

DOCKETED

Docket Number:	01-AFC-06C
Project Title:	Magnolia Power Project-Compliance
TN #:	232017
Document Title:	STATEMENT OF STAFF APPROVAL OF PROPOSED CHANGE
Description:	Notice
Filer:	Raquel Rodriguez
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/12/2020 2:13:10 PM
Docketed Date:	2/12/2020

CALIFORNIA ENERGY COMMISSION

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CEC-57 (Revised 1/19)



STATEMENT OF STAFF APPROVAL OF PROPOSED CHANGE MAGNOLIA POWER PROJECT (01-AFC-06C)

On November 5, 2019, the Southern California Public Power Authority (SCPPA) filed a post-certification petition for a project change for the Magnolia Power Project (MPP). The 323-megawatt project was certified by the California Energy Commission (CEC) in March 2003, and began commercial operation in September 2005. The facility is located in the City of Burbank, in Los Angeles County.

DESCRIPTION OF PROPOSED CHANGE

This request includes the following changes to the facility:

- Upgrade the combustors in the gas turbine
- Installation of new fuel gas system piping

The petition is available on the CEC's MPP webpage at <https://ww2.energy.ca.gov/sitingcases/magnolia/index.html>.

ENERGY COMMISSION STAFF REVIEW AND CONCLUSIONS

Title 20, California Code of Regulations, section 1769 requires a project owner to petition the CEC for approval of any change to the project design, operation or performance requirements it proposes after certification of the project.

CEC technical staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS). Staff has determined that the technical or environmental areas of Biological Resources, Cultural Resources, Efficiency, Environmental Justice, Facility Design, Geological and Paleontological Resources, Land Use, Noise and Vibration, Public Health, Reliability, Socioeconomics, Soil and Water Resources, Transmission Line Safety and Nuisance, Transmission System Engineering, Waste Management, and Visual Resources are not affected by the proposed changes.

For the technical areas of Hazardous Materials Management, Traffic and Transportation, and Worker Safety and Fire Protection, staff has determined the project would continue to comply with applicable LORS, would not result in any significant adverse environmental impacts, and would not require a change to any conditions of certification.

For Air Quality, staff has determined the project would continue to comply with applicable LORS and would not result in any significant adverse environmental impacts. The proposed changes would conform with past changes made by the South Coast Air Quality Management District to its permit language, and some Air Quality conditions of certification

in the Decision require updating. No daily, quarterly, annual or other emission limits would increase because of this change.

Staff notes the following for these technical areas:

- **AIR QUALITY.** See Attachment A for the Air Quality analysis and revised conditions.
- **HAZARDOUS MATERIALS MANAGEMENT.** During the installation of upgraded combustion system, several hazardous materials would be used on-site. Similar to equipment maintenance activities, these materials would include solvents, gasoline, lubricants, and welding gases that are already included in the annual compliance report under the existing Condition of Certification **HAZ-1** in the Final Commission Decision (Decision). No extremely hazardous or regulated hazardous materials would be used on-site specifically for the installation of the upgraded combustion system. Therefore, with the project owner's continued compliance with existing conditions of certification, **HAZ-1** specifically, the proposed change would not have a significant effect on the environment and the project would continue to comply with all applicable LORS.
- **TRAFFIC AND TRANSPORTATION.** Installation of the upgraded combustion system would generate a peak of 30-roundtrip worker vehicle trips during construction. This amount of construction traffic would be temporary and would not occur during peak commute times, thus impacts to the transportation system would be have a less than significant impact on roadway level of service and intersection delay. Furthermore, the project change would not generate any additional regular operations trips after completion of construction. All construction would occur on-site and would not obstruct any components of the local transportation network.
- **WORKER SAFETY.** By continuing to comply with the existing conditions of certification in the Decision, the project owner's proposed installation of the upgraded combustion system would not have a significant effect on the environment, and the project would continue to comply with all applicable LORS. Activities to be performed during construction of the upgraded combustion system would comply with worker safety and fire safety requirements already contained in health and safety plans utilized for construction of the main facility per Condition of Certification **WORKER SAFETY-1** in the Decision.

Staff's conclusions for each technical or environmental area are summarized in the table below.

Summary of Staff Responses to Petition

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

Environmental justice

Environmental Justice – Figure 1 shows 2010 census blocks in the six-mile radius of the Magnolia Power Plant with a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States Environmental Protection Agency’s *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

Staff conservatively obtains demographic data within a six-mile radius around a project site based on the parameters for dispersion modeling used in staff’s air quality analysis. Air quality impacts are generally the type of project impacts that extend the furthest from a project site. Beyond a six-mile radius, air emissions have either settled out of the air

column or mixed with surrounding air to the extent the potential impacts are less than significant. The area of potential impacts would not extend this far from the project site for most other technical areas included in staff’s EJ analysis.

Based on California Department of Education data in the **Environmental Justice – Table 1**, staff concluded that the percentage of those living in the Los Angeles Unified School District (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography, and thus is considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. **Environmental Justice – Figure 2** shows where the boundaries of the school district are in relation to the six-mile radius around the Magnolia Power Plant site.

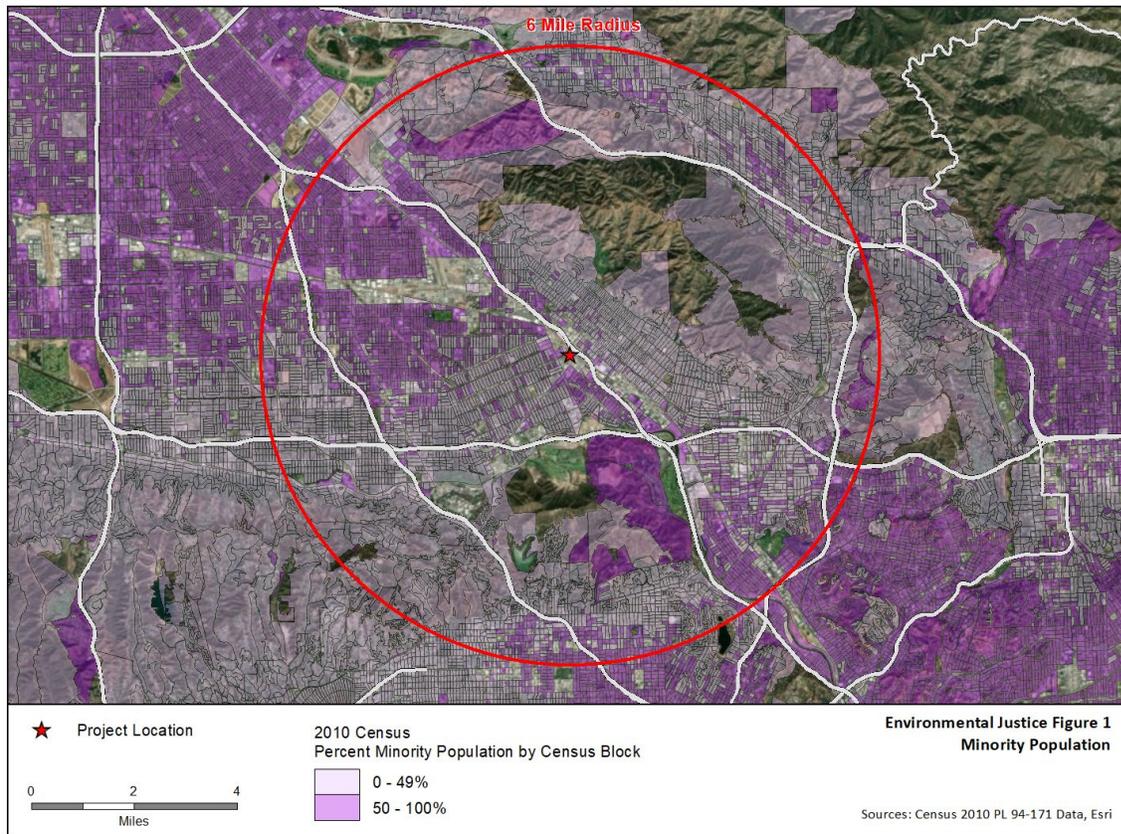
**Environmental Justice – Table 1
Low Income Data within the Project Area**

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Burbank Unified	15,173	5,611	37.0%
Glendale Unified	26,071	13,098	50.2%
Los Angeles Unified	621,414	503,682	81.1%
REFERENCE GEOGRAPHY			
Los Angeles County	1,492,735	1,034,525	69.3%
Source: CDE 2018. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2017-2018, < http://dq.cde.ca.gov/dataquest/ >.			

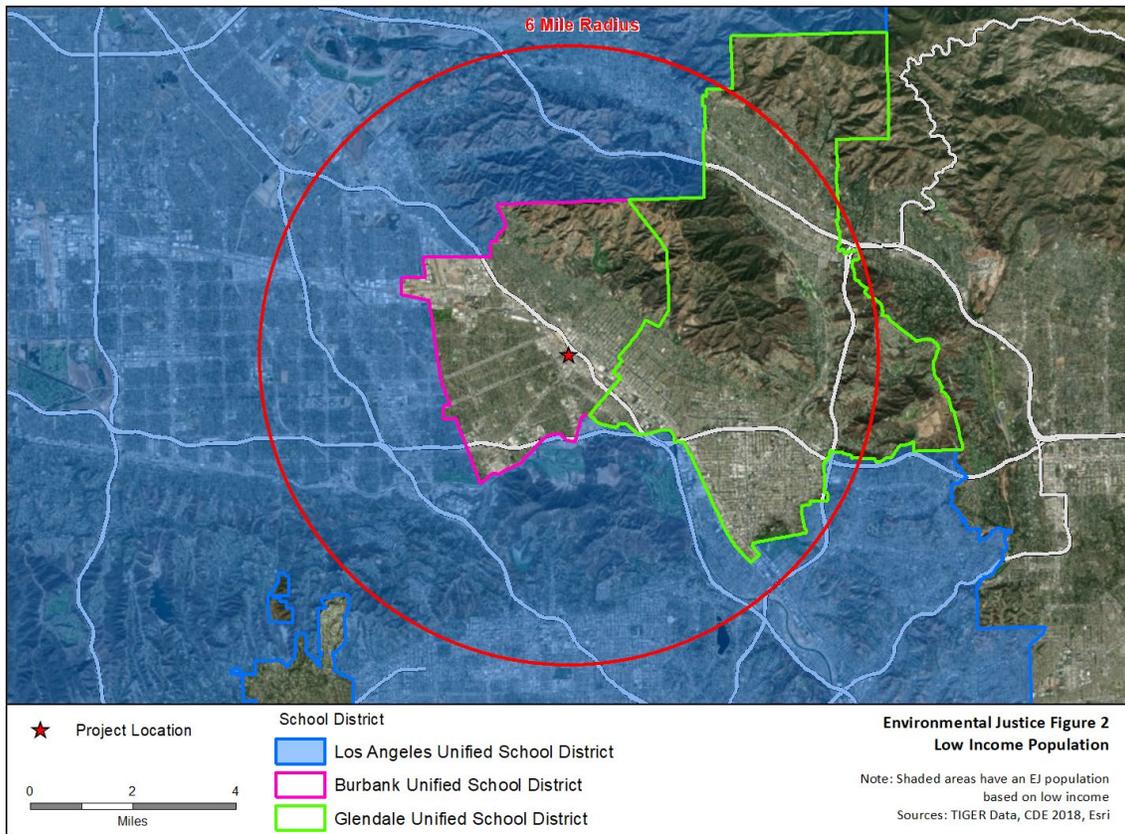
The following technical areas (if affected by the proposed project changes) consider impacts to EJ populations: Air Quality, Cultural Resources (indigenous people), Hazardous Materials Management, Land Use, Noise and Vibration, Public Health, Socioeconomics, Soil and Water resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, and Waste Management. Of these technical areas, only Air Quality, Hazardous Materials Management, and Traffic and Transportation are affected.

For Hazardous Materials Management and Traffic and Transportation, staff concludes that impacts would be less than significant, and thus would be less than significant on the EJ population represented in **Environmental Justice – Figure 1, Figure 2, and Table 1**. In the air quality analysis, staff proposes changes to conditions of certification. Staff has determined that by adopting the proposed changes to the existing conditions of certification, the project change would not cause significant air quality impacts for any population in the project’s six-mile radius, including the EJ population. Impacts to the EJ population are less than significant.

Environmental Justice – Figure 1



Environmental Justice – Figure 2



ENERGY COMMISSION STAFF DETERMINATION

Pursuant to Title 20, California Code of Regulations, section 1769(a)(3)(A) and (B), staff has determined for this petition that approval by the full Commission is not required and the proposed changes meet the criteria for staff approval because:

- i. there is no possibility that the change may have a significant impact on the environment;
- ii. the change would not cause the project to fail to comply with any applicable laws, ordinances, regulations, or standards; and
- ii. that no daily, quarterly, annual or other emission limit will be increased as a result of the change.

Staff also concludes that the proposed changes do not meet the criteria requiring production of subsequent or supplemental review as specified in Title 14, California Code of Regulations, section 15162(a).

WRITTEN COMMENTS

This Statement of Staff Approval of the proposed project changes has been filed in the docket for this project. Pursuant to section 1769(a)(3)(C), any person may file an objection to staff's determination within 14 days of the filing of this statement on the grounds that the project change does not meet the criteria set forth in sections 1769(a)(3)(A) and (B). Absent any objections as specified in 1769(a)(3)(C), this petition will be approved 14 days after this statement is filed.

Written comments or objections to staff's determination may be submitted using the CEC's e-Commenting feature, as follows: Go to the CEC's project webpage and click on either the "[Comment on this Proceeding](#)," or "[Submit e-Comment](#)" link. When your comments are filed, you will receive an email with a link to them.

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

California Energy Commission
Docket Unit, MS-4
Docket No. 01-AFC-6C
1516 Ninth Street
Sacramento, CA 95814-5512

All comments and materials filed with the Docket Unit will be added to the facility Docket Log and be publically accessible on the CEC's webpage for the facility.

If you have questions about this statement, please contact Chris Davis, Compliance Office Manager, at (916) 654-4842, or by fax to (916) 654-3882, or via e-mail at Chris.Davis@energy.ca.gov.

For information on public participation, please contact the Public Advisor, at (916) 654-4489 or (800) 822-6228 (toll-free in California) or send your e-mail to publicadvisor@energy.ca.gov.

News media inquiries should be directed to the CEC Media Office at (916) 654-4989, or by e-mail at mediaoffice@energy.ca.gov.

For List Serve: 7070

ATTACHMENT A

Magnolia Power Project (01-AFC-06C)
Air Quality Analysis of Magnolia Power Project (MPP) Upgrade
Nancy Fletcher

INTRODUCTION AND SUMMARY

On November 5, 2019, the Southern California Public Power Authority, (petitioner or SCPPA) filed a petition (SCPPA 2019) with the California Energy Commission (CEC) requesting to modify the Energy Commission license for the Magnolia Power Project (MPP). SCPPA is requesting to modify the combustor system to improve combustion turbine generator-turndown while maintaining the current emission limits.

MPP is a nominal 323-megawatt (MW) combined-cycle electricity generating facility consisting of a 181-MW General Electric (GE) Model 7FA combustion turbine generator (CTG) and one 142-MW steam turbine. The combustion turbine combined cycle is equipped with Dry Low NO_x (DLN) combustors and a heat recovery steam generator (HRSG) with duct burning capabilities. Selective catalytic reduction (SCR) technology and a carbon monoxide (CO) oxidation catalyst control emissions in the exhaust gas. Additional equipment includes a cooling tower and water treatment facility to enable re-use of the cooling water.

MPP is located within the South Coast Air Basin (SCAB). SCPPA owns MPP and the City of Burbank Water & Power Department (BWP) operates MPP. MPP operates under an existing South Coast Air Quality Management District (SCAQMD) issued Title V operating permit.

On June 10, 2016, SCPPA filed a petition to modify startup and shutdown operations and duct burner operation. The CEC approved the changes to the air quality conditions of certification including updates to the monthly limits of startup and shutdown events, duct burner fuel allotment, ammonia injection and monitoring requirements, source testing requirements, emission requirements, mitigation requirements, and other language changes on August 9, 2017 (CEC 2017).

On July 18, 2019, SCPPA submitted an application to the SCAQMD to modify the combustor in the turbine to allow the turbine to operate at lower loads without increasing the emission limits. The SCAQMD completed an evaluation on December 26, 2019 and submitted the proposed changes to the U.S. EPA for the 45-day regulatory review.

On June 28, 2019, SCPPA submitted an application to the SCAQMD to renew the Title V permit. The SCAQMD completed the analysis and drafted a renewed Title V permit. The SCAQMD proposed the addition of a facility wide condition regarding the operation of continuous monitoring systems.

The U.S. EPA completed the review for both the renewal and combustor upgrade revision on January 9, 2020. The SCAQMD received no comments from the public or U.S. EPA. CEC staff review of the Title V renewal is included in this analysis.

Staff reviewed the following requested changes from SCPPA 2019 and the associated SCAQMD changes to the Title V operating permit:

- A modification to the turbine combustor;
- The incorporation of an exemption from best available control technology (BACT) requirements during the one-time recommissioning (tuning) period following the combustor upgrade;
- The establishment of emission limits and recordkeeping requirements for the recommissioning period;
- Clarification of CO continuous emission monitoring system (CEMS) requirements,
- Clarification of ammonia monitoring requirements; and.
- The addition of a requirement for an ammonia slip test within 90 days of completing the upgrade.

Air quality impacts from the evaluated changes would be less than significant, including impacts to environmental justice populations. SCPPA 2019 proposes no increases to emission limits for ongoing operations in the CEC license or project mitigation including emission reduction credits (ERCs) and Regional Clean Air Incentives Market (RECLAIM) trading credits. Therefore, there are no air quality environmental justice issues related to the evaluated facility modifications and no minority or low-income populations would be significantly or adversely impacted.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

SCAQMD classifies SCPPA 2019 as a minor amendment under Title V provisions and the SCAQMD New Source Review (NSR) requirements. SCPPA 2019 does not trigger a Prevention of Significant Deterioration (PSD) review. CEC staff reviewed SCPPA 2019 and the SCAQMD evaluations for consistency with all federal, state, and SCAQMD laws, ordinances, regulations, and standards (LORS).

Air Quality Table 1 includes a summary of the air quality LORS applicable to the changes proposed in SCPPA 2019. **Air Quality Table 1** in this analysis is not intended to be comprehensive of all MPP facility LORS. Staff evaluated the changes and clarifications for consistency with all LORS and a compliance summary is included in **Air Quality Table 1**. The conditions of certification in the Final Commission Decision and amendments thereafter ensure that the facility would remain in compliance with all LORS.

Air Quality Table 1
Laws, Ordinances, Regulations, and Standards

Applicable Law	Description and Compliance
Federal	U.S. Environmental Protection Agency
Title 40 Code of Federal Regulations (CFR) Part 50 (National Primary and Secondary Ambient Air Quality Standards)	National Ambient Air Quality Standards (NAAQS) are set in this part. NAAQS defines levels of air quality necessary to protect public health. Continued compliance is expected.
Title 40 CFR Part 51 (Requirements for Preparation Adoption and Submittal of Implementation Plans)	Requires emission reporting and control strategies for the attainment and maintenance of national standards. Continued compliance is expected.
Title 40 CFR Part 52 (Approval and Promulgation of Implementation Plans)	PSD requires review and facility permitting for construction of new or modified major stationary sources of pollutants at locations where ambient concentrations attain the NAAQS. SCAQMD has partial delegation of PSD authority from the U.S. EPA depending on the calculation methodology and plant wide applicability limits. This amendment does not trigger a PSD review.
Title 40 CFR Part 60, Subpart A (General Provisions)	Outlines general requirements for facilities subject to standards of performance including notification, work practice, monitoring and testing requirements. Staff is proposing modifications to the conditions of certification to ensure continued compliance.
40 CFR 60, Subpart Da	Standards of Performance for Electric Utility Steam Generating Units. Establishes requirements for electric utility steam generators with heat inputs greater than 250 million British thermal units per hour (MMBtu/hr). The duct burners are rated at 583 MMBtu/hr and are therefore subject to this Subpart. Based on the MPP construction commencement date and exclusive firing on natural gas, MPP is subject to an emission standard of 0.3 lbs/MMBtu for sulfur dioxide (SO ₂) and 1.6 lbs/megawatt hour (MWh) for oxides of nitrogen (NO _x). MPP demonstrates compliance through sulfur oxide (SO _x) source testing and a CEMS for NO _x . Continued compliance is expected.
40 CFR 60, Subpart GG	Standards of Performance for Stationary Gas Turbines. Requires the turbines to meet emission standards. The applicable limits are 105 parts per million (ppm) for NO _x and 150 ppm for SO _x . MPP demonstrates compliance through a CEMS for NO _x . The SCAQMD certifies the CEMS through CFR guidelines. Monitoring for sulfur content is not required. MPP Source testing for SO _x indicates compliance. Continued compliance is expected.

Applicable Law	Description and Compliance
40 CFR 60, Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions For Electric Generating Units. Establishes emission standards for units installed after January 8, 2014. The modification would not qualify the upgraded turbines to be subject to subpart requirements, as the project does not meet the definition of reconstruction.
40 CFR 63, Subpart YYYY	National Emission Standards for Hazardous Air Pollutants for Stationary Gas Turbines. This subpart establishes requirements for facilities that are major sources of hazardous air pollutants (HAPS). MPP is an area source and not a major source of HAPS since HAP emissions are less than the 25 ton/year threshold.
40 CFR 64	Compliance Assurance Monitoring (CAM)–CAM regulations apply to major stationary sources that use control equipment to achieve emission limits. The combined-cycle turbines are located at a major source. The MPP turbines are currently major sources for NO _x , CO, and volatile organic compound (VOC) emissions. The combined-cycle turbines are subject to BACT requirements for NO _x , CO, and VOC emissions. MPP achieves applicable BACT limits by using external control equipment consisting of SCR and oxidation catalysts. MPP demonstrates compliance for CO and NO _x by CEMS. The oxidation catalysts also control VOC emissions at specified temperatures. SCPPA is required to maintain an exhaust temperature range and a temperature gauge to monitor the exhaust temperature. SCPPA is also required to demonstrate compliance with the VOC emission limit through source testing. Continued compliance is expected.
40 CFR 70	State Operating Permits Program–Part 70 establishes the Title V permitting program. MPP currently operates under a Title V permit. MPP submitted an updated Title V application as part of SCAQMD requirements. Continued compliance is expected.
40 CFR 72	Permits Regulation–Part 72 establishes the Acid Rain Permit Program. The acid rain program requirements establish controls for sulfur dioxide (SO ₂) and NO _x emissions from fossil fuel-fired combustion used to generate electricity. Facilities are required to cover SO ₂ emissions with allowances or offsets. MPP is subject to the acid rain program. The facility would continue to comply with SO ₂ emissions monitoring by using the gas meter in conjunction with natural gas composition analysis or by using a default emission factor in combination with natural gas usage. MPP would record SO ₂ emissions every hour. MPP would monitor NO _x and O ₂ with a CEMS in accordance with the specification in Part 75. The Title V permits includes compliance provisions with acid rain requirements. This program is within the jurisdiction of the SCAQMD with U.S. EPA oversight. Continued compliance is expected.

Applicable Law	Description and Compliance
State	California Air Resources Board and Energy Commission
California Health & Safety Code (H&SC) §41700 (Nuisance Regulation)	Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance. Continued compliance is expected.
H&SC §40910-40930 (District Plans to Attain State Ambient Air Quality Standards)	State Ambient Air Quality Standards should be achieved and maintained. The permitting of the source needs to be consistent with the approved clean air plan. The SCAQMD NSR program needs to be consistent with regional air quality management plans. Continued compliance is expected.
H&SC §42301.6 (AB 3205)	Establishes noticing requirements for projects within 1,000 feet of a school site. MPP is not located within 1,000 feet of a school site and therefore the public noticing requirements do not apply.
California Code of Regulations	Greenhouse Gases Emission Performance Standard (EPS), Article 1–Provisions Applicable to Power Plants 10 MW and Larger (SB1368)–MPP is a deemed-compliant power plant.
Local	South Coast Air Quality Management District
Regulation I General Provisions Rule 118	Emergencies–Establishes the ability for the SCAQMD to suspend District rules, regulations or orders during a state or federally declared State of Emergency.
Regulation II Permits Rules 201, 202, and 203	Permit to Construct, Temporary Permit to Operate, Permit to Operate. SCPPA shall obtain written authorizations prior to the use or replacement of any equipment that may eliminate, reduce or control air contaminants. The permit to construct serves as a temporary permit to operate prior to the issuance of the final permit. Continued compliance is expected.
Regulation II Permits Rules 204	Permit Conditions–Establishes the ability for the SCAQMD to impose conditions on any permit as needed to assure compliance with all applicable regulations.
Regulation II Permits Rule 212	Standards for Approving Permits and Issuing Public Notice–Outlines specific criteria for approving permits and issuing public notice. Outlines requirements for RECLAIM facilities. The proposed changes did not trigger Rule 212 public noticing requirements. MPP is not located within 1,000 feet of a school and the proposed changes will not result in an increase in emissions of toxic contaminants that would expose a person to levels above noticing thresholds.
Regulation II Permits Rule 218	Continuous Emission Monitoring (CEM)–Establishes requirements for CEMS. Only the CO CEMS is subject to Rule 218 requirements. MPP is currently operating with a compliant CEMS. MPP follows retention of record and reporting requirements. Continued compliance is expected.

Applicable Law	Description and Compliance
Regulation IV Prohibitions Rule 401	Visible Emissions—Establishes limits on visible emissions. SCAQMD reported there is no indication of visible emission problems in their compliance database. Staff does not expect visible emissions during the recommissioning period or on-going operation of MPP.
Regulation IV Prohibitions Rule 402	Nuisance—Prohibits the discharge of air contaminants or other material which could detrimentally impact the public. MPP uses ammonia for the SCR. The facility maintains a 5 ppm ammonia slip level. Staff does not expect nuisance problems from MPP.
Regulation IV Prohibitions Rule 407	Liquid and Gaseous Air Contaminants—Establishes a CO emission limit of 2,000 parts per million by volume (ppmv) from the turbines. The CO emissions from the turbines are subject to a more stringent CO emission limit of 2 ppmv at 15 percent oxygen (O ₂). SCPPA demonstrates compliance with the CO emission limit through source testing.
Regulation IV Prohibitions Rule 409	Combustion Contaminants—Establishes restrictions on particulate matter emissions from the turbines to 0.1 grain per cubic foot at 12 percent O ₂ . Source testing data indicates compliance below the rule limit.
Regulation IV Prohibitions Rule 431.1	Sulfur Content of Gaseous Fuels—Limits the sulfur concentration to 16 ppmv (calculated as hydrogen sulfide) in natural gas. Staff expects continued compliance because commercial grade natural gas has an average sulfur content of 4 ppm.
Regulation IV Prohibitions Rule 475	Electric Power generating Equipment—Limits combustion contaminants to 11 pounds per hour (lbs/hr) or 0.01 grains per standard cubic feet (gr/scf) for power generating equipment greater than 10 MW. Continued compliance is expected and demonstrated through source testing.
Regulation XI Source Specific Standards Rule 1325	Emissions of Oxides of Nitrogen from Electricity Generating Facilities—This regulation applies to electric generating units at electricity generating facilities. Rule 1325 establishes NO _x concentration and ammonia (NH ₃) slip limits. Rule 1325 limits require 1-hour rolling average unless a facility meets specified conditions. The rule also requires facilities to have startup limitations and recordkeeping requirements. This rule will become effective once MPP exits the RECLAIM program on 1/1/2024. SCPPA currently limits turbine NO _x emissions to 2 ppm over 3 hours and NH ₃ slip to 5 ppm over 1-hour. The SCAQMD stated no further action would be required under Rule 1325 when MPP exits RECLAIM. MPP would be eligible to maintain the 3-hour averaging time for NO _x . Compliance is expected.

Applicable Law	Description and Compliance
Regulation XIII New Source Review	New Source Review for Criteria Pollutants—This regulation applies to new or modified sources of emissions. Regulation XIII requirements are applicable to pollutants not covered under RECLAIM requirements. There are no daily, monthly, or hourly increases for CO, VOC, SOx, and particulate matter less than ten microns (PM10) emissions due to the proposed changes. Therefore, the equipment is not subject to additional BACT, offsets, or modeling requirements per SCAQMD rules and regulations. (See analysis for further discussion)
Regulation XIII New Source Review Rule 1325	Federal PM2.5 New Source Review Program—Outlines requirements for particulate matter less than 2.5 microns (PM2.5) for any new major polluting facility or major modification to a major polluting facility located in areas designated as non-attainment for PM2.5. MPP's potential to emit is below 70 tons per year and there is no proposed PM2.5 increase. Therefore, SCAQMD does not consider MPP a major facility for PM2.5 under Rule 1325.
Regulation XIV Toxics and Other Non-Criteria Pollutants Rule 1401	New Source Review of Toxic Air Contaminants (TAC)—Specifies limits for maximum individual cancer risk and acute and chronic hazard index for modifications to existing facilities emitting toxic air contaminants. SCPPA is not proposing an increase in fuel use and therefore there is no increase in toxic air contaminants. The SCAQMD is proposing a condition to limit the fuel use during recommissioning to ensure there is no increase in toxics.
Regulation XVII Prevention of Significant Deterioration (PSD)	Prevention of Significant Deterioration—Establishes requirements for attainment emissions. The SCAB is in attainment for nitrogen dioxide (NO ₂), SO ₂ , CO and particulate matter less than ten microns (PM10) NAAQS. SCAQMD has partial delegation of PSD authority from the U.S. EPA depending on the calculation methodology and plant wide applicability limits. SCAQMD does not consider MPP a major source and the proposed changes do not constitute a major amendment. Therefore, PSD requirements do not apply to SCPPA 2019.
Regulation XVII Prevention of Significant Deterioration (PSD) Rule 1714	Prevention of Significant Deterioration (PSD) for Greenhouse Gases (GHGs)—GHGs are regulated pollutants under the PSD major source permitting program. A GHG analysis under PSD is only required when a source triggers PSD review for criteria pollutants. There is no proposed change to the GHG potential to emit (PTE) and a PSD GHG review is not required.

Applicable Law	Description and Compliance
Regulation XX Regional Clean Air Incentives Market (RECLAIM) Rule 2005	New Source Review for RECLAIM—Establishes requirements for new or modified facilities subject to the RECLAIM program. BACT is required for a modified source resulting in specified emission increases. SCPPA does not propose an increase to the existing emission limits. However, during the one-time recommissioning period, hourly NOx emissions will be higher than the BACT limits in the SCAQMD-issued permit and CEC license because recommissioning may occur without full SCR control. Per SCAQMD, an operation exempt from BACT requirements does not trigger BACT. After recommissioning, the turbine would return to normal operation and there would be no change to the emission profile. SCAQMD determined the equipment is not subject BACT, additional RECLAIM, or modeling NOx requirements per SCAQMD rules and regulations. (See analysis for further discussion)
Regulation XX Regional Clean Air Incentives Market (RECLAIM) Rule 2012	NOx RECLAIM Monitoring, Reporting, and Recordkeeping—Establishes requirements for new or modified facilities subject to the RECLAIM program. The turbine is required to be equipped with a CEMS, a data handling system, recording system, and a fuel meter. SCPPA installed a CEMS in 2002 and SCAQMD certified the system in 2005. SCPPA modified the CEMS in 2011 and SCAQMD re-certified the system in 2012. The facility has been reporting their emissions as required and has maintained their NOx emissions below the NOx RECLAIM emissions cap. Continued compliance is expected.
Regulation XXX Title V Permits Rule 3003	Applications—Establishes application procedures for facilities subject to Title V requirements. MPP is a Title V facility. The SCAQMD determined that the requested amendment is a minor permit revision since there would be no increase in emissions or significant change in permit conditions. The revisions require a 45-day U.S. EPA review period.

SETTING

Ambient Air Quality Standards

The U.S. EPA and the California Air Resources Board (ARB) have both established allowable maximum ambient concentrations of criteria air pollutants. Ambient air quality standards are designed to protect people who are most susceptible to respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. The ambient air quality standards are also set to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The California Ambient Air Quality Standards are typically more stringent than the federally established NAAQS. See **Air Quality Table 2**. The averaging time for the various ambient air

quality standards ranges from one hour to one year. The standards are read as a concentration, in parts per million (ppm), parts per billion (ppb), or as a weighted mass of material per unit volume of air, in milligrams (mg) or micrograms (μg) of pollutant in a cubic meter (m^3) of ambient air, drawn over the applicable averaging period.

**Air Quality Table 2
Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.070 ppm (137 $\mu\text{g}/\text{m}^3$) ^a	0.070 ppm (137 $\mu\text{g}/\text{m}^3$)
	1 Hour	—	0.09 ppm (180 $\mu\text{g}/\text{m}^3$)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual	53 ppb (100 $\mu\text{g}/\text{m}^3$)	30 ppb (57 $\mu\text{g}/\text{m}^3$)
	1 Hour	100 ppb (188 $\mu\text{g}/\text{m}^3$) ^b	180 ppb (339 $\mu\text{g}/\text{m}^3$)
Sulfur Dioxide (SO_2)	24 Hour	—	0.04 ppm (105 $\mu\text{g}/\text{m}^3$)
	3 Hour	0.5 ppm (1300 $\mu\text{g}/\text{m}^3$)	—
	1 Hour	75 ppb (196 $\mu\text{g}/\text{m}^3$) ^c	0.25 ppm (655 $\mu\text{g}/\text{m}^3$)
Respirable Particulate Matter (PM ₁₀)	Annual	—	20 $\mu\text{g}/\text{m}^3$
	24 Hour	150 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$
Fine Particulate Matter (PM _{2.5})	Annual	12 $\mu\text{g}/\text{m}^3$	12 $\mu\text{g}/\text{m}^3$
	24 Hour	35 $\mu\text{g}/\text{m}^3$ ^b	—
Sulfates (SO_4)	24 Hour	—	25 $\mu\text{g}/\text{m}^3$
Lead	30 Day Average	—	1.5 $\mu\text{g}/\text{m}^3$
	Rolling 3-Month Average	.15 $\mu\text{g}/\text{m}^3$	—
Hydrogen Sulfide (H_2S)	1 Hour	—	0.03 ppm (42 $\mu\text{g}/\text{m}^3$)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 $\mu\text{g}/\text{m}^3$)
Visibility Reducing Particulates	8 Hour	—	extinction coefficient of 0.23 per kilometer (statewide)

Source: ARB 2019b, U.S. EPA 2019b

Notes: ^a Fourth- highest maximum 8 – hour concentration, averaged over 3 years

^b 98th percentile of daily maximum value, averaged over 3 years

^c 99th percentile of daily maximum value, averaged over 3 years

Ambient Air Quality Attainment Status

MPP is located in the city of Burbank, in Los Angeles County, and is part of the SCAB. For convenience, staff includes **Air Quality Table 3**, which summarizes the area's attainment status for current state and federal ambient air quality standards (AAQS) for the SCAB.

**Air Quality Table 3
SCAQMD Attainment Status**

Pollutants	Attainment Status Federal Classification	Attainment Status State Classification
Ozone (1-hr)	Nonattainment	Nonattainment
Ozone (8-hr)	Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
NO ₂ (1-hr)	Unclassified/Attainment	Attainment
NO ₂ (Annual)	Attainment (Maintenance)	Attainment
SO ₂	Attainment	Attainment
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
Sulfates	No Federal Standard	Attainment
Lead	Nonattainment (Partial)^b	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particulates	No Federal Standard	Unclassified

Source: ARB 2019a, U.S. EPA 2019a and b

Notes: ^a The federal 1-hour standard was revoked in June 2005, however the South Coast Air Basin has not attained this standard and is subject to anti-backsliding requirements.

^b The Los Angeles County portion of the basin.

ANALYSIS

Operation Summary and Emissions Analysis

The upgrade would allow MPP to operate the combustion turbine over a broader load range to increase operating flexibility and respond to shifts in grid demand. The increased operating flexibility would improve the integration of MPP operations with renewable energy sources. SCPPA stated they would continue to meet all emission limits and would not increase fuel input limits, power generating capacity, and potential to emit for criteria pollutants, greenhouse gases, and air toxics.

SCPPA would replace the DLN2.6e combustor with a DLN2.6+ combustor with Axial Fuel Staging (AFS) known as a DLN2.6+Flex upgrade (DLN2.6+). The DLN2.6+ includes an advanced fuel nozzle called a swizzle to provide better fuel mixing and a more stable combustion zone. DLN combustor technology includes multiple fuel streams combusted sequentially to maintain a precise air/fuel ratio. The DLN2.6+ combustor consists of six nozzles and two combustor zones. Combustion in the primary combustor zone occurs at a lower temperature than the second zone. During lower load operation, the operator can adjust the percentage of fuel split between the zones resulting in emission compliance over a wider range of firing temperatures.

Compared to the currently installed combustor, the DLN2.6+ has approximately 15 to 25 percentage points lower turndown capabilities and reduces minimum load fuel burn by up to

25 percent. Maximum turndown with the existing MPP combustor is 50 to 60 percent of full load. The upgrade would lower the maximum turndown to 27 percent of full load.

An Overboard Bleed System would allow the combustion turbine to use excess air from the combustion turbine compressor to cool the turbine exhaust air. While the exhaust gases would be cooler than present condition, they would still have enough heat to create steam in the HRSG. The cooler temperature allows for a reduced flow and prevents overheating of materials to allow for combustion turbine turndown to lower power output levels.

The DLN2.6+ upgrade would require new combustor system hardware (fuel nozzles, liners, transition piece, and casings), operation control modification (software modifications), new fuel gas system piping, and a recommissioning period (tuning). The applicant provided the SCAQMD with cost estimates of the upgrade and a new turbine package to determine if the project meets the definition of reconstruction in 40 CFR 60.15 (Standards of Performance for New Stationary Sources Subpart A-General provisions). According to the estimates provided, the project does not meet the definition of a reconstruction project and the LORS analysis was completed accordingly.

SCPPA would complete the upgrade during a planned MPP outage. SCPPA scheduled an outage with the California Independent System Operator from the end of January until March 22, 2020. The upgrade would include construction activities and recommissioning activities. SCPPA expects to complete the upgrade in approximately 54 working days. The construction activity would not require any grading activity or ground disturbance. SCPPA estimates the need to use a diesel-fired crane, diesel-powered forklift, propane-powered forklift, diesel-powered man lift, and four diesel-powered light tower. The construction activity would occur on the existing paved site and the SCPPA expects to operate this equipment for less than 30 days.

The construction activity and equipment used for the proposed project upgrade would be temporary and stationary source air permits would not be required through the SCAQMD. Any diesel equipment used would be required to comply with State of California diesel regulations. As applicable, SCPPA would be required to use diesel equipment registered through the Statewide Portable Equipment Registration Program or Diesel Off-road On-line Reporting System and associated equipment permits would need to be retained onsite. The estimated total equipment use and associated emissions for the upgrade is less than the typical equipment use for regular overhaul maintenance typically performed every four years. Therefore, sStaff does not expect significant impacts to air quality from the associated short-term construction activity.

Recommissioning activities would occur after the completion of the construction activities, approximately the end of February 2020. Recommissioning operation would consist of operating the turbine over various load ranges and operational modes to verify combustion characteristics and emission levels. SCPPA expects the recommissioning period to last approximately 408 hours. SCPPA expects to operate the gas turbine for 312 hours of the 408-hour recommissioning period. Recommissioning turbine operation ranges from four to 24 hours per day. The recommissioning activities would occur only once. After SCPPA completes the recommissioning, the turbine operations would return to the pre-modification

emission levels. Staff notes the original commissioning period in 2005 included 636 hours of turbine operation.

SCPPA reports that while the SCR and CO catalyst systems would be operational during the recommissioning period, the SCR and CO catalyst systems may not be able to operate at their full control efficiencies under some recommissioning activities. Similar to startup and shutdown operations, MPP would not be able to meet the BACT emission requirements for normal steady-state CTG operations during the entire recommissioning period. Therefore, SCPPA is proposing to exempt the recommissioning period from BACT requirements for steady state operations.

GE developed a recommissioning schedule for the upgrade including estimates of the duration and emissions from each recommissioning activity and contingency activities. SCPPA proposed a modified recommissioning schedule from GE to include additional tuning operations during contingency startup days. SCPPA based the fuel use and gas turbine exhaust emissions from the additional tuning operations on the recommissioning data. The proposed 408-hour recommissioning period would occur over 15 days with two additional days of contingency activities if needed. Staff notes emissions from the cooling tower are not included in the analysis since there are no proposed changes to the cooling tower operation.

GE provided performance data for the recommissioning event over five basic operating loads. GE developed sub-scenarios for the 50 percent and 90 percent load cases. The sub-scenarios for the 50 percent case include: (1) operation between 20 and 50 percent load, and (2) operation continuously at 50 percent load. The sub-scenario for the 90 percent load case includes: (1) operation between 30 and 110 percent load during the recommissioning period, and (2) operation between 30 and 110 percent load during the last day of recommissioning activities. **Air Quality Table 4** includes the estimated fuel use and emissions for the seven load scenarios during recommissioning operations. The estimated maximum hourly emission rate during recommissioning would occur at a different load for NOx than CO or VOC.

Air Quality Table 4
Fuel Use and Stack Emissions for Seven Basic Gas Turbine Load Scenarios during
Recommissioning (Tuning) Operations

Case	Nominal Load	Fuel Flow (HHV)	NOx (lbs/hour)	CO (lbs/hour)	VOC (lbs/hour)	Stack Temp
1	10%	564.03	98.72	19.58	18.86	191.47
2	25%	826.12	155.94	22.43	15.61	196.40
3	35%	992.08	11.93	55.64	43.76	199.69
4a	50%	1,204.40	8.44	3.34	0.18	204.62
4b	50% (steady)	1,204.40	8.44	0.54	0.18	204.62
5a	90%	1,732.58	12.55	0.77	0.29	217.77
5b	90% (last day)	1,732.58	12.55	0.30	0.29	217.77

Source: SCPPA 2019 and SCAQMD 2019

Air Quality Table 5 includes the detailed recommissioning activities and estimated emissions derived from the seven load scenarios during recommissioning operations. The highest hourly, highest daily, and total recommissioning emission approximations are based

on the summary provided in **Air Quality Table 5**. As shown, SCCPA expects the SCR to control NOx emissions during a large portion of the recommissioning activities.

Air Quality Table 5
Summary of Recommissioning Activities and Emissions

Day	Activity	Load (%)	Duration (hours)	Fuel Use (MMBtu)	NOx (lbs)	NOx (ppm)	CO (lbs)	VOC (lbs)
1	Cold Start	10	4	2,256.10	394.86	51	140.48	75.45
2	(continued)	10	1.6	902.44	157.95	51	56.19	30.18
	Checkout/Mapping	25	0.4	330.45	62.38	55	13.88	6.24
	Checkout/Mapping	35	0.4	396.83	4.77	3.5	22.26	17.50
	Checkout/Mapping	50	2	2,408.82	16.88	2	6.69	0.36
	Checkout/Mapping	90	3.6	6,237.29	45.20	2	10.69	1.06
	Daily Parking Point	50	12	14,452.90	101.25	2	25.80	2.16
	DLN Rough Tune	50	3	3,613.23	25.31	2	10.03	0.54
	DLN Rough Tune	90	1	1,732.58	12.55	2	2.97	0.29
3	(continued)	90	8	13,860.65	100.44	2	23.76	2.35
	Shutdown/Restart	10	3	1,692.08	296.15	51	105.36	56.59
	Mapping	25	1	826.12	155.94		34.69	15.61
4	(continued)	25	1	826.12	155.94	55	34.69	15.61
	Mapping	35	2	1,984.15	23.87	55	111.28	87.52
	Mapping	50	5	6,022.04	42.19	3.5	16.72	0.9
	Daily Parking Point	50	12	14,452.90	101.25	2	25.80	2.16
	Part Load Mapping	50	4	4,817.63	33.75	2	13.37	0.72
5	(continued)	50	5	6,022.04	42.19	2	16.72	0.9
	Map-hot fuel	90	3	5,197.75	37.66	2	8.91	0.88
	Daily Parking Point	50	12	14,452.90	101.25	2	25.80	2.16
	Part/Base/Peak Map	90	4	6,930.33	50.22	2	11.88	1.18
6	(continued)	90	8	13,860.65	100.44	2	23.76	2.35
	Daily Parking Point	50	12	14,452.90	101.25	2	25.80	2.16
	Map-cold fuel 1	50	4	4,817.97	33.75	2	13.37	0.72
7	Map-cold fuel 2	50	2	2,408.48	16.88	2	6.69	0.36
	Part/Base/Peak Map	90	6	10,395.49	75.33	2	17.82	1.76
	Daily Parking Point	50	12	14,452.09	101.25	2	25.80	2.16
	Turndown Tuning	50	4	4,817.63	33.75	2	13.37	0.72
8	(continued)	50	5	6,022.04	42.19	2	16.72	0.9
	Tune/Test	90	3	5197.75	37.66	2	8.91	0.88
	Daily Parking Point	50	12	14,452.90	101.25	2	25.80	2.16
	Auto Tune/Testing 1	90	4	6,929.34	50.22	2	11.88	1.18
9	Auto Tune/Testing 2	90	8	13,861.64	100.44	2	23.76	2.35
	Daily Parking Point	50	12	14,452.90	101.25	2	25.80	2.16
	Auto Tune/Testing	50	4	4,817.63	33.75	2	13.37	0.72
10	(continued)	50	8	9,635.27	67.50	2	26.75	1.44
	Shutdown/Restart	10	3	1,692.08	296.15	51	105.36	56.59
	Mapping	25	1	826.12	155.94	55	34.69	15.61

11	(continued)	25	1	826.12	155.94	55	34.69	15.61
	Mapping	35	2	1,984.15	23.87	3.5	111.28	87.52
	Auto Tune/Checkout	50	3	3,613.23	25.31	2	10.03	0.54
	Auto Tune/Checkout	90	2	3,465.16	25.11	2	5.94	0.59
	Daily Parking Point	50	12	14,452.09	101.25	2	25.80	2.16
	Auto Tune Validation	50	2	2,408.82	16.88	2	6.69	0.36
	Auto Tune Validation	90	2	3,465.16	25.11	2	5.94	0.59
12	(continued)	90	8	13,860.65	100.44	2	23.76	2.35
	Daily Parking Point	50	12	14,452.90	101.25	2	25.80	2.16
	Fast Ramp Test	50	4	4,817.63	33.75	2	13.37	0.72
13	(continued)	50	2	2,408.82	16.88	2	6.69	0.36
	Fast Ramp Test	90	6	10,395.49	75.33	2	17.82	1.76
14	Shutdown/Restart	10	2.7	1,522.87	266.53	51	94.82	50.93
	Load to Base	25	0.1	82.61	15.59	55	3.47	1.56
	Load to Base	35	0.1	99.20	1.19	3.5	5.56	4.38
	Load to Base	50	0.1	120.44	0.84	2	0.33	0.02
	Performance Testing	90	1	1,732.58	12.55	2	2.97	0.29
15	Shutdown/Restart	10	3	1,692.08	296.16	51	105.36	56.58
	Load to Base	25	0.1	82.61	15.59	55	3.47	1.56
	Load to Base	35	0.1	99.20	1.19	3.5	5.56	4.38
	Load to Base	50	0.1	120.45	0.84	2	0.33	0.02
	Performance Testing	90	12.7	22,003.79	159.39	2	37.72	3.68
16	Shutdown/Restart	10	3	1,692.08	296.16	51	105.36	56.58
	Load to Base	25	0.1	82.61	15.59	55	3.47	1.56
	Load to Base	35	0.1	99.20	1.19	3.5	5.56	4.38
	Load to Base	50	0.1	120.45	0.84	2	0.33	0.02
	Performance Testing	90	12.7	22,003.79	159.39	2	37.72	3.68
17	(continued)	90	24	41,581.96	301.32	2	71.28	7.06

Source: SCPPA 2019 and SCAQMD 2019

The estimated emissions for MPP have changed over time depending on the method of computation. For example, the original SCAQMD analysis included computations based on a different higher heating value than later SCAQMD evaluations. Therefore, some of the estimated maximum potential emissions differ. These differences are minor and do not affect the staff conclusion that overall emissions do not increase and there are no anticipated significant impacts from the proposed changes.

The current air quality conditions of certification do not include mass hourly emissions limits. The conditions of certification include concentration limits for NOx, CO, and VOCs averaged over one hour for CO and VOC, and three hours for NOx. The conditions of certification currently include exemptions from these concentration limits during startup and shutdown operations when periods when BACT is unachievable. As required by U.S. EPA, the conditions of certification include limitations on the operating periods exempted from BACT requirements.

Projects processed through the SCAQMD can also include exemptions from BACT limits for tuning operations. Tuning periods are necessary to ensure proper turbine combustion to meet emissions requirements. The planned recommissioning period is similar to a tuning period; SCPPA would operate the turbine over various load ranges to ensure proper combustion and emission levels. Once SCPPA validates the new combustor, MPP would return to normal operations and meet all current emission and operating requirements.

The current MPP emission profile is determined from normal operations and startup and shutdown operations. **Air Quality Table 6** includes the emission factors and operating profile used to calculate the current MPP potential to emit emission limits for startup and shutdown operations. The emissions from startup events and shutdown events are consistent with the 2017 amendment. The PM10 and SOx emissions for both startup and shutdown events are from the maximum hourly turbine emission rate without duct firing. SCPPA is not proposing any changes to these values.

Air Quality Table 6
Startup and Shutdown Emissions Profile

Operating Scenario	Duration (hours)	NOx (lbs)	CO (lbs)	VOC (lbs)	PM10 (lbs)	SOx (lbs)
Startup	6	440	500	30	70.74	7.68
Shutdown	0.5	25	120	17	5.90	0.64

Source: SCPPA 2019, SCAQMD 2019, CEC 2003, and CEC 2017

Air Quality Table 7 includes the maximum hourly emissions from the initial commissioning, startup, shutdown, estimated recommissioning emissions, normal turbine operations, duct burner, turbine with duct burner operations, and the proposed recommissioning limits for comparison. Staff notes the hourly startup emissions rate listed in **Air Quality Table 7** is an average rate over the 6-hour startup period. The maximum hourly emission rate could be higher during a given startup hour. In addition, the 2002 Final Staff Assessment (FSA) assumed the hourly shutdown emission rate as double the shutdown event emissions. The MPP hourly CO emission rate assumes the half hour shutdown event and a half hour of normal operation. SCPPA stated the duct burners would not be in operation during the recommissioning period.

As demonstrated in **Air Quality Table 7**, the maximum hourly manufacturer emission estimates for NOx and CO from the recommissioning period are less than original commissioning period the Energy Commission Final Decision. The SCPPA estimated maximum hourly NOx emissions are higher during some periods of recommissioning than normal, startup, and shutdown operations. SCPPA estimated maximum hourly CO emissions during periods of recommissioning are less than startup, and shutdown operation. SCPPA estimated maximum hourly VOC emissions are higher during some periods of recommissioning than normal, startup, and shutdown operations. The estimated maximum hourly emissions for SOx and PM10 are fuel based and are therefore the same for recommissioning and other operations. Staff notes that the recommissioning activities will occur one time and there are no proposed increases to the ongoing hourly, startup, shutdown, or normal turbine operations.

Air Quality Table 7
Maximum Estimated Hourly Emissions by Pollutant for All Operations

Operating Scenario	NOx (lbs/hour)	CO (lbs/hour)	VOC (lbs/hour)	PM10 (lbs/hour)	SOx (lbs/hour)
Commissioning	192.1	200.0	13.64	-----	-----
Startup	73.33	83.33	5.00	11.79	1.28
Shutdown (FSA)	50	240	34	12.0	1.31
Shutdown (SCPPA)	33.74	125.32	20.04	14.01	1.49
Recommissioning	155.94	55.64	43.76	11.79	1.28
Normal Turbine	13.18	8.02	4.58	11.79	1.28
Duct Burner	4.3	2.62	1.5	4.43	0.42
Turbine with Duct Burner	17.48	10.64	6.08	16.22	1.70
Recommissioning Limit	198	84	-----	-----	-----

Source: SCPPA 2019, SCAQMD 2019, CEC 2003, CEC 2017, and staff analysis

Notes: From the AEC 2002 Final Staff assessment (CEC 2002a). The 2002 FSA estimated limits are based on partial SCR operations and were not guaranteed. The Recommissioning Limit is the SCPPA proposed emission limits to be include in the conditions of certification (see discussion below).

Emission limitations are required for BACT exempt operational periods. SCPPA requested higher hourly recommissioning limits for NOx and CO in the SCAQMD-issued Title V permit than the manufacturer estimated hourly NOx and CO recommissioning emissions. The requested hourly NOx recommissioning limit is the commissioning hourly rate evaluated by the SCAQMD and was included in the development of the initial mitigation requirements. The SCPPA proposed CO recommissioning limit is below the highest CO limit previously evaluated. The requested NOx and CO values provide a margin of safety for MPP to demonstrate compliance with the emission limits that will be included in the license for the recommissioning period.

MPP is equipped with a NOx and CO CEMS. The conditions of certification require the use of the NOx and CO CEMS to demonstrate compliance with the concentration limits for NOx and CO. The conditions of certification include a monthly emission limitation for VOCs. SCPPA demonstrates compliance with the VOC monthly limitations by combining fuel use data and VOC emissions factors.

SCAQMD certified the CO CEMS to operate on a dual range: 0-10 ppm and 0-200 ppm. The CEMS valid range is 10-95% of full range. Therefore, the CEMS can measure a minimum CO concentration of 1 ppm for the low range and 20 ppm for the high range. The CEMS switches to the high range when CO emissions exceed 9.5 ppm. The estimated CO emissions take into account the CEMS minimum reading range. SCPPA derived the estimated emissions by adjusting CO concentrations under 1 ppm to 1 ppm and adjusting any CO concentration above 9.5 ppm and below 20 ppm to 20 ppm.

SCPPA estimated the daily emissions during recommissioning based on the recommissioning schedule. **Air Quality Table 8** includes the maximum daily emissions and fuel use during recommissioning by day taking into consideration the CO CEMS minimum range.

Air Quality Table 8
Maximum Daily Emissions, Total Recommissioning Emissions, and Fuel Use for
Recommissioning Activities

Recommissioning	Fuel Use (MMBtu)	Duration (hours)	NOx (lbs/day)	CO (lbs/day)	VOC (lbs/day)
Day 1	2,256.10	4	394.86	140.48	75.45
Day 2	30,074.54	24	426.29	148.50	58.34
Day 3	16,378.85	12	552.53	163.81	74.55
Day 4	28,102.84	24	357.00	201.86	106.91
Day 5	32,603.02	24	231.32	63.31	5.11
Day 6	33,131.52	24	235.44	62.93	5.23
Day 7	32,073.69	24	227.21	63.68	5.00
Day 8	32,602.03	24	231.32	63.31	5.11
Day 9	33,132.17	24	235.44	62.93	5.23
Day 10	12,153.47	12	519.59	166.80	73.64
Day 11	30,214.73	24	373.47	200.37	107.36
Day 12	33,131.18	24	235.44	62.93	5.23
Day 13	12,804.31	8	92.21	24.51	2.12
Day 14	3,557.7	4	296.72	107.16	57.18
Day 15	23,998.13	16	473.18	152.45	66.22
Day 16	23,998.13	16	473.18	152.45	66.22
Day 17	41,581.96	24	301.32	71.28	7.06
Total	421,794.37	312	5,656.51	1,908.77	725.95

Source: SCPPA 2019, SCAQMD 2019, and staff analysis

Air Quality Table 9 indicates the specific recommissioning day correlated to the maximum daily emission for each pollutant listed. Staff includes estimated emissions from PM10 and SOx based on the expected fuel usage during recommissioning. Staff includes both Day 9 and Day 17 estimates. The estimated fuel use during the expected recommissioning activities peaks on Day 9. Day 17 is a contingency day based on 90% load operation for 24 hours.

Air Quality Table 9
Maximum Daily Emissions Correlated to Recommissioning Day

Pollutant	Recommissioning Day	Maximum Daily Emissions (lbs)
NOx	Day 3	552.53
CO	Day 4	201.86
VOC	Day 11	107.36
PM10	Day 9	218.67
SOx	Day 9	23.67
PM10	Day 17	274.44
SOx	Day 17	29.70

Source: SCPPA 2019, SCAQMD 2019, and staff analysis

Air Quality Table 10 compares the estimated maximum daily recommissioning emissions with the current daily potential to emit for each criteria pollutant from the turbine and duct burner. Staff notes the air quality conditions of certification do not include explicit daily emission limits for the combustion turbine and duct burner. The estimated daily emissions from the proposed upgrade recommissioning period are less than the current calculated daily potentials to emit. The current maximum daily MPP emission scenario includes a 6-hour cold start, 0.5 hours of shutdown, 12 hours of operation with duct firing, 5.5 hours of full load operations without duct firing, and 24 hours of cooling tower operation.

In addition, **Air Quality Table 10** includes the SCPPA-proposed daily CO recommissioning limit that will be included in the air quality conditions of certification. The daily CO recommissioning limit is the calculated potential CO potential to emit based on the maximum daily MPP emission scenario.

Air Quality Table 10
Maximum Daily Recommissioning Emissions Compared to Current Potential to Emit

Operation	NOx (lbs/day)	CO (lbs/day)	VOC (lbs/day)	PM10 (lbs/day)	SOx (lbs/day)
Current Potential	747.3	815.8	145.2	336.1	35.8
Recommissioning	552.5	201.9	107.4	274.4	29.7
Recommissioning Limit	-----	792	-----	-----	-----
Comparison	Below	Below	Below	Below	Below

Source: SCPPA 2019, SCAQMD 2019, CEC 2017 and staff analysis

Notes: Staff notes the current potential maximum daily CO emissions **Air Quality Table 10** is the SCAQMD calculated daily potential CO emissions calculated in the previous amendment. Staff calculated a lower daily CO potential of 791.8 lb/day. Staff notes SCAQMD included the revised rounded CO daily limit of 792 for the recommissioning period in the final issued Title V operating permit and will be included in the license.

The air quality conditions of certification currently include monthly emission limits for CO, PM10, VOC, and SOx from the turbine and duct burner. Previous amendments established these limits from the evaluation of two operating scenarios. One scenario includes 720 hours of baseload operation with 240 of those hours including duct firing and the other scenario includes five startup and shutdown events, 240 hours of operation with duct firing, and 447.5 hours of full load operations without duct firing.

SCAQMD and staff analyzed maximum monthly emissions from the turbine and duct burner during a recommissioning month. The maximum monthly operation scenario during a recommissioning month for NOx, CO, and VOCs includes the proposed recommissioning activity (408 hours), one startup event, one shutdown event, 240 hours of operation with duct firing, and 89.5 hours of operation without duct firing. The maximum monthly operation scenario during recommissioning for PM10 and SOx includes the proposed recommissioning activity, 240 hours of operation with duct firing, and 96 hours of operation without duct firing.

Staff notes the maximum monthly emissions including a recommissioning month includes 744 hours of operation. The previous evaluations and current monthly limits assume 720 potential hours of operation. In addition, the conditions of certification limit MPP to five startup events per month. The proposed recommissioning includes four startup and shutdown events plus 96 hours of downtime. Therefore, the scenario used to estimate the potential maximum monthly emissions from a month including recommissioning is conservative when compared to the previously calculated monthly emission potentials. SCCPA is not proposing any changes to the current monthly emission limitations.

Air Quality Table 11 compares the estimated maximum monthly recommissioning emissions with the current monthly potential to emit for each criteria pollutant from the turbine and duct burner. **Air Quality Table 11** demonstrates the monthly emissions during proposed recommissioning activity would be below the current potential monthly emissions from the turbine and duct burner.

Air Quality Table 11
Maximum Monthly Emissions Including Recommissioning Compared to Current Monthly Potential to Emit

Operation	NOx (lbs/month)	CO (lbs/month)	VOC (lbs/month)	PM10 (lbs/month)	SOx (lbs/month)
Current Potential	12,418	9,243	3,744	9,552	1,022
Recommissioning Month	11,496	5,800	2,642	7,808	832
Comparison	Below	Below	Below	Below	Below

Source: SCPPA 2019, SCAQMD 2019, CEC 2017, and staff analysis

Notes: Staff notes a typo in CEC 2017 **Air Quality Table 12**. The corrected monthly NOx potential to emit based on the 2017 amendment is included above. There is no proposed monthly NOx emission limit increase and no monthly NOx emission limit is included in the conditions of certification.

The maximum annual operation scenario during the recommissioning year includes the proposed recommissioning activity, 56 startup events, 56 shutdown events, 1,000 hours of operation with duct firing, and 6,550 hours of operation without duct firing. The recommissioning activity accounts for a total of 408 hours and the remaining operations total 7,914 operating hours. There is no proposed change to the total annual operating profile of 8,322 annual hours of operation during a recommissioning year. Staff notes this is conservative because SCPPA estimates the recommissioning period would include 96 hours of non-firing time.

Air Quality Table 12 compares the estimated maximum annual emissions from a year with recommissioning with the current annual potential to emit for each criteria pollutant from the

turbine and duct burner. **Air Quality Table 12** demonstrates the annual emissions from a year with the proposed recommissioning activity would be below the current potential annual emissions from the turbine and duct burner.

Air Quality Table 12
Maximum Annual Emissions Including Recommissioning Compared to Current Annual Potential to Emit

Operation	NOx (lbs/year)	CO (lbs/year)	VOC (lbs/year)	PM10 (lbs/year)	SOx (lbs/year)
Current Potential	136,744	103,435	40,649	102,546	11,072
Recommissioning Year	135,506	99,800	39,437	100,519	10,851
Comparison	Below	Below	Below	Below	Below

Source: SCPPA 2019, SCAQMD 2019, CEC 2017, and staff analysis

California Environmental Quality Act (CEQA) Mitigation

As documented in **Air Quality Table 3**, SCAQMD is in non-attainment with the state and federal AAQS for ozone and PM2.5, state AAQS for PM10, and federal AAQS for lead. The Energy Commission generally requires mitigation for the emissions of pollutants and/or their precursors that are in non-attainment with state and federal air quality standards or may result in any violation of any air quality standard, such as mitigation of PM10, PM2.5, SOx, NOx, and VOC emissions in areas designated as non-attainment for ozone, PM10, and PM2.5 standards. Violations of the federal lead standard occasionally occur in the area immediately surrounding two large lead-acid battery recycling facilities, based on near-source monitoring. The South Coast District has identified emissions from these facilities as the sole contributor to lead violations in Los Angeles County. This PTA analysis does not address lead emissions or lead mitigation.

The Final Commission Energy Commission Final Decision and subsequent 2017 amendment required mitigation for MPP non-attainment pollutants and precursors to non-attainment pollutants. Mitigation for MPP included BACT requirements, purchased ERCs for CO and VOC, purchased SO₂ and PM10 credits from the SCAQMD priority reserve, and RECLAIM Trading Credits for NOx emissions. SCAQMD determines the quantity of offsets required for CO, VOC, SOx, and PM10 (criteria pollutants other than NOx), using 30-day emission averages. The 30-day average is based on the highest emissions for any month, including a month where commissioning takes place. As demonstrated in **Air Quality Table 11**, the upgrade would not result in any increase to the maximum monthly emission potential. Therefore, SCPPA has not proposed any change that would result in an increase to the 30-day emission averages even during the recommissioning period.

SCAQMD determines BACT requirements for CO, VOC, SOx, and PM10 (criteria pollutants other than NOx), based on Rule 1306. Rule 1306 establishes BACT and modeling requirements based on daily emissions. The recommissioning would not result in a daily increase for any pollutant. The current SOx and PM10 emissions limits are based on 100% operating capacity for daily and monthly limits. SCPPA will still comply with VOC and CO

daily maximum potentials and monthly requirements because SCPPA will not be firing the turbine at full capacity during the recommissioning event.

SCAQMD determines compliance for NO_x requirements according to Rule 2005. Rule 2005 defines an emission increase as an increase in a maximum hourly potential to emit pre modification versus post modification. Any increase is subject to BACT, modeling, and NO_x RECLAIM Trading Credits (RTCs). RTC holding requirements are determined on an annual basis. The proposed combustor turndown would not result in an increase to the ongoing annual NO_x emission rate. The SCAQMD evaluated recommissioning as a mode of operation exempt from the ongoing BACT requirements. The recommissioning event is a one-time event necessary to validate the new combustor. In addition, staff updated the conditions of certifications to include limitations on the recommissioning period consistent with the U.S. EPA guidance to limit operations on periods exempted from BACT requirements.

Staff has determined no additional mitigation in the form of ERCs or RECLAIM holdings for the upgrade would be required. SCPPA provided adequate mitigation at the time of licensing and subsequent amendments to meet both the SCAQMD rule requirements and Energy Commission requirements under CEQA. The DLN2.6+ upgrade would not result in an emission increase or other change in circumstance that would require additional mitigation. The CEQA mitigation measures noted as conditions of certification would ensure potential direct and cumulative air quality impacts of the proposed facility upgrade to a less than significant level, including impacts to any environmental justice population. There are no air quality environmental justice issues related to the proposed facility upgrade and no minority or low-income populations would be significantly or adversely impacted.

Greenhouse Gas

Staff calculated GHG emissions from MPP in the previous amendment using the maximum heat input from the turbine and duct burner. The combustor upgrade would not result in an increase to the maximum heat input. In addition, fuel use would be lower during the recommissioning period because the turbine would not be firing to full capacity and the duct burners will not be firing. Therefore, there are no increases to GHG emissions from the proposed combustor upgrade.

Conditions of Certification for the DLN2.6+ Upgrade

The SCAQMD issued an updated Title V permit incorporating the DLN2.6+ combustor upgrade. Staff reviewed the proposed language and determined the proposed language covering the recommissioning periods is clear that the recommissioning is limited to the one-time recommissioning event. Staff made correlating updates to the air quality conditions of certification.

Staff updated the table cross-referencing the SCAQMD permit conditions and the CEC conditions of certification to reflect the proposed changes to the conditions of certification.

Staff updated the turbine description to include the upgraded combustor model in the equipment table.

Staff moved the requirements in Conditions of Certification **AQ-2** and **AQ-16**, to Condition of Certification **AQ-22** for simplicity and consistency with the SCAQMD permit conditions. There are no changes to the permitted number of startups allowed per month, or the duration of the startup and shutdown exemptions.

Staff added additional language to Condition of Certification **AQ-22** specific to the recommissioning period. Staff clarified the recommissioning period would be exempt from the steady state emission limit. Staff added language limiting the operating hours, fuel use and NOx emissions permitted during the recommissioning phase. Staff added specific record-keeping requirements to demonstrate compliance with the requirements.

Staff added new Condition of Certification **AQ-2a** limiting annual operation to 7,914 hours in the 12-month period when recommissioning occurs. The hours counted against the 7,914-hour limit would include normal operations but would not include operation during the recommissioning period. This is consistent with the annual emission calculations.

Staff added language exempting the recommissioning period from Condition of Certification **AQ-3** requirements for ammonia injection rate. Condition of Certification **AQ-3** includes a range for ammonia injection. The range is for normal or steady state operation and does not include startup and shutdown periods where the load changes rapidly. The recommissioning period would include swings in operation and therefore the recommissioning ammonia injection range may be outside the ammonia injection rate range established for normal or steady state operations. Staff notes SCCPA and SCAQMD do not expect any increase to ammonia emissions during the recommissioning period.

Staff updated the ammonia testing requirements in Condition of Certification **AQ-7**. Staff updated the test method, and clarified the frequency of testing. In addition, staff added an ammonia slip test within 90 days after recommissioning. The test would demonstrate compliance with the ammonia slip limit after the combustor upgrade. SCCPA could use this test to satisfy the annual slip test requirement.

Staff moved the requirements in Conditions of Certification **AQ-2** and **AQ-17**, to Condition of Certification **AQ-23** for simplicity and consistency with the SCAQMD permit conditions. This change is similar to the change discussed above for **AQ-22** except **AQ-23** includes CO requirements. There are no proposed changes to the permitted number of startups allowed per month, or the duration of the startup and shutdown exemptions.

Staff added additional language to Condition of Certification **AQ-23** specific to the recommissioning period. Staff clarified the recommissioning period would be exempt from the steady state emission limit. Staff added language limiting the operating hours, fuel use and CO emissions permitted during the recommissioning phase. Staff added specific record keeping requirements to demonstrate compliance.

Staff added additional language specific to the recommissioning period in Condition of Certification **AQ-25**. Staff clarified the recommissioning period would be exempt from the steady state emission limit. Staff added language limiting the operating hours, fuel use and

VOC emissions permitted during the recommissioning phase. Staff is proposing the addition of specific record keeping requirements to demonstrate compliance.

Additional Proposed Condition Changes

The SCAQMD issued an updated Title V permit incorporating additional clarification and requirements to improve enforceability. Staff made correlating updates to the air quality conditions of certification.

Staff moved the definitions of the term “continuously record” from Conditions of Certification **AQ-19** and **AQ-20** to Conditions of Certification **AQ-3**, **AQ-4**, and **AQ-5** for simplicity. Currently Conditions of Certification **AQ-19** and **AQ-20** reference Conditions of Certification **AQ-3**, **AQ-4**, and **AQ-5**. Updated Conditions of Certification **AQ-3** and **AQ-4** require recording at least once every hour and Condition of Certification **AQ-5** requires monitoring at least once a month.

Staff is proposing to delete the initial source testing requirements in Condition of Certification **AQ-6**. All ongoing source test requirements are included in other conditions of certification.

Staff updated the ammonia monitoring requirements. Staff added specific language regarding ammonia monitoring methods to Condition of Certification **AQ-24** and deleted Condition of Certification **AQ-26**. Condition of Certification **AQ-26** contained language requiring a continuous emission-monitoring device approved by the SCAQMD to measure ammonia. MPP continuously monitors ammonia slip using a dual analyzer. One analyzer monitors NOx and the other monitors total nitrogen using a nitrogen to ammonia converter. The Data Analysis and Handling System (DAHS) calculates the total ammonia slip taking into consideration the difference between the NOx and total nitrogen. SCPA received approval for the ammonia monitoring system through the SCAQMD. SCAQMD stated the language in **AQ-26** was ambiguous. SCAQMD incorporated edits to the language to state clearly that this ammonia monitoring approach meets the requirements.

Staff combined the source testing requirements in Conditions of Certification **AQ-8** and **AQ-9** by moving the source testing requirements in Condition of Certification **AQ-9** to Condition of Certification **AQ-8**.

Staff clarified the CO CEMS requirements in Condition of Certification **AQ-14**. Staff added the SCAQMD approved equations used to convert the measured the CO concentration to a mass emission rate.

Staff added Condition of Certification **AQ-33a**. Condition of Certification **AQ-33a** is a general facility condition clarifying requirements for continuous operation monitors that are not subject to SCASQMD Rule 218. The SCAQMD added this language to the SCAQMD-issued permit during the most recent MPP Title V renewal.

In addition, staff incorporated minor administrative changes to the language such as updating and defining acronyms, for consistency with current CEC practices

CONCLUSIONS AND RECOMMENDATIONS

Staff recommends approval of the modification to the combustor system to improve combustion turbine generator-turndown with accompanying changes to the air quality conditions of certification. These changes would not require addition mitigation in the form of offsets or RTCs. All proposed changes would conform with the applicable LORS related to air quality and would not result in significant air quality impacts. The SCAQMD has analyzed requested changes and incorporated the changes into the SCAQMD-issued Title V permit.

AMENDED CONDITIONS OF CERTIFICATION

The modifications to the Air Quality Conditions of Certification are included below. **Underline** indicates new language. ~~Strikethrough~~ indicates deleted language.

South Coast Air Quality Management District (AQMD or District) Permit Conditions with Corresponding Energy Commission Conditions of Certification

SCAQMD Permit Conditions	Energy Commission Conditions of Certification	Condition Description
A63.1	AQ-11	Monthly contaminant emission limits (CO, VOC, PM10, & SOx). Includes emissions calculations equations and emission factors.
A99.1	AQ-16	NOx emission limit of 2.0 ppm does not apply during startup, and shutdown periods. Startup limited to 6 hours and shutdowns 0.5 hours per event.
A99.2	AQ-17	CO emission limit of 2.0 ppm does not apply during startup, and shutdown periods. Startup limited to 6 hours and shutdowns 0.5 hours per event.
A195.1	AQ-24	Ammonia limit of 5 ppmv @ 15% O ₂ averaged over 1-hour. <u>Includes ammonia slip calculation procedures.</u>
A195.2	AQ-22	NOx emission limit of 2.0 ppm @ 15% O₂ averaged over 3-hour. <u>NOx emission limit of 2.0 ppm does not apply during startup and shutdown periods or the one-time recommissioning. Each startup is limited to 6 hours and each shutdown is limited to 0.5 hours per event. Startup emissions are limited to 440 pounds per startup and 6 hours per day. Startups are limited to 5 per month. This condition also establishes emission limitations during recommissioning.</u>
A195.3	AQ-23	CO emission limit of 2.0 ppm @ 15% O₂ averaged over 1-hour. <u>CO emission limit of 2.0 ppm does not apply during startup and shutdown periods or to one-time recommissioning. Each startup is limited to 6 hours and each shutdown is limited to 0.5 hours per event. Startup emissions are limited to 5 per month. This condition also establishes emission limitations</u>

SCAQMD Permit Conditions	Energy Commission Conditions of Certification	Condition Description
		<u>during recommissioning.</u>
A195.4	AQ-25	VOC emission limit of 2.0 ppm @ 15% O ₂ averaged over 1-hour. <u>VOC emission limit of 2.0 ppm does not apply during the one-time recommissioning. This condition establishes emission limitations during recommissioning.</u>
A327.1	AQ-28	Under Rule 475; <u>the</u> project may violate either the mass emission limit or concentration emission limit, but not both at the same time.
A433.4	AQ-22	Startup emissions limited to 440 lbs per startup and 6 hours per day
C1.1	AQ-1	Limits duct burner fuel usage to 555 mmcf per year.
C1.2	AQ-1	Limits duct burner fuel usage to 6.66 mmcf per day.
C1.3	AQ-1	Limits duct burner fuel usage to 133 mmcf per month.
C1.4	AQ-2	Limits startups to 5 per month
<u>C1.5</u>	<u>AQ-2a</u>	<u>Limits annual operations during recommissioning.</u>
C157.1	AQ-30	Storage tank pressure relief valve set to 25 psig.
D12.1	AQ-3	Requires a flow meter to monitor ammonia injection.
D12.2	AQ-4	Requires a temperature gauge for the SCR.
D12.3	AQ-5	Requires a pressure gauge for the SCR.
D29.1	AQ-6	Initial and ongoing ammonia source testing requirements
D29.2	AQ-7	Initial <u>Ongoing</u> ammonia source testing requirements.
D29.3	AQ-8	Ongoing source testing requirements- <u>including recordkeeping and reporting.</u>
D82.1	AQ-14	CEMS CO monitoring and reporting requirements.
D82.2	AQ-15	CEMS NOx monitoring and reporting requirements.
D232.1	AQ-26	CEMS for ammonia emissions
E57.1	AQ-10	Vent to emission control when in operation.
E73.1	AQ-13	Conditions exempting ammonia injection.
E144.1	AQ-29	Venting limitation for ammonia storage tank.
E179.1	AQ-19	Ammonia injection and selective catalytic reduction (SCR) temperature monitoring requirements
E179.2	AQ-20	SCR pressure monitoring requirements.
E193.1	AQ-31	Requires compliance with Energy Commission mitigation measures.
E193.3	AQ-21	Emission control requirements for silo.

SCAQMD Permit Conditions	Energy Commission Conditions of Certification	Condition Description
F9.1	AQ-32	Opacity Limits.
F24.1	AQ-33	Accidental Release requirements
F67.1	AQ-33a	Continuous operation of monitoring systems requirements.
H23.1	AQ-18	Requires compliance with Rule 431.1.
I298.1 I298.2	AQ-27	Prohibited from operation unless the project owner holds sufficient RECLAIM Trade Credits (RTCs).
K40.1	AQ-9	Source testing recordkeeping and reporting
K67.1	AQ-40	Record keeping requirements for architectural coatings.
K67.2	AQ-12	Natural gas record requirements.

SCAQMD Permitted Equipment and Conditions

Equipment

ID No.	Equipment Descriptions
Inorganic Material Storage	
D1	Storage Tank, Pressurized, Aqueous Ammonia 19%, with Vapor Balance System, 12,000 Gallons
Internal Combustion: Power generation	
D4	Natural Gas Combined-Cycle, 1,787 MMBtu/hr Gas Turbine No. 1 General Electric Model PG7241FA, 181.1 MW with Dry Low NOx Combustors DLN2.6+ , a Heat Recovery Steam Generator, and a 142 MW Steam Generator. Connected to C9 and C10.
D6	Duct Burner, 583 MMBtu/hr. Connected to C9 and C10.
C9	CO Oxidation Catalyst Serving Unit No.1, with 334.1 cubic feet catalyst volume. Connected to D4 and D6.
C10	Selective Catalytic Reduction Serving Unit No. 1, with 1,100 cubic feet of total volume; width 26 feet; height 67 feet; length 1 foot 4 inches
S12	Stack No. 1, Height of 150 feet and diameter of 19 feet
Other Equipment	
E13	Coating Equipment
E18	Cooling Tower
Dry Storage	
D15	Storage Silo, Soda Ash
D16	Storage Silo, Lime
D17	Unloading Station with Pneumatic Hose

Conditions

AQ-1 The project owner shall limit the fuel usage for the duct burner to no more than:

- 555 MM cubic feet per year,
- 6.66 MM cubic feet per day, and
- 133 MM cubic feet per month.

[Rule 1303(a)(1)-BACT; Rule 1303(b)(1)-Modeling; Rule 2005]
[Devices subject to this condition: D6]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit the fuel use data to the CPM in Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-2 ~~**Deleted**~~ The project owner shall limit the number of startups to no more than 5 in any one month.

~~[Rule 1303(a)(1)-BACT; Rule 2005]
[Devices subject to this condition: D4, D6]~~

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit monthly startup data to the CPM in Quarterly Operation Reports.

AQ-2a **The project owner shall limit the operation to no more than 7,914 hours in any 12 months.**

The limit applies only to the 12-month period which encompasses recommissioning. The hours counted towards the limit shall include normal operation with and without duct firing and start up and shutdown time but does not include operation during recommissioning.

[Rule 1303(b)(1)-BACT; Rule 2005]
[Devices subject to this condition: D4]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit monthly startup data to the CPM in Quarterly Operation Reports. **The project owner shall submit data on the hourly operation to the CPM to demonstrate compliance with the 7,914 annual hour operation limit in the applicable Quarterly Operation Reports until no portion of the 12-month period includes recommissioning. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

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 (NH₃).

The project owner shall continuously record the flow rate with a measuring device or gauge accurate to plus or minus 5 percent, calibrated once every twelve months. **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.**

The project owner shall maintain the ammonia injection rate between 50 and 350 pounds per hour, except during start-up, ~~and~~ shutdown, **and recommissioning.**

[Rule 1303(a)(1)-BACT; Rule 2012]

[Devices subject to this condition: C10]

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, the U.S. EPA and the ~~California Energy Commission~~ **Energy Commission upon request.**

AQ-4 The project owner shall install and maintain a temperature gauge to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor. The project owner shall continuously record the temperature with a measuring device or gauge accurate to plus or minus 5 percent, calibrated once every twelve months. **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.**

The ~~operator~~ **project owner** shall maintain the **exhaust** temperature **at the inlet of the DCR** between 450 and 900 degrees F, except during start-up, ~~and~~ shutdown, **and recommissioning.**

[Rule 1303(a)(1)-BACT; Rule 2012]

[Devices subject to this condition: C10]

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy Commission upon request.**

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 of water column. The project owner shall ~~also install and maintain a device to~~ continuously record the pressure with a measuring device or gauge accurate to plus or minus 5 percent calibrated once every twelve months. **Continuously record shall be defined as recording at least once every month and shall be calculated based upon the average of the continuous monitoring for that month.**

The ~~operator~~ **project owner** shall maintain the differential pressure **across the SCR catalyst bed** between 1.0 and 5 inches of water column, except during start-up, ~~and~~ shutdown, **and recommissioning.**

[Rule 1303(a)(1)-BACT; Rule 2012]

[Devices subject to this condition: C10]

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy Commission upon request.**

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

Pollutant	Method	Averaging Time	Test Location
NO _x	District Method 100.1	1 hour	Outlet of the SCR
CO	District Method 100.1	1 hour	Outlet of the SCR
SO _x	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 AQMD 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 steam turbine generating output in MW.~~

~~The test shall be conducted in accordance with an AQMD approved source test protocol. The protocol shall be submitted to the AQMD no later than 45 days before the proposed test date and shall be approved by the 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 NO_x, CO, VOC and NH₃ tests.~~

~~[Rule 1303(a)(1)-BACT; Rule 1303(b)(2)-Offset; Rule 1401; Rule 2005]
[Devices subject to this condition: D4, D6]~~

Verification: ~~— The project owner shall submit the proposed protocol for the initial source tests 45 days prior to the proposed source test date to the District, and also to the California Energy Commission Compliance Project Manager (CPM) for approval. The project owner shall notify the District and the CPM no later than 10 days prior to the proposed initial source test date and time.~~

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 to demonstrate compliance with the Rule 1303 concentration limit.

The test shall be conducted at least **every calendar year**, ~~quarterly during the first twelve months of operation and at least annually thereafter.~~ **If the results of any calendar year test show non-compliance with the limit, then quarterly tests must be conducted and at least four consecutive tests must show compliance with the limit before calendar year testing can resume.**

The NO_x concentration, as determined by the certified 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 NO_x emissions using District Method 100.1 measured over a 60 minute averaging time period.

An ammonia slip test shall be conducted within 90 days after completion of the recommissioning. The test shall be conducted at 3 gas turbine loads, 1) as close to 27% as practicable but not more than 37% 2) as close to 100% as practicable, but not less than 90%, and 3) one intermediate load. The intent of the test is to determine compliance with the ammonia slip limit after combustor upgrades but can also be used to satisfy the annual slip test requirement

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]
[Devices subject to this condition: C10]

Verification: The project owner shall submit test results to the District and CPM no later than 60 days following the source test date and notify the District and CPM no later than 7 days prior to the source test date and time.

AQ-8 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant	Method	Averaging Time	Test Location
SO _x	AQMD Laboratory Method 307-91 or District Approved Method	District Approved Averaging Time	Fuel Sample
ROG	District Approved Method	1 hour	SCR Outlet
PM	EPA Method 201A/District Method 5.1 or District Approved Method	District Approved Averaging Time	SCR Outlet

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

The test(s) 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, or as close as practical, but not less than 90 percent of maximum heat input
- 2) when the gas turbine is operating alone at 100 percent of maximum heat input, or as close as practical, but not less than 90 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 parts per million by volume total hydrocarbons as carbon (ppmvC), 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 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 parts per million by volume (ppmv) ROG calculated as carbon set by ARB for natural gas fired turbines.

Source test results shall be submitted to the SCAQMD 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) and duct burner input (mmbtu/hr) under which the test was conducted.

[Rule 1303(a)(1)-BACT; Rule 1303(b)(2)-Offset; Rule 1401]

[Devices subject to this condition: D4, D6]

Verification: The project owner shall submit test results to the District and CPM no later than 60 days following the source test date and notify the District and CPM no later than 10 days prior to the source test date and time.

AQ-9 ~~**Deleted** The project owner shall provide to the District a source test report in accordance with the following specifications:~~

- ~~• 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, the 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; Rule 1303(b)(2)-Offset; Rule 2005]~~

~~[Devices subject to this condition: D4, D6]~~

~~**Verification:** The project owner shall submit test results to the District and CPM no later than 60 days following the source test date.~~

AQ-10 The project owner shall vent this equipment to the CO oxidation and SCR control whenever this equipment is in operation. ~~0This condition shall not apply during the turbine commissioning period.~~

[Rule 1303(a)(1)-BACT; Rule 1303(b)(2)-Offset; Rule 2005]
[Devices subject to this condition: D4, D6]

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy Commission upon request.**

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

Contaminant	Emissions Limit
CO	9,243 LBS IN ANY 1 MONTH
PM10	9,552 LBS IN ANY 1 MONTH
VOC	3,744 LBS IN ANY 1 MONTH
SO _x	1,022 LBS IN ANY 1 MONTH

The project owner shall calculate the emission limit(s) by using monthly fuel use data and the following emission factors: PM10 with duct firing 7.98 lbs/MMscf, PM10 without duct firing 6.93 lbs/MMscf, VOC with duct firing 2.69 lbs/MMscf, VOC without duct firing 2.69 lbs/MMscf, VOC startups 30 lbs/event, VOC shutdowns 17 lbs/event, SO_x 0.75 lbs/mmscf.

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.

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

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit the monthly fuel use data and emissions calculations to the CPM in Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-12 The project owner 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; Rule 2012]
[Devices subject to this condition: D4, D6]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall report natural gas fuel use to the CPM in Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-13 The project owner may, at their 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; Rule 2005]

[Devices subject to this condition: C10]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit the ammonia injection data to the CPM in Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-14 The project owner shall install and maintain a CEMS to measure the following parameters:

- CO concentration in ppmv.
- **The CEMS shall be installed and operated to measure CO concentration over a 15-minute averaging time period.**
- 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) **using the equation below,** and record the hourly emission rates on a continuous basis.

CO Emission Rate, lbs/hr =

$$K \times C_{co} \times F_d \left[\frac{20.9}{20.9\% - \%O_2d} \right] \left[\frac{Q_g \times HHV}{10e^6} \right]$$

K = 7.267 × 10⁻⁸ (lbs/scf)/ppm

C_{co} = Average of 4 consecutive 15 minute average CO concentrations, ppm

F_d = 8710 dscf/MMBTU natural gas

%O₂d = Hourly average % by volume O₂ dry, corresponding to C_{co}

Q_g = Fuel gas usage during the hour, scf/hr

HHV = Gross high heating value of the fuel gas, BTU/scf

- The CEMS shall be installed and operated, in accordance with an **AQMD** approved AQMD-Rule 218 CEMS plan application. ~~The project owner shall not install the CEMS prior to receiving AQMD approval of the CEMS plan.~~
- ~~The CEMS shall be installed and operated to measure CO concentration over a 15 minute averaging time period.~~
- ~~The CEMS shall be installed and operating no later than 90 days after initial startup of the turbine.~~

[Rule 1303(a)(1)-BACT; Rule 1303(b)(2)-Offset]
 [Devices subject to this condition: D4, D6]

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy Commission upon request.**

AQ-15 The project owner shall install and maintain a CEMS to measure the following parameters:

- NO_x concentration in ppmv.
- Concentrations shall be corrected to 15 percent oxygen on a dry basis.

[Rule 2012]
 [Devices subject to this condition: D4, D6]

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy Commission upon request.** The project owner shall provide written notification of startup date to the District and CPM within 14 days prior to the turbine startup date.

AQ-16 ~~**Deleted** The 2.0 PPM NO_x 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 or CPM.~~

~~[Rule 2005]
 [Devices subject to this condition: D4, D6]~~

~~**Verification:** The project owner shall maintain records of NO_x emission limits during startups and shutdowns for inspection by representatives of the District, ARB, U.S. EPA and the Commission.~~

AQ-17 ~~**Deleted** The 2.0 PPM CO emission limit(s) shall not apply during turbine 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 or CPM.~~

~~[Rule 1303(a)(1)-BACT]
 [Devices subject to this condition: D4, D6]~~

Verification: — ~~The project owner shall maintain records of CO emission limits during startups and shutdowns for inspection by representatives of the District, ARB, U.S. EPA and the Commission.~~

AQ-18 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]
[Devices subject to this condition: D4]

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy Commission upon request**.

AQ-19 ~~**Deleted** 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 **AQ-3**~~
- ~~• Condition **AQ-4**~~

~~[Rule 1303(a)(1) BACT]
[Devices subject to this condition: C10]~~

Verification: — ~~The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Commission.~~

AQ-20 ~~**Deleted** 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 continuous monitoring for that month.~~

- ~~• Condition **AQ-5**~~

~~[Rule 1303(a)(1) BACT]
[Devices subject to this condition: C10]~~

Verification: — ~~The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Commission.~~

AQ-21 The project owner 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; Rule 403]

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

Verification: The project owner shall make the site **and records** available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy Commission upon request.**

AQ-22 The project owner shall limit NOx emissions to 2.0 ppmv. The 2.0 ppmv NOx emission limit is averaged over 3 hours at 15 percent oxygen, dry.

~~The project owner shall comply with the 2.0 ppmv NOx BACT emission concentration limit at all times, except as specified above 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 Turbine1) and D6 (Duct Burner).~~

The 2.0 PPM NOx emission limit shall not apply during startup, recommissioning, and shutdown periods. Startup time shall not exceed 6 hours per startup per day. NOx emissions during the 6 hours after commencement of a startup shall not exceed 440 lbs. Shutdown time shall not exceed 30 minutes per shutdown per day. NOx emissions during the 30 minutes prior to the conclusion of a shutdown shall not exceed 25 lbs. The project owner shall limit the number of startups to 5 per month.

The project owner shall keep records of the date, time and duration as well as minute-by-minute data (NOx, CO, and O2 concentration and fuel flow rate at a minimum) of each startup and shutdown.

Recommissioning is a one-time event that shall not exceed 312-turbine operating hours and 402 mmscf of fuel use. The NOx emissions during recommissioning shall not exceed 198 lbs/hr and 5,657 total lbs as determined through use of the certified CEMS.

The project owner shall keep records of the date and time the turbine is operated during recommissioning, the duration of the operation, the fuel use and the NOx and CO emissions. The project owner shall notify SCAQMD prior to the start of the recommissioning operation and at the conclusion of the recommissioning operation.

[Rule 2005]

[Devices subject to this condition: D4, D6]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM CEMS data and emissions calculations to demonstrate compliance for the NO_x limits in Quarterly Operation Reports.

The project owner shall submit to the CPM CEMS data and fuel use data to demonstrate compliance with NO_x emission limits and fuel usage during the one-time recommissioning event in any applicable Quarterly Operation Report. The project owner shall submit to the CPM monthly start up and shutdown data to demonstrate compliance with the monthly limit on the number of startups and startup and shutdown duration requirements in the Quarterly Operation Reports. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-23 The project owner shall limit CO emissions to 2.0 ppmv. The 2.0 ppmv CO emission limit is averaged over 1 hour at 15 percent oxygen, dry.

The 2.0 PPM CO emission limit shall not apply during startup, recommissioning, 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. CO emissions during the 30 minutes prior to the conclusion of a shutdown shall not exceed 120 lbs. The project owner shall limit the number of startups to 5 per month.

The project owner shall keep records of the date, time and duration as well as minute-by-minute data (NO_x, CO, and O₂ concentration and fuel flow rate at a minimum) of each startup and shutdown.

Recommissioning is a one-time event that shall not exceed 312-turbine operating hours and 402 mmscf of fuel use. The CO emissions during recommissioning shall not exceed 84 lbs/hr, 792 lbs in any one day, and 1,909 lbs total as determined through use of the certified CEMS.

The project owner shall keep records of the date and time the turbine is operated during recommissioning, the duration of the operation, the fuel use, and the NO_x and CO emissions. The project owner shall notify SCAQMD prior to the start of the recommissioning operation and at the conclusion of the recommissioning operation.

[Rule 1303(a)(1)-BACT]

[Devices subject to this condition: D4, D6]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM CEMS data and emissions calculations to demonstrate compliance for the CO limits in Quarterly Operation Reports. **The project owner shall submit to the CPM CEMS data and fuel use data to demonstrate compliance with CO emission limits and fuel usage during the one-time recommissioning event in any applicable Quarterly Operation Report. The project owner shall submit to the CPM monthly start up and shutdown data to demonstrate compliance with the monthly limit on the number of startups and startup and shutdown duration requirements in the Quarterly Operation Reports. The project**

owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-24 The project owner shall limit NH₃ emissions to 5.0 ppmv. The 5 ppmv NH₃ emissions limit is averaged over ~~4 hour~~ **60 minutes** at 15 percent oxygen, dry. **The project owner shall continuously record the NH₃ slip concentration using the following:**

An exhaust gas sampling system consisting of an exhaust gas probe in the stack at the outlet of the SCR sending exhaust sample to both an analyzer measuring NOx only (unconverted sample) and an analyzer utilizing an NH₃ to NOx converter and measuring total nitrogen, including NOx and NH₃ (converted sample).

The following equation is used to calculate NH₃ slip:

**NH₃ slip, ppm =
NOx, ppm (Converted sample) – NOx, ppm (Total, unconverted sample)**

The monitoring device shall monitor and record NH₃ concentrations and alert the project owner (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 also record the 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 ammonia slip calculation procedures described above shall not be used for compliance determination or emission information without corroborative data using an approved reference method for the determination of ammonia.

The SCAQMD may require the installation of a CEMS designed to monitor ammonia concentration if the SCAQMD determines that a commercially available CEMS has been proven to be accurate and reliable and that an adequate Quality Assurance/Quality Control (QA/QC) protocol has been established. The SCAQMD or other agency must establish an SCAQMD approved QA/QC protocol prior to the ammonia CEMS becoming a requirement.

In the event that an ammonia CEMS is installed, the ammonia slip calculation and annual ammonia slip testing requirement shall no longer be required.

[Rule 1303(a)(1)-BACT]

[Devices subject to this condition: C10]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM emissions calculations to

demonstrate compliance for the NH₃ limits in Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-25 The project owner shall limit VOC emissions to 2.0 ppmv. The 2.0 ppmv VOC emission limit is averaged over 60 minutes at 15 percent oxygen, dry. **The 2.0 VOC emission limit shall not apply during recommissioning. Recommissioning is a one-time event that shall not exceed 312-turbine operating hours and 402 mmscf of fuel use.**

The project owner shall keep records of the date and time the turbine is operated during recommissioning, the duration of the operation, the fuel use, and the NOx and CO emissions. The project owner shall notify AQMD prior to the start of the recommissioning operation and at the conclusion of the recommissioning operation.

[Rule 1303(a)(1)-BACT]

[Devices subject to this condition: D4, D6]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM emissions calculations to demonstrate compliance for **with** the VOC limits in Quarterly Operation Reports. **The project owner shall submit to the CPM the turbine operating hours and fuel use data to demonstrate compliance with the operating hour and fuel usage limits during the one-time recommissioning event in any applicable Quarterly Operation Report. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-26 ~~**Deleted** The project owner shall install, operate, 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 ammonia concentrations, and alert the project owner (via audible or visible alarm) whenever ammonia concentrations are near, at, or in excess of the permitted ammonia limit of 5 ppmv, corrected to 15% 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% oxygen.~~
- ~~• Date, time, extent (in time) of all excursions above 5 ppmv, corrected to 15% 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 reduced 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.~~

~~[Rule 1303(a)(1)-BACT]~~

~~[Devices subject to this condition: C10]~~

~~**Verification:** Records will be retained at the project site and made available for review upon request. The project owner shall submit to the CPM emissions calculations to demonstrate compliance for the ammonia limits in Quarterly Operation Reports.~~

AQ-27 This equipment 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 **project owner** 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.

[Rule 2005]

[Devices subject to this condition: D4]

This equipment 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 **project owner** 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.

[Rule 2005]

[Devices subject to this condition: D6]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM records of all RTCs held for the Magnolia Power Project facility prior to first fire and then annually in the fourth Quarterly Operation Report. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-28 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]

[Devices subject to this condition: D4, D6]

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM combustion contaminant emissions (concentration and mass rate) in the Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

The following Conditions of Certification pertain to the following equipment: 12,000 gallon Ammonia Storage Tank (ID No. D1)

AQ-29 The project owner shall vent this equipment, during filling, only to the vessel from which it is being filled.

[Rule 1303(a)(1)-BACT]

[Devices subject to this condition: D1]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy** Commission.

AQ-30 The project owner shall install and maintain a pressure relief valve set at 25 psig.

[Rule 1303(a)(1)-BACT]

[Devices subject to this condition: D1]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy** Commission.

AQ-31 The project owner shall construct, operate and maintain this equipment according to the following specifications:

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

[CA PRC CEQA]

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

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy** Commission.

Facility Conditions

AQ-32 Except for open abrasive blasting operations, the project owner 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]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the **Energy** Commission.

AQ-33 Deleted

AQ-33a The project owner shall comply with all terms and conditions specified below:

Continuous operation of monitoring systems not subject to Rule 218 are not required when necessary calibration, maintenance or repair activities are performed in accordance with manufacturer's recommendation. The project owner shall take all reasonable actions to minimize the time required to perform such activities. In no event shall any such activities exceed 96 consecutive hours for any one calibration, maintenance, or repair episode.

The project owner shall notify the Executive Officer within 24 hours of the start of a calibration, maintenance, or repair activity, if the activity is expected to last more than 24 consecutive hours.

[Rule 204]

Verification: **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

OPERATION CONDITIONS

AQ-34 The project owner shall provide emission reduction credits to offset turbine and duct burner CO, VOC, SO₂ and PM₁₀ emissions as specified by the SCAQMD. Additionally, the project must be fully and legally operational at the rated capacity within three years of the Permit to Construct issuance date, unless extended in writing by the Executive Officer, or otherwise any SO₂ priority reserve ERCs shall revert back to the SCAQMD Priority Reserve account and the project owner shall not operate this equipment until SO₂ ERCs are provided by the project owner to the SCAQMD in the amount of 42 lbs/day.

Verification: The project owner shall submit to the CPM records showing that the project's SCAQMD regulated emission reduction credit requirements have been met 15 days

prior to initiating construction for Priority Reserve emission reduction credits, and 30 days prior to turbine first fire for traditional emission reduction credits.

AQ-35 The project owner shall perform quarterly cooling tower recirculating water quality testing for total solids content (total dissolved and undissolved solids). The project owner shall also provide a flow meter to determine the daily cooling tower circulating water flow.

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM cooling tower recirculating water quality tests and daily recirculating water flow in the Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-36 The cooling tower daily PM10 emissions shall be limited to 30.25 lbs/day. The project owner shall estimate daily PM10 emissions from the cooling tower using the water quality testing data and daily recirculating water flow data. The emission calculation used to show compliance with this condition will be based on the following equation:

$$\text{Daily PM10} = \text{DWRR} \times \text{TSC} \times 0.000006 \text{ drift fraction} \times 8.34 \text{ lbs/gallon} / 1,000,000$$

Where:

DWRR = Daily Water Recirculation Rate (gallons)

TSC = Total Solids Content (TSS + TDS in ppm by weight)

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner shall submit to the CPM daily cooling tower PM10 emission estimates in the Quarterly Operation Reports. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-37 The project owner shall provide, for CEQA mitigation, an assurance from the City of Burbank, a SCPPA member, that they will not seek to use the emission reductions resulting from the shutdown of the Magnolia 3 and 4 cooling towers in any form other than for the CEQA mitigation for the Magnolia Power Project (MPP) cooling tower. Additionally, the project owner shall provide documentation assuring that the Magnolia 3 and 4 cooling towers have been removed and not replaced by other cooling tower(s) that would serve the existing City of Burbank power boilers and turbines.

Verification: The project owner shall provide, to the CPM 15 days prior to initiating construction, a letter from the City of Burbank documenting that the Magnolia 3 and 4 cooling towers have been removed from the Magnolia site, that these cooling towers have not been replaced by other cooling tower(s) at the site, and that they will not use the emission reductions resulting from the shutdown from the Magnolia 3 and 4 cooling towers for any other purpose than the CEQA mitigation proposed for the MPP cooling tower.

AQ-38 The project owner shall compile quarterly operating reports containing the operating and emission estimation data as required in Conditions **AQ-1** through **AQ-37**.

Verification: ~~Records will be retained at the project site and made available for review upon request.~~ The project owner will submit to the CPM the Quarterly Operation Reports within 30 calendar days of the end of each calendar quarter. **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

AQ-39 The project owner shall submit to the CPM for review and approval any modification proposed by either the project owner or issuing agency to any project air permit.

Verification: The project owner shall submit any proposed air permit modification to the CPM within five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-40 The project owner shall keep records, in a manner approved by the SCAQMD, for the following parameter(s) or item(s):

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 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.

[Rule 3004(a)(4) –Periodic Monitoring]

Verification: ~~The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Commission.~~ **The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.**

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