MPP modifications. BWP/SCPPA has already purchased the required VOC ERC from the open market (ERC Certificate No. AQ005068).

Rule 1325/40CFR 51 Appendix S – Federal PM2.5 New Source Review

These rules apply to major polluting facilities, major modifications to a major polluting facility, or any modifications to an existing facility that would constitute a major polluting facility in and of itself. A major polluting facility is defined as a facility which has actual emissions, or a potential to emit of greater than 100 tons per year (tpy). A major polluting facility

which proposes a modification resulting in a significant increase is required to comply with the following requirements:

- Use of Lowest Achievable Emission Reduction (LAER)
- Offset particulate matter of 2.5 microns or less in diameter (PM2.5) emissions at the offset ratio of 1.1:1
- Certification of compliance of emission limits
- Conduct an alternative analysis of the project

As shown in Table 3-11, the existing facility is a non-major source, and the proposed increase in startups and duct firing will not result in an emissions increase above the 100 ton/year threshold (see Table 3-9). Therefore, MPP will continue to be a non-major polluting facility for PM2.5 and is not subject to the requirements of either Rule 1325 or Appendix S.

Rule 1401 – Toxic Air Contaminants

There will be an overall reduction in fuel use as a result of the proposed modifications, therefore, there will be no increase in emissions of toxic air contaminants. A health risk assessment was performed for the MPP under the initial permit application in 2001, which showed that the MPP was in compliance with the applicable standards of this rule. A summary of toxic air contaminants emissions is provided in Table 3-13.

Regulation XVII – Prevention of Significant Deterioration

The South Coast Basin where the project is located is in attainment for NO_2, SO_2, CO, and PM10 emissions. Additionally, beginning on January 2, 2011, GHGs are a regulated criteria pollutant under the PSD major source permitting program. Therefore each of these pollutants must be evaluated under PSD for this project.

The PSD applies to a significant increase in emissions from a major stationary source, or a major modification to a minor source. For a CCGF, the major source threshold is 100 tpy based on actual emissions or potential to emit. If the facility is deemed to be major, Rule 1702 further defines a significant emission increase as 40 tpy or more of NO_2 or SO_2, 100 tons per year or more of CO, and 15 tpy or more of PM10. The MPP is not defined as a major source, because its emissions are below 100 tpy. Furthermore, the emission increases under this application do not constitute a major modification in and of themselves.

Rule 1714 – PSD for Greenhouse Gases

As of January 2, 2011 GHGs are a regulated New Source Review pollutant under the PSD permitting program when they are emitted by new sources or modifications to existing sources at amounts equal to or greater than the applicability thresholds of the GHG tailoring rule.

A summary of GHG emissions from the modified MPP is provided in Table 3-14 (SCAQMD, 2016a, page 35). As summarized below, a recent court case determined that increases in GHG emissions alone cannot trigger the review of a permit application under PSD. An analysis under PSD for GHGs emission is only required when a source triggers PSD review for other criteria pollutants.

U.S. Supreme Court Decision in *Utility Air Regulatory Group versus EPA*

On June 23, 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group versus EPA, 134 S.Ct. 2427 (2014)* (*"UARG")*. The Court held that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required

to obtain a PSD or Title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology. In accordance with the Supreme Court decision, on April 10, 2015, the D.C. Circuit issued an amended judgment in *Coalition for Responsible Regulation, Inc. versus Environmental Protection Agency,* Nos. 09-1322, 10-073, 10-1092 and 10-1167 (D.C. Cir. April 10, 2015), which, among other things, vacated the PSD and Title V regulations under review in that case to the extent that they require a stationary source to obtain a PSD or Title V permit solely because the source emits or has the potential to emit GHGs above the applicable major source thresholds. The D.C. Circuit also directed the EPA to consider whether any further revisions to its regulations are appropriate in light of *UARG*, and if so, to undertake to make such revisions. In response to the Supreme Court decision and the D.C. Circuit's amended judgment, the EPA intends to conduct future rulemaking action to make appropriate revisions to the PSD and operating permit rules.

Rule 2005 – New Source Review

In accordance with Rule 2005, an emission increase is defined as an increase in a source's maximum hourly potential to emit calculated by taking the annual emissions divided by 8760 hours per year, or less if limited by permit condition.

Because there will be an increase in NOx annual emissions due to the modifications at the MPP, there will be an increase in hourly NOx Potential-to-Emit (PTE), and the MPP will be subject to offsets, modeling, and BACT for NOx.

The facility is required to hold NOx RTCs in the amount equal to the increase for the first year of operation [paragraph (c)(2)]. In addition, since the facility is defined as a new facility (constructed after 1994), it is required to hold RTCs for each compliance year after the first year of operation.

The MPP meets a NOx BACT level of 2.0 ppm on a 1-hour average. This emission rate is considered the current NOx BACT standard for gas turbines based on recently issued permits including Los Angeles Department of Water and Power (LADWP) Scattergood, City of Pasadena, Inland Empire Energy Center, and El Segundo Generating Station.

Air dispersion modeling analysis was performed for NOx emissions. The details of the dispersion modeling analyses are provided in Section 3.5, which demonstrate compliance with the CAAQS and NAAQS for NO_2.

Rule 2012 – NOx RECLAIM Monitoring, Reporting, and Recordkeeping

The turbine is a major NOx source under RECLAIM. As a major NOx source, the turbine is required to install and maintain a CEMS, which includes both NOx and O_2 analyzers, a data handling system, a recording system, and a fuel meter. NOx emissions are required to be reported by electronic transmission daily, and the facility must submit a monthly NOx report.

The CEMS was installed shortly after commissioning in 2005. SCPPA received final certification of their CEMS from SCAQMD in a letter dated July 7, 2006. The facility has been reporting their emissions as required under this rule, and has maintained NOx emissions below their cap. Continued compliance is expected.

Regulation XXX – Title V

The MPP is a Title V facility because it is a major source of NOx emissions. The facility currently operates under a valid Title V permit initially issued on May 27, 2003, renewed on April 10, 2009 and again on January 9, 2015. The SCAQMD has issued the revised permit for the proposed MPP modifications (SCAQMD, 2016b).

40CFR 60 Subpart Da - NSPS

This New Source Performance Standard (NSPS) applies to electric utility steam generating units rated over 250 MMBtu/hr which were constructed after September 18, 1978. The fired HRSG is subject to this subpart because its heat input rating is 583 MMBtu/hr which is greater than the applicability standard of 250 mmbtu/hr in the rule. The emission standards that apply are as follows:

NOx 0.2 lbs/MMBtu
PM 0.03 lbs/MMBtu (construction commenced prior to February 28, 2005)
SO_2 0.2 lbs/MMBtu

The regulation requires the installation of a CEMS to measure NOx and O_2. A CEMS for opacity is not required since the unit burns natural gas exclusively and does not use post-combustion controls for PM or SO_2 {60.49Da(u)(2)}. A PM CEMS is optional under 60.49Da(t). In lieu of a PM CEMS, a CO CEMS may be installed. An initial performance test is required.

Calculated emissions from the gas turbine/duct burners are as follows:

NOx 0.0075 lbs/MMBtu
PM 0.0070 lbs/MMBtu
SO_2 0.0007 lbs/MMBtu

The calculated emissions and the emissions from the compliance testing are all lower than subpart Da requirements. The compliance test was performed as required. Continued compliance is expected.

NESHAPS for Stationary Gas Turbines - 40CFR Part 63 Subpart YYYY

This regulation [National Emission Standards for Hazardous Air Pollutants (NESHAPS)] applies to gas turbines located at major sources of HAP emissions. A major source is defined as a facility with emissions of 10 tpy or more of a single HAP or 25 tpy or more of a combination of HAPs based on the potential to emit. The turbine does not emit any single HAP at a rate of 10 tpy or more, and the total combined potential HAP emissions from the turbine is less than 6 tpy (note that ammonia is not included in EPA's definition of HAPs). Therefore, MPP is not classified as a major source of HAPs, and it is not subject to this subpart. A summary of HAPs emissions from the modified MPP is provided in Table 3-13.

40CFR Part 64 – Compliance Assurance Monitoring

The Compliance Assurance Monitoring (CAM) regulation applies to emission units at major stationary sources required to obtain a Title V permit, which use control equipment to achieve a specified emission limit and which have emissions that are at least 100% of the major source thresholds on a pre-control basis (NOx and VOC = 10 tpy, CO = 50 tpy, PM10 = 70 tpy, and SOx = 100 tpy). The rule is intended to provide "reasonable assurance" that the control systems are operating properly to maintain compliance with the emission limits. The MPP is a major source of NOx and VOC (but not CO, PM10, or SOx), and the turbine is subject to an emission limit for both NOx and VOC.

NOx

- Emission Limit – NOx is subject to a 2.0 ppm 3 hour BACT limit.
- Control Equipment – NOx is controlled with the SCR
- Requirement - As a NOx Major Source under Reclaim, the turbine is required to have CEMS under Rule 2012. The use of a continuous monitor to show compliance with an emission limit is exempt from CAM under 64.2(b)(vi).

VOC

- Emission Limit – VOC is subject to a 2.0 ppm 1 hour BACT limit.
- Control Equipment – VOC is controlled with the oxidation catalyst.
- Requirement – The oxidation catalyst is effective at operating temperatures above 300 degrees F. The facility is required to maintain a temperature gauge in the exhaust, which will measure the exhaust temperature on a continuous basis and record the readings on an hourly basis. This will allow the operator to insure that the oxidation catalyst is operating properly.

40CFR Part 72 – Acid Rain

The facility is subject to the requirements of the federal acid rain program, because the turbine is a utility unit greater than 25 MW. The acid rain program is similar to RECLAIM in that facilities are required to cover SO_2 emissions with "SO_2 allowances" that are similar in concept to RTCs. MPP is also required to monitor SO_2 emissions through use of fuel gas meters and gas constituent analyses, or, if fired with pipeline quality natural gas, as in the case of the MPP, a default emission factor of 0.0006 lbs/MMBtu is allowed. SO_2 mass emissions are to be recorded every hour. NOx and O_2 must be monitored with CEMS in accordance with the specifications of Part 75. Under this program, NOx and SOx emissions will be reported directly to the EPA. Compliance is expected.

3.9 Conclusions

With the proposed amendments to the startup emissions and monthly emission limits, the CEC Staff's conclusions in the Final Staff Assessment and the Final Decision that air quality impacts from Project are less than significant, will still be applicable.

3.10 Public Health

The public health impacts assessed during the licensing of the MPP indicated that the acute, chronic, and cancer risk associated with the operation of the MPP were below the CEC's significance impact levels (see MPP Final Staff Assessment, Public Health Table 2, page 4.7-13). The proposed modifications at the MPP are not expected to increase the amount of fuel fired (the basis for calculating the MPP non-criteria pollutant emissions, which drive the health risk assessment). Therefore, no significant public health impacts are expected from the proposed changes to COCs AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-6, AQ-7, AQ-11, AQ-13, AQ16 and AQ-17.

For the original project, the CEC determined that the MPP would not have a significant direct or cumulative impact on public health (see MPP Final Staff Assessment, Public Health Section, page 4.7-14). As the proposed changes to the MPP license is not expected to increase public health impact above those analyzed during licensing, no significant cumulative public health impacts are expected.

3.10.1 Compliance with LORS

The proposed changes to the MPP will be in compliance with all applicable LORS.

Table 3-1
Summary of Proposed Operating Scenarios for the MPP Combustion Turbine

Startups/month	Startups/year	Shutdowns/month	Shutdowns/year	Annual Operation Hours/Year
5	60	5	60	8,322

Table 3-2
Summary of Proposed Operating Scenarios for the MPP Duct Burner

Hours/day	Hours/month	Annual Operations/Year
12	240	1,000

Table 3-3
Normal MPP Operation Hourly Emissions (100% Load)
(Without the Duct Burner)

Pollutant	Hourly Emissions (lb/hr)
NO_x	13.18
CO	8.02
VOC	4.58
Ammonia (NH_3)	12.17
PM_{10}	11.79
SO_x	1.28

Table 3-4
MPP Duct Burner Operation Hourly Emissions

Pollutant	Hourly Emissions (lb/hr)
NO_x	4.30
CO	2.62
VOC	1.50
Ammonia (NH_3)	3.97
PM_{10}	4.43
SO_x	0.42

Table 3-5
Normal MPP Operation Hourly Emissions (100% Load)
(With the Duct Burner)

Pollutant	Hourly Emissions (lb/hr)
NO_x	17.48
CO	10.64
VOC	6.08
Ammonia (NH_3)	16.15
PM_{10}	16.22
SO_x	1.70

Table 3-6
Emissions during Startup of the MPP
(Startup Duration Six Hours)

Pollutant	Startup Emissions (lb)
NO_x	440.00
CO	500.00
VOC	30.00
PM_{10}	70.74
SO_x	7.68

Table 3-7
Emissions during Shutdown of the MPP
[Shutdown Duration 0.5 hour (30 Minutes)]

Pollutant	Shutdown Emissions (lb in 30 minutes)	Shutdown Emissions (lb in 60 minutes)[a]
NO_x	25.00	33.74
CO	120.00	125.32
VOC	17.00	20.04
PM_{10}	5.90	14.01
SO_x	0.64	1.49

[a] This includes 30 minutes of shutdown emission and 30 minutes of normal operation with duct burner emission

Table 3-8
Summary of Emissions During Startup, Shutdown, and Normal Operations

Operating Scenario	Length Of Event (minutes)	NO_x (lbs/event)	CO (lbs/event)	VOC (lbs/event)	PM_{10} (lbs/event)	SO_x (lbs/event)
Startup (Six Hour Duration)	360	440.00	500.00	30.00	70.74	7.68
Startup (Hourly Emission)	60	73.33	83.33	5.0	11.79	1.28
Shutdown	30	25.00	120.00	17.00	5.90	0.64
Shutdown + Normal Operation with Duct Burner	60	33.74	125.32	20.04	14.01	1.49
Normal (100% load) without Duct Burner	60	13.18	8.02	4.58	11.79	1.28
Normal (100% load) with Duct Burner	60	17.48	10.64	6.08	16.22	1.70

Table 3-9
Summary of Daily, Monthly, and Annual Criteria Pollutant Emissions

Operating Scenario	Length Of Event (Hours)	NO_x (lbs/event)	CO (lbs/event)	VOC (lbs/event)	PM_{10} (lbs/event)	SO_x (lbs/event)
Daily	24	747.3	791.8	145.2	336.1	35.8
Monthly	720	-	9,243	3,744	9,552	1,022
Annual	8,322	136,734	103,435	40,649	102,546	11,072

Table 3-10
MPP Maximum Hourly Emissions, lb/hr
[Data from CEC Staff Report, MPP Project, October 2002 (01-AFC-6)], Air Quality Table 12]

Pollutant	CO	NOx	PM10	SOx	VOC	NH_3
Combustion Turbine Cold Start (4.0 hr)	125.0	36.25	12.0	1.31	10.0	4.76
Combustion Turbine Warm Start (2.1 hr)	142.86	42.86	12.0	1.31	9.52	9.07
Combustion Turbine Hot Start (1.5 hr)	190.0	33.33	12.0	1.31	13.33	7.93
Combustion Turbine Shutdown (0.5 hr)	240.0	50.0	12.0	1.31	34.0	5.96
Combustion Turbine w/Duct Firing (95^{o}F)	10.49	17.24	18.0	1.71	6.00	15.93
Combustion Turbine w/o Duct Firing (41^{o}F)	8.01	13.16	12.0	1.31	4.58	12.16
Cooling Tower	–	–	1.26	–	–	–

Table 3-11
MPP Estimated Maximum Daily, Monthly and Annual Emissions
[Data from CEC Staff Report, MPP Project, October 2002 (01-AFC-6)], Air Quality Table 13]

Pollutant	CO	NOx	PM10	SOx	VOC	NH_3
Maximum Daily Emissions (lb/day)						
Combustion Turbine Cold Start (4.0 hr x 1 event = 4.0 hours)	500	145	48.0	5.2	40	19.04
Combustion Turbine w/Duct Firing (95°F) (12 hours)	125.9	206.9	216.0	20.5	72.0	191.16
Combustion Turbine w/o Duct Firing (41°F) (8 hours)	64.1	105.3	96.0	10.5	36.6	97.3
Cooling Tower (24 hours)	–	–	30.24	–	–	–
Total Maximum Daily Emissions	690	457	360	36	149	307.5
Monthly Load Following Scenario Emissions (lb/month)						
Combustion Turbine Cold Start (4.0 hr x 4 events = 16 hours)	2,000	580	192.0	20.8	160	76.2
Combustion Turbine Warm Start (2.1 hr x 4 events = 8.4 hours)	1,200	360.0	100.8	11.0	80.0	76.2
Combustion Turbine Shutdown (0.5 hr x 8 events = 4 hours)	960.0	200.0	48.0	5.24	136.0	23.8
Combustion Turbine w/ Duct Firing (95°F) (240 hours)	2,518	4,138	4,320	410.4	1,440	3,823
Combustion Turbine w/o Duct Firing (41°F) (163.6 hours)	1,310	2,153	1,963	214.3	749.3	1,989
Cooling Tower (432 hours)	–	–	544	–	–	–
Total Monthly Load Following Scenario Emissions	**7,988**	7,431	6,624	661	2,565	5,988

Table 3-11
MPP Estimated Maximum Daily, Monthly and Annual Emissions
[Data from CEC Staff Report, MPP Project, October 2002 (01-AFC-6)], Air Quality Table 13]

Pollutant	CO	NOx	PM10	SOx	VOC	NH_3
Monthly Base Load Scenario Emissions (lb/month)						
Combustion Turbine w/ Duct Firing (95°F) (240 hours)	2,518	4,138	4,320	410	1,440	3,823
Combustion Turbine w/o Duct Firing (41°F) (480 hours)	3,845	6,317	5,760	629	2,198	5,837
Cooling Tower (720 hours)	–	–	907	–	–	–
Total Monthly Baseload Scenario Emissions	6,363	10,455	10,987	1,039	3,638	9,660
Annual Load Following Scenario Emissions (lb/year)						
Combustion Turbine Cold Start (4.0 hr x 52 events = 208 hours)	26,000	7,540	2,496	272	2,080	990
Combustion Turbine Warm Start (2.1 hr x 52 events = 109.2 hours)	15,600	4,680	1,310	143	1,040	990
Combustion Turbine Shutdown (0.5 hr x 104 events = 52 hours)	12,480	2,600	624.0	68	1,768	310
Combustion Turbine w/ Duct Firing (95°F) (1,000 hours)	10,490	17,240	18,000	1,710	6,000	15,930
Combustion Turbine w/o Duct Firing (41°F) (3,208.8 hours)	25,702	42,227	38,505.6	4,204	14,696	39,019
Cooling Tower (4,578 hours)	–	–	5,768	–	–	–
Total Annual Load Following Scenario Emissions, lb/year	**90,272**	74,287	66,703	6,397	25,584	57,239
Total Annual Load Following Scenario Emissions, tpy	**45.14**	37.14	33.35	3.20	12.79	28.62

Table 3-11
MPP Estimated Maximum Daily, Monthly and Annual Emissions
[Data from CEC Staff Report, MPP Project, October 2002 (01-AFC-6)], Air Quality Table 13]

Pollutant	CO	NOx	PM10	SOx	VOC	NH_3
Annual Base Load Scenario Emissions (lb/year)						
Combustion Turbine w/ Duct Firing (95°F) (1,000 hours)	10,490	17,240	18,000	1,710	6,000	15,930
Combustion Turbine w/o Duct Firing (41°F) (7,322 hours)	58,649	96,358	87,864	9,592	33,535	89,036
Cooling Tower (8,322 hours)	–	–	10,486	–	–	–
Total Annual Baseload Scenario Emissions, lb/year	69,139	**113,598**	116,350	**11,302**	39,535	104,966
Total Annual Baseload Scenario Emissions, tpy	34.57	**56.80**	58.18	5.65	19.77	52.48

Table 3-12
Revised Daily, Monthly, and Annual Emission Limits (2016)

Pollutant	Operating Scenario	Length of Event (Hours)	Revised Facility Emission Limits (2016)
CO	Maximum Daily	24	791.8 lb/day
NOx	Maximum Daily	24	747.1 lb/day
PM10 (including emissions from cooling tower)	Maximum Daily	24	366.3 lb/day
PM10 (emissions from cooling tower not included)	Maximum Daily	24	336.1 lb/day
SOx	Maximum Daily	24	35.8 lb/day
VOC	Maximum Daily	24	145.2 lb/day
CO	Monthly	720	9,243 lb/month
PM10 (including emissions from cooling tower)	Monthly	720	10,459 lb/month
PM10 (emissions from cooling tower not included)	Monthly	720	9,552 lb/month
SOx	Monthly	720	1,022 lb/month
VOC	Monthly	720	3,744 lb/month
CO	Annual	8,322	103,435 lb/yr
NOx	Annual	8,322	136,734 lb/yr
PM10 (including emissions from cooling tower)	Annual	8,322	113,032 lb/yr
PM10 (emissions from cooling tower not included)	Annual	8,322	102,546 lb/yr
SOx	Annual	8,322	11,072 lb/yr
VOC	Annual	8,322	40,649 lb/yr

Table 3-13
Post-Modification MPP Air Toxics Emissions

Pollutant	Emission Factor	Hourly Emissions	Annual Emissions
	lbs/mmscf	lbs/hr	lbs/yr
1,3 butadiene	4.39E-04	9.91E-04	6.46
acetaldehyde	1.80E-01	4.06E-01	2649.42
acrolein	3.69E-03	8.33E-03	54.31
benzene	3.33E-03	7.52E-03	49.01
ethylbenzene	3.26E-02	7.36E-02	479.84
formaldehyde	3.67E-01	8.28E-01	5401.87
naphthalene	1.33E-03	3.00E-03	19.58
PAH (excluding naphthalene)	9.18E-04	2.07E-03	13.51
propylene oxide	2.96E-02	6.68E-02	435.68
toluene	1.33E-01	3.00E-01	1957.63
xylenes	6.53E-02	1.47E-01	961.15
		Total, lbs/yr	**12,028**
		Total, tpy	**6.0**

Table 3-14
MPP GHG Emissions

GHG	Hourly Tons at 2370 MMBtu/hr	Pre-Modification Annual Tons at 15,872,572 MMBtu/yr	Post-Modification Annual Tons at 15,454,414 MMBtu/yr	Difference, tpy
CO_2	138.5	927,656	903,217	-24,439
CH_4	2.61E-03	17	17	0
N_2O	2.61E-04	1.7	1.7	0
Total Mass	138.5	927,675	903,236	-24,439
CO_2e	138.6	928,613	904,149	-24,464

Table 3-15
Ambient Air Quality Significance Thresholds

Pollutant and Averaging Time	Standard
PM10 24-hour (SCAQMD Criteria) PM10 annual geometric mean (SCAQMD Criteria)	2.5 μg/m^3 (change in concentration level, state) 1.0 μg/m^3 (change in concentration level, state))
PM10 24-hour Ambient Air Quality Standard	150 μg/m^3 (federal) 50 μg/m^3 (state)
PM10 Annual Ambient Air Quality Standard	20 μg/m^3 (state)
CO 1-hour Ambient Air Quality Standard	40 mg/m^3 (federal) 23 mg/m^3 (state)
CO 8-hour Ambient Air Quality Standard	10 mg/m^3 (federal) 10 mg/m^3 (state)
NO_2 1-hour Ambient Air Quality Standard	188 μg/m^3 (federal, 98th percentile) 339 μg/m^3 (state)
NO_2 Annual Ambient Air Quality Standard	100 μg/m^3 (federal) 57 μg/m^3 (state)
SO_2 1-hour Ambient Air Quality Standard	196 μg/m^3 (federal, 99th percentile) 655 μg/m^3 (state)
SO_2 24-hour Ambient Air Quality Standard	105 μg/m^3 (state)

μg/m^3 = microgram per cubic meter; mg/m^3 = milligram per cubic meter

Table 3-16
Maximum 24-Hour and Annual Average PM10 Concentrations at the Burbank-West Palm Avenue (Burbank); District Station Code 069, East San Fernando Valley

Averaging Period	Maximum Monitored PM10 Concentration (μg/m^3)				
	2011	2012	2013	2014	Maximum
24-Hour	61	55	52	60	61
Annual	28.4	26.4	28.5	31.2	31.2

μg/m^3 = microgram per cubic meter

Table 3-17
Maximum 1-Hour and 8-Hour Monitored CO Concentrations at the Burbank-West Palm Avenue (Burbank); District Station Code 069, East San Fernando Valley

Averaging Period	Maximum Monitored CO Concentration ppm (μg/m^3)				
	2011	2012	2013	2014	Maximum
1-Hour	2.8 (3,220)	2.8 (3,220)	3.0 (3,450)	3.0 (3,450)	3.0 (3,450)
8-Hour	2.4 (2,760)	2.4 (2,760)	2.4 (2,760)	3.0 (3,450)	3.0 (3,450)
ppm = parts per million, μg/m^3 = microgram per cubic meter					

Table 3-18
Maximum 1-Hour and Annual Monitored NO_2 Concentrations at the Burbank-West Palm Avenue (Burbank); District Station Code 069, East San Fernando Valley

Averaging Period	Maximum Monitored NO_2 Concentration ppb (μg/m^3)				
	2011	2012	2013	2014	Maximum
1-Hour (CAAQS)	67.8 (127.5)	79.5 (149.5)	72.5 (136.3)	73.2 (137.6)	79.5 (149.5)
Annual	22.1 (41.5)	21.9 (41.2)	20.2 (38.0)	21.8 (41.0)	22.1 (41.5)
ppb = parts per billion, μg/m^3 = microgram per cubic meter					

Table 3-19
1-Hour NO_2 98th Percentile Concentrations at the Burbank-West Palm Avenue (Burbank); District Station Code 069, East San Fernando Valley

Averaging Period	98th Percentile NO_2 Concentration ppb (μg/m^3)				
	2011	2012	2013	2014	Mean (2012-2014)
1-Hour (NAAQS)	56.2 (105.7)	57.0 (107.2)	60.0 (112.8)	65.2 (122.6)	60.7 ppb 114.2 μg/m^3
ppb = parts per billion, μg/m^3 = microgram per cubic meter					

Table 3-20
Maximum 1-Hour and 24-Hour Monitored SO_2 Concentrations at the
Burbank-West Palm Avenue (Burbank); District Station Code 069, East San Fernando Valley

Averaging Period	Maximum Monitored SO_2 Concentration ppb ($\mu g/m^3$)				
	2011	2012	2013	2014	Maximum
1-Hour (CAAQS)	9.0 (23.6)	6.5 (17.0)	10.8 (28.3)	4.5 (11.8)	10.8 (28.3)
24-Hour (CAAQS)	0.002 ppm (5.22 $\mu g/m^3$)	0.002 ppm (5.22 $\mu g/m^3$)	0.002 ppm (5.22 $\mu g/m^3$)	0.002 ppm (5.22 $\mu g/m^3$)	0.002 ppm (5.22 $\mu g/m^3$)
ppb = parts per billion, ppm = parts per million, $\mu g/m^3$ = microgram per cubic meter					

Table 3-21
1-Hour SO_2 99th Percentile Concentrations at the
Burbank-West Palm Avenue (Burbank); District Station Code 069, East San Fernando Valley

Averaging Period	99th Percentile SO_2 Concentration ppb ($\mu g/m^3$)				
	2011	2012	2013	2014	Mean (2012-2014)
1-Hour (NAAQS)	5.2 (13.6)	2.9 (7.6)	4.2 (11.0)	3.9 (10.2)	3.7 ppb 9.7 $\mu g/m^3$
ppb = parts per billion, $\mu g/m^3$ = microgram per cubic meter					

Table 3-22
CO Emission Rate (1-hour Average) and other Source Release Parameters for Startup, Normal, and Shutdown Operating Scenarios

Details of Operation	CO Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Startup	10.50	45.70	361.6	7.20	5.80
Normal Operation (CT + DB)	1.341	45.70	356.4	18.40	5.80
Shutdown	15.79	45.70	361.6	7.20	5.80

Table 3-23
PM10 Emission Rate (1-hr Average) and other Source Release Parameters for Normal Operating Scenario (CT + DB Operation) and Cooling Tower Cells

Details of Operation	PM10 Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Normal Operation (CT + DB)	2.044	45.70	356.4	18.40	5.80
Cooling Tower, Cell 1	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 2	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 3	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 4	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 5	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 6	0.0265	15.24	304.35	8.43343	9.5175

Table 3-24
NOx Emission Rate (1-hr Average) and other Source Release Parameters for Startup, Normal, and Shutdown Operating Scenarios

Details of Operation	NOx Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Startup	9.240	45.70	361.6	7.20	5.80
Normal Operation (CT + DB)	2.201	45.70	356.4	18.40	5.80
Shutdown	4.251	45.70	361.6	7.20	5.80

Table 3-25
SOx Emission Rate (1-hr Average) and other Source Release Parameters for Normal Operating Scenario (CT + DB Operation)

Details of Operation	SOx Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Normal Operation (CT + DB)	0.213	45.70	356.4	18.40	5.80

Table 3-26
CO Emission Rate and other Source Release Parameters Selected for Air Dispersion Modeling Analysis for Startup, Normal, and Shutdown Operating Scenarios

Details of Operation	CO Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Startup	10.50	45.70	361.6	7.20	5.80
Normal Operation (CT + DB)	1.341	45.70	361.6	7.20	5.80
Shutdown	15.79	45.70	361.6	7.20	5.80

Table 3-27
PM10 Emission Rate and other Source Release Parameters Used for Estimating 24-hr Average Concentrations for the Normal Operating Scenario (CT + DB Operation) and Cooling Tower Six Cells

Details of Operation	PM10 Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Normal Operation (CT + DB)	2.044	45.70	361.6	7.20	5.80
Cooling Tower, Cell 1	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 2	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 3	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 4	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 5	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 6	0.0265	15.24	304.35	8.43343	9.5175

Table 3-28
PM10 Emission Rate and other Source Release Parameters Used for Estimating Annual Average Concentrations (CT + DB Operation)

Details of Operation	PM10 Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Normal Operation (CT + DB)	1.475	45.70	361.6	7.20	5.80
Cooling Tower, Cell 1	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 2	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 3	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 4	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 5	0.0265	15.24	304.35	8.43343	9.5175
Cooling Tower, Cell 6	0.0265	15.24	304.35	8.43343	9.5175

Table 3-29
NOx Emission Rate and other Source Release Parameters Selected for Air Dispersion Modeling Analysis for Startup, Normal, and Shutdown Operating Scenarios (for demonstrating Compliance with 1-hr NOx CAAQS and NAAQS)

Details of Operation	NOx Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Startup	9.240	45.70	361.6	7.20	5.80
Normal Operation (CT + DB)	2.201	45.70	361.6	7.20	5.80
Shutdown	4.251	45.70	361.6	7.20	5.80

Table 3-30
NOx Emission Rate and other Source Release Parameters Used for Estimating Annual Average Concentrations

Details of Operation	NOx Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
MPP: 60 startups, 60 shutdowns, 1,000 hours of duct burner operation with combustion turbine, and remaining period only combustion turbine operation. Total MPP operating hours of 8,322 hours in the year (95% Capacity Factor).	1.967	45.70	361.6	7.20	5.80

Table 3-31
SOx Emission Rate and other Source Release Parameters Used for Estimating 1-hr and 24-hr Average Concentrations (CT + DB Operation)

Details of Operation	SOx Emission Rate (g/s)	Release Height (m)	Stack Temperature (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
Normal Operation (CT + DB).	0.213	45.70	361.6	7.20	5.80

Table 3-32
Operation Impact Analysis for CO Emissions

Averaging Time	CO Ambient Air Quality Standard ($\mu g/m^3$)	Modeling Scenario	Modeled Conc. ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Significant (Yes/No)
1-Hour Analysis						
1-Hour	23,000	Startup (MPPCOST)	33.09	3,450	3,483.1	No
1-Hour	23,000	Normal Operation (CT + DB in operation) (MPPCONB)	4.23	3,450	3,454.2	No
1-Hour	23,000	Shutdown (MPPCOSH)	49.76	3,450	3,499.8	No
8-Hour Analysis						
8-Hour	10.000	Startup (MPPCOST)	25.22	3,450	3,475.2	No
8-Hour	10.000	Normal Operation (CT + DB in operation) (MPPCONB)	3.22	3,450	3,453.2	No
8-Hour	10.000	Shutdown (MPPCOSH)	37.92	3,450	3,487.9	No

Table 3-33
Operation Impact Analysis for PM10 Emissions - SCAQMD Significance Criteria Analysis

Averaging Time	Significant Change in PM10 Air Quality Concentration ($\mu g/m^3$)	Modeling Scenario	Maximum PM10 Concentration ($\mu g/m^3$)	Significant (Yes/No)
24-hour	2.5	Normal Operation (CT + DB in operation) Cooling Tower in operation.(MPPPM24C)	2.34	No
Annual	1.0	CT + DB in operation for 1,000 hours. Only CT in operation for 7,322 hours. Cooling Tower in operation.	0.41	No

Table 3-34
Results of PM10 Annual Modeling Scenario Analysis (PM10 Concentrations in µg/m^3)
Five Years of Meteorological Data

Modeling Scenario	Year 2008	Year 2009	Year 2010	Year 2011	Year 2012	Maximum PM10 Concentration, µg/m^3
CT + DB in operation for 1,000 hours. Only CT in operation for 7,322 hours. Cooling Tower in operation.	0.40	0.38	0.38	0.41	0.41	0.41

Table 3-35
Operation Impact Analysis for PM10 Emissions – CAAQS and NAAQS Analysis

Averaging Time	PM10 Ambient Air Quality Standard (µg/m^3)	Modeling Scenario	Modeled Conc. (µg/m^3)	Background Conc. (µg/m^3)	Total Impact (µg/m^3)	Percent of Standard (µg/m^3)
24-Hour	150 (federal)	Normal Operation (CT + DB in operation) + Cooling Tower (MPPPM24C).	2.34	61	63.3	42
24-Hour	50 (state)	Normal Operation (CT + DB in operation) + Cooling Tower (MPPPM24C).	2.34	61	63.3	127
Annual (state)	20 (state)	Normal Operation (CT + DB in operation) + Cooling Tower (MPPPM24C). CT+DB in operation for 1,000 hours. Only CT in operation for 7,322 hours.	0.41	31.2	31.6	153

Table 3-36
Modeling Analysis for NOx Emissions (1-hr NOx CAAQS)

Averaging Time	NO_2 Ambient Air Quality Standard ($\mu g/m^3$)	Modeling Scenario	Modeled MPP Conc. ($\mu g/m^3$)	Modeled MPP Conc. x 0.8 ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Significant (Yes/No)
1-Hour	339	MPP in startup (MPPNOSTC)	29.12	23.30	149.5	172.8	No
1-Hour	339	MPP in normal operation with Duct Burner (MPPNONBC)	6.94	5.55	149.5	155.0	No
1-Hour	339	MPP in shutdown (MPPNOSHC)	13.40	10.72	149.5	160.2	No

Table 3-37
Modeling Analysis for NOx Emissions (1-hr NOx NAAQS)

Averaging Time	NO_2 Ambient Air Quality Standard ($\mu g/m^3$)	Modeling Scenario	Modeled MPP NOx Conc. ($\mu g/m^3$)	Modeled MPP NOx Conc. x 0.8 ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Significant (Yes/No)
1-Hour	188	MPP in startup (MPPNOSTN)	26.62	21.30	108.5	129.8	No
1-Hour	188	MPP in normal operation with Duct Burner (MPPNONBN)	6.34	5.07	108.5	113.6	No
1-Hour	188	MPP in shutdown (MPPNOSHN)	12.25	9.80	108.5	118.3	No

Table 3-38
Results of NOx Annual Modeling Scenario Analysis (NOx Concentrations in µg/m^3)
Five Years of Meteorological Data

Modeling Scenario	Year 2008	Year 2009	Year 2010	Year 2011	Year 2012	Maximum Modeled NOx Concentration, µg/m^3
MPP: 60 startups, 60 shutdowns, 1,000 hours of duct burner operation with combustion turbine, and remaining period only combustion turbine operation. Total MPP operating hours of 8,322 hours in the year (95% Capacity Factor) MPPNOANN(8-12)	0.44	0.42	0.43	0.46	0.45	0.46

Table 3-39
Annual Modeling Analysis Results for NO_X Emissions

Averaging Time	NO_2 NAAQS (µg/m^3)	NO_2 CAAQS (µg/m^3)	Modeling Scenario	MPP NO_2 Conc[a]. (µg/m^3)	Background Conc. (µg/m^3)	Total Impact (µg/m^3)	Significant (Yes/No)
Annual	100	57	MPP: 60 startups, 60 shutdowns, 1,000 hours of duct burner operation with combustion turbine, and remaining period only combustion turbine operation. Total MPP operating hours of 8,322 hours in the year (95% Capacity Factor).	0.35	41.5	41.9	No

[a] MPP NO_2 concentration was calculated by multiplying maximum NOx concentration (0.46 µg/m^3) by 0.75.

Table 3-40
Modeling Analysis for SOx Emissions (1-hr and 24-hr SOx CAAQS)

Averaging Time	SO_2 Ambient Air Quality Standard ($\mu g/m^3$)	Modeling Scenario	Modeled MPP Conc. ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Significant (Yes/No)
1-Hour	655	Normal operation (CT + DB in operation) (MPPNONBC)	0.67	28.3	29.0	No
24-Hour	105	Normal operation (CT + DB in operation) (MPPSOX_CA)	0.21	5.2	5.4	No

Table 3-41
Modeling Analysis for SOx Emissions (1-hr SOx NAAQS)

Averaging Time	SO_2 Ambient Air Quality Standard ($\mu g/m^3$)	Modeling Scenario	Modeled MPP SOx Conc. ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Significant (Yes/No)
1-Hour	196	Normal operation (CT + DB in operation) (MPPSOX_NA)	0.62	9.7	10.3	No

SECTION 4
PROPOSED MODIFICATIONS TO THE CONDITIONS OF CERTIFICATION

As required under the CEC Siting Regulations Section 1769(a)(1)(A), this section provides the details of the proposed modifications to the project's COCs.

The proposed modifications to COCs are presented below with deletions in strike-out and insertions in underline.

CO Catalyst Specifications:

1,787 MMBtu/hr Gas Turbine (ID No. D4) (A/N ~~386305~~575368) No. 1 GE Model PG7241FA with Dry Low NOx combustors connected directly to a 181.1 MW Electric Generator ~~(ID No. B5)~~ and Heat Recovery Steam Generator ~~(ID No. B7)~~ with 583 MMBtu/hr Duct Burners (ID No. D6) (A/N 575368) connected to a 142 MW Steam Turbine ~~(ID No. B8)~~. Selective Catalytic Reduction (ID No. C10) (A/N ~~386306~~575369) with 1,100 cubic feet of total volume, 67 feet height, 1ft 4 in ~~.33 feet~~ long, 26 feet wide with an ammonia injection grid ~~(ID No. B11)~~ and CO oxidation catalyst (ID No. C9) with 34.1~~60~~ cubic feet of total volume connected to an exhaust stack (ID No. S12) (A/N ~~386306~~575369) No. 1.

AQ-1 The operator ~~project owner~~ shall limit the fuel usage for the duct burner to no more than 5557~~2~~ MM cubic feet per year.

AQ-2 The operator ~~project owner~~ shall limit the fuel usage for the duct burner to no more than 6.6~~8~~6 MM cubic feet per day.

New Condition (AQ-New 1) The operator shall limit the fuel usage for the duct burner to no more than 133 MM cubic feet per month.

AQ-3 The operator ~~project owner~~ shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH_3).

The operator ~~project owner~~ shall ~~also install and maintain a device to~~ continuously record the flow rate with a ~~parameter being measured. The~~ measuring device or gauge ~~shall be~~ accurate to +/- ~~within plus or minus~~ 5 percent, calibrated ~~. It shall be calibrated~~ once every twelve months. The operator shall maintain the ammonia injection rate between 50 and 350 gal/hr.

AQ-4 The operator ~~project owner~~ shall install and maintain a(n) temperature gauge to accurately indicate the temperature of ~~in~~ the exhaust at the inlet to the SCR reactor. The operator ~~project owner~~ shall ~~also install and maintain a device to~~ continuously record the temperature with a ~~parameter being measured. The~~ measuring device or gauge ~~shall be~~ accurate to +/- ~~within plus or minus~~ 5 percent, calibrated once every 12 months.. The operator ~~It~~ shall maintain the temperature between 450 and 900 degreees F.~~be calibrated once every twelve months.~~

AQ-5 The operator ~~project owner~~ shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column. The operator ~~project owner~~ shall ~~also install and maintain a device to~~ continuously record the pressure ~~arameter being measured. The~~with a measuring device or gauge ~~shall be~~ accurate to ~~within plus or minus~~ 5 percent, calibrated once every 12 months. ~~It shall be calibrated once every twelve months.~~ The operator shall maintain the differential pressure between 1.0 and 5 inches of water column.

AQ-6 The operator ~~project owner~~ shall conduct source test(s) for the pollutant(s) identified below.

~~Pollutant~~	~~Method~~	~~Averaging Time~~	~~Test Location~~
~~NOx~~	~~District Method 100.1~~	~~1 hour~~	~~Outlet of the SCR~~
~~CO~~	~~District Method 100.1~~	~~1 hour~~	~~Outlet of the SCR~~
~~SOx~~	~~District Approved Method~~	~~District Approved Avg. Time~~	~~Fuel sample~~
~~ROG~~	~~District Approved Method~~	~~1 hour~~	~~Outlet of the SCR~~
~~PM~~	~~District Approved Method~~	~~District Approved Avg. Time~~	~~Outlet of the SCR~~
~~NH_3~~	~~District Method 207.1 and 5.3 or EPA Method 17~~	~~1 hour~~	~~Outlet of the SCR~~
~~Acetaldehyde~~	~~District Approved Method~~	~~District Approved Avg. Time~~	~~Outlet of the SCR~~
~~Benzene~~	~~District Approved Method~~	~~District Approved Avg. Time~~	~~Outlet of the SCR~~
~~Formaldehyde~~	~~District Approved Method~~	~~District Approved Avg. Time~~	~~Outlet of the SCR~~
~~PAH~~	~~District Approved Method~~	~~District Approved Avg. Time~~	~~Outlet of the SCR~~

~~The test shall be conducted after District approval of the source test protocol, but no later than 180 days after initial startup. The District shall be notified of the date and time of the test at least 10 days prior to the test.~~

~~The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine and the steam turbine generating output in MW.~~

~~The test shall be conducted in accordance with a District approved source test protocol. The protocol will be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the District before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.~~

~~The test shall be conducted for all pollutants 1) when the gas turbine and the duct burner are operating simultaneously at 100 percent of maximum heat input and 2) when the gas turbine is operating alone at 100 percent of maximum heat input. In addition, tests shall be conducted when the gas turbine is operating alone at loads of 75 and 50 percent of maximum heat input for NOx, CO, VOC and NH_3 tests.~~

Pollutant to be Tested	**Required Test Method**	**Averaging Time**	**Test Location**
SOx emissions	AQMD Lab method 307-91	District-approved averaging time	Fuel sample
ROG emissions	Approved District method	1 hour	Outlet of the SCR
PM emissions	EPA Method 201A/District method 5.1	District-approved averaging time	Outlet of the SCR

The test shall be conducted to demonstrate compliance with the Rule 1303 concentartion and/or monthly emission limit.

The test shall be conducted at least once every three years. The results shall be submitted to the AQMD within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test. The test shall be conducted 1) when the gas turbine and duct burner are operating simultaneously at 100 percent of maximum heat input and 2) when the gas turbine is operating alone at 100 percent of maximum heat input.

For natural gas fired turbines only, an alternative to AQMD method 25.3 for the purpose of demonstrating compliance with BACT may be the following:

a) Triplicate stack gas samples extracted directly into Summa canisters, maintaining a final canister pressure between 400-500 mm Hg absolute.

b) Pressurization of Summa canisters with zero gas analyzed/certified to less than 0.05 ppmv total hydrocarbons as carbon, and

c) Analysis of Summa canisters as per modified EPA method TO-12 (with pre-concentration) or the canister analysis portion of AQMD Method 25.3 with a minimum detection limit of 0.3 ppmvC or less and reported to two significant figures. The temperature of the Summa canisters when extracting the samples for analysis shall not be below 70 F.

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The use of this alternative method for VOC compliance determination does not mean that it is more accurate than unmodified AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD Method 25.3 without prior approval, except for the determination of compliance with the BACT level of 2.0 ppmv ROG calculated as carbon set by CARB for natural gas fired turbines.

AQ-7 The operator ~~project owner~~ shall conduct source test(s) for the pollutant(s) identified below.

~~Pollutant~~	~~Method~~	~~Averaging Time~~	~~Test Location~~
~~NH_3~~ emissions	~~District Method 207.1 and 5.3 or EPA Method 17~~	~~1 hour~~	~~SCR Outlet~~

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~~The test shall be conducted and the results submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.~~

~~The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the Continuous Emission Monitoring System (CEMS), shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable or not yet certified, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.~~

~~The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.~~

Pollutant(s) to be tested	**Required Test Method(s)**	**Averaging Time**	**Test Location**
NH_3 emissions	District Method 207.1 and 5.3 or EPA Method 17	1 hour	Outlet of the SCR

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The test shall be conducted to demonstrate compliance with the rule 1303 concentration limit.

The test shall be conducted at least quarterly during the first twelve months of operation and at least every calendar year thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the AQMD within 45 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

AQ-11 The project owner shall limit emissions from this equipment as follows:

Containment	Emission Limit
CO	~~7,988~~9,243 LBS IN ANY 1 MONTH
PM10	~~10,080~~9,552 LBS IN ANY 1 MONTH
VOC	~~3,638~~3,744 LBS IN ANY 1 MONTH
SOx	~~1,039~~1,022 LBS IN ANY 1 MONTH

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~~For the purposes of this condition, the limit(s) shall be based on the total combined emissions from the gas turbine and duct burner.~~

~~The project owner shall calculate the emission limit(s) by using monthly fuel use data and the following emission factors: PM10 with duct firing 7.89 lbs/MMscf, PM10 without duct firing 6.86 lbs/MMscf, VOC with duct firing 2.63 lbs/MMscf, VOC without duct firing 2.62 lbs/MMscf, VOC startups 30 lbs/event, VOC shutdown 17 lbs/event, SOx 0.75 lbs/MMscf.~~

~~Duct burner fuel usage shall not exceed 222 MMscf per month and 618 MMscf per year. Written records of duct burner operation and fuel usage shall be maintained and made available upon request from AQMD.~~

~~The project owner shall calculate the emission limit(s) for CO, during the commissioning period, using the fuel use data and the following emission factors: 228 lbs/MMscf during the no load and part load tests when the turbine is operating at or below 60 percent load, and 14 lbs/MMscf during the mid load and full load tests when the turbine is operating at greater than 60 percent load.~~

~~The project owner shall calculate the emission limit(s) for CO, after the commissioning period and prior to the CO CEMS certification, using fuel use data and the following emission factors: 500 lbs/event for cold startups, 300 lbs/event for warm startups, 285 lbs/event for hot startups, 120 lbs/event for shutdowns, and 4.58 lbs/MMscf for all other operations.~~

~~The project owner shall calculate the emission limit(s) for CO, after the CO CEMS certification, based on readings from the certified CEMS. In the event the CO CEMS is not operating or the emissions exceed the valid upper range of the analyzer, the emissions shall be calculated in accordance with the approved CEMS plan.~~

The operator shall calculate the emission limit(s) by using the monthly fuel use data and the following emission factors: PM10 with duct firing = 7.98 lb/MMscf, PM10 without duct firing = 6.93 lb/MMscf, VOC with duct firing = 2.69 lb/MMscf, VOC without duct firing = 2.69 lb/MMscf, VOC startups = 30 lb/event, VOC shutdown = 17 lb/event, SOx = 0.75 lb/MMscf.

The operator shall calculate the emission limit(s) for CO, after the CO CEMS certification, based upon readings from the AQMD certified CEMS. In the event the CO CEMS is not operating or the emissions exceed the valid upper range of the analyzer, the emissions shall be calculated in accordance with the approved CEMS plan.

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from equipment D4 (Gas Turbine 1) and D6 (Duct Burner).

AQ-13 The operator ~~project owner~~ may, at his discretion, choose not to use ammonia injection if all ~~any~~ of the following requirement(s) are met:

The SCR inlet exhaust temperature ~~to the SCR~~ is 450 degrees F or less, not to exceed 6~~4~~ hours during a ~~cold~~ startup, ~~2.1 hours during a warm startup, 1.5 hours during a hot startup,~~ and 0.5 hours during a shutdown.

AQ-16 The 2.0 PPM NOx emission limit(s) shall not apply during ~~turbine commissioning,~~ startup~~,~~ and shutdown periods. Startup time shall not exceed 6~~4~~ hours per startup per day. ~~and the number of startups shall not exceed one per day.~~ Shutdown time shall not exceed 30 minutes per shutdown ~~and the number of shutdowns shall not exceed one~~ per day. ~~The commissioning period shall not exceed 636 operating hours from the date of initial startup. The project owner shall provide the AQMD with written notification of the startup date.~~ Written records of ~~commissioning,~~ startups~~,~~ and shutdowns shall be maintained and made available upon request from AQMD.

AQ-17 The 2.0 PPM CO emission limit(s) shall not apply during turbine ~~commissioning,~~ startup~~,~~ and shutdown periods. Startup time shall not exceed 6~~4~~ hours per startup per day ~~and the number of startups shall not exceed one per day~~. Shutdown time shall not exceed 30 minutes per shutdown ~~and the number of shutdowns shall not exceed one~~ per day. ~~The commissioning period shall not exceed 636 operating hours from the date of initial startup. The project owner shall provide the AQMD with written notification of the startup date.~~ Written records of ~~commissioning,~~ startups~~,~~ and shutdowns shall be maintained and made available upon request from AQMD.

New Condition (AQ-New2) The operator shall comply with the 2.0 ppmv NOx BACT emission concentration limit at all times, except as specified in Condition AQ-22 (A195.2) and under the following conditions:

Emission Limit	Averaging Time	Operation Requirement
440 lbs/startup	6 hours	The 440 lbs/startup emission limit shall apply to a startup event which shall not exceed 6 hours per day

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from equipment D4 (Gas Turbine 1) and D6 (Duct Burner).

New Condition (AQ-New 3) This equipment D4 (Gas Turbine) shall not be operated unless the facility holds 132,444 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 132,444 pounds of NOx RTCs valid during that compliance year.

RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

New Condition (AQ-New 4) This equipment D6 (Duct Burner) shall not be operated unless the facility holds 4,300 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 4,300 pounds of NOx RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

New Condition (AQ-New 5) The operator shall limit the number of startups for the Gas Turbine (D4) and Duct Burner (D6) to no more than 5 in any one month.

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SECTION 5
POTENTIAL EFFECTS ON THE PUBLIC

As required under the CEC Siting Regulations Section 1769(a)(1)(G), this section addresses the proposed Amendment's effects on the public.

The proposed amendment is not expected to have impacts that are greater than those analyzed during project licensing. Therefore, impacts to public are expected to be the same as those analyzed during CEC license proceeding for the MPP.

SECTION 6
LIST OF PROPERTY OWNERS

As required under the CEC Siting Regulations Section 1769(a)(1)(H), this section lists the property owners affected by the proposed modifications. The list of property owners are presented in Appendix A.

SECTION 7
POTENTIAL EFFECTS ON PROPERTY OWNERS

As required under the CEC Siting Regulations Section 1769(a)(1)(I), this section addresses potential effects of the proposed Amendment on nearby property owners, the public, and parties in the application proceeding.

The proposed project changes are expected to result in comparable impacts as those analyzed during the licensing proceeding. Therefore, impacts to property owners are expected to be the same as those analyzed during the license proceeding for the project.

SECTION 8
REFERENCES

California Energy Commission (CEC), "Final Staff Assessment, Magnolia Power Project, Application for Certification (01-AFC-6)," October 2002.

California Energy Commission (CEC), "Commission Decision, Magnolia Power Project, Application for Certification (01-AFC-6)," March 2003.

South Coast Air Quality Management District (SCAQMD),"Permit to Operate Evaluation, Application Processing & Calculations, Magnolia Power Project, Title V Permit Revision," February 2016a (see Appendix C).

South Coast Air Quality Management District (SCAQMD),"RECLAIM/Title V Facility Permit Revision (Facility ID# 128243)," April 2016b (see Appendix C).

APPENDIX A
LIST OF PROPERTY OWNERS WITHIN 1,000 FEET OF THE MAGNOLIA POWER PROJECT

List of Property Owners within 1,000 Feet of the Magnolia Power Project, 164 West Magnolia Boulevard, Burbank, CA 91502

APN_D	OWNERNAME	M_HSENO	M_DIR	M_STREET	M_SFX	M_UNIT	M_CITY	M_STATE	M_ZIP
2446-001-004	MANDEL DEBRA CO TR	440		SHENANDOAH	ST		THOUSAND OAKS	CA	91360
2446-001-005	DAYCO FUNDING CORPORATION	4751		WILSHIRE	BLVD	#203	LOS ANGELES	CA	90010
2446-001-011	ARMEN HAGOPJANIAN	3955		SAPPHIRE	DR		ENCINO	CA	91436
2446-001-012	DENNIS CARUSO	305	N	VICTORY	BLVD		BURBANK	CA	91502
2446-001-013	DENNIS CARUSO	305	N	VICTORY	BLVD		BURBANK	CA	91502
2446-001-031	MANDEL DEBRA CO TR	440		SHENANDOAH	ST		THOUSAND OAKS	CA	91360
2446-001-033	KEVORK BERBERIAN	1632	N	KINGSLEY	DR		LOS ANGELES	CA	90027
2446-001-034	CORRADI CORTES PROPERTIES LLC	100		WALNUT	ST		SAN FRANCISCO	CA	94118
2446-001-035	CORRADI CORTES PROPERTIES LLC	100		WALNUT	ST		SAN FRANCISCO	CA	94118
2446-001-036	CORRADI CORTES PROPERTIES LLC	100		WALNUT	ST		SAN FRANCISCO	CA	94118
2449-016-010	SYLVIA ARIAN	503	N	VICTORY	BLVD		BURBANK	CA	91502
2449-016-011	MARIA L MARTINEZ	415	N	VICTORY	BLVD		BURBANK	CA	91502
2449-016-012	FRIEDA M ROEPER			PO BOX 176			MOUNT SINAI	NY	11766
2449-016-013	SYLVIA ARIAN	503	N	VICTORY	BLVD		BURBANK	CA	91502
2449-016-020	GILBERT C SOMERFIELD	24744		VANTAGE POINT	TER		MALIBU	CA	90265
2449-016-033	SYLVIA ARIAN	503	N	VICTORY	BLVD		BURBANK	CA	91502
2449-016-041	SIDNEY DJANOGLY	2611	S	COAST HIGHWAY 101			CARDIFF BY THE SE	CA	92007
2449-016-042	SIDNEY DJANOGLY	2611	S	COAST HIGHWAY 101		#101	CARDIFF BY THE SE	CA	92007
2449-016-043	SIDNEY DJANOGLY	2611	S	COAST HIGHWAY		#101	CARDIFF BY THE SE	CA	92007
2449-016-044	SANG H & YONG C YEA	10428		SALINAS RIVER	CIR		FOUNTAIN VALLEY	CA	92708
2449-016-045	YRVAND TOROSIAN	913	W	MAGNOLIA	BLVD		BURBANK	CA	91506
2449-032-001	TERRY MULLIN	924		WEST	BLVD	#1000	LOS ANGELES	CA	90024
2449-032-003	DEBRA L ROSEN	212	S	RODEO	DR		BEVERLY HILLS	CA	90212
2449-032-005	REILLEY MULLIN			PO BOX 5549			KAMUELA	HI	96773
2449-032-810	SOU PAC TRANS CO	1		MARKET	PLZ		SAN FRANCISCO	CA	94105
2449-032-811	SOU PAC TRANS CO	1		MARKET	PLZ		SAN FRANCISCO	CA	94105
2449-032-900	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2449-033-001	163 W MAGNOLIA LLC	2506	N	ONTARIO	ST		BURBANK	CA	91504
2449-033-002	RON C LAMPLEY			PO BOX 284			VERDUGO CITY	CA	91046
2449-033-003	GRACE L KONOSKY	26477		CUMMINGS VALLEY	RD		TEHACHAPI	CA	93561
2449-033-004	ASSOCIATION OF GERMAN SHEPHERD RESCUERS	120		TUSTIN	AVE	#C1111	NEWPORT BEACH	CA	92663
2449-033-005	WILLIAM J BARNES			PO BOX 3321			INCLINE VILLAGE	NV	89450
2449-033-008	MARK & VALENTINA ALGAZY	437	N	MOSS	ST		BURBANK	CA	91502
2449-033-009	JERRALD & GLORIA DOWNIE	640	E	GRINNELL	DR		BURBANK	CA	91501
2449-033-010	ANGELO & LINDA DE SAPIO	1542	N	BEVERLY	DR		BEVERLY HILLS	CA	90210
2449-033-011	ANGELO & LINDA DE SAPIO	1542	N	BEVERLY	DR		BEVERLY HILLS	CA	90210
2449-033-012	LEASING ATS	28001		SMYTH	DR	#106	VALENCIA	CA	91355
2449-033-013	LEASING ATS	27959		SMYTH	DR		VALENCIA	CA	91355
2449-033-014	HARLEY D & SIDNEY A HOAG			PO BOX 281			CLAREMONT	CA	91711

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APN_D	OWNERNAME	M_HSENO	M_DIR	M_STREET	M_SFX	M_UNIT	M_CITY	M_STATE	M_ZIP
2449-033-016	RANCHITO ALLEGRA LLC	190	N	CANON	DR	#200	BEVERLY HILLS	CA	90210
2449-033-017	MACKEL JOHN E FAMILY PARTNERSHIP	2720		COCHRAN	ST		SIMI VALLEY	CA	93065
2449-033-018	TESORO SOUTH COAST COMPANY LLC			PO BOX 592809			SAN ANTONIO	TX	78259
2449-033-030	DUNE LLC	428	N	MOSS	ST		BURBANK	CA	91502
2449-033-031	DUNE LLC	428	N	MOSS	ST		BURBANK	CA	91502
2449-033-036	BIG MAGNOLIA LLC	150	N	ROBERTSON	BLVD	#320	BEVERLY HILLS	CA	90211
2449-033-037	BIG MAGNOLIA LLC	150	N	ROBERTSON	BLVD	#320	BEVERLY HILLS	CA	90211
2449-033-039	BIG MAGNOLIA LLC	150	N	ROBERTSON	BLVD	#320	BEVERLY HILLS	CA	90211
2449-033-046	TURPANJIAN PROPERTIES L P	580		SILVER SPUR	RD		ROLLING HILLS EST	CA	90275
2449-033-048	IRV G KAYE	212	S	RODEO	DR		BEVERLY HILLS	CA	90212
2449-034-004	MISHENKA PROPERTIES LLC	610	N	HOLLYWOOD	WAY		BURBANK	CA	91505
2449-034-006	MISHENKA PROPERTIES LLC	610	N	HOLLYWOOD	WAY		BURBANK	CA	91505
2449-034-007	MISHENKA PROPERTIES LLC	610	N	HOLLYWOOD	WAY		BURBANK	CA	91505
2449-034-008	MISHENKA PROPERTIES LLC	610	N	HOLLYWOOD	WAY		BURBANK	CA	91505
2449-034-010	HOT BRICKS LLC	452	N	MOSS	ST		BURBANK	CA	91502
2449-034-013	VALERIE I VIETS	450	N	MOSS	ST		BURBANK	CA	91502
2449-034-014	LEASING ATS	28001		SMYTH	DR	#106	VALENCIA	CA	91355
2449-034-015	RALPH C & DORIS E FROELICH	1551	E	CHEVY CHASE	DR	#311	GLENDALE	CA	91206
2449-034-016	TAN AND GREEN III LLC	25648		OAK MEADOW	DR		VALENCIA	CA	91381
2449-034-017	MARC & TAMARA L RAMIREZ	6624		SAN FERNANDO	RD		GLENDALE	CA	91201
2449-034-018	DUNE LLC	428	N	MOSS	ST		BURBANK	CA	91502
2449-034-019	DANIEL TOOBI	420	N	MOSS	ST		BURBANK	CA	91502
2449-034-020	DANIEL TOOBI	420	N	MOSS	ST		BURBANK	CA	91502
2449-034-021	CARLOS CHAVARRIA	8411		STARKLAND	AVE		WEST HILLS	CA	91304
2449-034-024	BRADLEY D HOWARD	1819	W	OLIVE	AVE		BURBANK	CA	91506
2449-034-025	PLANEGGER RANDY A SR CO TR	710	S	VICTORY	BLVD	#200	BURBANK	CA	91502
2449-034-026	DANIEL TOOBI	420	N	MOSS	ST		BURBANK	CA	91502
2449-034-031	PETROL PROPERTIES LLC	2959		GLENDALE	BLVD		LOS ANGELES	CA	90039
2449-034-032	JOHN & AZNIV S GARIBIAN	900		PENSHORE	TER		GLENDALE	CA	91207
2449-034-034	135 MAGNOLIA ASSOCIATES LLC	17404		VENTURA	BLVD	2NDFL	ENCINO	CA	91316
2449-034-035	KATHLEEN TRUMBO	430	N	VARNEY	ST		BURBANK	CA	91502
2449-034-037	MISHENKA PROPERTIES LLC	610	N	HOLLYWOOD	WAY		BURBANK	CA	91505
2449-034-038	MANUEL & HILDA ASSARIAN	415	N	VARNEY	ST		BURBANK	CA	91502
2449-034-039	GAVE PROPERTIES LLC	11523		SANTINI	LN		PORTER RANCH	CA	91326
2449-034-040	DUNE LLC	428	N	MOSS	ST		BURBANK	CA	91502
2449-034-041	TAN AND GREEN III LLC	25648		OAK MEADOW	DR		VALENCIA	CA	91381
2449-034-042	PETROL PROPERTIES LLC	443	N	VARNEY	ST		BURBANK	CA	91502
2449-034-043	GREG & LINDA OWENS	837		UNIVERSITY	AVE		BURBANK	CA	91504
2449-034-900	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502

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APN_D	OWNERNAME	M_HSENO	M_DIR	M_STREET	M_SFX	M_UNIT	M_CITY	M_STATE	M_ZIP
2449-035-005	FRANK J DVORACEK	440	N	VARNEY	ST		BURBANK	CA	91502
2449-035-006	VARNEY GROUP LLC	430	N	VARNEY	ST		BURBANK	CA	91502
2449-035-007	VARNEY GROUP LLC	430	N	VARNEY	ST		BURBANK	CA	91502
2449-035-008	VARNEY GROUP LLC	430	N	VARNEY	ST		BURBANK	CA	91502
2449-035-010	WESSEL INVESTMENT CO LLC	740	S	BUNTING	CT		ANAHEIM	CA	92808
2449-035-011	WESSEL INVESTMENT CO LLC	740	S	BUNTING	CT		ANAHEIM	CA	92808
2449-035-012	MABEL L MCCORMICK	26841		CHUCKWAGON	PL		CANYON COUNTRY	CA	91387
2449-035-014	135 MAGNOLIA ASSOCIATES LLC	17404		VENTURA	BLVD	2NDFL	ENCINO	CA	91316
2449-035-015	17 W MAGNOLIA BLVD ASSOC	17	W	MAGNOLIA	BLVD		BURBANK	CA	91502
2449-035-016	LODGE VALLEY	446	N	VARNEY	ST		BURBANK	CA	91502
2449-035-017	VARNEY GROUP LLC	430	N	VARNEY	ST		BURBANK	CA	91502
2449-035-018	STEPHEN G & VINNEJEAN HAAG	5	W	MAGNOLIA	BLVD		BURBANK	CA	91502
2449-035-019	17 W MAGNOLIA BLVD ASSOC LTD	17	W	MAGNOLIA	BLVD		BURBANK	CA	91502
2449-035-020	17 WEST MAGNOLIA BOULEVARD ASSOCIATES LTD	17	W	MAGNOLIA	BLVD		BURBANK	CA	91502
2449-035-022	G SQUARED GROUP LLC	410	N	VARNEY	ST		BURBANK	CA	91502
2449-035-803	SOU PAC TRANS CO	1		MARKET	PLZ		SAN FRANCISCO	CA	94105
2449-035-804	SOU PAC TRANS CO	1		MARKET	PLZ		SAN FRANCISCO	CA	94105
2449-035-902	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2449-035-904	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2449-035-906	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2449-035-907	LA COUNTY FLOOD CONTROL DISTRICT	900	S	FREMONT	AVE		ALHAMBRA	CA	91803
2449-036-901	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2449-036-903	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2449-036-904	BURBANK CITY			PO BOX 6459			BURBANK	CA	91510
2449-037-013	NORTHRIDGE PROPERTIES LLC	15505		ROSCOE	BLVD		NORTH HILLS	CA	91343
2449-037-902	BURBANK CITY			PO BOX 6459			BURBANK	CA	91510
2451-006-023	FSBP LP	18403		VENTURA	BLVD		TARZANA	CA	91356
2451-006-024	FSBP LP	18403		VENTURA	BLVD		TARZANA	CA	91356
2451-006-025	FSBP LP	18403		VENTURA	BLVD		TARZANA	CA	91356
2451-006-803	SPRINT COMMUNICATIONS CO L P E 2014-19-1 PAR 1	1200		MAIN	ST		KANSAS CITY	MO	64105
2451-006-904	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2451-006-905	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2451-006-906	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2451-006-907	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-006-908	BURBANK CITY			PO BOX 6459			BURBANK	CA	91510
2451-006-909	BURBANK CITY	233	S	FRONT	ST		BURBANK	CA	91502
2451-007-005	BOREL PRIVATE BK AND TRUST	160		BOVET	RD		SAN MATEO	CA	94402
2451-007-014	DOUGLAS C MOBLEY	1500		ALAMEDA	AVE		GLENDALE	CA	91201
2451-007-019	BCH ENTERPRISES	110	W	OLIVE	AVE		BURBANK	CA	91502

List of Property Owners within 1,000 Feet of the Magnolia Power Project, 164 West Magnolia Boulevard, Burbank, CA 91502

APN_D	OWNERNAME	M_HSENO	M_DIR	M_STREET	M_SFX	M_UNIT	M_CITY	M_STATE	M_ZIP
2451-007-020	BCH ENTERPRISES	110	W	OLIVE	AVE		BURBANK	CA	91502
2451-007-022	BURBANK INDUSTRIAL PROPERTIES	101	S	1ST	ST	#400	BURBANK	CA	91502
2451-007-025	OLIVE AVENUE PARTNERS LLC	110	W	OLIVE	AVE		BURBANK	CA	91502
2451-007-900	LA COUNTY FLOOD CONTROL DISTRICT	900	S	FREMONT	AVE		ALHAMBRA	CA	91803
2451-007-903	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-007-904	LA COUNTY FLOOD CONTROL DISTRICT	900	S	FREMONT	AVE		ALHAMBRA	CA	91803
2451-007-905	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-007-906	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-009-900	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-009-901	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-009-902	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-009-903	LA COUNTY FLOOD CONTROL DISTRICT	900	S	FREMONT	AVE		ALHAMBRA	CA	91803
2451-010-900	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2451-010-901	LACMTA	1		GATEWAY	PLZ		LOS ANGELES	CA	90012
2451-010-902	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-010-903	BURBANK CITY	375	E	OLIVE	AVE		BURBANK	CA	91502
2451-011-900	BURBANK CITY	164	W	MAGNOLIA	BLVD		BURBANK	CA	91502
2451-011-906	LA COUNTY FLOOD CONTROL DISTRICT	900	S	FREMONT	AVE		ALHAMBRA	CA	91803
2451-012-001	BURBANK CHAMBER OF COMMERCE	200	W	MAGNOLIA	BLVD		BURBANK	CA	91502
2451-012-002	EDWARD M & LIDA GIAMELA	336	S	VIA MONTANA			BURBANK	CA	91501
2451-012-003	EDWARD M & LIDA GIAMELA	336	S	VIA MONTANA			BURBANK	CA	91501
2451-012-004	EDWARD M & LIDA GIAMELA	336	S	VIA MONTANA			BURBANK	CA	91501
2451-012-005	LOUIS C TALAMANTES	15292		SADDLEBACK	RD		SANTA CLARITA	CA	91387
2451-012-006	LOUIS C TALAMANTES	15292		SADDLEBACK	RD		SANTA CLARITA	CA	91387
2451-012-010	JAMES A & CAROL L BRADY			PO BOX 2442			TEMECULA	CA	92593
2451-012-011	RICHARD A & RILLA J RAAD	604	N	SUNSET CANYON	DR		BURBANK	CA	91501
2451-012-012	THOMAS W MCINTYRE	313	N	LAKE	ST		BURBANK	CA	91502
2451-012-014	JACK D MARQUEZ	215	N	NAOMI	ST		BURBANK	CA	91505
2451-012-017	STOP THE VIOLINS LLC	919		SHERLOCK	DR		BURBANK	CA	91501
2451-012-018	STUDIO 211 PROPERTIES LLC	3170		DONA MARIA	DR		STUDIO CITY	CA	91604
2451-012-019	TOWARDS 2000 INC	215	W	PALM	AVE	#204	BURBANK	CA	91502
2451-012-020	TOWARDS 2000 INC	215	W	PALM	AVE	#204	BURBANK	CA	91502
2451-012-021	TOWARDS 2000 INC	215	W	PALM	AVE	#204	BURBANK	CA	91502
2451-012-022	CRAIG A BRADY	11450		GARRET	PL		TUJUNGA	CA	91042
2451-012-900	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2451-013-003	THOMAS B SWICK	1401	W	KENNETH	RD		GLENDALE	CA	91201
2451-013-006	STEPHEN L BROWNING	13455		NOEL	RD	#1900	DALLAS	TX	75240
2451-013-010	FLOREA & MARIA SIMA	1436	N	MYERS	ST		BURBANK	CA	91506
2451-013-013	CHARLOTTE L HEIL	11839		WOODLEY	AVE		GRANADA HILLS	CA	91344

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APN_D	OWNERNAME	M_HSENO	M_DIR	M_STREET	M_SFX	M_UNIT	M_CITY	M_STATE	M_ZIP
2451-013-014	ROBERT G EVANS	224	W	PALM	AVE		BURBANK	CA	91502
2451-013-015	222 WEST PALM AVENUE LLC	228	W	PALM	AVE		BURBANK	CA	91502
2451-013-016	YEFIM KISELYUK	4157		SAINT CLAIR	AVE		STUDIO CITY	CA	91604
2451-013-017	MARCUS E PORHOLA	82737		FIELD	LN		INDIO	CA	92201
2451-013-018	MARCUS E PORHOLA	82737		FIELD	LN		INDIO	CA	92201
2451-013-020	GLENDALE PROPERTY INVESTMENTS	2338		FLINTRIDGE	DR		GLENDALE	CA	91206
2451-013-023	THOMAS B SWICK	1401	W	KENNETH	RD		GLENDALE	CA	91201
2451-014-011	231 W OLIVE PARTNERS LTD LIMITED PARTNERSHIP	11719		BEE CAVE	RD	#301	AUSTIN	TX	78738
2451-014-016	231 W OLIVE PARTNERS LTD LIMITED PARTNERSHIP	11719		BEE CAVE	RD	#301	AUSTIN	TX	78738
2451-014-017	231 W OLIVE PARTNERS LTD LIMITED PARTNERSHIP	11719		BEE CAVE	RD	#301	AUSTIN	TX	78738
2451-014-027	STEPHEN L BROWNING	11719		BEE CAVE	PKWY	#301	AUSTIN	TX	78738
2451-016-001	JANICE M BELL	20501		NORTHRIDGE	RD		CHATSWORTH	CA	91311
2451-016-021	SOUTH LAKE MEDIA PARK LLC	217	S	LAKE	ST		BURBANK	CA	91502
2451-016-022	SOUTH LAKE MEDIA PARK LLC	217	S	LAKE	ST		BURBANK	CA	91502
2451-016-023	SOUTH LAKE MEDIA PARK LLC	217	S	LAKE	ST		BURBANK	CA	91502
2451-016-024	SOUTH LAKE MEDIA PARK LLC	217	S	LAKE	ST		BURBANK	CA	91502
2451-016-025	JORDAN HOLDINGS LLC	257	S	LAKE	ST		BURBANK	CA	91502
2451-016-026	SOUTH LAKE MEDIA PARK LLC	217	S	LAKE	ST		BURBANK	CA	91502
2451-016-027	277 SOUTH LAKE STREET LLC	277	S	LAKE	ST		BURBANK	CA	91502
2453-004-001	315 NORTH FIRST STREET LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-002	DEL REY PROPERTIES LLC	480		RIVERSIDE	DR		BURBANK	CA	91506
2453-004-003	315 NORTH FIRST STREET LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-004	CORDOVA WEST PROPERTIES	101	S	1ST	ST	#400	BURBANK	CA	91502
2453-004-007	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-009	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-011	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-013	LACI PROPERTIES LLC	24654		CORDILLERA	DR		CALABASAS	CA	91302
2453-004-014	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-015	LACI PROPERTIES LLC	24654		CORDILLERA	DR		CALABASAS	CA	91302
2453-004-016	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-017	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-019	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-020	DEL REY PROPERTIES LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-021	NARAN V & NISHA N VARU	2		SKYLINE	DR		BURBANK	CA	91501
2453-004-022	FIRST STREET VILLAGE LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-023	DEL REY PROPERTIES	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-004-024	BENI & SHEILA E NAGHI	24647		CORDILLERA	DR		CALABASAS	CA	91302
2453-004-025	MARY TIGMO	13642		GLADSTONE	AVE		SYLMAR	CA	91342
2453-004-026	315 NORTH FIRST STREET LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506

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APN_D	OWNERNAME	M_HSENO	M_DIR	M_STREET	M_SFX	M_UNIT	M_CITY	M_STATE	M_ZIP
2453-011-029	C AND P PROPERTIES NO 1	101	S	1ST	ST	400	BURBANK	CA	91502
2453-011-031	DEL REY PROPERTIES LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-011-037	DEL REY PROPERTIES LLC	480	W	RIVERSIDE	DR		BURBANK	CA	91506
2453-011-911	BURBANK CITY	275	E	OLIVE	AVE		BURBANK	CA	91502
2460-023-056	BURBANK MALL ASSOCIATES LLC	18201		VON KARMAN	AVE	950	IRVINE	CA	92612
2460-023-057	BURBANK MALL ASSOCIATES LLC	18201		VON KARMAN	AVE	950	IRVINE	CA	92612

APPENDIX B
AIR DISPERSION MODELING PROTOCOL

RE: Permit Modification Magnolia Power Project - Modeling Protocol

Jillian Wong

Fri 2/13/2015 3:18 PM

To:Krishna Nand <krishnanand44@msn.com>;

Cc:Chris Perri <CPerri@aqmd.gov>; John Yee <JYee@aqmd.gov>;

Hi Krishna,

Thanks for the information. We do not have any further comments on your protocol at this time.

Jillian Wong, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

From: krishna Nand [mailto:krishnanand44@msn.com]
Sent: Wednesday, February 11, 2015 9:08 AM
To: Jillian Wong
Cc: Krishna Nand
Subject: RE: Permit Modification Magnolia Power Project - Modeling Protocol

Hi Jillian,

Thanks for the information.

I am providing below additional information relating to the emission rates that will be used fro the dispersion modeling analysis.

1. At the MPP we have one combustion turbine and one duct burner; both exhaust through one stack. Thus, for modeling purposed, we will have only one source of emissions.

2. The following four operating scenarios are included in the permit application: (1) startup, (2) normal operation of the combustion turbine only (operating at 100% load), (3) normal operation of the combustion turbine with the duct burner (operating at 100% load), and (4) shutdown.

3. Only one type of startup is considered. Duration of the startup is six hours.

4. Shutdown duration is only 30 minutes. For modeling analysis, 30 minutes of normal operation will be added to the shutdown emissions.

5. CO Modeling: CO modeling (1-hr average and 8-hour average) will be performed for startup, normal operation (combustion turbine + duct burner), and shutdown (one hour emission). 1-hour CO emissions will be used for performing both 1-hr and 8-hr average modeling analysis. Please note that the minimum exit velocity has been estimated for the startup scenario.

6. PM10 Modeling: 24-hr Average PM10 modeling will be performed using hourly PM10 emissions from the operation of the combustion turbine and the duct burner. For annual average modeling analysis, annual emissions will be calculated for 1,000 hrs of combustion turbine + duct burner operation; and only combustion turbine operation for 7,322 hours (95% capacity factor).

7. NOx Modeling: NOx modeling (1-hr average) will be performed for startup, normal operation (combustion turbine + duct burner), and shutdown (one hour emission). This analysis will be performed for calculating maximum 1-hr average concentrations as well as 98th percentile 1-hr average concentrations. For annual average modeling analysis, annual emissions will be calculated for 60 startups, 60 shutdowns, 1,000 hrs of combustion turbine + duct burner operation; and the remaining hours in only combustion turbine operation (95% capacity factor).

I will call you to further discuss the above scenarios this afternoon.

Thanks,

Krishna Nand
(424) 263-7717

From: jwong@aqmd.gov
To: krishnanand44@msn.com
Subject: RE: Permit Modification Magnolia Power Project - Modeling Protocol
Date: Sat, 7 Feb 2015 01:04:01 +0000

Hi Krishna,

Sorry for the delay. We only have a couple of very minor comments:

The protocol does not contain specific information as to the emission rates which will be used for each averaging periods modeled. Therefore, SCAQMD staff might have more questions/changes once emission rates are received.
NO2 attainment status – Please include clarification on the NAAQS NO2 attainment status – annual NO2 (attainment), 1-hr NO2 (unclassified)

Let me know if you have any questions.

Jillian Wong, Ph.D. (formerly Baker)
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

From: krishna Nand [mailto:krishnanand44@msn.com]
Sent: Monday, January 26, 2015 10:06 PM
To: Jillian Baker
Cc: cfierro@burbankca.gov; Krishna Nand
Subject: Permit Modification Magnolia Power Project - Modeling Protocol

Jillian,

Attached is the air dispersion modeling and health risk assessment protocol for the permit modification for the Magnolia Power Project for your review comments and approval please.

Please contact me at (424) 263-7717 if you have any questions.

Best regards,

Krishna Nand
Env. Mgmt. Professional

From: jbaker@aqmd.gov
To: krishnanand44@msn.com
CC: cfierro@burbankca.gov; krishnanand44@msn.com
Subject: RE: Burbank Data
Date: Thu, 11 Dec 2014 15:20:47 +0000
Good morning Krishna,

Here are the ozone files you requested.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

From: krishna Nand [mailto:krishnanand44@msn.com]
Sent: Wednesday, December 10, 2014 5:01 PM
To: Jillian Baker
Cc: cfierro@burbankca.gov; Krishna Nand
Subject: RE: Burbank Data

Hi Jillian,

We may also be using the OLM/PVMRM option for NO2 modeling. Therefore, we will also need the hourly ozone concentration data to run the AERMOD model.

I will therefore appreciate receiving the hourly ozone data for the five year period please.

Thanks,
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From: krishnanand44@msn.com
To: jbaker@aqmd.gov
CC: krishnanand44@msn.com; cfierro@burbankca.gov
Subject: RE: Burbank Data
Date: Tue, 18 Nov 2014 08:10:01 -0800
Hi Jillian,

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From: jbaker@aqmd.gov
To: krishnanand44@msn.com
Subject: Burbank Data
Date: Tue, 18 Nov 2014 15:53:07 +0000
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NO2 attainment status – Please include clarification on the NAAQS NO2 attainment status – annual NO2 (attainment), 1-hr NO2 (unclassified)

Let me know if you have any questions.

Jillian Wong, Ph.D. (formerly Baker)
South Coast AQMD
21865 Copley Drive,
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CC: krishnanand44@msn.com; cfierro@burbankca.gov
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Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

AIR DISPERSION MODELING
AND HEALTH RISK ASSESSMENT PROTOCOL

MAGNOLIA POWER PROJECT (MPP)
SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY
TITLE V PERMIT REVISION
(Revision in MPP Startup and Shutdown Operation)

Prepared for:

Magnolia Power Project, SCPPA
164 West Magnolia Boulevard
Burbank, CA 91502
Facility ID: 128243

Submitted to:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

January 2015

PREPARED BY:

ENVIRONMENTAL MANAGEMENT PROFESSIONALS, LLC
22811 MADRONA AVENUE, TORRANCE - CALIFORNIA 90505
Tel/Fax: (310) 539-0606; e-mail: krishnanand44@msn.com

E0202

TABLE OF CONTENTS

Page

LIST OF TABLES iii

LIST OF FIGURES iii

ACRONYMS AND ABBREVIATIONS iv

SECTION 1 INTRODUCTION 1-1

1.1 Location Details of the Magnolia Power Project 1-2

SECTION 2 PROJECT IMPACTS TO BE DETERMINED

2.1 Background Ambient Air Quality 2-1

2.2 Analysis for Non-Attainment Criteria Pollutants 2-1

2.3 Analysis for Attainment Criteria Pollutants 2-2

2.4 Toxic Air Contaminants 2-2

SECTION 3 AIR DISPERSION MODEL SELECTION AND APPLICATION 3-1

3.1 Model Selection 3-1

3.2 Modeling Options 3-1

3.3 Building Downwash 3-1

3.4 Flagpole Receptor Heights 3-2

3.5 Averaging Time 3-2

3.6 Meteorological Data 3-2

3.7 Receptor Grid 3-2

3.8 Receptor Elevations 3-3

3.9 Non-Default Option: Conversion of NOx to NO_2 3-3

SECTION 4 HEALTH RISK ASSESSMENT METHODOLOGY 4-1

4.1 Air Dispersion Modeling 4-1

4.2 Health Risk Assessment Modeling 4-1

4.3 Health Risk Assessment 4-1

LIST OF TABLES

2-1 Air Quality Significance Thresholds for Non-Attainment Pollutant, PM10 2-3
2-2 Air Quality Significance Thresholds for Attainment Pollutant 2-3
4-1 HARP Model Switches 4-2

LIST OF FIGURES

1-1 Site Location Map, Magnolia Power Project 1-3

ACRONYMS AND ABBREVIATIONS

AERMOD	AERMOD Air Dispersion Model
Btu	British thermal unit
BWP	City of Burbank Water and Power
CAAQS	California Ambient Air Quality Standard
CCGF	Combined Cycle Generating Facility
CO	carbon monoxide
CTG	combustion turbine generator
EMP	Environmental Management Professionals, LLC
HARP	Hot Spots Assessment and Reporting Program
HHV	Higher heating value
HRA	health risk assessment
MPP	Magnolia Power Project
NAAQS	National Ambient air Quality Standard
NED	National Elevation Dataset
NH_3	ammonia
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
OEHHA	California Office of Health Hazard Assessment
PM2.5	particulate matter of diameter less than or equal to 2.5 microns
PM10	particulate matter of diameter less than or equal to 10 microns
PVMRM	Plume Volume Molar Ratio Method
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
Scf	standard cubic feet
SCPPA	Southern California Public Power Authority
SOx	oxides of sulfur
TAC	Toxic Air Contaminant
USEPA	United States Environmental Protection Agency
VOC	volatile organic compounds

SECTION 1
INTRODUCTION

The Southern California Public Power Authority (SCPPA) owns the Magnolia Power Project (MPP), a combined cycle electrical generating facility (CCGF). The plant is located in the City of Burbank and is operated by the Burbank Water and Power (BWP). The South Coast Air Quality Management District (SCAQMD) issued a Permit to Construct and a Temporary Permit to Operate the CCGF on May 27, 2003. The MPP was commissioned in September 2005 and placed under operation after commissioning. During the normal startups of the CCGF (startups after commissioning of the CCGF), it was observed that the startup duration was about six hours and the oxides of nitrogen emission was about 440 pounds (during the full start of the CCGF). A comparison of the above observed startup duration with the permit condition (in the permit issued by the SCAQMD) indicated that the observed startup duration was significantly higher than the permitted startup durations of all the three types of startups (Cold Start = 4 hours; Warm Start = 2.1 hours; and Hot Start = 1.5 hours). NOx emissions during the startup were also observed to be higher than the emissions used for preparing the initial permit application.

The SCPPA, therefore, submitted a permit application in December 2006 to the SCAQMD requesting the changes in the following permit conditions:

1. Redefine startup (all starts to be considered as cold starts)
2. Remove the terms “warm startup” and “hot startup”
3. Increase in startup duration
4. Increase the allowed NOx emissions during the start
5. Reduce the total number of starts to three per month
6. Reduce the total number of shutdowns to three per month
7. Make suitable associated changes in SCAQMD Permit Conditions A63.1, A99.1, A99.2, C1.1, C1.2, C1.3, E73.1 and E193.2

The SCPPA also requested a change in the hours of duct burner operation from the permitted 240 hrs/month to 200 hrs/month. This change as well as the decrease in the number of startups and shutdowns was requested to demonstrate compliance with the permitted monthly emission limits. In addition, the SCPPA performed revised emission calculations using the SCAQMD’s default higher heating value (HHV) for natural gas of 1050 Btu/scf. This is higher than the HHV of 1,020 Btu/scf used for preparing the 2001 SCPPA MPP initial permit application.

The revised permit for the MPP was issued in 2008 and the MPP has been in operation in compliance with the revised permit conditions.

The SCPPA has further reviewed the operation of the MPP, including its integration with the intermittent renewable energy resources (wind and solar) and has identified the need to shutdown the power plant more often than specified in the SCAQMD permit. This will also require an increase in the number of startups in comparison to the currently permitted startups of three per month.

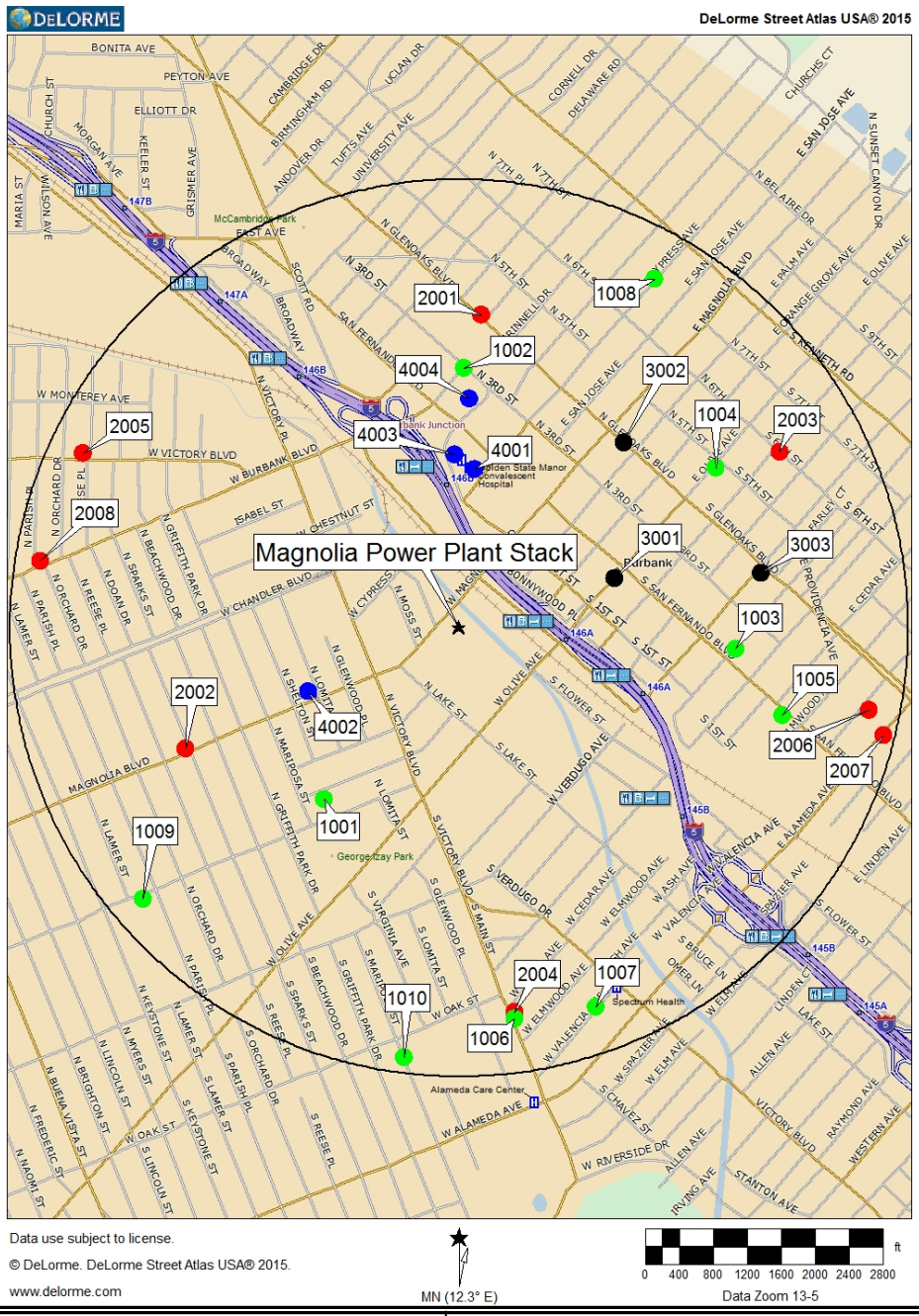
The SCPPA is therefore requesting for changes in the following permit conditions:

1. Increase the number of allowed startups and shutdowns (from three to five per month and 36 to 60 per year).
2. Change in the hours of duct burner operation from the currently permitted 200 hrs/month to 240 hrs/month. Please note that the initial permit application for the MPP was based on the 240 hrs/month of duct burner operation.

Environmental Management Professionals, LLC (EMP) is preparing an air permit application for the changes in permit conditions and revision of the Title V Permit for the SCPPA's Magnolia Power Project. This document is a protocol for air dispersion modeling and health risk assessment that will be performed as part of the preparation of the air permit application for project-specific criteria pollutant and toxic air contaminant (TAC) emissions. The protocol also specifies the impacts that will be determined through modeling, and discusses the modeling inputs that will be used for the analysis.

1.1 LOCATION DETAILS OF THE MAGNOLIA POWER PROJECT

MPP is located at 164 West Magnolia Boulevard in the City of Burbank, California, (164 West Magnolia Boulevard, Burbank, CA 91502) within an existing 23-acre power generating facility. The plant is located approximately 2,000 feet southwest of the Burbank City Hall, and it is bordered by Magnolia Blvd., on the north, Lake Street on the west, Flower Street on the east, and Olive Avenue on the south. The plant is bordered by industrial properties on all sides, and the nearest sensitive receptor (school) is located approximately 2,500 feet southwest of the facility. The site location map is shown in Figure 1-1.



- Pre-Schools and Day-Cares
- Elementary/Intermediate/High Schools
- College or University
- Hospitals

Figure 1-1
Site Location Map
Magnolia Power Project

SECTION 2
PROJECT IMPACTS TO BE DETERMINED

Presented below are the project impacts to be determined through application of air dispersion models. Separate discussions are provided for non-attainment criteria pollutants, attainment criteria pollutants, and toxic air contaminants/air toxics.

Air quality impact analysis for the MPP [combustion turbine generator (CTG) and duct burner) will be performed for startup, normal operation and shutdown scenarios.

Health risk assessment will be performed for the CTG assuming normal operation throughout the year (8760 hours), which will provide a conservative estimate of the health risk from the MPP.

2.1 BACKGROUND AMBIENT AIR QUALITY

The MPP is located in the South Coast Air Quality Air Basin (SCAB), which is currently designated as non-attainment with National Ambient Air Quality Standards (NAAQS) for particulate matter less than 2.5 microns ($PM_{2.5}$) and ozone. The SCAB is also designated as non-attainment for the California Ambient Air Quality Standards (CAAQS) for particulate matter less than 10 microns (PM_{10}) as well as $PM_{2.5}$ and ozone.

The SCAB is currently designated as attainment with PM_{10} NAAQS. It is also designated as attainment for the NAAQS and CAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2).

2.2 ANALYSIS FOR NON-ATTAINMENT CRITERIA POLLUTANTS

As per the SCAQMD Rule 1303, PM10 will be the only one non-attainment criteria pollutant, which will require air dispersion modeling analysis, because the project site is located in PM10 non-attainment area for the CAAQS. The resulting predicted ambient concentration will be compared to the Rule 1303 Table A-2, Allowable Change Increments to determine the significance of the impacts. The applicable concentration increments are shown in Table 2-1. The PM_{10} impact analysis will include only primary particulates. No attempt will be made to estimate secondary formation of particulates from oxides of nitrogen (NOx), oxides of sulfur (SOx), ammonia (NH_3), or volatile organic compounds (VOC) emissions.

2.3 ANALYSIS FOR ATTAINMENT CRITERIA POLLUTANTS

As per the SCAQMD Rule 1303, CO will be the only attainment pollutant that will require air dispersion modeling analysis. The project incremental impact for CO will be added to an appropriate background CO concentration and the total concentration will be compared to the most stringent California or National Ambient Air Quality Standard. The background concentrations will be determined from data collected at the District's Burbank-West Palm Avenue (Burbank) (District Station Code 069, East San Fernando Valley) monitoring station. Following the modeling requirements detailed in Rule 1303, no dispersion modeling analysis will be performed for SOx emissions from the MPP.

The project site is designated as attainment with PM_{10} NAAQS. Thus, air dispersion modeling will be performed for PM10 emissions. The project incremental impact for PM10 (24-hour concentration) will be added to an appropriate background PM10 concentration and the total concentration will be compared to the National Ambient Air Quality Standard. The background concentration will be determined from data collected at the District's Burbank-West Palm Avenue (Burbank) (District Station Code 069, East San Fernando Valley) monitoring station.

As per the SCAQMD Rule 2005, facility wide oxides of nitrogen (NOx) impacts will be determined (NOx emissions from the CTG and the duct burner). The project incremental impact will be added to an appropriate background NO_2 concentration and the total concentration will be compared to the most stringent California or National Ambient Air Quality Standard. The background concentrations will be determined from data collected at the District's Burbank-West Palm Avenue (Burbank) (District Station Code 069, East San Fernando Valley).

The impacts (1-hr ground level NO_2 concentrations) will be initially determined using United States Environmental Protection agency (USEPA's) Tier 2 ambient ratio factor of 0.8. However, if this results in project NO_2 impacts greater than California or National Ambient Air Quality Standard, then the Plume Volume Molar Ratio Method (PVMRM) will be applied as appropriate.

2.4 TOXIC AIR CONTAMINANTS

The impact of TACs will be determined by performing a health risk assessment (HRA). All the TACs listed in Rule 1401 and emitted by the MPP combustion turbine and the duct burner will be included in the HRA. The cancer, acute non-cancer, and chronic non-cancer impacts will be determined for the MPP. Additional details of the HRA methodology are provided in Section 4.

Table 2-1
Air Quality Significance Thresholds for Non-Attainment Pollutant, PM10

Pollutant	Significance Threshold (Allowable Change Increments)
24-hour (CAAQS)	2.5 ug/m^3
Annual geometric mean (CAAQS)	1.0 ug/m^3
ug/m^3 = microgram per cubic meter	

Table 2-2
Air Quality Significance Thresholds for Attainment Pollutants

Pollutant	Significance Threshold (Ambient Air Quality Standards)
CO	
1-hour (CAAQS)	20 ppm (23 mg/m^3)
8-hour (CAAQS)	9 ppm (10 mg/m^3)
1-hour (NAAQS)	35 ppm (40 mg/m^3)
8-hour (NAAQS)	9 ppm (10 mg/m^3)
NO_2	
1-hour (CAAQS)	0.18 ppm (338 ug/m^3)
Annual (CAAQS)	0.03 ppm (56 ug/m^3)
1-hour (NAAQS), 98th percentile averaged over 3 years	100 ppb (188 ug/m^3)
Annual (NAAQS)	0.0534 ppm (100 ug/m^3)
PM10 24-hour (NAAQS)	150 ug/m^3
ug/m^3 = microgram per cubic meter; mg/m^3 = milligram per cubic meter; ppm = parts per million, ppb = parts per billion	

SECTION 3
AIR DISPERSION MODEL SELECTION AND APPLICATION

Atmospheric dispersion modeling will be conducted to analyze potential localized ambient air quality impacts associated with the operation of the MPP with increased number of startups and shutdowns. The atmospheric dispersion modeling methodology proposed to be used is based on generally accepted modeling practices and modeling guidelines of both the United States Environmental Protection Agency (USEPA) and the SCAQMD. All dispersion modeling will be performed using the latest version of the AERMOD dispersion model.

3.1 MODEL SELECTION

As mentioned above, the dispersion modeling methodology proposed to be used will follow both USEPA and SCAQMD guidelines. AERMOD model proposed to be used for air dispersion modeling analysis is a USEPA model used for simulating the transport and dispersion of emission sources in areas of flat as well as in elevated terrains.

3.2 MODELING OPTIONS

It is proposed to follow USEPA and SCAQMD's latest modeling guidance for AERMOD dispersion model for performing air dispersion modeling studies. The SCAQMD's modeling guidance recommends that AERMOD model should be executed with the USEPA regulatory default option. However, if the default option is not utilized, the modeling report should contain a discussion to justify this change and include all supporting data and information.

AERMOD model will be used with urban modeling option. All sources will be modeled with urban effects using a population of 9,862,049 (population of Los Angeles County).

3.3 BUILDING DOWNWASH

The USEPA's guidance will be followed to address the potential influence on the concentrations from structures located near point emission sources. The latest building downwash program (BPIP Version 04274) will be used to identify the structures required to be included in the AERMOD model and it will be used to address building downwash effect. This building downwash program will also be used to estimate the direction-specific building dimensions, which are required as inputs by the AERMOD dispersion model, to address the influence of nearby structures on the ambient concentrations.

3.4 FLAGPOLE RECEPTOR HEIGHTS

All receptors will be set to a height of 0.0 meters so that ground-level concentrations are analyzed.

3.5 AVERAGING TIME

For determining the maximum annual concentration of criteria pollutants such as NO_2 and PM10, AERMOD model will be run for each calendar year separately.

On January 22, 2010, USEPA strengthened the health-based National Ambient Air Quality Standard (NAAQS) for NO_2 by setting a new 1-hour NO_2 standard at the level of 100 parts per billion (ppb). In addition to establishing an averaging time and level, EPA also set a new "form" for the standard. The form is the air quality statistic used to determine if an area meets the standard. The form for the 1-hour NO_2 standard, is the 3-year average of the 98^{th} percentile of the annual distribution of daily maximum 1-hour average concentrations. Lakes software will be used to determine the 5-year average of the 98^{th} percentile NO_2 concentrations from NOx emissions at the Magnolia Power Project.

3.6 METEOROLOGICAL DATA

USEPA requires the use of five years of meteorological data for air dispersion modeling analysis. Five years of meteorological data set (Years 2008 through 2012) for Burbank station available at the SCAQMD's website will be used for air dispersion modeling analysis.

EMP may use Plume Volume Molar Ratio Method (PVMRM) option of the AERMOD model for some of the modeling scenarios, for estimating maximum 1-hr average NO_2 concentrations. This modeling option requires ozone concentration data from a representative monitoring station for the same period which is proposed to be used for other air dispersion modeling analysis. The SCAQMD has provided hourly ozone concentration data for the Burbank station for the period 2008 through 2012 (e-mail from Jillian Baker, SCAQMD; December 11, 2014). This data will be used for calculating 1-hr average NO_2 concentrations with PVMRM option of the AERMOD model.

3.7 RECEPTOR GRID

To identify the maximum impacted receptors, appropriate model receptors must be selected. The modeling grid will consist of four parts: (1) receptors along the perimeter of the City of Burbank facility with a spacing of approximately 20 meters, receptors spaced 25 meters apart extending from the previous receptors, in a 1,500 meter x 1,500 meter grid surrounding the project site, (3) receptors spaced 100 meters apart from 0.5 kilometer to 1.6 kilometer from the property line, and (4) receptors spaced 250 meters apart from one kilometer to 15 kilometers from the property line.

In addition to the above receptor coverage, a fine grid of receptors will be centered on the location of the maximum predicted impacts as determined from the results of coarse-grid (100 meter or higher distance grid) receptor modeling. The fine grid will cover 250 meter x 250

meter area with receptors at 30 meter spacing. It is expected that the location of the fine grid will vary depending on the operating scenario of the combustion turbine, pollutant(s), and averaging period(s) of concern.

Discrete receptors within one mile (1.6 kilometer) of the MPP stack will also be located at sensitive receptors (e.g., schools and hospitals, etc.). No receptors will be placed within the power plant facility property line. All coordinates for sources and receptors will be specified in North American Datum (NAD)83, UTM Zone 11. Receptor grid points outside the AERMOD Modeling project boundary with grid spacing of 100 meters or more will be placed so that individual grid points are placed at UTM coordinates ending in "00".

3.8 RECEPTOR ELEVATIONS

Receptor elevations and hill heights will be assigned using USEPA AERMAP and commercially available digital terrain elevations developed by the United States Geological Survey by using its National Elevation Dataset (NED). The NED data provides terrain elevations with 1-meter vertical resolution and (1 arc-second) 30-meters horizontal resolution based on a UTM coordinate system. For each receptor location, the terrain elevation will be set to the elevation for the closest NED grid point. The U.S. Geological Survey specifies coordinates in NAD83, UTM Zone 11. Lakes Environmental software will be used for assigning elevations to various receptors and hill heights.

3.9 NON-DEFAULT OPTION: CONVERSION OF NOx TO NO_2

It may be noted that for most of the modeling scenarios, Tier 2 modeling approach will be followed for estimating 1-hr average NO_2 concentrations. In this approach, modeling will be performed for NOx emissions and a NO_2-to-NOx ratio of 0.80 will be applied to estimate 1-hr average NO_2 concentrations. Additional details of this approach are provided on pages 5 and 6 of the USEPA's March 1, 2011 Memorandum which is available at:

http://www.epa.gov//ttn/scram/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf.

For some of the modeling scenarios, Plume Volume Molar Ratio Method (PVMRM) option of the AERMOD model may be used for estimating maximum 1-hr average NO_2 concentrations. An ambient equilibrium NO_2/NOx ratio of 0.90 will be used for performing PVMRM modeling. This is the default value specified in the SCAQMD and USEPA guidance documents. Data for the in-stack NO_2/NO_x ratio will be obtained from equipment vendor for performing PVMRM modeling.

SECTION 4
HEALTH RISK ASSESSMENT METHODOLOGY

This section describes the methodology which will be followed for air dispersion and health risk modeling, and health risk assessment.

4.1 AIR DISPERSION MODELING

AERMOD model will be used for performing air dispersion modeling. The details of the AERMOD model are provided in Section 3. In addition to the receptor locations described in Section 3 for air dispersion modeling, receptors at the centroids of census blocks surrounding the project location will also be placed for health risk assessment. These receptors will be used to estimate cancer burden if maximum individual cancer risk is estimated to be greater than 1 in a million.

4.2 HEALTH RISK ASSESSMENT MODELING

Health risk assessment will be performed using the latest version of the California Air Resources Board developed Hotspots Analysis and Reporting Program. The HARP model contains the latest updates to the California Office of Environmental Health Hazard Assessment (OEHHA) toxicity. The model has a number of "switches" that will be set to control the operation of the program. These switches are identified in Table 4-1.

4.3 HEALTH RISK ASSESSMENT

HARP model will be used to estimate carcinogenic and non-carcinogenic health risks at all the receptors selected for air dispersion modeling. Carcinogenic health risk will be estimated for residential receptors (70-year exposure period), student receptors (70-year exposure period), and worker receptors (40-year exposure period).

The estimates of carcinogenic and non-carcinogenic (acute and chronic hazard indices) risk derived from the HARP model output for the combustion turbine generator will be used to prepare the health risk assessment report. Acute hazard indices will be calculated separately for five years of meteorological data proposed to be used for air dispersion modeling. The highest value of the acute hazard index estimated for the five years of modeling analysis will be used for health risk assessment.

Cancer burden will also be calculated if maximum individual cancer risk is estimated to be greater than 1 in a 1 million.

Table 4-1
HARP Model "Switches"

HARP Model Switch	Setting
Deposition Velocity	0.02 m/sec
Fraction of homegrown fruits and vegetables consumed	5.2 %
Non-cancer chronic risk estimates - residential and sensitive receptors	"Derived (OEHHA)" risk analysis method
Cancer risk estimates - residential and sensitive receptors	"Derived (Adjusted)" risk analysis method
Non-cancer chronic risk estimates - worker receptors	Point estimate
Cancer risk estimates - worker receptors	Point estimate
Pathways for residential receptors	Inhalation, soil ingestion, dermal absorption, homegrown produce, and mother's milk.
Pathways for worker receptors	Inhalation, soil ingestion, and dermal absorption
Source: SCAQMD Risk Assessment Procedures for Rules 1401 and 212, including SCAQMD's Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588), June 2011.	

APPENDIX C
PERMIT TO OPERATE EVALUATION AND RECLAIM/TITLE V FACILITY PERMIT REVISION, FACILITY ID# 128243

C.1 Permit to Operate Evaluation (Partial), Application Processing & Calculations, February 11, 2016

C.2 RECLAIM/Title V Facility Permit Revision, Facility ID# 128283, April 15, 2016

APPENDIX C.1
Permit to Operate Evaluation (Partial) & Application Processing & Calculations, February 11, 2016

PERMIT TO OPERATE EVALUATION

APPLICANT:

Burbank City, Burbank Water & Power, SCPPA
164 W. Magnolia Blvd
Burbank, CA 91502

EQUIPMENT LOCATION:

164 W. Magnolia Blvd.
Burbank, CA 91502

EQUIPMENT DESCRIPTION:

Section D of the Facility Permit, ID# 128243

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 3: INTERNAL COMBUSTION: POWER GENERATION					
GAS TURBINE NO.1, COMBINED CYCLE, NATURAL GAS, GENERAL ELECTRIC, MODEL PG7241FA, WITH DRY LOW NOX COMBUSTORS, 1787 MMBTU/HR WITH A/N: ~~464716~~ **575368** GENERATOR, 181.1 MW GENERATOR, HEAT RECOVERY STEAM STEAM TURBINE, STEAM, 142 MW	D4	C9 C10	NOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407]; CO: 2PPMV (4) [RULE 1303]; NOX: 2 PPMV (4) [RULE 2005]; PM: 0.1 GR/SCF (5) [RULE 409]; PM: 0.01 GR/SCF (5A) [RULE 475]; PM: 11 LBS/HR (5C) [RULE 475]; SO2: (9) [40CFR 72 – ACID RAIN]; SOX: 150 PPM (8) [40CFR 60 SUBPART GG]; VOC: 2 PPMV (4) [RULE 1303]	**A63.1**, A99.1, A99.2, A195.2, A195.3, A195.4, A327.1, A433.1, **C1.4**, D29.2, **D29.3**, D82.1, D82.2, E57.1, E193.1, E193.2, **I298.1**, K40.1, K67.2
BURNER, DUCT, NATURAL GAS, 583 MMBTU/HR A/N: ~~464716~~ **575368**	D6	C9 C10	NOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407]; CO: 2PPMV (4) [RULE 1303]; NOX: 2 PPMV (4) [RULE 2005]; NOx 0.2 LBS/MMBTU (8B) [40CFR 60 SUBPART Da]; NOX: 114 PPM NATURAL GAS (8A) [40CFR 60 SUBPART GG]; PM: 0.1 GR/SCF (5) [RULE 409]; PM: 0.01 GR/SCF (5A) [RULE 475];	**A63.1**, A99.1, A99.2, A195.2, A195.3, A195.4, A327.1, A433.1, C1.1, C1.2, **C1.3**, **C1.4**, D29.2, **D29.3**, D82.1,

EVALUATION:

Rule 212 – Standards for Approving Permits

This project is not subject to the Rule 212 public notice requirements because there is no increase in daily maximum or toxic emissions, and the facility is not located within 1000 feet of a school (the closest school is Walt Disney Elementary located approximately 2100 feet south-west of the site).

Rule 401 – Visible Emissions

Visible emissions are not expected under normal operation. There is no indication of visible emission problems in the SCAQMD compliance database.

Rule 402 – Nuisance

Use of ammonia for the SCR system can potentially result in odor problems. However, it is expected that if the facility maintains the 5 ppm ammonia slip level, odor will not be a problem. Furthermore, there have been no issues of odor or other nuisance problems with the plant since it began operating.

Rule 407 – Liquid and Gaseous Air Contaminants

This rule limits the CO emissions to 2000 ppm. Compliance with the CO limit has been demonstrated through stack testing. The turbine is also subject to a more stringent CO BACT limit of 2 ppm. The tests performed after the installation of the SCRs confirm that the unit can comply with the 2 ppm limit as well. Furthermore, the facility is required to maintain a CO continuous monitor.

Rule 409 Combustion Contaminants

This rule limits particulate emissions to 0.1 gr/scf at 12% CO2. The test results show that the actual particulate emissions are below this limit. The test results are summarized as follows:

	Test Load	Results, gr/scf at 12% CO2
Initial testing Oct 2005	W/O Duct Firing	0.001
	W/Duct Firing	0.001
Periodic Testing Nov 2008	W/O Duct Firing	0.00079
	W/Duct Firing	0.00074
Periodic Testing Aug 2011	W/O Duct Firing	0.00007
	W/Duct Firing	0.00078

The following theoretical calculation also supports the conclusion that the units are in compliance:

Estimated grain loading at max load = 16.22 lbs/hr X (7000 gr/lb)/73 E6 scf/hr
= 0.0016 gr/scf

Rule 431.1 – Sulfur Content of Gaseous Fuel

The natural gas supplied to the turbine is expected to comply with the 16 ppmv sulfur limit (calculated as H2S) specified in this rule. Commercial grade natural gas has an average sulfur content of about 4ppm. The

Emission Rates, Base Load Operation

Pollutant	GT Emission Rate lbs/hr	DB Emission Rate lbs/hr	Total lbs/hr
NOx	13.18	4.30	17.48
CO	8.02	2.62	10.64
VOC	4.58	1.50	6.08
PM10	11.79	4.43	16.22
SOx	1.28	0.42	1.7
NH3	12.17	3.97	16.15

Sample Calculations

NOx (GT) = [2.0*8710*1787*(20.9/5.9)*46]/385E6
= 13.18 lbs/hr

PM10 (GT) = 0.0066 *1787
= 11.79 lbs/hr

Emission Rates, Start Ups and Shutdowns

Pollutant	Start Up Emission Rate lbs/hr	Total Start Up Emissions (6 hrs/event) lbs/event	Shutdown Emission Rate lbs/hr	Total Shutdown Emissions (0.5 hrs/event) lbs/event
NOx	73.33	440	50	25
CO	83.33	500	240	120
VOC	5.00	30	34	17
PM10	11.79	70.74	11.79	5.90
SOx	1.28	7.68	1.28	0.64

Emission Rates, Uncontrolled (provided by the manufacturer, reference A/N 386305)

Pollutant	Uncontrolled GT Emission Rate lbs/hr	Uncontrolled DB Emission Rate lbs/hr	Total lbs/hr
NOx	63	61	124
CO	73	31	104
VOC	14.1	3	17.1
PM10	11.79	4.43	16.22
SOx	1.28	0.42	1.7

GT + DB Baseload		1000	17480	10640	8500	16220	1700	16150
	Total, lbs	8,556	130,723 ~~132,962~~	91,683 ~~93,319~~	43,727 ~~44,355~~	106,341 ~~108,747~~	11,470 ~~11,731~~	105,259

Note that GT Baseload calculations are being corrected from previous application A/N 464716

B. Post Modification Annual Emissions

	# of Events	Hours	NOx	CO	VOC	PM10	SOx	NH3
Start Up	60	360	26400	30000	1800	4244	461	0
Shutdown	60	30	1500	7200	1020	354	38	0
GT Baseload		6932	91364	55595	31749	81728	8873	84362
GT + DB Baseload		1000	17480	10640	6080	16220	1280	16150
	Total, lbs	8,322	136,744	103,435	40,649	102,456	10,652	100,512

C. Change in Annual Emissions Pre-Modification vs. Post-Modification

Pollutant	Pre Modification Annual Emissions	Post Modification Annual Emissions	Change
NOx	130,723	136,744	6,021
CO	91,683	103,435	11,752
VOC	43,727	40,649	-3,078
PM10	106,341	102,456	-3,885
SOx	11,470	10,652	-818
NH3	105,259	100,512	-4,747

Comparison of PM10 and SOx Emission Calculations

The PM10 and SOx emission calculations changed from the initial assumptions under A/N 386305 to the calculations done for the previous modification under A/N 464716.

A/N 386305 PM10 and SOx Calculations

Appendix B

GHG Calculations

Out of the six GHG pollutants:

carbon dioxide, CO_2,
methane, CH_4,
nitrous oxide, N_2O
hydrofluorocarbons, HFCs
perfluorocarbons, PFCs
sulfur hexafluoride, SF_6

Only the first 3 are emitted by combustion sources. Sulfur hexafluoride can be emitted by circuit breakers.

The following emission factors and global warming potential (GWP) will be used in the calculations:

GHG Emission Factors

GHG	Emission Factor, natural gas		GWP
	kg/mmbtu	lbs/mmscf	
CO2	53.02	120,160	1.0
CH4	1.0E-03	2.27	25
N2O	1.0E-04	0.227	298

The emission factors in kg/mmbtu are converted to lbs/mmcf assuming the default HHV of 1028 btu/cf from 40 CFR98 Subpart C Table C-1. 1 kg = 2.2046 lbs.

CO2 equivalent (CO2e) is calculated using the following equation:

CO2e = CO2 + 25*CH4 + 298*N2O

Or, using fuel consumption (F):

CO2e = 120,160*F + 2.27*25*F + 0.227*298*F = 120,284*F (in lbs)

CO2e = 60.142*F (in tons)

Pre-Modification Turbine Annual Operating Schedule

Event	Duration/yr	Heat Input
Start	216	*(included below)*
Shutdown	18	*(included below)*
100% Load @ w/o DB	7322	1787 (includes start ups/shutdowns)
100% Load with DB	1000	2370
Total	8556	15,872,572

Post-Modification Turbine Annual Operating Schedule

Event	Duration/yr	Heat Input
Start	360	*(included below)*
Shutdown	30	*(included below)*
100% Load @ w/o DB	6932	1787 (includes start ups/shutdowns)
100% Load with DB	1000	2370
Total	8322	15,454,414

Turbine GHG PTE

GHG	Hourly Tons @ 2370 mmbtu/hr	Pre-Modification Annual Tons @ 15,872,572 mmbtu/yr	Post-Modification Annual Tons @ 15,454,414 mmbtu/yr	Difference, tpy
CO2	138.5	927,656	903,217	-24,439
CH4	2.61E-03	17	17	0
N2O	2.61E-04	1.7	1.7	0
Total Mass	138.5	927,675	903,236	-24,439
CO2e	138.6	928,613	904,149	-24,464

Estimated lbs of CO2 per MWH (based on PTE, not actual operating conditions)

9,907 btu/kWh * 1000 kWh/MWh * 1*10-6 MMBtu/Btu * 53.02 kg CO2/MMBtu-HHV * 2.205 lb/kg = 1,158.2 lb CO2/MWH

1,158.2 lb CO2/netMWH @ HHV (no equipment degradation)

Past Actual GHG Emissions

Based on the previous 24 month annual average heat input of 12,208,697 mmbtu taken from Appendix C

Pollutant	Average Annual Emissions Previous 24 Months	
	lbs/yr	tons/yr
CO2	1426.67E+06	713,654
CH4	26,908	13.45
N2O	2,691	1.35
Total Mass	1426.70E+06	713,669
CO2e	1428.14E+06	714,393

Annual Increase in Total Mass and CO2e

Pollutant	Past Actual tons/yr	PTE tons/yr	Increase tons/yr
GHG Total Mass	713,669	903,217	189,548
CO2e	714,393	904,149	189,756

Appendix D

Toxic Emissions

Toxic emissions estimates are based on emission factors from USEPA AP-42 Table 3.1-3, except for Acetaldehyde, Formaldehyde, Benzene, and Acrolein emission factors which are from the Background document for AP-42 Section 3.1, Table 3.4-1 for a natural gas turbine with a CO catalyst.

The following data was used:

Fuel HHV	=	1,050 btu/cf		
Gas Turbine Fuel Use	=	1,787 mmbtu/hr/1050 btu/cf	=	1.702 mmscf/hr
Duct Burner Fuel Use	=	583 mmbtu/hr/1050 btu/cf	=	0.555 mmscf/hr
Total Fuel Use	=	2.257 mmscf/hr		
Pre Modification Operation				
Hrs/yr with Duct Firing	=	1000		
Annual Fuel Use with DF	=	2.257*1000	=	2257 mmscf
Hrs/yr no Duct Firing	=	7556 (includes start ups and shutdowns)		
Annual Fuel Use No DF	=	1.702*7556	=	12860 mmscf
Total Annual Fuel Use	=	15,117 mmscf		
Post Modification Operation				
Hrs/yr with Duct Firing	=	1000		
Annual Fuel Use with DF	=	2.257*1000	=	2257 mmscf
Hrs/yr no Duct Firing	=	7322 (includes start ups and shutdowns)		
Annual Fuel Use No DF	=	1.702*7322	=	12462 mmscf
Total Annual Fuel Use	=	14,719 mmscf		

A. Pre Modification Toxic Emissions

Pollutant	Emission Factor Lbs/mmscf	Hourly Emissions Lbs/hr	Annual Emissions Lbs/yr
1,3 butadiene	4.39E-04	9.91E-04	6.64
acetaldehyde	1.80E-01	4.06E-01	2721.06
acrolein	3.69E-03	8.33E-03	55.78
benzene	3.33E-03	7.52E-03	50.34
ethylbenzene	3.26E-02	7.36E-02	492.81
formaldehyde	3.67E-01	8.28E-01	5547.94
naphthalene	1.33E-03	3.00E-03	20.11
PAH (excluding naphthalene)	9.18E-04	2.07E-03	13.88
propylene oxide	2.96E-02	6.68E-02	447.46
toluene	1.33E-01	3.00E-01	2010.56
xylenes	6.53E-02	1.47E-01	987.14
		Total, lbs/yr	12,354
		Total, tpy	6.2

B. Post Modification Toxic Emissions

Pollutant	Emission Factor Lbs/mmscf	Hourly Emissions Lbs/hr	Annual Emissions Lbs/yr
1,3 butadiene	4.39E-04	9.91E-04	6.46
acetaldehyde	1.80E-01	4.06E-01	2649.42
acrolein	3.69E-03	8.33E-03	54.31
benzene	3.33E-03	7.52E-03	49.01
ethylbenzene	3.26E-02	7.36E-02	479.84
formaldehyde	3.67E-01	8.28E-01	5401.87
naphthalene	1.33E-03	3.00E-03	19.58
PAH (excluding naphthalene)	9.18E-04	2.07E-03	13.51
propylene oxide	2.96E-02	6.68E-02	435.68
toluene	1.33E-01	3.00E-01	1957.63
xylenes	6.53E-02	1.47E-01	961.15
		Total, lbs/yr	12,028
		Total, tpy	6.0

Note that under A/N 386305 and subsequent application 464716, toxic emission for the gas turbine were based onn AP-42 Table 3.1-3, dated 4/00, except for Formaldehyde which was based on a Sims Roy memo to Docket A-95-51 dated 8/2/01, and Hexane, Propylene, and PAHs which were based on the CATEF II

database (CARB 2001). Factors for the duct burner were based on Ventura County AB-2588 for natural gas fired equipment > 100 mmbtu/hr dated 8/24/95.

APPENDIX C.2
RECLAIM/Title V Facility Permit Revision, Facility ID# 128283
April 15, 2016

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

April 15, 2016

Mr. Ron Davis
General Manager
Burbank City Water and Power
164 W Magnolia Blvd
Burbank, CA 91502

Subject: RECLAIM/Title V Facility Permit Revision (Facility ID# 128243)

Dear Mr. Davis:

Please find attached the revised Title Page, Table of Contents, and Section D of your RECLAIM/Title V Facility Permit. The revised sections reflect the approval of the de minimis significant permit revision requested in your Application No. 575370. This permit revision reflects the increase in monthly and annual start ups for the gas turbine. The draft permit was submitted to EPA for 45-day review on February 12, 2016 and no comments were received. Following are the application numbers:

Equipment	Application No.	Device ID	Permit Type
Gas Turbine	575368	D4	PO
SCR	575369	C10	PO

Please review the attached sections carefully. Insert the enclosed sections into your RECLAIM/Title V Facility Permit and discard the earlier versions. Questions concerning changes to your permit should be directed to Mr. Chris Perri at (909) 396-2696.

Sincerely,

Andrew Y. Lee, P.E.
Senior Engineering Manager
Engineering and Compliance

Cc: Gerardo Rios, EPA Region IX
Cher Snyder, SCAQMD Compliance

AYL:BC:JTY:CGP

Attachments

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

FACILITY PERMIT TO OPERATE

BURBANK CITY,BURBANK WATER & POWER,SCPPA
164 W MAGNOLIA BLVD
BURBANK, CA 91502

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Wayne Nastri
Acting Executive Officer

By _____ For
Mohsen Nazemi, P.E.
Deputy Executive Officer
Engineering & Compliance

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Table of Content
Facility ID: 128243
Revision #: 19
Date: April 15, 2016

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

TABLE OF CONTENTS

Section	Description	Revision #	Date Issued
A	Facility Information	4	01/09/2015
B	RECLAIM Annual Emission Allocation	15	01/01/2016
C	Facility Plot Plan	TO BE DEVELOPED	
D	Facility Description and Equipment Specific Conditions	8	04/15/2016
E	Administrative Conditions	4	01/09/2015
F	RECLAIM Monitoring and Source Testing Requirements	4	01/09/2015
G	Recordkeeping and Reporting Requirements for RECLAIM Sources	4	01/09/2015
H	Permit To Construct and Temporary Permit to Operate	6	01/09/2015
I	Compliance Plans & Schedules	4	01/09/2015
J	Air Toxics	4	01/09/2015
K	Title V Administration	4	01/09/2015
Appendix			
A	NOx and SOx Emitting Equipment Exempt From Written Permit Pursuant to Rule 219	4	01/09/2015
B	Rule Emission Limits	4	01/09/2015

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: INORGANIC MATERIAL STORAGE					
STORAGE TANK, PRESSURIZED, AQUEOUS AMMONIA 19%, WITH VAPOR BALANCE SYSTEM, 12000 GALS A/N: 386307	D1				C157.1, E144.1, E193.1
Process 3: INTERNAL COMBUSTION: POWER GENERATION					
GAS TURBINE, NO. 1, COMBINED CYCLE, NATURAL GAS, GENERAL ELECTRIC, MODEL PG7241FA, WITH DRY LOW NOX COMBUSTORS, 1787 MMBTU/HR WITH A/N: 575368	D4	C9 C10	NOX: MAJOR SOURCE**	**CO**: 2 PPMV (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]; **CO**: 2000 PPMV (5) **[RULE 407, 4-2-1982]**; **NOX**: 2 PPMV (4) **[RULE 2005, 6-3-2011]**; **PM**: 0.01 GRAINS/SCF (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM**: 0.1 GRAINS/SCF (5) **[RULE 409, 8-7-1981]**; **PM**: 11 LBS/HR (5C) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 150 PPMV (8) **[40CFR 60 Subpart GG, 3-6-1981]**; **VOC**: 2 PPMV (4) **[RULE 1303(a)(1) -BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A195.2, A195.3, A195.4, A327.1, A433.1, C1.4, D29.2, D29.3, D82.1, D82.2, E57.1, E193.1, H23.1, I298.1, K40.1, K67.2
GENERATOR, 181.1 MW					
GENERATOR, HEAT RECOVERY STEAM					
STEAM TURBINE, STEAM, 142 MW					

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 3: INTERNAL COMBUSTION: POWER GENERATION					
BURNER, DUCT, NATURAL GAS, 583 MMBTU/HR A/N: 575368	D6	C9 C10	NOX: MAJOR SOURCE**	**CO**: 2 PPMV (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]; **CO**: 2000 PPMV (5) **[RULE 407, 4-2-1982]**; **NOX**: 0.2 LBS/MMBTU (8B) **[40CFR 60 Subpart Da, 10-4-1991]**; **NOX**: 2 PPMV (4) **[RULE 2005, 6-3-2011]**; **NOX**: 114 PPMV NATURAL GAS (8A) **[40CFR 60 Subpart GG, 3-6-1981]**; **PM**: 0.01 GRAINS/SCF (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM**: 0.03 LBS/MMBTU (8A) **[40CFR 60 Subpart Da, 10-4-1991]**; **PM**: 0.1 GRAINS/SCF (5) **[RULE 409, 8-7-1981]**; **PM**: 11 LBS/HR (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: 0.2 LBS/MMBTU (8A) **[40CFR 60 Subpart Da, 10-4-1991]**; **SOX**: 150 PPMV (8A) **[40CFR 60 Subpart GG, 3-6-1981]**; **VOC**: 2 PPMV (4) **[RULE 1303(a)(1) -BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A195.2, A195.3, A195.4, A327.1, A433.1, C1.1, C1.2, C1.3, C1.4, D29.2, D29.3, D82.1, D82.2, E57.1, E193.1, I298.2, K40.1, K67.2
CO OXIDATION CATALYST, SERVING UNIT NO. 1, EMERCHEM, WITH 334.1 CUBIC FEET CATALYST VOLUME, HEIGHT: 66 FT 6 IN, WIDTH: 25 FT 1 IN, DEPTH: 3 IN A/N: 575369	C9	D4 D6			

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 3: INTERNAL COMBUSTION: POWER GENERATION					
SELECTIVE CATALYTIC REDUCTION, SERVING UNIT NO. 1, CORMETECH, VANADIUM-TITANIUM, 1100 CU.FT.; WIDTH: 26 FT ; HEIGHT: 67 FT ; LENGTH: 1 FT 4 IN WITH A/N: 575369 AMMONIA INJECTION, GRID	C10	D4 D6		**NH3**: 5 PPMV (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A195.1, D12.1, D12.2, D12.3, D29.1, D232.1, E73.1, E179.1, E179.2, E193.1
STACK, NO.1, HEIGHT: 150 FT ; DIAMETER: 19 FT A/N: 575368	S12				
Process 4: RULE 219 EXEMPT EQUIPMENT SUBJECT TO SOURCE SPECIFIC RULES					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E13			**VOC**: (9) **[RULE 1113, 7-13-2007;** *RULE 1113, 9-6-2013;* **RULE 1171, 2-1-2008;** *RULE 1171, 5-1-2009*]	K67.1
RULE 219 EXEMPT EQUIPMENT, COOLING TOWER	E18				
Process 5: DRY STORAGE					
STORAGE SILO, SODA ASH, 3000 FT3, WITH PASSIVE VENT FILTER, 25 TOTAL CARTRIDGES 307 FT2 FILTER AREA, HEIGHT: 48 FT ; DIAMETER: 9 FT A/N: 524486	D15				E193.3
STORAGE SILO, LIME, 2000 FT3, WITH PASSIVE VENT FILTER, 25 TOTAL CARTRIDGES 307 FT2 FILTER AREA, HEIGHT: 40 FT ; DIAMETER: 8 FT A/N: 524487	D16				E193.3

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 5: DRY STORAGE					
UNLOADING STATION, WITH 1 PNEUMATIC HOSE A/N: 524486	D17				E193.3

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: DEVICE ID INDEX

The following sub-section provides an index to the devices that make up the facility description sorted by device ID.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: DEVICE ID INDEX

Device Index For Section D			
Device ID	**Section D Page No.**	**Process**	**System**
D1	1	1	0
D4	1	3	0
D6	2	3	0
C9	2	3	0
C10	3	3	0
S12	3	3	0
E13	3	4	0
D15	3	5	0
D16	3	5	0
D17	4	5	0
E18	3	4	0

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

F24.1 Accidental release prevention requirements of Section 112(r)(7):

a). The operator shall comply with the accidental release prevention requirements pursuant to 40 CFR Part 68 and shall submit to the Executive Officer, as a part of an annual compliance certification, a statement that certifies compliance with all of the requirements of 40 CFR Part 68, including the registration and submission of a risk management plan (RMP).

b). The operator shall submit any additional relevant information requested by the Executive Officer or designated agency.

[40CFR 68 - Accidental Release Prevention, 5-24-1996]

DEVICE CONDITIONS

A. Emission Limits

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A63.1 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
CO	Less than or equal to 9243 LBS IN ANY ONE MONTH
PM10	Less than or equal to 9552 LBS IN ANY ONE MONTH
VOC	Less than or equal to 3744 LBS IN ANY ONE MONTH
SOX	Less than or equal to 1022 LBS IN ANY ONE MONTH

The operator shall calculate the emission limit(s) by using the monthly fuel use data and the following emissions factors: PM10 with duct firing = 7.98 lb/MMscf, PM10 without duct firing = 6.93 lb/MMscf, VOC with duct ring = 2.69 lb/MMscf, VOC without duct firing = 2.69 lb/MMscf, VOC startups = 30 lb/event, VOC shutdown = 17 lb/event, SOx = 0.75 lb/MMscf.

The operator shall calculate the emission limit(s) for CO, after the CO CEMS certification based upon the readings from the AQMD certified CEMS. In the event the CO CEMS is not operating or the emissions exceed the valid upper range of the analyzer, the emissions shall be calculated in accordance with the approved CEMS plan.

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from equipment D4 (Gas Turbine 1) and D6 (Duct Burner).

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D4, D6]

A99.1 The 2.0 PPM NOX emission limit(s) shall not apply during startup and shutdown periods. Startup time shall not exceed 6 hours per startup per day. Shutdown time shall not exceed 30 minutes per shutdown per day. Written records of startups and shutdowns shall be maintained and made available upon request from AQMD.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D4, D6]

A99.2 The 2.0 PPM CO emission limit(s) shall not apply during the turbine commissioning, startup, and shutdown periods. Startup time shall not exceed 6 hours per startup per day. Shutdown time shall not exceed 30 minutes per shutdown per day. Written records of commissioning, startups, and shutdowns shall be maintained and made available upon request from AQMD.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D4, D6]

A195.1 The 5 PPMV NH3 emission limit(s) is averaged over 60 minutes at 15 percent oxygen, dry.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C10]

A195.2 The 2 PPMV NOX emission limit(s) is averaged over 3 hours at 15 percent oxygen, dry.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D4, D6]

A195.3 The 2 PPMV CO emission limit(s) is averaged over 1 hour at 15 percent oxygen, dry.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D4, D6]

A195.4 The 2 PPMV VOC emission limit(s) is averaged over 1 hour at 15 percent, dry.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D4, D6]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[RULE 475, 10-8-1976; RULE 475, 8-7-1978]

[Devices subject to this condition : D4, D6]

A433.1 The operator shall comply with the 2.0 ppmv NOx BACT emission concentration limit at all times, except as specified in Condition A195.2 and under the following conditions::

Emission Limits	Averaging Time	Operation Requirements
440 lbs/startup	6 hours	The 440 lbs/startup emission limit shall apply to a startup event which shall not exceed 6 hours per day

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from equipment D4 (Gas Turbine 1) and D6 (Duct Burner).

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D4, D6]

C. Throughput or Operating Parameter Limits

C1.1 The operator shall limit the fuel usage to no more than 555 MM cubic feet per year.

[RULE 1303(b)(1)-Modeling, 5-10-1996; RULE 1303(b)(1)-Modeling, 12-6-2002; **RULE 2005, 6-3-2011]**

[Devices subject to this condition : D6]

C1.2 The operator shall limit the fuel usage to no more than 6.66 MM cubic feet per day.

[RULE 1303(b)(1)-Modeling, 5-10-1996; RULE 1303(b)(1)-Modeling, 12-6-2002]

[Devices subject to this condition : D6]

C1.3 The operator shall limit the fuel usage to no more than 133 MM cubic feet per month.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2005, 6-3-2011]**

[Devices subject to this condition : D6]

C1.4 The operator shall limit the number of start-ups to no more than 5 in any one month.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2005, 6-3-2011]**

[Devices subject to this condition : D4, D6]

C157.1 The operator shall install and maintain a pressure relief valve set at 25 psig.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D1]

D. Monitoring/Testing Requirements

D12.1 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia. The operator shall continuously record the flow rate with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

The operator shall maintain the ammonia injection rate between 50 and 350 gph

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C10]

D12.2 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor. The operator shall continuously record the temperature with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

The operator shall maintain the temperature between 450 and 900 degrees F

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C10]

D12.3 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the the SCR catalyst bed in inches of water column. The operator shall continuously record the pressure with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

The operator shall maintain the differential pressure between 1.0 and 5 inches of water column

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C10]

D29.1 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test shall be conducted to demonstrate compliance with the rule 1303 concentration limit.

The test shall be conducted at least quarterly during the first twelve months of operation and at least every calendar year thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the AQMD within 45 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C10]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	1 hour	Outlet of the SCR
CO emissions	District method 100.1	1 hour	Outlet of the SCR
SOX emissions	Approved District method	District-approved averaging time	Fuel Sample
ROG emissions	Approved District method	1 hour	Outlet of the SCR
PM emissions	Approved District method	District-approved averaging time	Outlet of the SCR

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR
Aldehydes	Approved District method	District-approved averaging time	Outlet of the SCR
Benzene	Approved District method	District-approved averaging time	Outlet of the SCR
Formaldehyde	Approved District method	District-approved averaging time	Outlet of the SCR
Polynuclear Aromatic Hydrocarbons (PAH)	Approved District method	District-approved averaging time	Outlet of the SCR

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test shall be conducted after AQMD approval of the source test protocol, but no later than 180 days after the initial startup. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine and steam turbine generating output in MW.

The test shall be conducted in accordance with a AQMD approved source test protocol. the protocol shall be submittted to the AQMD no later than 45 days before the proposed test date and shall be approved by AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted for all pollutants 1) when the gas turbine and duct burner are operating simultaneously at 100 percent of maximum heat input and 2) when the gas turbine is operating alone at 100 percent of maximum heat input. In addition, tests shall be conducted when the gas turbine is operating alone at loads of 75 and 50 percent of maximum heat input for the NOx, CO, VOC and NH3 tests.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1401, 9-10-2010; **RULE 2005, 6-3-2011]**

[Devices subject to this condition : D4, D6]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
SOX emissions	AQMD Laboratory Method 307-91	District-approved averaging time	Fuel Sample

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

ROG emissions	Approved District method	1 hour	Outlet of the SCR
PM emissions	EPA Method 201A/District Method 5.1	District-approved averaging time	Outlet of the SCR

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration and/or monthly emissions limit.

The test shall be conducted at least once every three years. The results shall be submitted to the AQMD within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test. The test shall be conducted 1) when the gas turbine and duct burner are operating simultaneously at 100 percent of maximum heat input and 2) when the gas turbine is operating alone at 100 percent of maximum heat input.

For natural gas fired turbines only, an alternative to AQMD Method 25.3 for the purpose of demonstrating compliance with BACT may be the following:

a) Triplicate stack gas samples extracted directly into Summa canisters, maintaining a final canister pressure between 400-500 mm Hg absolute,

b) Pressurization of the Summa canisters with zero gas analyzed/certified to less than 0.05 ppmv total hydrocarbons as carbon, and

c) Analysis of Summa canisters per unmodified EPA Method TO-12 (with pre-concentration) or the canister analysis portion of AQMD Method 25.3 with a minimum detection limit of 0.3 ppmvC or less and reported to two significant figures. The temperature of the Summa canisters when extracting the samples for analysis shall not be below 70 F

The use of this alternative method for VOC compliance determination does not mean that it is more accurate then unmodified AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD Method 25.3 without prior approval, except for the determination of compliance with the BACT level of 2.0 ppmv ROG calculated as carbon set by CARB for natural gas fired turbines.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D4, D6]

D82.1 The operator shall install and maintain a CEMS to measure the following parameters:

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS will convert the actual CO concentrations to mass emission rates (lbs/hr) and record the hourly emission rates on a continuous basis.

The CEMS shall be installed and operated, in accordance with an AQMD approved Rule 218 CEMS plan application. The operator shall not install the CO CEMS prior to receiving AQMD approval of the CO CEMS plan. The CO CEMS shall be installed and operating no later than 90 days after initial startup of the turbine.

The CEMS shall be installed and operated to measure CO concentrations over a 15 minute averaging time period.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D4, D6]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

NOX concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D4, D6]

D232.1 The operator shall install and maintain a continuous emission monitoring device to accurately indicate the NH3 concentration in the flue gas exiting the exhaust stack. The monitoring device shall be approved by the Executive Officer and shall monitor and record NH3 concentrations and alert the operator (via audible or visible alarm) whenever NH3 concentrations are near, at, or in excess of the permitted NH3 limit of 5 ppmv, corrected to 15 percent oxygen. It shall continuously monitor, compute, and record the following parameters.

Ammonia concentration, uncorrected in ppmv.

Oxygen concentration in percent.

Ammonia concentration in ppmv, corrected to 15 percent oxygen.

Date, time, extent (in time) of all excursions above 5 ppmv, corrected to 15 percent oxygen.

The continuous emission monitoring device described above shall be operated and maintained according to a Quality Assurance Plan (QAP) approved by the Executive Officer. The QAP must address contingencies for monitored ammonia concentrations near, at, or above the permitted compliance limit, and remedial actions to reduce ammonia levels once an exceedance has occurred.

The continuous emission monitoring device may not be used for compliance determination or emission information determination without corroborative data using an approved reference method for the determination of ammonia.

The continuous emission monitoring device shall be installed and operating no later than 90 days after initial startup of the turbine.

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C10]

E. Equipment Operation/Construction Requirements

E57.1 The operator shall vent this equipment to the CO oxidation and SCR control whenever this equipment is in operation..

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; **RULE 2005, 6-3-2011**]

[Devices subject to this condition : D4, D6]

E73.1 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if all of the following requirement(s) are met:

The SCR inlet exhaust temperature is 450 degrees F or less not to exceed 6 hours during a startup and 0.5 hours during a shutdown.

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2005, 6-3-2011**]

[Devices subject to this condition : C10]

E144.1 The operator shall vent this equipment, during filling, only to the vessel from which it is being filled.

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002]

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : D1]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

Condition Number 12-1

Condition Number 12-2

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C10]

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every month and shall be calculated based upon the average of the continous monitoring for that month.

Condition Number 12-3

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C10]

E193.1 The operator shall construct, operate, and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the Final California Energy Commission Certificate for 01-AFC-6 prepared for this project.

[CA PRC CEQA, 11-23-1970]

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : D1, D4, D6, C10]

E193.3 The operator shall operate and maintain this equipment according to the following specifications:

The bin vent filter shall be in the ON position at all times during filling of the silo, and for at least 1 hour after filling has ended

Filling of the silo shall be stopped immediately if the high level switch is activated

The storage silo shall not be filled past the high level switch

The unload truck hose shall be equipped with a dust cap. The dust cap shall be in place at all times except during the actual filling operation

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 403, 4-2-2004; RULE 403, 6-3-2005]**

[Devices subject to this condition : D15, D16, D17]

H. Applicable Rules

H23.1 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Sulfur compounds	District Rule	431.1

[RULE 431.1, 6-12-1998]

[Devices subject to this condition : D4]

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

I. Administrative

I298.1 This equipment shall not be operated unless the facility holds 132444 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 132444 pounds of NOx RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D4]

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

I298.2 This equipment shall not be operated unless the facility holds 4300 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 4300 pounds of NOx RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D6]

K. Record Keeping/Reporting

K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv) corrected to 15 percent oxygen (dry basis), mass rate (lbs/hr), and lbs/MM Cubic Feet. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Source test results shall also include the oxygen levels in the exhaust, fuel flow rate (CFH), the flue gas temperature, and the generator power output (MW) under which the test was conducted.

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; **RULE 2005, 6-3-2011**]

[Devices subject to this condition : D4, D6]

K67.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

FACILITY PERMIT TO OPERATE
BURBANK CITY,BURBANK WATER & POWER,SCPPA

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E13]

K67.2 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Natural gas fuel use.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : D4, D6]