DOCKETED	
Docket Number:	07-AFC-06C
Project Title:	Carlsbad Energy Center - Compliance
TN #:	259209
Document Title:	Staff Analysis - Petition to Amend Air Quality Conditions of Certification For Amended Carlsbad Energy Center Project
Description:	Staff Analysis - Petition to Amend Air Quality Conditions of Certification For Amended Carlsbad Energy Center Project
Filer:	Anwar Ali
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	9/18/2024 2:58:04 PM
Docketed Date:	9/18/2024

DATE: September 18, 2024

TO: Interested Parties

FROM: Anwar Ali, Compliance Project Manager

SUBJECT: **AMENDED CARLSBAD ENERGY CENTER PROJECT (07-AFC-06C)**

CEC Staff Analysis of Petition to Amend the Final Commission Decision

On February 3, 2020, the Carlsbad Energy Center, LLC (CECL), the project owner, filed a post certification petition (TN 231945) with the California Energy Commission (CEC) requesting to amend the Amended Carlsbad Energy Center Project (ACECP) Final Commission Decision (Decision). The project owner was originally seeking approval to modify two Air Quality Conditions of Certification (COCs). On September 26, 2023, the CECL filed a supplemental petition (TN 252418) with the CEC in order to conform additional Air Quality COCs with the recent San Diego Air Pollution Control District (SDAPCD) permit modifications.

The ACECP is a 527-megawatt (MW) natural gas-fired, thermal power plant operating in simple-cycle configuration. The facility is located in Carlsbad, San Diego County. It was certified by the CEC on July 30, 2015, and began commercial operation on December 12, 2018.

Description of Proposed Change

In the initial petition, the CECL requested approval to modify two Air Quality COCs: to modify the definition of turbine shutdown and to modify the permitted carbon monoxide (CO) startup mass emission limit (COC AQ-40). The proposed changes required CECL to pursue a revised federal Clean Air Act Permit (Title V) from SDAPCD. On September 26, 2023, the CECL filed a supplemental petition with the CEC to conform the CEC Air Quality COCs with the SDAPCD permit modification and additional minor changes related to equipment that was never built or conditions on construction of ACECP. SDAPCD issued a revised Title V Permit in March 2023.

CEC Staff Review and Conclusions

California Code of Regulations, title 20, section 1769 requires a project owner to petition the CEC for the approval of any change the project owner proposes to the project, design, operation, or performance requirements of a certified facility. A change in ownership or operational responsibility also requires approval through the post-certification amendment process. Consistent with these regulations, the CEC staff (staff)

has reviewed the petition, including the supplemental petition, for potential environmental effects, consistency with applicable laws, ordinances, regulations, and standards (LORS) and ACECP's conditions of certification.

Based on staff's analysis, staff has concluded that the proposed changes to the ACECP Decision, with the adoption of the new or modified Air Quality COCs, would not have a significant effect on the environment, or cause the project to fail to comply with any applicable LORS.

Staff recommends new and revised COCs for consistency with the new Title V permit issued by SDAQMD. With the addition of the new and revised COCs, the facility would continue to comply with applicable LORS. The proposed project changes would not result in significant impacts to the ambient air quality.

Staff concludes the proposed modifications of Air Quality COCs do not meet any of the criteria requiring the preparation of subsequent or supplement review pursuant to Public Resources Code section 21166 or California Code of Regulations, title 14, sections 15162 and 15163. Staff also concludes that none of the findings specified in California Code of Regulations, title 20, section 1748(b) are applicable to the proposed change.

As explained in Staff Analysis, consistent with California Code of Regulations, title 20, section 1769(a)(4), staff is bringing this petition to the Commission for approval. Staff intends to recommend approval of the petition at the November 13, 2024, Business Meeting of the CEC.

The CEC's project webpage, https://www.energy.ca.gov/powerplant/simple-cycle/carlsbad-energy-center, has a link to the petition and the Staff Analysis on the right side of the webpage in the box labeled "Compliance Proceeding." Click on the "Docket Log (07-AFC-06C)" option. If approved, the CEC's Order approving this petition will also be available from the same webpage.

This letter has been mailed to the CEC's list of interested parties and property owners of all parcels within 500 feet of any affected project linear facility and 1,000 feet of the power plant site. It has also been emailed to the ACECP subscription list. The list is an automated the CEC email system by which information about this facility is emailed to parties who have subscribed. To subscribe, go to the CEC's project webpage, cited above, scroll down the right side of the project's webpage to the box labeled "Subscribe," and provide the requested contact information.

Any person may comment on the Staff Analysis. Those who wish to submit comments on the analysis prior to the CEC Business Meeting may do so by using the CEC's electronic commenting feature. 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 may also be mailed or hand-delivered to:

California Energy Commission
Docket Unit, MS-4
Docket No. 07-AFC-06C
715 P Street
Sacramento, CA 95814-5512

Comments will also be accepted during the scheduled Business Meeting. All comments and materials filed with the Docket Unit will be added to the facility Docket Log and become publicly accessible on the CEC's project webpage

If you have questions about this notice, please contact Compliance Project Manager Anwar Ali, Compliance Monitoring and Enforcement Unit, Safety and Reliability Branch, at (916) 698-7498 or via e-mail at anwar.ali@energy.ca.gov.

For information on public participation, please contact the CEC's Office of Public Advisor, Energy Equity, and Tribal Affairs at (916) 957-7910 or email at publicadvisor@energy.ca.gov.

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

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AMENDED CARLSBAD ENERGY CENTER PROJECT (07-AFC-06C)
Petition to Amend Commission Decision
EXECUTIVE SUMMARY

Anwar Ali, Ph.D.

INTRODUCTION

On February 3, 2020, the Carlsbad Energy Center, LLC (CECL), the project owner, filed a Post-Certification Petition for Changes in Project Design, Operation or Performance and Amendments to the Commission Decision (petition) (TN 231945) with the California Energy Commission (CEC) requesting to amend the Amended Carlsbad Energy Center Project (ACECP) Final Commission Decision (Decision), pursuant to California Code of Regulations, title 20, section 1769. CECL requested to modify two Air Quality Conditions of Certification (COCs). On September 26, 2023, the CECL filed a supplemental petition (TN 252418) with the CEC in order to conform additional Air Quality COCs with SDAPCD permit modifications. The staff has completed its review of the petition[1] filed with the CEC.

The ACECP is a 527-megawatt (MW) natural gas-fired, thermal power plant operating in simple-cycle configuration. The facility is located in Carlsbad, San Diego County. It was certified by the CEC on July 30, 2015, and began commercial operation on December 12, 2018. The CEC approved the ACECP construction and operation of six General Electric (GE) LMS100-PA 632 MW combustion turbine generators (CTGs), however, only five CTGs with a total net output of approximately 527 MW were constructed.

DESCRIPTION OF PROPOSED CHANGE(S)

On February 3, 2020, CECL requested to modify two Air Quality Conditions of Certification (COCs):

1. Modification of the COC **AQ-40** (SDAPCD SA Condition 40) to allow for higher Carbon Monoxide (CO) emissions during turbine startup; and
2. Administrative changes to the COC **AQ-14** (SDAPCD SA Condition 14). The proposed changes pertained to the modification of the definition of turbine shutdown without changes in emissions.

However, the proposed modifications required revised Title V Operating Permit and Permits to Operate from SDAPCD. On September 26, 2023, CECL filed a supplemental petition with the CEC in order to conform the CEC Air Quality COCs with the SDAPCD

[1] For purposes of this document, the term "petition" includes the initial submittal and any supplemental petition submittals.

permit. For the petition filed with the CEC on September 23, 2023, the CECL requested the approval of the following additional modifications of the COCs:

i. Changes proposed by SDAPCD in response to the CECL's June 2021 Authority to Construct application.
ii. Changes proposed by SDAPCD for its permit conditions as reflected in the August 24, 2021 Startup Authorization and the Permits to Operate (PTOs) issued in March 2023.
iii. Administrative changes to COCs, which are related either to the equipment that was never built or information that pertained to the construction of ACECP.
iv. Proposed deletion of a COC that is not related to AQ.

To incorporate the new SDAPCD permit conditions for the proposed amendment into the Decision, staff proposes to:

- Modify Conditions of Certification: **AQ-1**, **AQ-2**, **AQ-7**, **AQ-9**, **AQ-12**, **AQ-14**, **AQ-15**, **AQ-17**, **AQ-23** to **AQ-36**, **AQ-39** to **AQ-52**, **AQ-54**, **AQ-61** to **AQ-63**, **AQ-66**, **AQ-67**, **AQ-69**, **AQ-70**, **AQ-73**, **AQ-74**, **AQ-76** to **AQ-78**, **AQ-80**, **AQ-81**, **AQ-83**, **AQ-84**, **AQ-87**, **AQ-88**, **AQ-94** to **AQ-96**, **AQ-100** and **AQ-101** to **AQ-105**.

- Add new Conditions of Certification: **AQ-13a**, **AQ-90a** and **AQ-90**.

- Delete Conditions of Certification: **AQ-SC9**, **AQ-SC-12, AQ-SC13, AQ-3**, **AQ-4**, **AQ-6**, **AQ-8**, **AQ-13**, **AQ-18**, **AQ-19**, **AQ-60**, **AQ-64**, **AQ-71**, **AQ-79**, **AQ-82**, **AQ-85**, **AQ-86**, **AQ-90**, **AQ-92**, **AQ-93**, and **AQ-106** to **AQ-121**.

The purpose of the CEC's review process is to assess whether the project changes proposed in the petition would have a significant impact on the environment or cause the project to not comply with applicable laws, ordinances, regulations, and standards (LORS) (Cal. Code Regs., tit. 20, § 1769).

NECESSITY FOR THE PROPOSED CHANGE(S)

The proposed revisions to applicable Air Quality COCs are necessary for consistency with the SDAPCD permit. The modifications proposed by the CEC staff to the Air Quality COCs would allow the project to continue to operate in compliance with the Decision, the SDAPCD permits requirements, and LORS.

CEC STAFF REVIEW AND CONCLUSION

Staff has reviewed the petition and all the information provided to staff related to the petition pursuant to California Code of Regulations, title 20, section 1769, for potential environmental effects and consistency with applicable LORS. Consistent with these

regulations, the CEC staff (staff) has reviewed the petition for potential environmental effects, consistency with applicable laws, ordinances, regulations, and standards (LORS) and ACECP's conditions of certification.

Staff concludes that none of the findings specified in California Code of Regulations, title 20, section 1748(b) are applicable to the proposed change. Staff also concludes the proposed modifications of Air Quality COCs do not meet any of the criteria requiring the preparation of subsequent or supplement review pursuant to Public Resources Code section 21166 or California Code of Regulations, title 14, sections 15162 and 15163.

Consistent with California Code of Regulations, title 20, section 1769(a)(4), staff is bringing this petition to the Commission for approval.

Staff has recommended new and revised COCs for consistency with the new Title V permit issued by SDAQMD. Staff concludes that with the adoption of new or modified Air Quality COCs, the proposed changes to the ACECP would not have a significant effect on the environment or cause the project to fail to comply with applicable LORS provided that the proposed changes as set forth herein are approved by the CEC. The proposed project changes would not result in significant impacts to the ambient air quality. Therefore, staff recommends the CEC approval of the petition and adoption of the staff's proposed new and modified COCs.

STAFF'S ASSESSMENT OF THE PROPOSED PETITION

Staff's assessment of the proposed changes considered the potential impacts to the population within the disadvantaged community, including the environmental justice population within a six-mile radius of the ACECP.

Staff reviewed the petitions for potential environmental effects and consistency with applicable LORS. Staff's conclusions for all technical and environmental areas are summarized in **Executive Summary Table 1.**

Executive Summary Table 1
Summary of Conclusions for all Technical and Environmental Areas

Technical Areas Reviewed	CEQA				Conforms with applicable LORS
	Potentially Significant Impact	Less Than Significant Impact with Mitigation (with Revised or New COCs)	Less Than Significant Impact (with or without Existing COCs)	No Impact	
Air Quality			X		X (With New COCs)
Biological Resources				X	X
Cultural Resources				X	X
Efficiency				X	
Facility Design					X
Geological and Paleontological Resources				X	X
Hazardous Materials Management				X	X
Land Use				X	X
Noise and Vibration				X	X
Public Health				X	X
Reliability					
Socioeconomics				X	
Soil and Water Resources				X	X
Traffic and Transportation				X	X
Transmission Line Safety and Nuisance				X	X
Transmission System Engineering					X
Visual Resources				X	X
Waste Management				X	X
Worker Safety and Fire Protection				X	X

Areas shown in gray are not subject to CEQA consideration or have no applicable LORS the project must comply with.

For the technical area of Air Quality, staff has proposed new and revised COCs. With the addition of the new and revised COCs, the project would continue to comply with applicable LORS. The proposed project changes would not result in significant impacts to the ambient air quality, public health or greenhouse gas emissions. The details of the proposed changes to COCs can be found under the Air Quality section in this Staff Analysis.

For the remaining environmental and technical areas, staff has determined that the modified project would continue to comply with applicable LORS and the project change would not result in any significant adverse environmental impacts or require a change to any other COCs.

The basis for each of staff's conclusions are provided below:

AIR QUALITY

For the changes to the Air Quality COCs in the Decision and consistent with California Code of Regulations, title 20, section 1769(a)(3)(B), staff has determined that the modified ACECP would increase an hourly emission limit. Staff recommends the addition of the new and modified Air Quality COCs for consistency with the new SDAPCD permit conditions. With the addition of the new and revised COCs, the facility would continue to comply with applicable LORS. The proposed project changes would not result in significant impacts to the ambient air quality. Please refer to the attached Air Quality analysis for additional information.

BIOLOGICAL RESOURCES

The proposed petition to amend the Air Quality COCs would not result in any physical changes to the footprint of any existing project features. There would no construction activities or ground disturbance associated with the proposed changes. Furthermore, while nitrogen oxides (NOx) emissions may be temporarily higher during tuning activities and deposition of NOx emissions may adversely affect sensitive species or habitat, any emissions would be minimal, and the petition would not increase the annual NOx emissions. As stated in the petition (Section D.2, page 27) (TN 252418) "No changes to the annual NOx emission limits for the five CTGs are proposed." Therefore, staff concludes that the proposed changes to the Air Quality COCs would not have an impact on biological resources.

CULTURAL RESOURCES

The proposed petition to amend the Air Quality COCs pertain to the operational profile aspects of the project. No groundwork is proposed, and no cultural resources were identified nearby that could be affected by the proposed changes. The implementation of the proposed changes, therefore, would not impact cultural resources.

EFFICIENCY

The proposed petition to amend the Air Quality COCs would not impact the power plant efficiency.

FACILITY DESIGN

The proposed petition to amend the Air Quality COCs would not require any construction activity; therefore, there would be no impacts to the facility's design.

GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

The proposed changes to amend the Air Quality COCs would not result in any physical changes to the footprints of any existing project features. There would be no construction activities or ground disturbance associated with the proposed petition. Therefore, staff concludes that the proposed changes to the Air Quality COCs would not have any impact on geological or paleontological resources.

HAZARDOUS MATERIALS MANAGEMENT

The proposed petition to amend the Air Quality COCs would not require any construction activity or physical modifications onsite. Therefore, there would be no impacts on hazardous materials management.

LAND USE

The proposed changes to the Air Quality COCs would not result in any physical changes onsite. Therefore, staff concludes that the changes in the Air Quality COCs would not have an impact on land use.

NOISE AND VIBRATION

The proposed petition to amend the Air Quality COCs would not require any construction activity or physical modification to the project. Therefore, there would be no impact on noise and vibration.

PUBLIC HEALTH

The proposed petition to amend the Air Quality COCs would not affect the operating profile or natural gas usage of the combustion turbine generators beyond what has been evaluated in 2015 commission decision (CEC2015b); thus, they will not change the facility toxic air contaminant emissions. Staff concludes that there would be no changes to the health risk assessment, and therefore, no impacts to public health.

RELIABILITY

This proposed petition to amend the Air Quality COCs would not result in any changes to project reliability. Therefore, it would not impact the reliability of the power plant.

SOCIOECONOMICS

The proposed changes to the Air Quality COCs would not result in any physical changes onsite. Therefore, staff concludes that the proposed changes would not have any impact on socioeconomics.

SOIL AND WATER

The proposed petition to amend the Air Quality COCs would not result in any physical changes onsite. Therefore, staff concludes that the proposed changes would not have any impact on soil and water resources.

TRAFFIC AND TRANSPORTATION

The proposed petition to amend the Air Quality COCs would not result in any physical changes onsite. Therefore, staff concludes that the proposed changes in the Air Quality COCs would not have any impact on the traffic and transportation aspects of the project.

TRANSMISSION LINE SAFETY AND NUISANCE

The proposed petition to amend the Air Quality COCs would not result in any changes on the transmission line. Therefore, staff concludes that there would be no impact on transmission line safety and nuisance.

TRANSMISSION SYSTEM ENGINEERING

The proposed changes to the Air Quality COCs do not include activities affecting the transmission lines and would not impact the transmission grid. Therefore, the proposed changes would not have any impact on transmission system engineering.

VISUAL RESOURCES

The proposed changes to the Air Quality COCs would not result in any physical changes onsite. Therefore, staff concludes that the changes in the Air Quality COCs would not have any impact on visual resources.

WASTE MANAGEMENT

The proposed petition to amend the Air Quality COCs would not result in any construction activities or physical changes onsite. The proposed changes will not affect the level of waste production from the facility. Therefore, staff concludes that the changes in the Air Quality COCs would not have any impact on waste management.

WORKER SAFETY AND FIRE PROTECTION

The proposed petition to amend the Air Quality COCs would not require any construction activity or physical modifications to the site. Therefore, there would be no impact on worker safety and fire protection.

ENVIRONMENTAL JUSTICE

CALENVIROSCREEN

Staff reviewed CalEnviroScreen 4.0 data to determine whether the United States census tract for the location of the ACECP is identified as a disadvantaged community. This science-based mapping tool is used by the California Environmental Protection Agency (CalEPA) to identify disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria pursuant to Health and Safety Code section 39711, as enacted by Senate Bill 535 (De León, Chapter 830, Statutes of 2012). The CalEnviroScreen 4.0 overall percentile score for this census tract is 9.25 and, thus, it is identified as a disadvantaged community.

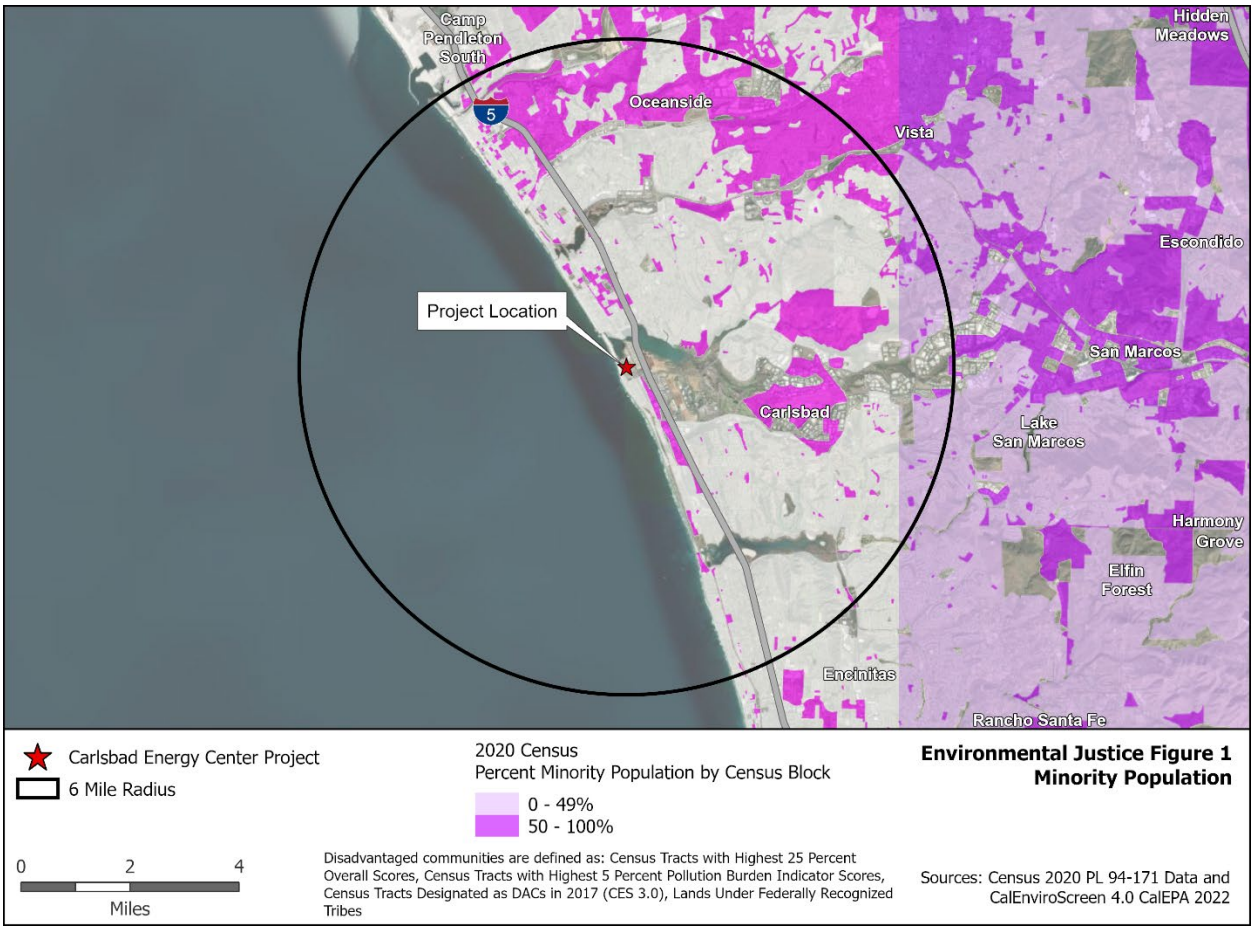
Environmental Justice Figure 1 shows 2020 census blocks in the six-mile radius of the ACECP with a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States 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.

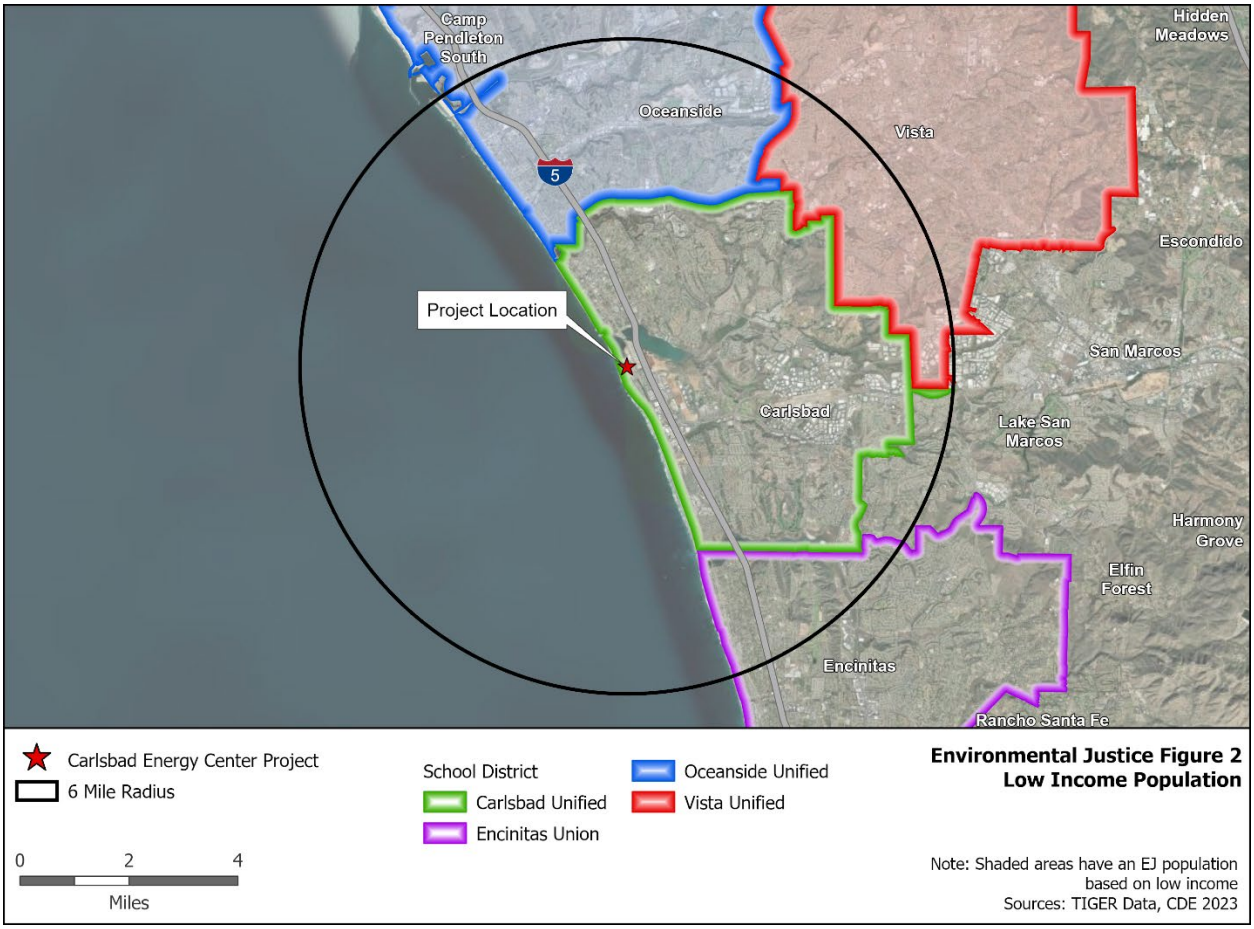
Based on California Department of Education data in the **Environmental Justice Table 1**, staff concluded that the percentage of those living in the Vista Unified and Oceanside Unified school districts (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography. Thus, it 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 – Table 1
Low Income Data within the Project Area

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Carlsbad Unified	10,981	2,328	21.2%
Encinitas Union	4,648	836	18.0%
Oceanside Unified	18,277	12,248	67.0%
Vista Unified	21,533	13,528	62.8%
REFERENCE GEOGRAPHY			
San Diego County	476,760	243,349	51.0%
Source: CDE 2023. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2022-2023, http://dq.cde.ca.gov/dataquest/.			

Environmental Justice – Figure 2 shows where the boundaries of the school district are in relation to the six-mile radius around the ACECP site.




Camp Pendleton South
Oceanside
Vista
Hidden Meadows
Escondido
5
Project Location
San Marcos
Carlsbad
Lake San Marcos
Harmony Grove
Elfin Forest
Encinitas
Rancho Santa Fe
Carlsbad Energy Center Project
6 Mile Radius
School District
Carlsbad Unified
Encinitas Union
Oceanside Unified
Vista Unified
0
2
4
Miles
Environmental Justice Figure 2
Low Income Population
Note: Shaded areas have an EJ population based on low income
Sources: TIGER Data, CDE 2023

Environmental Justice Conclusions

In the Air Quality analysis, staff concludes that impacts would be less than significant and there are no air quality, public health, or greenhouse gas environmental justice issues related to the evaluated facility modifications. No minority or low-income populations would be significantly or adversely impacted by the proposed changes in air quality. Impacts on EJ population represented in **Figures 1** and **2**, and **Table 2** would be less than significant.

In the Air Quality analysis, staff proposes new and amended COCs to comply with applicable LORS. Staff has determined that by adopting the proposed COCs, the proposed change would not cause significant impacts for any population in the project's six-mile radius, including the EJ population. The impacts to the EJ population are less than significant.

CEC STAFF RECOMMENDATIONS AND CONCLUSIONS

Staff has reviewed the petition and all the information provided to staff related to the petition pursuant to California Code of Regulations, title 20, section 1769, for potential environmental effects and consistency with applicable LORS, and the ACECP's conditions of certification. Because the petition falls within the requirements of subdivision (a)(4) of section 1769, staff is bringing the petition to the Commission for approval. None of the findings specified in California Code of Regulations, title 20, section 1748(b) are applicable to the proposed change. Staff concludes the proposed modifications of Air Quality COCs do not meet any of the criteria requiring the preparation of subsequent or supplement review pursuant to Public Resources Code section 21166 or California Code of Regulations, title 14, sections 15162 and 15163.

For the changes to the Air Quality COCs in the Decision and consistent with California Code of Regulations, title 20, section 1769(a)(3)(B), staff has determined that the modified ACECP would increase an hourly emission limit. Staff concludes that, with regard to the proposed changes to the ACECP: (1) there is no possibility that the changes may have a significant effect on the environment, (2) the changes would not cause the project to fail to comply with any applicable LORS, and (3) the changes would not require a change to, or deletion of, any conditions of certification as adopted in the Decision or previous amendments to that Decision, except for those related to the technical area of Air Quality.

With the adoption of the new and modified air quality COCs for consistency with the new SDAPCD permit conditions, the proposed project changes would not result in significant impacts to the ambient air quality. Staff recommends the CEC approval of the petition and adoption of the staff's proposed new and modified COCs.

Carlsbad Energy Center Project (07-AFC-06C)

Petition to Amend Air Quality Conditions of Certification

AIR QUALITY, PUBLIC HEALTH, AND GREENHOUSE GASES

Tao Jiang, Ph.D., P.E.

INTRODUCTION AND SUMMARY

On February 5, 2020, CECL filed a Petition to Amend (PTA) (CECL 2020) with the CEC requesting to revise existing Carlsbad Energy Center Project (CECP) Air Quality Conditions of Certification (COCs) AQ-14 to modify the turbine shutdown condition definition and AQ-40 to modify the permitted carbon monoxide (CO) startup mass emission limit. Based on staff review, it was determined that additional San Diego County Air Pollution Control District (SDAPCD) permits were necessary prior to the Energy Commission acting on the February 2020 PTA. The final Title V Operating Permit and Permits to Operate (PTOs) were initially issued in February 2023 and then resent on March 14, 2023, after a few minor corrections were made (SDAPCD 2023). On September 26, 2023, CECL filed the Supplemental PTA with CEC to update the PTA filed in February 2020 and to conform the Air Quality COCs with recent permit modifications made by SDAPCD in March 2023 (CECL 2023).

To incorporate the new SDAPCD permit conditions for the proposed amendment into the CEC Decision, staff proposes to:

- Modify Conditions of Certification: **AQ-1**, **AQ-2**, **AQ-7**, **AQ-9**, **AQ-12**, **AQ-14**, **AQ-15**, **AQ-17**, **AQ-23** to **AQ-36**, **AQ-39** to **AQ-52**, **AQ-54**, **AQ-61** to **AQ-63**, **AQ-66**, **AQ-67**, **AQ-69**, **AQ-70**, **AQ-73**, **AQ-74**, **AQ-76** to **AQ-78**, **AQ-80**, **AQ-81**, **AQ-83**, **AQ-84**, **AQ-87**, **AQ-88**, **AQ-94** to **AQ-96**, **AQ-100** and **AQ-101** to **AQ-105**.
- Add Conditions of Certification: **AQ-13a**, **AQ-90a** and **AQ-90**
- Delete Conditions of Certification: **AQ-SC9**, **AQ-SC12, AQ-SC13, AQ-3**, **AQ-4**, **AQ-6**, **AQ-8**, **AQ-13**, **AQ-18**, **AQ-19**, **AQ-60**, **AQ-64**, **AQ-71**, **AQ-79**, **AQ-82**, **AQ-85**, **AQ-86**, **AQ-90**, **AQ-92**, **AQ-93**, and **AQ-106** to **AQ-121**.

The proposed project changes only affect the Air Quality COCs. There is no ground disturbance or other physical change to the project that would affect any other resource area.

In this analysis, staff evaluated the potential for air quality impacts from these proposed modifications and determined impacts of the proposed changes would be less than significant.

BACKGROUND

The CEC approved the original CECP in May 2012 (CEC 2012) and the ACECP in July 2015 (CEC 2015b). The Amended CECP was approved for the construction and operation of six General Electric (GE) LMS100-PA natural gas-fired combustion turbine generators (CTGs) operating in simple-cycle configuration. Only five CTGs with a total net output capacity of approximately 527 megawatts (MW) were constructed. Construction of five CTGs was completed sequentially with the fifth unit completed in September 2018. The CTGs were commissioned from May to October 2018 and the site-wide declaration of commercial online started in December 2018. The SDAPCD issued a Startup Authorization (SA) on May 1, 2019, which replicates the permit conditions in the Permit to Construct (PTC) and serves as the draft Permit to Operate (PTO) while the air district completes the PTO. The SA was subsequently extended several times until the final PTOs were issued in March 2023.

Starting in July 2019, the new CTGs at the facility were found to occasionally exceed the permitted limits for CO emissions during startup under ambient conditions with elevated temperature and/or humidity. Due to the inability to consistently meet the CO emission limits in the SDAPCD SA, CECL obtained an Emergency Variance from SDAPCD. CECL subsequently obtained an Interim Variance, which was converted to Regular Variance through the approval of the SDAPCD Hearing Board on September 19, 2019. The Regular Variance initially included Units 6, 8, 9, and 10 and was effective September 19, 2019, through March 1, 2020. Unit 7 was added to the variance later when it also exceeded the CO limit during startup. The Regular Variance required that CECL pursue a permit modification with the SDAPCD to increase the CO limit.

CECL filed an Authority to Construct (ATC) with the SDAPCD on September 20, 2019, and then an Amendment Petition with the CEC on February 5, 2020. During the review process, SDAPCD determined that changes to additional permit conditions beyond what CECL requested were needed. In addition, a complaint related to the CECP operating outside of restricted hours specified in AQ-SC9 was filed with the CEC in April 2021.

On August 25, 2022, the SDAPCD issued a preliminary decision to issue an amended operating permit under Title V of the federal Clean Air Act (Title V) for the CECP, which references draft PTOs for the five CTGs and one fire-water pump engine that were installed at the power plant. Revisions to the draft Title V permit were made in response to comments filed in the public comment period and the revised draft permit was issued on November 25, 2022. The final Title V Operating Permit and PTOs were initially issued in February 2023 and then resent on March 14, 2023, after a few minor corrections were made.

Criteria Pollutants

The United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) for several pollutants based on their adverse health effects. The U.S. EPA has set National Ambient Air Quality Standard (NAAQS) for ozone (O_3), carbon monoxide (CO), nitrogen

dioxide (NO_2), particulate matter of 10 micrometers or less in diameter (PM10) and particulate matter of 2.5 micrometers and smaller in diameter (PM2.5), sulfur dioxide (SO_2), and lead (Pb). Primary standards were set to protect public health; secondary standards were set to protect public welfare against visibility impairment, damage to animals, crops, vegetation, and buildings. In addition, CARB has established California Ambient Air Quality Standard (CAAQS) for these pollutants, as well as for sulfate (SO_4), visibility reducing particles, hydrogen sulfide (H_2S), and vinyl chloride. CAAQS are generally stricter than NAAQS. The standards currently in effect in California and relevant to the project are shown in **Air Quality Table 1**.

The air quality standards, shown in **Air Quality Table 1**, are designed and established to be health protective. Air pollution can cause known health problems, especially for children, the elderly, and people with heart or lung problems. Healthy adults may experience symptoms during periods of intense exercise. Pollutants can also cause damage to vegetation, animals, and property.

AIR QUALITY TABLE 1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards [a]	National Standards [b]	
			Primary	Secondary
O_3	1-hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
PM10	24-hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Mean	20 µg/m^3	—	
PM2.5	24-hour	—	35 µg/m^3	Same as Primary Standard
	Annual Mean	12 µg/m^3	12.0 µg/m^3 [c]	15.0 µg/m^3
CO	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
NO_2	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3) [d]	—
	Annual Mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as Primary Standard
SO_2 [e]	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [e]	—
	Annual Mean	—	0.030 ppm (for certain areas) [e]	—
H_2S	1-hour	0.03 ppm (42 µg/m^3)	—	—

Notes: ppm=parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; "—" = no standard

[a] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards (other than O_3, PM, NO_2 [see note d below], and those based on annual arithmetic mean) are not to be exceeded more than once a year. The 8-hour O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. The 24-hour PM10 standard of 150 µg/m^3 is not to be exceeded more than once per year on average over a 3-year period. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentile concentration is less than or equal to 35 µg/m^3.

[c] On March 6, 2024, the U.S. EPA published a final rule to strengthen the annual PM2.5 NAAQS from 12.0 µg/m^3 to 9.0 µg/m^3 (U.S. EPA 2024b).

[d] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.

[e] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The previous SO_2 standards (24-hour and annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is a U.S. EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Sources: CARB 2024a, U.S. EPA 2024a, U.S. EPA 2024b

Attainment Status

Areas that meet the AAQS, based upon air monitoring measurements made by either the local air district or CARB, are classified as "attainment areas," and areas that have monitoring data that exceed AAQS are classified as "nonattainment areas" (Health and Saf. Code, § 39608). If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified."

The project site would be in the San Diego Air Basin (SDAB), under the jurisdiction of SDAPCD. **Air Quality Table 2** summarizes attainment status for the relevant criteria pollutants for the project area in the SDAB with both NAAQS and CAAQS.

Air Quality Table 2
ATTAINMENT STATUS FOR PROJECT AREA IN SDAB

Criteria Pollutant	Federal Designation	State Designation
Ozone (8-Hour)	Nonattainment	Nonattainment
Ozone (1-Hour)	--	Nonattainment
Carbon Monoxide	Attainment	Attainment
PM10	Unclassified	Nonattainment
PM2.5	Attainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment

Sources: CARB 2024b, SDAPCD 2024.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

There have been some changes to air quality laws, ordinances, regulations and standards (LORS) applicable to the project since the in the Energy Commission decision for CECP (CEC 2012) and Carlsbad Amendments Final Commission Decision (CEC2015). The following federal, state and local LORS shown below in **Air Quality Table 3** pertain to the control and mitigation of air quality, public health and greenhouse gas impacts and are applicable to the project. Air Quality Table 1 in this analysis is not intended to be comprehensive of all LORS. Staff reviewed the petition for consistency with these LORS. The requested changes would enable the facility to continue to comply with these LORS.

Air Quality Table 3
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable LORS	Description
Federal	
40 CFR 60 Subpart KKKK	New Source Performance Standard for Stationary Combustion Turbines: This subpart applies to all stationary combustion turbines with heat input in excess of 10 MMBtu per hour based on high heat value (HHV). The pollutants regulated by this subpart are NOx and sulfur dioxide (SO_2). The rule was revised in 2020 (85 Fed.Reg.

	63402) has no applicable requirements for CO emissions. The proposed change to the definition of shutdown does not impact actual or potential NOx emissions during startup, shutdown, or normal operations. This rule has no applicable requirements for CO emissions. Therefore, the proposed changes of conditions do not affect compliance with Subpart KKKK.
40 CFR 60 Subpart TTTT	Green House Gas Emissions for Electric Utility Generating Units. This subpart establishes emission standards and compliance schedules for the control of GHG emissions from an affected Electrical Generating Unit (EGU). The proposed changes do not affect GHG emissions and therefore do not affect the compliance with this subpart. This current facility is no longer a major source after removing the boilers, and Subpart YYYY is no longer applicable.
40 CFR 63 Subpart YYYY	National Emission Standards for Hazardous Air Pollutants (NESHAPs). This rule applies to combustion turbines installed at major sources of hazardous air pollutants (HAPs).
40 CFR Part 72	Acid Rain Program. This program is designed to reduce emissions of compounds that form acid rain, including NOx and SOx. Compliance is accomplished through a market-based trading program. Permitting and enforcement are delegated to SDAPCD. The proposed changes of conditions do not affect the compliance with this subpart.
40 CFR Part 75	Continuous Emissions Monitoring. This part establishes the minimum requirements for using a Continuous Emissions Monitoring System (CEMS) for demonstrating compliance with the Acid Rain Program provisions. The proposed changes of conditions do not affect the compliance with this subpart.
State	
Health and Safety Code (HSC) Section 40910-40930	Permitting of source needs to be consistent with California Air Resources Board (ARB) approved Clean Air Plans. The proposed changes of conditions do not affect the compliance with these sections.
HSC Section 41700	Prohibits emission of air contaminants that would cause nuisance, detriment, annoyance, or injury or endanger the comfort, repose, health or safety of persons or the public. The proposed changes of conditions do not affect the compliance with this statute.
California Code of Regulations, (CCR), title 17, Section 93115	Airborne Toxics Control Measure for Stationary Compression Ignition Engines. Limits the types of fuels allowed, establishes maximum emission rates, and establishes recordkeeping requirements. The proposed changes of conditions do not affect the compliance with this regulation.
Local – San Diego Air Pollution Control District (SDAPCD) Rule and Regulations	
Regulation II – Permits, Rule 10-Rule 27.1	These rules sets forth the regulatory framework of the application for, and issuance of, construction and operation permits for new, altered, and existing equipment. Included in these requirements are the federally delegated requirements for New Source Review, Title V Permits, and the Acid Rain Program. Regulation II Rule 20.1 and 20.3 establish the pre-construction review requirements for new, modified or relocated facilities, in conformance with the federal New Source Review regulation to ensure that these facilities do not interfere with progress in

	attainment of the national ambient air quality standards and that future economic growth in San Diego County is not unnecessarily restricted. These rules also establish Best Available Control Technology (BACT) and emission offset requirements. The proposed changes of conditions do not affect the compliance with these rules.
Regulation IV – Prohibitions, Rule 50-Rule 71	These rules set forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, and fuel contaminants. These rules also specifies additional performance standards for stationary gas turbines and other internal combustion engines. The proposed changes of conditions do not affect the compliance with these is rules.
Regulation X – National Standards of Performance (NSPS) for New Stationary Sources	Regulation X incorporates provisions of 40 CFR Part 60, Chapter I, and is applicable to all new, modified, or reconstructed sources of air pollution. Sections of this federal regulation apply to stationary gas turbines (40 CFR Part 60 Subpart KKKK) and emergency generator and fire pump engines (40 CFR Part 60 Subpart IIII) as described above in the federal LORS description. Subpart KKKK establishes limits of NO_2 and SO_2 emissions from the facility as well as monitoring and test method requirements. Subpart IIII establishes emission standards for compression ignition internal combustion engines. This regulation was revised in 2021. SDAPCD is delegated enforcement authority for these NSPS through their authority to issue and enforce the Title V permit for this existing Title V source. The proposed changes of conditions do not affect the compliance with this regulation.
Regulation XI – National Emission Standards for Hazardous Air Pollutants	Regulation XI adopts federal standards for hazardous air pollutants (40 CFR Section 63) by reference. No such standards presently exist that would apply to the project. The proposed changes of conditions do not affect the compliance with this regulation.
Regulation XII – Toxic Air Contaminants – New Source Review, Rule 1200- Rule 1210	Regulation XII, Rule 1200, establishes the pre-construction review requirements for new, modified, or relocated sources of toxic air contaminants, including requirements for Toxics Best Available Control Technology (T-BACT) if the incremental project risk exceeds rule triggers. The proposed changes of conditions do not affect the compliance with this regulation.
Regulation XIV – Title V Operating Permits, Rule 1401- Rule 1425.	Regulation XIV, Rule 1401 defines the permit application and issuance as well as compliance requirements associated with the Title V federal permit program. Any new source which qualifies as a Title V facility must obtain a Title V permit within 12 months of starting operation. Rule 1401 was revised in 2021. Regulation II, Rule 1412 defines the requirements for the Acid Rain Program, including the requirement for a subject facility to obtain emission allowances for SOx emissions as well as monitoring SOx, NOx, and carbon dioxide (CO_2) emissions from the facility. The proposed changes of conditions do not affect the compliance with this regulation.

ANALYSIS

Air Quality

CO Startup Emission Limits

The current **AQ-40** requires the CO startup emissions to be under 7.4 lbs/event. The CECL proposed to modify **AQ-40** to increase the CO startup emissions limit to 17.3 lbs/event. The requested change is necessary because the CTGs at the facility occasionally exceeded the current CO emission limits during startup under ambient conditions which appear to be elevated in temperature and/or humidity and to conform with SDAPCD permit modifications.

The current CO emission limit for startup was based on the manufacturer's estimates for the equipment at ambient temperature and relative humidity of 60.3°F and 79.1%, respectively, and was not based on an SDAPCD rule or air quality standard, or Best Available Control Technology (BACT) requirements. CECL conducted troubleshooting to improve operating conditions and reliability during startups in an attempt to achieve as efficient a startup as reasonably possible to minimize CO emissions. Based on the testing done, CECL determined that the CTGs are incapable of meeting the current CO emission limits consistently under expected operating conditions and, therefore, sought modification of condition **AQ-40**. The requested change in the CO startup emission limits is necessary to reflect what the CTGs can achieve in practice and under ambient conditions. The modeling results described below indicate that with proposed change in CO startup emission the operating impacts are not expected to exceed any air quality CO emission standard. The proposed change to **AQ-40** only affects CO emissions during startup. Other conditions regulating CO emissions are not proposed to be revised.

The proposed startup emissions limit of 17.3 lbs/event is based on a review of other air permits for similar GE LMS100-PA installations at Pio Pico, CPV Sentinel and Walnut Creek projects comparing multiple different operating scenarios. The multiple operating scenarios that were evaluated to determine the maximum hourly emissions included:

1. The CTG starts up (25-minute duration), operates at the maximum steady-stat emission level for 22 minutes, and then shuts down (up to 13-minute duration);

2. The CTG starts up (25-minute duration), shuts down (up to 13-minute duration), and initiates a second startup (only completes 22 minutes of the 25-minute startup); and

3. The CTG shuts down (up to 13-minute duration), starts up (25-minute duration), runs at the maximum load for 9 minutes, then completes a shutdown (up to 13-minute duration).

The 1-hour CO emissions for the three scenarios presented above are summarized in **Air Quality Table 4**. The scenario 2 was selected for further analysis since it was determined to have the highest CO emissions.

Air Quality Table 4

CECP Maximum Hourly CO Emission Scenarios for Startup

Scenario		CO (lbs/hr) (per turbine)
1	Start + 22 minutes Normal + Shutdown	24.54
2	Start + Shutdown + Partial Start (22 minutes)	37.05
3	Shutdown + Start + 9 minutes Normal + Shutdown	26.02

Maximum daily emissions are based on four startups and four shutdowns during a 24-hour period, with the balance of the day based on CTG emissions at 100% operating load with no evaporative cooling. Maximum annual emissions are based on 2,700 hours per year of operation per CTG, with 400 startups and 400 shutdowns per year. Non-startup, non-shutdown hours are based on the maximum hourly emission rate at annual average temperature and 100% operating load with no evaporative cooling (CO = 8.83 lbs/hr). The maximum hourly, daily and annual CO emissions are summarized in **Air Quality Table 4** and compared to the emissions in the previous final staff analysis (FSA) (CEC 2015a). As shown in **Air Quality Table 5**, the proposed change to **AQ-40** may result in an increase in the maximum hourly, daily and annual CO emission for a single turbine. However, the previous FSA includes six turbines while the proposed amendment only includes five turbines as one turbine has never been built. Therefore, only the maximum hourly CO emission increases while the daily and annual CO emission both decrease when all turbines combined.

Air Quality Table 5

Maximum Hourly, Daily, and Annual CO Emissions

Units in Operation	CO (lbs/hr)	CO (lbs/day)	CO (tons/year)
One CTG (Proposed Amendment)	37.05	274.75	15.06
All CTGs (Proposed Amendment)	185.25	1373.75	75.3
One CTG (2015 FSA)	17.31	232.8	12.96
All CTGs (2015 FSA)	103.86	1396.8	77.8
Net Change (One CTG)	+19.74	+41.95	+2.1
Net Change (All CTGs)	+81.39	-23.05	-2.5

Source: CECL 2023

To assess this modification to the CO emissions during startup, AERMOD was used to determine maximum 1-hour and 8-hour CO concentrations. The modeled CO concentrations were added to the CO background levels. Background concentrations are

determined from the measured values at the surrounding representative air monitoring sties.

There are two CO monitoring stations in San Diego County, El Cajon and Rancho Carmel Drive stations. **Air Quality Table 6** presents the maximum 1-hour and 8-hour background concentrations from these two stations. For a conservative analysis, staff uses the highest background CO concentrations from 2020 to 2022 to represent the baseline condition at the project site.

Air Quality Table 6

Staff Recommended CO Background Concentrations (ppm, µg/m3)

Pollutant	Averaging Period	Background Concentration (ppm)			Maximum Background Concentration		Limiting Standard (µg/m3)	Percent of Standard
		2020	2021	2022	ppm	µg/m3		
CO	1 Hour	3.30	3.00	2.20	3.30	3,843	23,000	17%
	8 Hour	1.70	1.80	1.20	1.80	2,096	10,000	21%

Source: U.S.EPA 2024c and independent staff analysis.

The air quality impact analysis used the same methodology, including meteorological data, rural dispersion parameters, receptors, and buildings used in the Energy Commission decision for CECP (CEC 2012) and Carlsbad Amendments Final Commission Decision (CEC2015b). Most of the modeled sources remained the same except CTG Unit 11 and the emergency generator, which were not constructed. The worst-case 1-hour assumed a CTG startup (25 minute), a shutdown (13 minute), and initiation of a second startup (only completes 22 minutes of the 25-minute startup). All five CTGs were assumed to also have these emissions in the same hour for the modeling analysis. In keeping with the analysis done in the 2015 Amendments Final Commission Decision (CEC2015b), the 8-hour modeling used the same CTG startup emissions, even though this is very unlikely and extremely conservative. In addition to the five CTGs, emissions from the fire water pump (FWP) testing at full load for one hour were included in the 1-hour CO modeling, and for the 8-hour averaging period, FWP engine emissions for one hour of operation were averaged over the period. The FWP emissions and stack parameters are the same as used in 2015 Amendments Final Commission Decision (CEC2015b).

The modeling results in **Air Quality Table 7** indicate the proposed change in CO startup emissions limits is small and not expected to cause any exceedance of CO air quality standards. Additionally, the project is located in the area which is attainment for state and federal CO standards. The proposed change would not cause a significant air quality impact for CO.

Air Quality Table 7

Amended CECP CO Impacts (µg/m3)

Pollutant	Averaging Period	Project Impact (µg/m3)	Background (µg/m3)	Total Impact (µg/m3)	Limiting Standard (µg/m3)	Percent of Standard
CO	**1 Hour**	138.8	3,843	3,982	23,000	17%
	8 Hour	45.2	2,096	2,141	10,000	21%

Source: CECL 2023 and independent staff analysis.

Shutdown Definition

The current COC **AQ-14** requires an accounting of emissions for a full 13 minutes prior to loss of flame. This amount of time was initially defined in the 2015 Amendments Final Commission Decision (CEC 2015b) to allow for an 11-minute cooldown period following the initial couple of minutes of a shutdown during normal operations of the turbines. However, if the shutdown is less than 13 minutes, current COC **AQ-14** requires the back calculation of the NOx emissions from the time gas flow ceases to the turbine. The back-calculation process in instances where an emergency stop (such as gas system over-pressurization) occurs includes as much as 10 minutes of normal operating minutes (likely full load emissions). Similarly, in the event of an aborted startup (such as synchronization breaker malfunction), the shutdown event emissions might be recorded as including approximately 10 minutes of startup emissions. In both cases, attributing normal operations or startup emissions to the shutdown limit of 0.6 lbs/event for NOx in COC **AQ-41** led to exceedances of the calculated shutdown limits when the shutdown lasts less than 13 minutes. The exceedances were only accounting errors and there were no actual emissions in excess of the emission limits. Seven of these events occurred (five abrupt shutdowns and two aborted startups) in the 14 months after the start of commissioning. These events were reported to both SDAPCD and CEC and were resolved. Since this is merely an accounting problem and there were no actual excess emissions, the project owner proposed a change in the shutdown definition in the SDAPCD permit to prevent this incorrect accounting of normal operating or startup emissions with the shutdown emissions.

The proposed modification related to the definition of shutdown and how NOx is calculated does not affect actual NOx, CO, or VOC emissions limits. No changes were proposed to the total hourly and annual NOx and CO emissions which include all operating conditions, i.e., startups, shutdowns, and tuning, as well as normal operations. Therefore, there is no adverse air quality impact related to the 1-hour NO2 and 1- and 8-hour CO ambient air quality standards (AAQS) due to the proposed modification.

Although CECL proposed only revising the shutdown definition in **AQ-14**, the SDAPCD made changes to additional conditions to ensure that emissions associated with startup would not be included in the shutdown emissions and similarly, that emissions associated with normal operations beyond what would occur in a normal shutdown hour

would not occur. To incorporate the related changes in district permit, staff proposes revisions to **AQ-15** to revise the definition of startup to exclude shutdown, and to **AQ-27**, **AQ-28**, **AQ-29**, **AQ-39** and **AQ-41** to implement changes which ensure that the change in shutdown definition could not lead to emissions increases.

Tuning

The CECL proposed periodic tuning of the CTGs to ensure the emissions control systems on the CTGs are working optimally. Tuning may include, but not be limited to, activities associated with adjusting, optimizing, rebalancing, and otherwise calibrating emissions control equipment and equipment components to ensure proper performance specification during normal operations. Gas turbine tuning may consist of one to several short periods to assess the turbine and emission control systems operations. Annual tuning for all five CTGs combined is expected to be completed within 65 hours.

NOx and CO emissions may be temporarily higher during tuning activities than during normal operations because the SCR and oxidation catalyst system may not be fully optimized. The maximum hourly emissions estimated for tuning are 49.3 lbs/hr for NOx and 135 lbs/hr for CO, which would be less than the uncontrolled hourly emissions in existing conditions **AQ-42** and **AQ-43** which are 90 lbs/hr for NOx and 248 lbs/hr for CO**.** A new **AQ-45** was added which defines the hourly and daily NOx and CO emission limits when tuning occurs.

The proposed change to include tuning events would not result in an actual or potential emissions increase and thus there would be no adverse air quality impact related to the short-term (1- and 8-hour) NO_2 and CO AAQS over what was analyzed for the 2015 Amendments Final Commission Decision (CEC2015b). In addition, there would be no changes to the maximum hourly emissions for VOC, SOx, PM10, or PM2.5 and no changes to the daily or annual emissions. Therefore, there would be no significant air quality impacts related to the proposed tuning operation.

In-Kind Replacement

CECL has conducted identical replacement of GE LMS100PA SuperCore parts during the SuperCore repairs in 2018, 2019 and 2021. Replacements of SuperCore parts requires notification to SDAPCD and an application to approve repairs to the SDAPCD. CECL proposed the addition of a new condition (**AQ-2**) which requires notification to CEC after replacement of SuperCore parts.

An identical or in-kind replacement for equipment, repairs and maintenance is not expected to increase emissions or require permit changes. Therefore, this change is not expected to have any air quality impact.

VOC/CO Surrogate Relationship and Source Test Compliance Demonstration

The current **AQ-29** specifies the VOC emission limit and uses a SDAPCD approved VOC/CO surrogate relationship to calculate VOC emissions. In May 2022, SDAPCD issued a Notice of Violation (NOV) for an exceedance of the 4 ppm CO emissions limit that occurred in one gas turbine during transient conditions. Because the CO 1-hour emission limit is 4 ppm and the VOC limit is 2 ppm, a VOC exceedance was also presumed based on a presumed CO to VOC relationship of 2 to 1. However, source test data collected by CECL demonstrated that the CO to VOC concentrations do not have a consistent relationship and are highly variable with a range from 40:1 to 3.3:1. Based on this information, the SDAPCD agreed that an exceedance of the VOC limit had not occurred and that a relationship between the VOC and CO emissions does not exist at this facility. Therefore, the CECL proposed to revise **AQ-29** to reference source test data rather than a VOC to CO relationship based on the CO data from the continuous emissions monitoring system (CEMS) and delete **AQ-79** which required a protocol for establishing the VOC to CO surrogate relationship.

The CECL also proposed modifications to **AQ-35**, **AQ-39**, and **AQ-40** to clarify that compliance would be based on the arithmetic average of three tests. A revision to **AQ-63** was proposed to clarify the RATA compliance requirements for the CO CEMS. In addition, several COCs that were only applicable to the initial source tests of the units have been deleted, keeping the conditions that require on-going source tests. These proposed changes will not lead to any emission increase and therefore have no air quality impacts.

Turbine Operation Hour

On January 8, 2021, a complaint was filed to the CEC related to the project operating outside of its COC **AQ-SC9** restricted operating hours of 06:00 am to midnight (CEC 2021a). On April 21, 2021, staff docketed a response to the complaint letter (CEC 2021b) and on September 20, 2022, docketed an additional response to answer follow up questions received via email (CEC 2021c).

The CEMS data showed instances where the turbines were starting up just before 6:00 am, and in some cases were shutting down just after midnight. **AQ-SC9** provides that "the gas turbines shall only be operated between the military time hours of 0600 to

2400, except in the event of a California Independent System Operator declared emergency." This COC was not implemented to mitigate air quality impacts or for compliance with any air quality related LORS. Instead, **AQ-SC9** drafted to include language from a 2014 settlement agreement between the City of Carlsbad, San Diego Gas & Electric (SDG&E) and CECL. However, the language from the settlement agreement is slightly different and provides as follows: "CECP will not operate between the hours of midnight and 6 am, except to the extent reasonably required for reliability-related purposes or as otherwise required by the ISO Tariff." **AQ-SC9** omitted the language "to the extent reasonably required for reliability-related purposes or as otherwise required by the ISO Tariff".

To meet a California Independent System Operator (ISO) scheduled dispatch at 0600 hours (6:00 am), the project needs to initiate startup several minutes before 0600 to ramp-up to the dispatch power level by 0600, and at the end of dispatch, needs several minutes after 2400 for the turbines to spin down for cooling to final shutdown. Staff also noted that Continuous Emissions Monitoring System (CEMS) internal clocks are not adjusted for local Daylight Savings Time, such that the reported CEMS clocks record the time as one hour behind local time during that period of the year when Daylight Savings Time is in effect. This led to the appearance that the units were starting an hour earlier then the COC allowed. In order to avoid future confusion, the CECL proposed to delete **AQ-SC9** since the requirement is not related to air quality.

Staff agrees with this request since the intent of the 2014 settlement agreement on limiting operating hours is already more accurately reflected in COC **NOISE-4**, which states, "there shall be no operation of the power plant between midnight and 6:00am except to the extent reasonably required for reliability-related purposes or as otherwise required by the ISO Tariff." These proposed changes will not lead to any emission increase and therefore have no air quality impacts.

Other administrative Changes

Since the sixth CTG and the emergency generator have not been installed and CECL does not have plans to do so, the CECL proposed the deletion of references to those units in COCs. Two of the construction related COCs, i.e., **AQ-SC12** and **AQ-SC13** are proposed to be deleted since they were only needed during initial construction and no longer are necessary. Other minor edits made by SDAPCD in the PTOs, such as district rule numbers and the reference to commissioning period are also reflected in the COC changes. These proposed changes will not lead to any emission increase and therefore have no air quality impacts.

Public Health

The proposed modifications would not affect the operating profile or natural gas usage of the CTGs as approved under the current license, thus will not change the project emissions of toxic air contaminants (TAC) beyond what has been evaluated in 2015 commission decision (CEC2015b). Therefore, the proposed project modifications would not create significant direct, indirect or cumulative public health impacts.

Greenhouse Gases

The annual fuel use and emissions would not change due to the proposed modifications. Therefore, this modification will not increase the production of greenhouse gases at CECP beyond what has been evaluated in 2015 commission decision (CEC2015b). GHG impacts of the proposed project modification would be less than significant.

RESPONSE TO PUBLIC COMMENTS

- **COMMENT NO. 1.** On February 26, 2020, CEC received a letter from the Terramar Community in Carlsbad and Ms. Kerry Siekmann stating the reasons for their objection to the PTA filed on February 5, 2020. The objection letter states the following:

  I. Terramar and I are docketing our opposition to the proposed amendments. As climate change impacts the world, it is critical that the SDAPCD (San Diego Air Pollution Control District) and the CEC (California Energy Commission) control carbon emissions.

  II. The approval of the ACECP (Amended Carlsbad Energy Center Project) was based on the FDOC (Final Determination of Compliance). Now CECL, the Project Owner, is requesting amendments to their permit, to increase allowable carbon emissions.

  Terramar and I, oppose the permitting of additional emissions. We request that CECL, the Project Owner, continue work on a solution to the emissions problems.

  If the SDAPCD must allow the additional emissions, then we request the Project Owner continue to request variances until the problem is solved and not issue amendments to the permit. In this time of climate change CECL, the Project Owner, must try harder.

  III. Terramar and I, request that the SDAPCD deny the Project Owner's request for amendments.

  If the SDAPCD decides to give permission to the CECL to continue to solve the excess carbon emissions, Terramar and I, request that the SDAPCD gives the CECL continued variances with offsets, instead of amending the permit.

  Terramar and I, would like to remind the SDAPCD and the CEC that the FDOC was based on the stack height. We are counting on you to protect our air and deny the requested amendments.

Staff Response:

The comment confuses carbon dioxide with carbon monoxide (CO). The PTA proposes to increase the startup emission limit for carbon monoxide (CO). CO is not a "carbon emission" and is not associated with climate change impacts. Carbon dioxide is a greenhouse gas and is associated with climate change impacts. The PTA does not propose to increase any emission limits for carbon dioxide.

CO is a criteria pollutant which is regulated under federal and state ambient air quality standards. The CECL has performed an air quality modeling impact analysis using the proposed startup CO emissions. Staff has reviewed the modeling. The modeling results indicate that the normal operational impacts would not create exceedances of CO air quality standards as shown in **Air Quality Table 5** and does not trigger any offset requirements.

SDAPCD approved the PTA and issued final Title V Operating Permit and PTOs in February 2023 and reissued the PTOs on March 14, 2023, after a few minor corrections were made.

- **COMMENT NO. 2.** On December 2, 2020, CEC received an email from Ms. Nina Eaton stating that "As a resident and business owner for over 20 years here in Carlsbad, I strongly object to the idea of allowing NRG an increase in CO emissions during startup or under any circumstance!"

Staff Response:

As described in staff response to the first comment, an air quality modeling impact analysis has been conducted by CECL and reviewed by CEC staff. The modeling results indicate that the normal operational impacts with proposed modifications would not create exceedances of CO air quality standards.

- **COMMENT NO. 3.** On October 25, 2023, Mr. Robert Ziss docketed the following comment (TN 252738):

  > "The power plant units should only operate during daylight hours. Because the exhaust stacks are only 100 feet tall, the exhaust emissions spread Laterally during calm wind conditions and on shore to offshore periods. These Conditions occur every day sending pollution into the SDG&E maintainable facility and homes on the north end of Terramar subdivision. Black particular particles are seen on all horizontal house external surfaces. The old air quality study that caused the Encina power plant to require a 400 ft exhaust stack will verify my allegation. This time it is not sulfer from fuel oil but natural gas particulate."

Staff Response:

This comment is not related to the PTA, but staff still addresses it here as the comment was submitted following the filing of the PTA. Particulate matter is a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or

smoke, are large or dark enough to be seen with the naked eye. The PTA is not proposing to increase or change any emission limits associated with particulate matter or PM2.5 and/or PM10. The CEC license and the SDAPCD permit, including the associated air quality modeling and health risk assessments conducted specifically for the operation of ACECP, provide modeling of operational conditions and evaluate whether there would be air quality impacts associated with the project. Staff has consulted with the SDAPCD and CECP and could not verify Mr. Ziss's claims regarding emissions. Additionally, **NOISE-4** limits facility operation between the hours of 6 a.m. and midnight, except to the extent reasonably required for reliability-related purposes or as otherwise required by the ISO Tariff.

CONCLUSIONS AND RECOMMENDATIONS

The requested project changes would continue to comply with all applicable federal, state, and district LORS and the modeling results indicate the proposed change in CO startup emissions limits is not expected to cause any exceedance of CO air quality standards. Therefore, the amended project would not cause any significant adverse impacts to ambient air quality, public health, or greenhouse gases, provided that the revised COCs are included. Staff recommends the approval of the revised COCs as shown below.

AMENDED CONDITIONS OF CERTIFICATION

The modifications to the Air Quality conditions of certification are included below. ~~Strikethrough~~ indicates deleted language and **underline and bold** is used for new language.

STAFF CONDITIONS

AQ-SC9 **Deleted.**~~The gas turbines shall only be operated between the military time hours of 0600 to 2400, except in the event of a California Independent System Operator declared emergency.~~

~~**Verification**: The project owner shall submit the Quarterly Operation Reports to the CPM and District, if requested by the District, no later than 30 days following the end of each calendar quarter that demonstrate the operating hours and provide documentation regarding declared emergency events when the gas turbines are operated between the hours of 2400 and 0600, military time.~~

AQ-SC12 **Deleted.**~~The project owner shall not allow the overlap of specific construction and demolition phase activities. The following activities shall not be conducted concurrently with any of the other listed activities:~~

~~1. ASTs 5, 6, and 7 demolition (licensed CECP activity);~~
~~2. ASTs 1, 2, and 4 demolition and berm removal (PTR described activities);~~
~~3. Amended CECP construction (PTA described activities); and~~

4. EPS demolition (PTA and Encina Power Station Demolition Plan described activities).

In addition, the gas turbines initial commissioning activity and the EPS demolition activity shall not be performed concurrently.

Verification: The project owner shall identify the start and conclusion of the work phases described above in the Monthly Compliance R reports.

AQ-SC13 **Deleted.**The project owner shall not implode or fell any concrete or mortar structure, such as the main exhaust stack or the power plant building, during the demolition of the Encina Power Station.

Verification: The project owner shall provide updates on the demolition progress and the demolition methods used in the Monthly Compliance Reports.

SDAPCD Title V Operating Permit Conditions

AQ-1 The equipment authorized to be constructed under this permit is described in Application Nos. APCD2014-APP-003480, APCD2014-APP-003481, APCD2014-APP-003482, APCD2014-APP-003483, APCD2014-APP-003484, APCD2014-APP-003485, APCD2014-APP-003486, APCD2014-APP-003487. **Only SuperCores with serial numbers 878-162, 878-176, 878-186, 878-187, 878-188, 878-191, 878-119, and 878-129 may be used in any of the five combustion turbine generators at this site, as specified in Permit to Operate Nos. APCD2022-PTO-004219, APCD2022-PTO-004220, APCD2022-PTO-004221, APCD2022-PTO-004222, and APCD2022-PTO-004223.**

Verification: The project owner shall provide copies of any applications to alter the equipment or the permit conditions for the equipment covered by the permit applications numbered above to the CPM within five days of sending such applications to the District. The project owner shall make the site available for inspection of equipment and records by representatives of the District, ARB, and the Energy Commission.

AQ-2 The project owner shall cancel all applications for permits and/or retire all permits to operate for all of the equipment authorized to be constructed under this permit on or before the date construction commences for any equipment authorized for construction under Application Numbers APCD2007-APP-985745, APCD2007-APP-985747, or APCD2007-APP-985748 (the 2012 Licensed CECP) **A replacement SuperCore Model 878 for the General Electric LMS100-PA combustion turbine generator may be used in any of the five combustion turbine generators at this site, as specified in Permit to Operate Nos. APCD2022-PTO-004219, APCD2022-PTO-004220, APCD2022-PTO-004221, APCD2022-PTO-004222, and APCD2022-PTO-004223, for a maximum of 180 days, unless otherwise approved in writing by the District, while one of the SuperCores with serial numbers 878-162, 878-176, 878-186, 878-187, 878-188, 878-191, 878-119, or 878-129 is undergoing maintenance or repairs. The District's Compliance Division shall be notified, in writing, within 24 hours of ordering the replacement SuperCore from a vendor but no later than 24 hours**

prior to the installation of the replacement SuperCore. The District's Compliance Division shall also be notified, in writing, within 24 hours of scheduling the re-installation of the permitted SuperCore which underwent maintenance or repairs but no later than 24 hours prior to its re-installation.

Verification: ~~This condition requires canceling the amended CECP permit applications if the project owner decides to build the previously licensed CECP. The project owner shall provide to the CPM documentation of the cancellation of the 2014 permit applications, if the project approved under the 2007 permit applications is built, by the time any construction activity approved under the 2007 permit applications commences.~~ **The project owner shall notify the CPM within five working days of notifying the District that a SuperCore has been replaced. The project owner shall make the site available for inspection of equipment and records by representatives of the District, ARB, and the Energy Commission.**

AQ-3 **Deleted.**~~The project owner shall cancel permit Application Nos. APCD2007-APP-985745, APCD2007-APP-985747, and APCD2007-APP-985748 (the 2012 Licensed CECP) on or before the date construction commences for any equipment authorized for construction under this permit.~~

~~**Verification**: This condition requires canceling the previously licensed CECP permit application if the project owner decides to build the amended CECP. The project owner shall provide to the CPM documentation of the cancellation of the 2007 permit applications, if the project approved under the 2014 permit applications is built, by the time any construction activity approved under the 2014 permit applications commences.~~

AQ-4 **Deleted.**~~Prior to the earliest initial startup date for any of the combustion turbines, the project owner shall surrender to the District Class A Emission Reduction Credits (ERCs) in an amount equivalent to 47.94 tons per year of oxides of nitrogen (NOx) to offset the net maximum allowable increase of 39.9 tons per year of NOx emissions for the equipment described in District Application Nos. APCD2014-APP-003480, APCD2014-APP-003481, APCD2014-APP-003482, APCD2014-APP-003483, APCD2014-APP-003484, APCD2014-APP-003485, APCD2014-APP-003486, APCD2014-APP-003487. [Rule 20.3(d)(8)]~~

~~**Verification**: The project owner shall submit to the CPM, within 15 days of ERC surrender to the District, information demonstrating compliance with this condition.~~

AQ-6 **Deleted.**~~The project owner shall operate the project in accordance with all data and specifications submitted with the application under which this license is issued and District Application Nos. 2014-APP-003480, 2014-APP-003481, 2014-APP-003482, 2014-APP-003483, 2014-APP-003484, 2014-APP-003485, 2014-APP-003486, and 2014-APP-003487. [Rule 14]~~

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

AQ-7 ~~The project owner shall provide a~~**A**ccess, facilities, utilities, and any necessary safety equipment, with the exception of personal protective equipment requiring individual fitting and specialized training, for source testing and inspection **shall be provided** upon request of the Air Pollution Control District. ~~[Rule 19]~~

Verification: The project owner shall provide facilities, utilities, and safety equipment for source testing and inspections upon request of the District, ARB, and the Energy Commission.

AQ-8 **Deleted.**~~The project owner shall obtain any necessary District permits for all ancillary combustion equipment including emergency engines, prior to on-site delivery of the equipment. [Rule 10]~~

~~**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-9 A rolling 12-calendar-month period is one of a series of successive consecutive 12-calendar-month periods. The initial 12-month-calendar period of such a series shall begin on the first day of the month in which the applicable beginning date for that series occurs as specified in this permit. [**Rule 20.3 (d)(1),** Rule 20.3 (d)(3), ~~Rule 20.3(d)(8) and~~ Rule 21]

Verification: None required.

AQ-12 **The project owner shall maintain a**~~A~~ll records required by this permit**,** ~~shall be maintained~~ **including any calibration, maintenance, and other supporting information and copies of all reports required by this permit for at least five years from the date of their creation. Such records shall be maintained** on site for a minimum of **three**~~five~~ years**. Records required by this permit shall be considered as being maintained "on-site" if records for the previous 12-month period are available at the stationary source and any additional records are maintained at a location to be specified by the source** and made **readily** available to the District upon request. [Rule 1421**, Rule 21**]

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

AQ-13 **Deleted.**~~The fire pump and emergency diesel engines shall not be operated for maintenance and testing purposes at the same time that any combustion turbine is operating during its commissioning period. [Rule 20.3(d)(2)]~~

~~**Verification**: The project owner shall maintain records of the fire-pump and emergency diesel engine operation during the combustion turbine initial commissioning period that~~

~~shows compliance with this condition and shall provide that data with the Monthly Compliance Reports required during any commissioning period.~~

AQ-13a Tuning operations shall be defined as adjustments to the combustion systems and/or emissions control equipment that involves operating the equipment in a manner such that the emissions control equipment may not be fully effective or operational. Only one combustion turbine shall be tuned at any given time. The combined tuning operations for all combustion turbines operated at this stationary source shall not exceed 12 hours (720 minutes) in a calendar day nor exceed 65 hours in a calendar year. The District Compliance Division shall be notified at least 24 hours in advance of any tuning operations.

Verification: The project owner shall maintain a log of tuning events and shall provide emissions summary data in compliance with this condition as part of the Quarterly Operation Reports (AQ-SC8). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

COMBUSTION TURBINE GENERATOR CONDITIONS

District Application Number 2014-APP-003482 -APCD2022-PTO-004219

Unit #6: One nominal **105.3**~~104~~ MW **(net)** natural-gas-fired simple-cycle General Electric LMS 100 PA combustion turbine generator with demineralized water injection~~,~~ ~~S/N TBD~~; maximum heat input of 984 MMBtu/hr (HHV) at average site-specific ambient conditions; an inlet-air evaporative cooler; **and with the** combustion turbine exhaust ducted to an oxidation catalyst and selective catalytic reduction (SCR) system with aqueous ammonia injection.

District Application Number 2014-APP-003483 -APCD2022-PTO-004220

Unit #7: One nominal **105.3**~~104~~ MW **(net)** natural–gas-fired simple-cycle General Electric LMS 100 PA combustion turbine generator with demineralized water injection~~,~~ ~~S/N TBD~~; maximum heat input of 984 MMBtu/hr (HHV) at average site-specific ambient conditions; an inlet-air evaporative cooler; **and with the** combustion turbine exhaust ducted to an oxidation catalyst and selective catalytic reduction (SCR) system with aqueous ammonia injection.

District Application Number 2014-APP-003484 -APCD2022-PTO-004221

Unit #8: One nominal **105.3**~~104~~ MW **(net)** natural-gas-fired simple-cycle General Electric LMS 100 PA combustion turbine generator with demineralized water injection~~,~~ ~~S/N TBD~~; maximum heat input of 984 MMBtu/hr (HHV) at average site-specific ambient conditions; an inlet-air evaporative cooler; **and with the** combustion turbine exhaust ducted to an oxidation catalyst and selective catalytic reduction (SCR) system with aqueous ammonia injection.

District Application Number 2014-APP-003485 -APCD2022-PTO-004222

Unit #9: One nominal **105.3**~~104~~ MW **(net)** natural-gas-fired simple-cycle General Electric LMS 100 PA combustion turbine generator with demineralized water injection~~, S/N TBD~~; maximum heat input of 984 MMBtu/hr (HHV) at average site-specific ambient conditions; an inlet-air evaporative cooler; **and with the** combustion turbine exhaust ducted to an oxidation catalyst and selective catalytic reduction (SCR) system with aqueous ammonia injection.

District Application Number 2014-APP-003486 -APCD2022-PTO-004223

Unit #10: One nominal **105.3**~~104~~ MW **(net)** natural-gas-fired simple-cycle General Electric LMS 100 PA combustion turbine generator with demineralized water injection~~, S/N TBD~~; maximum heat input of 984 MMBtu/hr (HHV) at average site-specific ambient conditions; an inlet-air evaporative cooler; **and with the** combustion turbine exhaust ducted to an oxidation catalyst and selective catalytic reduction (SCR) system with aqueous ammonia injection.

~~**District Application Number 2014-APP-003487**~~

~~Unit #11: One nominal 104 MW natural-gas-fired simple-cycle General Electric LMS 100 PA combustion turbine generator with demineralized water injection, S/N TBD; maximum heat input of 984 MMBtu/hr (HHV) at average site-specific ambient conditions; an inlet-air evaporative cooler; combustion turbine exhaust ducted to an oxidation catalyst and selective catalytic reduction (SCR) system with aqueous ammonia injection.~~

DEFINITIONS

AQ-14 ~~For purposes of determining compliance with the emission limits of this permit, a~~**A** shutdown period is the **period of up to** 13~~-~~consecutive~~-~~**clock** minute**s prior to** ~~period preceding~~ the **clock minute that** ~~moment at which~~ fuel flow to the combustion turbine ceases**, excluding any clock minute in that shutdown period that is coincident with a startup period and any clock minute when the average gross electrical power output from the turbine is greater than 20 megawatts (MW). A shutdown period must contain at least one clock minute unless all minutes are coincident with a startup period.** [Rule 20.3 (d)(1)]

Verification: The project owner shall submit to the CPM the CTG shutdown event duration data demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-15 **A startup occurs when fuel flows to the combustion turbine following a non-operational period. And, u**~~U~~nless otherwise noted in a specific condition, a startup period is the period of time that begins **the clock minute** when fuel flows to the combustion turbine following a non-operational period **and includes each succeeding clock minute up to and including the clock minute that ends the startup period. If fuel ceases to flow to the combustion turbine during the 25-consecutive-clock-minute period beginning with the clock minute that begins the startup period, then the startup period ends on the clock minute immediately preceding the clock minute when fuel has ceased to flow, and all clock minutes that are in that 25-consecutive-clock-minute period prior to fuel ceasing to flow are part of that startup**

period. For purposes of determining compliance with the emission limits of this permit, the duration of a startup period shall not exceed 25 consecutive **clock** minutes. [Rule 20.3(d)(1)]

Verification: The project owner shall submit to the CPM the CTG startup event duration data demonstrating compliance with this condition as part of the Quarterly Operation Reports
(**AQ-SC8**).

AQ-17 A Continuous Emission Monitoring System (CEMS) protocol is a document approved in writing by the District that describes the methodology and quality assurance and quality control procedures for monitoring, calculating, and recording stack emissions from the combustion turbine that is monitored by the CEMS. [~~Rules 69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, 40 CFR Part 60 Appendix B and F, and 40 CFR Part 75]

Verification: The project owner shall maintain a copy of the CEMS protocol on site and provide it for inspection on request by representatives of the District, ARB, and the Energy Commission.

AQ-18 **Deleted.**~~For each combustion turbine, the commissioning period is the period of time commencing with the initial startup of that turbine and ending after 213 hours of turbine operation, or the date the project owner notifies the District the commissioning period has ended, whichever comes first. For purposes of this condition, the number of hours of turbine operation is defined as the total unit operating minutes during the commissioning period divided by 60 rounded to the nearest hundredth of an hour. [Rule 20.3(d)(1)]~~

~~**Verification**: The project owner shall provide commissioning event data that shows compliance with the commissioning period operation limits for each combustion turbine in the Monthly Compliance Reports and shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.~~

AQ-19 **Deleted.**~~For the purposes of this permit, initial startup shall be defined for each combustion turbine as the first time that the combustion turbine combusts fuel on-site. [Rule 20.3]~~

~~**Verification**: None Require~~

AQ-23 Unless otherwise specified in this permit, all continuous monitoring data shall be collected at least once every clock-minute. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1)]

Verification: None required.

AQ-24 For purposes of determining compliance with emission limits based on source testing, the average of three subtests shall be used. For purposes of determining compliance with emission limits based on a Continuous Emission Monitoring System (CEMS), data collected in accordance with the CEMS protocol shall be used and the averages for averaging periods

specified herein shall be calculated as specified in the CEMS protocol. [Rules ~~69.3,~~ 69.3.1, 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, 40 CFR Part 60 Appendix B and F, and 40 CFR Part 75]

Verification: Source tests demonstrating compliance with this condition shall be provided to the CPM and are due within the timeframes specified in Conditions **AQ-57** and **AQ-58**. CEMS data summaries shall be submitted to the CPM as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-25 For purposes of determining compliance with emission limits based on CEMS data, all CEMS calculations, averages, and aggregates shall be performed in accordance with the CEMS protocol approved in writing by the District. [Rules ~~69.3,~~ 69.3.1, 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, 40 CFR Part 60 Appendix B and F, and 40 CFR Part 75]

Verification: CEMS data summaries shall be submitted to the CPM as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-26 For each emission limit expressed as pounds, pounds per hour, or parts per million based on a one-hour or less averaging period or compliance period, compliance shall be based on using data collected at least once every minute when compliance is based on CEMS data except as specified in the District approved CEMS Protocol. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1)]

Verification: CEMS data summaries shall be submitted to the CPM as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-27 When a combustion turbine is combusting fuel (operating), the emission concentration of oxides of nitrogen (NOX), calculated as nitrogen dioxide (NO2), shall not exceed 2.5 parts per million by volume on a dry basis (ppmvd) corrected to 15**%** ~~percent~~ oxygen, averaged over a **1**~~one~~-clock-hour period, except during ~~commissioning,~~**tuning operations,** startup **periods**~~,~~ and **any clock minutes that are not excluded from,** shutdown periods for that turbine. **Any clock minutes excluded from a shutdown period shall be included in the 1-clock-hour average unless they are coincident with a startup period.** [Rule 20.3(d)(1)]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-28 When a combustion turbine is operating, the emission concentration of carbon monoxide (CO) shall not exceed 4.0 ppmvd corrected to 15**%** ~~percent~~ oxygen, averaged over a **1**~~one~~-clock-hour period, except during ~~commissioning,~~ **tuning operations,** startup **periods**~~,~~ and **any clock minutes that are not excluded from** shutdown periods for that turbine. **Any clock minutes excluded from a shutdown period shall be included in the 1-clock-hour average unless they are coincident with a startup period.** [Rule 20.3(d)(**2**~~1~~)]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-29 When a combustion turbine is operating, the volatile organic compound (VOC) concentration, calculated as methane, measured in the exhaust stack, shall not exceed 2.0 ppmvd corrected to 15**%** ~~percent~~ oxygen, averaged over a **1**~~one~~-clock-hour period, except during ~~commissioning,~~ **tuning operations,** startup **periods**~~,~~ and **any clock minutes that are not excluded from** shutdown periods for that turbine. For purposes of determining compliance based on ~~the CEMS, the District approved VOC/CO surrogate relationship and the CO CEMS data averaged over a one-clock-hour period shall be used. The VOC/CO surrogate relationship shall be verified and/or modified, if necessary, based on source testing~~**source testing, an average of three subtests shall be used**. [Rule 20.3(d)(1)]

Verification: The project owner shall provide the~~,~~ **source test data** to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-30 When a combustion turbine is operating, the ammonia concentration (ammonia slip), shall not exceed 5.0 ppmvd corrected to 15**%** ~~percent~~ oxygen and averaged over a **1**~~one~~-clock-hour period, except during ~~commissioning,~~**tuning operations, and** startup, and shutdown periods for that turbine. [Rule 1200]

Verification: The project owner shall provide the estimated ammonia concentrations and ammonia emissions based on the annual source test data, the CEMS data and SCR ammonia flow data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-31 When a combustion turbine is operating, the emission concentration of NOX, calculated as nitrogen dioxide (NO2) shall not exceed 42 ppmvd averaged over each **1**~~one~~-clock-hour period and corrected to 15**%** ~~percent~~ oxygen**,** except for **tuning operations, and** startup and shutdown periods for that turbine, as defined in Rule 69.3**.1**. [Rule 69.3**.1**]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-32 When a combustion turbine is operating with post-combustion air pollution control equipment that controls oxides of nitrogen (NOX) emissions, the emission concentration of NOX, calculated as nitrogen dioxide (NO2), shall not exceed 13.6 ppmvd averaged over each one-clock-hour period and corrected to 15**%** ~~percent~~ oxygen, except for **tuning operations, and** startup and shutdown periods for that turbine, as defined in Rule 69.3.1. This limit does not apply during any period in which the facility is subject to a variance from the emission limits contained in Rule 69.3.1. [Rule 69.3.1]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-33 When a combustion turbine is operating without any post-combustion air pollution control equipment that controls oxides of nitrogen (NOX) emissions, the emission concentration of NOX calculated as nitrogen

dioxide (NO2) from each turbine shall not exceed 22.6 parts per million by volume on a dry basis (ppmvd) averaged over each **1**~~one~~-clock-hour period and corrected to 15**%** ~~percent~~ oxygen, except for **tuning operations, and** periods of startup and shutdown, as defined in Rule 69.3.1. ~~This limit does not apply during any period in which the facility is subject to a variance from the emission limits contained in Rule 69.3.1.~~ [Rule 69.3.1]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-34 For each rolling four-unit operating hour period, average emission concentration of oxides of nitrogen (NOx) for each turbine calculated as nitrogen dioxide (NO2) in parts per million by volume dry (ppmvd) corrected to 15**%** ~~percent~~ oxygen or, alternatively, as elected by the project owner, the average NOx emission rate in pounds per megawatt-hour (lb/MWh) shall not exceed an average emission limit calculated in accordance with 40 CFR Section 60.4380(b)(3). The emission concentration and emission rate averages shall be calculated in accordance with 40 CFR Section 60.4380(b)(1). The average emission concentration limit and emission rate limit shall be based on an average of hourly emission limits over the four-unit operating hour period including the operating-hour and three unit operating-hours immediately preceding. For any unit operating hour where multiple emission standards would apply based on load of the turbine, the applicable standard shall be the higher of the two limits. The hourly emission concentration limit and emission rate limit shall be as follows based on the load of the turbine over the four unit operating hour period:

Case	**Emission Limit, ppmvd at 15% ~~percent~~ O2**	**Emission Limit, lb/MWh**
a. All four hours at or above 75% Load	15	0.43
b. All four hours below 75% Load	96	4.7
c. Combination of hours	(a x 15+b x 96)/4	(a x 0.43+b x 4.7)/4

Where: a = the number of unit operating hours in the four hour period with all operation above 75% load and b = 4-a.

The averages shall ~~exclude all clock hours occurring before the Initial Emission Source Test but shall~~ include emissions during all ~~other~~ times that the equipment is operating including, but not limited to, emissions during **tuning operations, and** startup and shutdown periods. For each six-calendar-month period, emissions in excess of these limits and monitor downtime shall be identified in accordance with 40 CFR Sections 60.4350 and 60.4380(b)(2), except that Section 60.4350(c) shall not apply for identifying periods in excess of a NOx concentration limit. For the

purposes of this condition, unit operating hour shall have the meaning as defined in 40 CFR 60.4420. [40 CFR Part 60 Subpart KKKK]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-35 The emissions of particulate matter less than or equal to **10**~~ten~~ microns in diameter (PM10) from the exhaust stack~~s~~ of **each**~~the~~ combustion turbine shall not exceed 5.0 pounds per hour for each combustion turbine**, calculated as the arithmetic average of the most recent source test for each turbine**. [Rule 20.3(d)(1), (2)]

Verification: Source tests demonstrating compliance with this condition shall be provided to the CPM and are due within the timeframes specified in Conditions **AQ-57** and **AQ-58**.

AQ-36 The emissions of particulate matter less than or equal to **10**~~ten~~ microns in diameter (PM10) from the exhaust stacks of the combustion turbines shall not exceed 3.5 pounds per hour per turbine, averaged over all **five**~~six~~ combustion turbines, calculated as the arithmetic average of the most recent source test for each turbine. [Rule 20.3(d)(1),(2)]

Verification: Source tests demonstrating compliance with this condition shall be provided to the CPM and are due within the timeframes specified in Conditions **AQ-57** and **AQ-58**.

AQ-39 Mass emissions from each combustion turbine of oxides of nitrogen (NOX), calculated as NO2; carbon monoxide (CO); and volatile organic compounds (VOC), calculated as methane, shall not exceed the following limits, except during ~~commissioning~~**tuning operations**, startup **periods**, and **any clock minites that are not excluded from** shutdown periods for that turbine. A **1**~~one~~-clock-hour averaging period for these limits shall be used when compliance is determined using CEMS data**, and any clock minutes excluded from a shutdown period shall be included in the 1-clock-hour average unless they are coincident with a startup period**. **For purposes of determining compliance based on source testing, an average of three subtests shall be used.** ~~[Rule 20.3(d)(2)]~~

Pollutant	Emission Limit, lb/hr
a. NOx	9.1
b. CO	8.8
c. VOC	2.5

[Rule 20.3(d)(2)]

Verification: The project owner shall submit to the CPM operating data demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-40 ~~Excluding any minutes that are coincident with a shutdown period,~~ ~~c~~**C**umulative mass emissions from each combustion turbine of oxides of nitrogen (NOx), calculated as NO2; carbon monoxide (CO); and volatile

organic compounds (VOC), calculated as methane, shall not exceed the following limits during each of that turbine's startup periods, except during that turbine's commissioning period.

Pollutant	Emission Limit, lb
a. NOx	14.7
b. CO	**17.3**~~7.4~~
c. VOC	2.0

In addition, CO emissions from startups shall not exceed 34.6 pounds in each clock hour. For purposes of determining compliance with the limit of 34.6 pounds of CO from startups in each clock hour, for each startup, CO emissions shall be calculated as the sum of emissions occurring during all the minutes of the startup period for that startup and of the emissions occurring during all the minutes of the first shutdown period following that startup that are within 25 minutes of when fuel begins to flow. Furthermore, CO emissions for all combustion turbines combined from all operations shall not exceed 1691 pounds in each 24-consecutive-clock-hour period. For the purposes of determining compliance based on source testing, an average of three subtests shall be used. [NOx and VOC: Rule 20.3(d)(1); CO: Rule 20.3(d)(2)]

Verification: The project owner shall submit to the CPM operating data demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-41 **Excluding any clock minutes that are coincident with a startup period,** ~~C~~**c**umulative mass emissions from each combustion turbine of oxides of nitrogen (NOX), calculated as NO2; carbon monoxide (CO); and volatile organic compounds (VOC), calculated as methane, shall not exceed the following limits during each of that turbine's shutdown periods, except during that turbine's commissioning period. ~~[Rule 20.3(d)(1)]~~

Pollutant	Emission Limit, lb
a. NOx	0.6
b. CO	3.4
c. VOC	2.4

In addition, the period prior to any restart of the combustion turbine consisting of a shutdown period of up to 13 consecutive clock minutes and a non-operational period of at least five clock minutes will be no less than a cumulative 18 consecutive clock minutes. [Rule 20.3(d)(1)]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-42 Emissions of oxides of nitrogen (NOX), calculated as nitrogen dioxide (NO2), from each combustion turbine shall not exceed 90 pounds per hour measured over each **1**~~one~~-clock-hour period. In addition, the emission concentration of NOx, calculated as NO2, from each turbine shall not

exceed 100 parts per million by volume on a dry basis (ppmvd) averaged over each **1**~~one~~-clock-hour period and corrected to 15**%** ~~percent~~ oxygen. These emission limits shall apply during all times a turbine is operating, including, but not limited to, emissions during ~~commissioning,~~**tuning operations, and** startup, and shutdown periods for that turbine. [Rule 20.3(d)(2)]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-43 The carbon monoxide (CO) emissions from each combustion turbine shall not exceed 248 pounds per hour measured over each **1**~~one~~--clock-hour period. In addition, the emission concentration of CO from each turbine shall not exceed 400 parts per million by volume on a dry basis (ppmvd) averaged over each **1**~~one~~--clock-hour period and corrected to 15**%** ~~percent~~ oxygen. This emission limit shall apply during all times that a turbine is operating, including, but not limited to, emissions during ~~commissioning,~~**tuning operations, and** startup, and shutdown periods. [Rule 20.3(d)(2)(i)]

Verification: The project owner shall provide CEMS emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-44 Total emissions from the equipment authorized to be constructed under this permit except emissions or emission units excluded from the calculation of aggregate potential to emit as specified in Rule 20.1 (d)(1) as it exists on the date the permit to operate for this equipment is approved ~~and except for CO emissions during any rolling 12-calendar-month period in which a turbine commissioning period occurs~~, shall not exceed the following limits for each rolling 12-calendar-month period, beginning with the 12-calendar-month period that begins with the month in which the earliest initial startup among the equipment authorized to be constructed under this permit occurs:

Pollutant	Emission Limit, tons per year
NOx	84.18
CO	77.8
VOC	24.1
PM10	28.4
SOx	5.6

The aggregate emissions of each pollutant shall include emissions during all times that the equipment is operating~~, except for CO emissions during any rolling 12-calendar month period in which a turbine commissioning period occurs~~. All calculations performed to show compliance with this limit shall be performed according to a protocol approved in advance by the District. [**Rule 20.3(d)(1),** Rule~~s~~ 20.3(d)(2), **Rule** 20.3(d)(5), ~~20.3(d)(8), and~~ **Rule** 21]

Verification: The project owner shall submit to the CPM and the District the facility annual operating and emissions data demonstrating compliance with this condition as part of the fourth quarter's Quarterly Operation Reports (**AQ-SC8**).

AQ-45 ~~Total emissions of CO during any rolling 12-calendar-month period in which a turbine commissioning period occurs from the equipment authorized to be constructed under this permit except emissions or emission units excluded from the calculation of aggregate potential to emit as specified in Rule 20.1 (d)(1) as it exists on the date the permit to operate for this equipment is approved shall not exceed the following limit for each rolling 12-calendar-month period, beginning with the 12-calendar-month period that begins with the month in which the earliest initial startup among the equipment authorized to be constructed under this permit occurs:~~

~~77.8 tons per year + N x 4.05 tons/yr~~

~~Where N=number of turbines with commissioning periods occurring within the 12-calendar-month period. All calculations performed to show compliance with this limit shall be performed according to a protocol approved in advance by the District. [Rules 20.3(d)(2), 20.3(d)(5), 20.3(d)(8), and 21]~~ **Cumulative mass emissions from all combustion turbines operated at this stationary source of oxides of nitrogen (NOx), calculated as NO2, and carbon monoxide (CO), shall not exceed the following limits during all tuning operations.**

Pollutant	Emission Limit, lbs/hr	Emission Limit, lbs/day
a. NOx	49.3	591.6
b. CO	135	1691

Verification: The project owner shall submit to the CPM and the District the CEMS emissions data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-SC8).

AQ-46 Total emissions from each combustion turbine shall not exceed 14.~~3~~**2** tons per year of NOx calculated as nitrogen dioxide and shall not exceed 4.73 tons per year of PM10. For the purposes of this condition emissions shall be calculated on a rolling 12-calendar-month basis beginning with the calendar month in which the initial startup of the turbine occurs. All calculations performed to show compliance with this limit shall be performed according to a protocol approved in advance by the District. [**Rule 20.3(d)(1),** Rule~~s~~ 20.3(d)(2), **Rule** 20.3(d)(5), ~~20.3(d)(8), and~~**Rule** 21]

Verification: The project owner shall provide emissions summary data in compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-47 **Deleted.**~~Total emissions from the equipment permitted under APCD2003-PTO-001267, APCD2003-PTO-000791, APCD2003-PTO-000792, APCD2003-PTO-000793, APCD2003-PTO-001770 and APCD2003-PTO-005238 shall not exceed any of the following mass emission limits according to the schedule based on the number of turbines that have undergone their initial startup as described in the following table:~~

~~Number of Turbines Started~~	~~NOx (ton/yr)~~	~~PM10 (ton/yr)~~
~~1~~	~~No Limit~~	~~No Limit~~
~~2~~	~~No Limit~~	~~No Limit~~
~~3~~	~~41.57~~	~~No Limit~~
~~4~~	~~27.42~~	~~27.6~~
~~5~~	~~13.27~~	~~22.9~~
~~6~~	~~0.00~~	~~18.2~~

~~For the purposes of this condition, emissions shall be calculated on a rolling 12-calendar-month basis beginning with the calendar month in which 180 days has passed since the latest initial startup from among the indicated number of turbines. Once a turbine has undergone its initial startup, it is included in determining the number of turbines started from the initial startup date going forward. All calculations performed to show compliance with this limit shall be performed according to a protocol approved in advance by the District. [Rules 20.3(d)(2), 20.3(d)(5), 20.3(d)(8), and 21]~~

~~**Verification**: This condition requires the existing Encina boilers and turbine to cease operations once the amended CECP is operational. The project owner shall provide emissions summary data in compliance with this condition as part of the Quarterly Operation Reports (AQ-SC8). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.~~

AQ-48 For each calendar month and each rolling 12-calendar-month period, the project owner shall maintain records, as applicable, on a calendar monthly basis, of mass emissions during each calendar month and rolling 12-calendar-month period of NOX calculated as NO2, CO, VOCs calculated as methane, PM10, and SOX calculated as SO2, in tons, from each emission unit located at this stationary source, except for emissions or emission units excluded from the calculation of aggregate potential to emit as specified in Rule 20.1 (d)(1) as it exists on the date the permit to operate for this equipment is approved. These records shall be made available for inspection within 15 calendar days after the end of each calendar month. [**Rule 20.3(d)(1),** Rule~~s~~ 20.3(d)(**5**~~3~~), ~~20.3(d)(8) and~~ **Rule** 21]

Verification: The project owner shall provide emissions summary data in compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project

owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-49 For each combustion turbine, the number of ~~annual~~ operating hours in each calendar year shall not exceed 2,700. For the purposes of this condition, the number of operating hours shall be calculated as the total number of unit operating minutes divided by 60 rounded to the nearest hundredth of an hour. [Rules 1200, 20.3(d)(2) and 21]

Verification: The project owner shall submit facility annual operating data demonstrating compliance with this condition as part of the fourth quarter's Quarterly Operation Reports
(**AQ-SC8**).

AQ-50 For each combustion turbine, the number of startup periods occurring in each calendar year shall not exceed 400. ~~When determining compliance with this limit, any startup that occurs during the commissioning period shall not be included.~~ [Rules 1200, 20.3(d)(2) and 21]

Verification: The project owner shall submit facility annual operating data demonstrating compliance with this condition as part of the fourth quarter's Quarterly Operation Reports
(**AQ-SC8**).

AQ-51 **Deleted.**~~For each combustion turbine, the number of startup periods occurring during its commissioning period shall not exceed 350. [Rules 1200, 20.3(d)(2) and 21]~~

~~**Verification**: The project owner shall submit facility annual operating data demonstrating compliance with this condition as part of the fourth quarter's Quarterly Operation Reports
(**AQ-SC8**).~~

AMMONIA – SCR

AQ-52 **Deleted.**~~Not later than 90 calendar days prior to the start of construction, unless a later date is approved in writing by the District, the project owner shall submit to the District the final selection, design parameters and details of the selective catalytic reduction (SCR) and oxidation catalyst emission control systems for the combustion turbines including, but not limited to, the minimum temperature for the SCR catalyst at which ammonia injection is feasible; the catalyst volume, catalyst material, catalyst manufacturer, space velocity and area velocity at full load; and control efficiencies of the SCR for controlling NOx emissions and the oxidation catalyst for controlling CO and VOC emissions at temperatures between the minimum and maximum operating temperatures at space velocities corresponding to 100 percent and 25 percent load. Such information may be submitted to the District as trade secret and confidential pursuant to District Rules 175 and 176. [Rules 20.3(d)(1) and 14]~~

~~**Verification**: The project owner shall submit to the CPM for review and District for approval final selection, design parameters and details of the SCR and oxidation catalyst emission control systems at least 90 days prior to the start of construction.~~

AQ-54 ~~Continuous monitors shall be installed on each SCR system prior to their initial operation to monitor or calculate, and record the ammonia solution injection rate in pounds per hour and the SCR outlet temperature in degrees Fahrenheit for each unit operating minute.~~ **The ammonia injection flow rate shall be continuously monitored, recorded, and controlled.** The monitors shall be installed, calibrated and maintained in accordance with a District approved protocol~~, which may be part of the CEMS protocol. This protocol, which shall include the calculation methodology, shall be submitted to the District for written approval at least 90 days prior to initial startup of the gas turbines with the SCR system, unless a later date is approved in writing by the District~~. The monitors shall be in full operation at all times when the turbine is in operation. [Rule 20.3(d)(1)]

Verification: The project owner shall submit to the CPM for review and the District for approval a turbine operation monitoring protocol in compliance with this condition at least 90 days prior to the initial startup.

AQ-60 **Deleted.**~~The exhaust stacks for each combustion turbine shall be equipped with source test ports and platforms to allow for the measurement and collection of stack gas samples consistent with all approved test protocols. The ports and platforms shall be constructed in accordance with District Method 3A, Figure 2, and approved by the District. Ninety days prior to construction of the turbine stacks the project owner shall provide to the District for written approval detailed plan drawings of the turbine stacks that show the sampling ports and demonstrate compliance with the requirements of this condition. [Rule 20]~~

~~**Verification**: The project owner shall submit to the CPM for review and District for approval a stack test port and platform plan at least 90 days before the construction of the turbine stacks.~~

AQ-61 ~~Not later than 60 calendar days after completion of the commissioning period for each combustion turbine, an Initial Emissions Source Test shall be conducted on that turbine~~ **Each combustion turbine shall be source tested** to demonstrate compliance with the NOX, CO, VOC, PM10, and ammonia emission standards of this permit. The source test protocol shall comply with all of the following requirements:

a. Measurements of NOX and CO concentrations and emissions and oxygen (O2) concentration shall be conducted in accordance with U.S. Environmental Protection Agency (EPA) methods 7E, 10, and 3A, respectively, and District source test Method 100, or alternative methods approved by the District and EPA;
b. Measurement of VOC concentrations and emissions, except for formaldehyde, shall be conducted in accordance with EPA Method 18, or an alternative method approved by the District and EPA;

c. Measurement of formaldehyde concentrations and emissions shall be conducted in accordance with EPA Method 316 or 323, as specified by the District, or an alternative method approved by the District and EPA;
d. Total VOC concentrations and emissions shall be the sum of those concentrations and emissions determined using Method 18 and the formaldehyde concentrations and emissions;
e. Measurements of ammonia concentrations shall be conducted in accordance with Bay Area Air Quality Management District Method ST-1B or an alternative method approved by the District and EPA;
f. Measurements of PM10 emissions shall be conducted in accordance with EPA Methods 201A and 202 or an alternative method approved by the district and EPA;
g. Source testing shall be performed at the normal load level, as specified in 40 CFR Part 75 Appendix A Section 6.5.2.1 (d), provided it is not less than 80**%** ~~percent~~ of the combustion turbine's rated load unless it is demonstrated to the satisfaction of the District that the combustion turbine cannot operate under these conditions . If the demonstration is accepted, then emissions source testing shall be performed at the highest achievable continuous power level. The District may specify additional testing at different load levels or operational conditions to ensure compliance with the emission and concentration limits of this permit and District Rules and Regulations;
h. Measurements of particulate matter emissions shall be conducted in accordance with SDAPCD Method 5 or an alternative method approved by the District and EPA;
i. Measurements of opacity shall be conducted in accordance with EPA Method 9 or an alternative method approved by the District and EPA; and
j. Unless otherwise authorized in writing by the District, testing for NOX, CO, VOC, PM10**,** and ammonia concentrations and emissions, as applicable, shall be conducted concurrently with the NOX and CO continuous emission ~~measurement~~**monitoring** system (CEMS) Relative Accuracy Test Audit (RATA).

[Rule**s** 20.3(d)(1) and 1200]

Verification: The project owner shall submit to the CPM for review and the District for approval the initial source test protocol and source test report within the timeframes specified in Conditions **AQ-57** and **AQ-58**.

AQ-62 A renewal source test and a NOX and CO Relative Accuracy Test Audit (RATA) shall be periodically conducted on each combustion turbine to demonstrate compliance with the NOX, CO, VOC, PM10, and ammonia emission standards of this permit and applicable relative accuracy requirements for the CEMS systems using District approved methods. The renewal source test and the NOX and CO RATAs shall be conducted in accordance with the applicable RATA frequency requirements of 40 CFR

75, Appendix B, Sections 2.3.1 and 2.3.3. The renewal source test shall be conducted in accordance with a protocol complying with all the applicable requirements of the source test protocol for the Initial Emissions Source Test. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

Verification: The project owner shall submit to the CPM for review and the District for approval the periodic RATA and source test protocols, and RATA source test reports within the timeframes specified in Conditions **AQ-57** and **AQ-58**.

AQ-63 Relative Accuracy Test Audit**s** (RATAs) and all ~~other~~ required certification tests shall be performed and completed on the NOX CEMS in accordance with applicable provisions of 40 CFR Part 75 Appendix A and B and 40 CFR §60.4405 and on the CO CEMS in accordance with applicable provisions of 40 CFR Part 60 Appendix B and F. [~~Rule 21,~~ Rule 20.3 (d)(1), 40 CFR Part 60 Subpart KKKK**,** ~~and~~ 40 CFR Part 75]
In order to provide for a reasonable assurance of compliance with the permitted emission limits, the CO CEMS must meet one of the following performance criteria:
a. A Relative Accuracy of 10% when the average reference method value is used in the denominator of Equation 2-6 of 40 CFR 60, Performance Specification 2;
b. A Relative Accuracy of 5.0% when the applicable emission standard is used in the denominator of Equation 2-6 of 40 FR, Performance Specification 2;
c. 0.50 ppmvd corrected to 15% oxygen and 1.0 lb/hr when the RA is calculated as the absolute average difference between the RM and CEMS plus the 2.5 percent confidence coefficient.

Verification: The results and field data collected during source tests required by this condition shall be submitted to the CPM for review and the District for approval as required by Condition **AQ-58**.

AQ-64 **Deleted.**~~Not later than 60 calendar days after completion of the commissioning period for each combustion turbine, an initial emission source test for toxic air contaminants shall be conducted on that turbine to determine the emissions of toxic air contaminants from the combustion turbine. At a minimum the following compounds shall be tested for, and emissions, if any, quantified:~~

~~a. Acetaldehyde~~
~~b. Acrolein~~
~~c. Benzene~~
~~d. Formaldehyde~~
~~e. Toluene~~
~~f. Xylenes~~

~~This list of compounds may be adjusted by the District based on source test results to ensure compliance with District Rule 1200 and other conditions of this permit are demonstrated. The District may require one or more or additional compounds to be quantified through source testing as~~

~~needed to ensure compliance with Rule 1200 and other conditions of this permit. Within 60 calendar days after completion of a source test performed by an independent contractor, a final test report shall be submitted to the District for review and approval. [Rule 1200]~~

~~**Verification**: The results and field data collected during source tests required by this condition shall be submitted to the CPM for review and the District for approval within 60 days of testing.~~

AQ-66 The higher heating value of the combustion turbine fuel shall be measured by ASTM D1826–94, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter or ASTM D1945–96, Standard Method for Analysis of Natural Gas by Gas Chromatography or an alternative test method approved by the District and EPA. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

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

AQ-67 The sulfur content of the combustion turbine fuel shall be sampled not less than once each calendar quarter in accordance with a protocol approved by the District~~, which shall be submitted to the District for approval not later than 90 days before the earliest initial startup date for any of the combustion turbines~~ and measured with ASTM D1072–90 (Reapproved 1994), Standard Test Method for Total Sulfur in Fuel Gases; ASTM D3246–05, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry; ASTM D4468–85 (Reapproved 2000), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry; ASTM D6228–98 (Reapproved 2003), Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection; or ASTM D6667–04, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence or an alternative test method approved by the District and EPA. [Rule 20.3 (d)(1), Rule 21, and 40 CFR Part 75]

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

AQ-69 A continuous emission monitoring system (CEMS) shall be installed on each combustion turbine and properly maintained and calibrated to measure, calculate, and record the following, in accordance with the District approved CEMS protocol:

a. Clock-hourly average concentration of oxides of nitrogen (NOX) in parts per million (ppmvd) both uncorrected and corrected to 15**%** ~~percent~~ oxygen;

b. Clock-hourly average concentration of carbon monoxide (CO) in parts per million (ppmvd) both uncorrected and corrected to 15**%** ~~percent~~ oxygen;
c. Percent oxygen (O2) in the exhaust gas for each unit operating minute;
d. Clock-hourly mass emissions of oxides of nitrogen (NOx) calculated as NO2, in pounds;
e. Cumulative mass emissions of oxides of nitrogen (NOx) calculated as NO2 in each **tuning operation, and** startup and shutdown period, in pounds;
f. Calendar-daily mass emissions of oxides of nitrogen (NOX) calculated as NO2, in pounds;
g. Calendar monthly mass emissions of oxides of nitrogen (NOX) calculated as NO2, in pounds;
h. Rolling four unit operating hour average concentration of oxides of nitrogen (NOX) in parts per million (ppmvd) corrected to 15**%** ~~percent~~ oxygen;
i. Rolling four unit operating hour average emission rate of oxides of nitrogen (NOX), calculated as NO2, in pounds per megawatt-hour (lb/MWh);
j. Calendar quarter, calendar year, and rolling 12-calendar-month period mass emissions of oxides of nitrogen (NOX) calculated as NO2, in tons;
k. Cumulative mass emissions of carbon monoxide (CO) in each **tuning operation, and** startup and shutdown period, in pounds;
l. Clock-hourly mass emissions of carbon monoxide (CO), in pounds;
m. Calendar-daily mass emission of carbon monoxide (CO), in pounds;
n. Calendar-monthly mass emission of carbon monoxide (CO), in pounds;
o. Rolling 12-calendar-month period mass emission of carbon monoxide (CO), in tons;
p. Average concentration of oxides of nitrogen (NOx) and carbon monoxide (CO) in parts per million (ppmvd) both uncorrected and corrected to 15**%** ~~percent~~ oxygen during each unit operating minute; and
q. Average emission rate in pounds per hour of oxides of nitrogen (NOx) calculated as NO2 and carbon monoxide (CO) during each unit operating minute.

[Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

Verification: The project owner shall submit to the CPM for review and the District for approval a CEMS protocol, as required by **AQ-70**, which includes description of the methods of compliance with the requirements of this condition.

The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

AQ-70 ~~No later than 90 calendar days prior to initial startup of each combustion turbine, the project owner shall submit a CEMS protocol to the District, for written approval that shows how the CEMS will be able to meet all District monitoring requirements. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]~~ **Copies of the approved CEMS protocol and the District's written approval shall be maintained on site and made available to District personnel upon request.**

Verification: The project owner shall submit to the CPM for review and the District for approval a CEMS operating protocol at least 90 days prior to the initial startup of each combustion turbine.

AQ-71 **Deleted.**~~No later than the earlier of 90 unit operating days or 180 calendar days after each combustion turbine commences commercial operation, a Relative Accuracy Test Audit (RATA) and other required certification tests shall be performed and completed on that turbine's NOx CEMS in accordance with 40 CFR Part 75 Appendix A and on the CO CEMS in accordance with 40 CFR Part 60 Appendix B. The RATAs shall demonstrate that the NOX and CO CEMS comply with the applicable relative accuracy requirements. At least 60 calendar days prior to the test date, the project owner shall submit a test protocol to the District for written approval. Additionally, the District and U.S. EPA Region 9 shall be notified a minimum of 45 calendar days prior to the test so that observers may be present. Within 45 calendar days of completion of this test, a written test report shall be submitted to the District for approval. For purposes of this condition, commences commercial operation is defined as the first instance when power is sold to the electrical grid. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]~~

~~**Verification**: The project owner shall submit to the CPM for review and the District for approval the RATA certification test protocol at least 60 days prior to the RATA test and shall notify the CPM, the U.S. EPA Region 9, and District of the RATA test date at least 45 days prior to conducting the RATA and other certification tests.~~

~~The project owner will submit all RATA or source test reports to the CPM for review and the District for approval within 45 days of the completion of those tests.~~

AQ-73 The oxides of nitrogen (NOX) and oxygen (O2) components of the CEMS shall be certified and maintained in accordance with applicable **f**~~F~~ederal **r**~~R~~egulations including the requirements of ~~sections~~ **§§** 75.10 and 75.12 of **T**~~t~~itle 40~~,~~ Code of Federal Regulations Part 75 (40 CFR 75), the **p**~~P~~erformance **s**~~S~~pecifications of Appendix A of 40 CFR 75, the **q**~~Q~~uality **a**~~A~~ssurance procedures of Appendix B of 40 CFR 75 and the CEMS **P**~~p~~rotocol approved by the District. The carbon monoxide (CO) components of the CEMS shall be certified and maintained in accordance with **District Rule 19,** 40 CFR 60, Appendices B and F~~, unless otherwise specified in this permit,~~ and the CEMS **P**~~p~~rotocol approved by the District.

[Rules ~~69.3,~~ 69.3.1, ~~and~~ 20.3(d)(1)**;** ~~and~~ 40 CFR Part 60 Subpart KKKK~~,~~**; 40 CFR 60, Appendices B and F;** ~~and~~ 40 CFR Part 75]

Verification: The project owner shall submit to the CPM for review and the District for approval a CEMS protocol, as required by AQ-70, which includes description of the methods of compliance with the requirements of this condition.

The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

AQ-74 The CEMS shall be in operation in accordance with the District approved CEMS **P**~~p~~rotocol at all times when the turbine is in operation. A copy of the District approved CEMS ~~monitoring~~ **P**~~p~~rotocol shall be maintained on site and made available to District personnel upon request. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1)**;** ~~and~~ 40 CFR Part 60 Subpart KKKK~~,~~**;** and 40 CFR Part 75]

Verification: The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

AQ-76 Any violation of any emission standard as indicated by the CEMS shall be reported to the District's **C**~~c~~ompliance **D**~~d~~ivision within 96 hours after such occurrence. [**CA Health and Safety Code, Division 26, Part 4, Chapter 5 §42706**~~Rule 19.2~~]

Verification: The project owner shall notify the District regarding any emission standard violation as required in this condition and shall document all such occurrences in each Quarterly Operation Report (**AQ-SC8**).

AQ-77 The CEMS shall be maintained and operated, and reports submitted, in accordance with the requirements of Rule 19.2 Sections (**D**~~d~~), (**E**~~e~~), (**F**~~f~~)(1), (**F**~~f~~)(2), (**F**~~f~~)(3), (**F**~~f~~)(4) and (**F**~~f~~)(5)~~,~~ and ~~a~~ CEMS **P**~~p~~rotocol approved by the District. [Rule 19.2]

Verification: The project owner shall submit to the District the CEMS reports as required in this condition and shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

AQ-78 Except for changes that are specified in the initial approved CEMS protocol or a subsequent revision to that protocol that is approved in advance, in writing by the District, the District shall be notified in writing at least **thirty (**30**)** calendar days prior to any planned changes made in the CEMS or Data Acquisition and Handling System (DAHS), including, but not limited to, the programmable logic controller, software which affects the value of data displayed on the CEMS / DAHS monitors with respect to the parameters measured by their respective sensing devices and any planned changes to the software that controls the ammonia flow to the SCR. Unplanned or emergency changes shall be reported within 96 hours. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

Verification: The project owner shall submit to the CPM for review and the District for approval any revision to the CEMS/DAHS or ammonia flow control software, as required by this condition, to be approved in advance at least 30 days before any planned changes are made. The project owner shall notify the District regarding any unplanned emergency changes to these software systems within 96 hours and shall document all such occurrences in each Quarterly Operation Report (**AQ-SC8**).

AQ-79 **Deleted.**~~At least 90 calendar days prior to the Initial Emissions Source Test, the project owner shall submit a monitoring protocol to the District for written approval which shall specify a method of determining the VOC/CO surrogate relationship that shall be used to demonstrate compliance with all VOC limits when using CEMS data. This protocol can be provided as part of the Initial Source Emissions Testing Protocol. [Rule 20.3 (d)(1)]~~

~~**Verification**: The project owner shall submit to the CPM for review and the District for approval the monitoring protocol as part of the initial source test protocol in compliance with requirements of this condition at least 90 days prior to the initial source test.~~

AQ-80 Fuel flowmeters shall be installed and maintained to measure the fuel flow rate, corrected for temperature and pressure, to each combustion turbine. Correction factors and constants shall be maintained on site and made available to the District upon request. The fuel flowmeters shall meet the applicable quality assurance requirements of 40 CFR Part 75, Appendix D, Section 2.1.6. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

Verification: The project owner shall submit to the CPM the natural gas usage data from the fuel flow meters as part of the Quarterly Operation Report (**AQ-SC8**).

AQ-81 Each combustion turbine shall be equipped with continuous monitors to measure, calculate**,** and record unit operating days, hours, ~~and~~ minutes and the following operational characteristics:

a. Date and time;
b. Natural gas flow rate to the combustion turbine during each unit operating minute, in standard cubic feet per hour;
c. Total heat input to the combustion turbine based the fuels higher heating value during each unit operating minute, in million British thermal units per hour (MMBtu/hr);
d. Higher heating value of the fuel on an hourly basis, in British thermal units per standard cubic foot (Btu/scf);
e. Stack exhaust gas temperature during each unit operating minute, in degrees Fahrenheit;
f. Gross electrical power output during each unit operating minute in megawatts (MW); and
g. Water injection rate in gallons per minute (gpm) or pounds per hour (lb/hr).

The values of these operational characteristics shall be recorded each unit operating minute. The monitors shall be installed, calibrated, and maintained in accordance with a turbine operation monitoring protocol,

which may be part of the CEMS protocol, approved by the District, which shall include any relevant calculation methodologies. The monitors shall be in full operation at all times when the combustion turbine is in operation. Calibration records for the continuous monitors shall be maintained on site and made available to the District upon request. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

Verification: The project owner shall submit to the CPM for review and the District for approval a turbine operation monitoring protocol in compliance with this condition and within the timeframes specified in **AQ-82** and the project owner shall make the site available for inspection of records and equipment required in this condition by representatives of the District, ARB, and the Energy Commission.

AQ-82 **Deleted.**~~At least 90 calendar days prior to initial startup of each combustion turbine, the project owner shall submit a turbine monitoring protocol to the District for written approval. This may be part of the CEMS protocol. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]~~

~~**Verification**: The project owner shall submit to the CPM for review and the District for approval a turbine monitoring protocol in compliance with this condition at least 90 days prior to the initial startup of each combustion turbine.~~

AQ-83 Operating logs or Data Acquisition and Handling System (DAHS) records shall be maintained to record the beginning and end times and durations of all **tuning periods, and** startup and shutdown periods to the nearest minute, quantity of fuel used in each clock minute, clock hour, calendar month, and 12-calendar-month period in standard cubic feet; hours of operation each day; and hours of operation during each calendar year. For purposes of this condition, the hours of turbine operation is defined as the total minutes the turbine is combusting fuel during the calendar year divided by 60 rounded to the nearest hundredth of an hour. [Rules ~~69.3,~~ 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

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

AQ-84 ~~Before the end of the commissioning period for each combustion turbine, the project owner shall install post-combustion air pollution control equipment on that turbine to minimize NOX and CO emissions. Once installed, t~~**T**he post-combustion air pollution control equipment shall be maintained in good condition and shall be in full operation at all times when the turbine is combusting fuel and the air pollution control equipment is at or above its minimum operating temperature. [Rule 20.3(d)(1)]

Verification: The project owner shall provide the CPM District records demonstrating compliance with this condition as part of the monthly commissioning status report (AQ-85).

AQ-85 **Deleted.** Within 30 calendar days after the end of the commissioning period for each combustion turbine, the project owner shall submit a written report to the District. This report shall include, at a minimum, the date the commissioning period started and ended, the dates and times of all startup and shutdown periods, the emissions of NOX and CO during other periods, and the emissions of NOX and CO during steady state operation. This report shall also detail any turbine or emission control equipment malfunction, upset, repairs, maintenance, modifications, or replacements affecting emissions of air contaminants that occurred during the commissioning period. All of the following continuous monitoring information shall be reported for each minute and, except for cumulative mass emissions during startup and shutdown periods, averaged over each hour of operation:

a. Concentration of oxides of nitrogen (NOX) in parts per million (ppmvd) both uncorrected and corrected to 15 percent oxygen;
b. Concentration of carbon monoxide (CO) in parts per million (ppmvd) both uncorrected and corrected to 15 percent oxygen;
c. Percent oxygen (O2) in the exhaust gas;
d. Mass emissions of oxides of nitrogen (NOx) calculated as NO2, in pounds;
e. Cumulative mass emissions of oxides of nitrogen (NOx) calculated as NO2 in each startup and shutdown period, in pounds;
f. Cumulative mass emissions of carbon monoxide (CO) in each startup and shutdown period, in pounds;
g. Mass emissions of carbon monoxide (CO), in pounds;
h. Total heat input to the combustion turbine based on the fuel's higher heating value, in million British thermal units per hour (MMBtu/hr);
i. Higher heating value of the fuel on an hourly basis, in British thermal units per standard cubic foot (Btu/scf);
j. Gross electrical power output of the turbine, in megawatts (MW);
k. SCR outlet temperature, in degrees Fahrenheit;
l. Water injection rate in gallons per minute (gpm) or pounds per hour (lb/hr); and
m. Ammonia injection rate in pounds per hour (lb/hr).

The hourly average information shall be submitted in writing and in an electronic format approved by the District. The minute-by-minute information shall be submitted in an electronic format approved by the District. [Rules 69.3, 69.3.1, 20.3(d)(1) and 20.3(d)(2)]

Verification: A log of the dates, times, and cumulative unit operating hours when fuel is being combusted during the commissioning period shall be maintained by the project owner. The project owner shall submit, commencing one month from the time of gas turbine first fire, a monthly commissioning status report throughout the duration of the commissioning phase that demonstrates compliance with the requirements listed in this condition. The monthly commissioning status report shall be submitted to the CPM by the tenth of each month for the previous month, for all months with turbine commissioning activities following the turbine first fire date. The project owner shall also

~~provide the reporting required by this condition to the District and CPM within 30 day of completing commissioning of each turbine.~~

~~The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.~~

AQ-86 **Deleted.**~~For each combustion turbine, the project owner shall submit the following notifications to the District and U.S. EPA, Region 9:~~

~~a. A notification in accordance with 40 CFR Section 60.7(a)(1) delivered or postmarked not later than 30 calendar days after construction has commenced;~~

~~b. A notification in accordance with 40 CFR Section 60.7(a)(3) delivered or postmarked within 15 calendar days after initial startup; and~~

~~c. An Initial Notification in accordance with 40 CFR Section 63.6145(c) and 40 CFR Section 63.9(b)(2) submitted no later than 120 calendar days after the initial startup of the turbine.~~

~~In addition, the project owner shall notify the District when:~~

~~1. construction is complete by submitting a Construction Completion Notice before operating any unit that is the subject of this permit,~~

~~2. each combustion turbine first combusts fuel by submitting a First Fuel Fire Notice within five calendar days of the initial operation of the unit, and~~

~~3. each combustion turbine first generates electrical power that is sold by providing written notice within five days of this event.~~

~~[Rules 24 and 21 and 40 CFR Part 75, 40 CFR Part 60 Subpart KKKK, 40 CFR Part §60.7, 40 CFR Part 63 Subpart YYYY, and 40 CFR Part §63.9.]~~

~~**Verification**: The project owner shall provide notification to the District and U.S. EPA Region 9 as required by this condition and shall provide copies of these notifications as part of the final monthly commissioning status reports (AQ 85) due the month after the notifications are sent.~~

AQ-87 The project owner shall file semiannual reports in accordance with 40 CFR §60.4375. [40 CFR ~~Part~~ 60 Subpart KKKK **§ 60.4375 (a)**]

Verification: None required.

AQ-88 Each semiannual report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Each such semiannual compliance report shall be postmarked or delivered no later than January 30 or July 30, whichever date is the first date following the end of the semiannual reporting period. [40 CFR ~~Part~~ 60 Subpart KKKK**;** ~~and~~ Rule 21]

Verification: The project owner shall provide the District's Compliance Division the semi-annual reports required in this condition within the due dates specified in this condition, shall provide summaries of these semi-annual reports in the Quarterly

Operation Reports (**AQ-SC8**) following each semi-annual report, and shall provide full copies of these reports to the CPM upon request.

AQ-90 **Deleted.**~~Within 120 days of startup of each gas turbine, the owner or operator shall submit an initial notification to US EPA Region 9 in accordance with 40 CFR 63.6145(c) with the information specified in 40 CFR 63.6145(d). [40 CFR 63 Subpart YYYY]~~

~~**Verification**: The project owner shall provide a copy of the initial notification required by this condition to the CPM as part of the Quarterly Operation Reports (**AQ-SC8**).~~

AQ-90a **This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies**

Verification: None required.

AQ-90b **The project owner shall, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)**

Verification: None required.

CONDITIONS FOR EMERGENCY FIRE PUMP ENGINE

~~2014-APP-003481~~ APCD2020-PTO-003631

Emergency fire-pump diesel engine: John Deere/Clark model JW6H-UFADF0; S/N ~~TBD~~ **RG6090L130217**; EPA certified Tier 3, family ~~E~~**H**JDXL09.0114; 327 bhp rated at 1760 rpm; turbocharged with charge air cooler for emission control; driving an emergency fire-pump.

Every person who owns or operates this equipment is required to comply with the conditions listed below and all applicable requirements and District rules, including but not limited to Rule 10, 20, 40, 50, 51.

AQ-92 **Deleted.**~~The engine shall be EPA certified to the applicable emissions requirements for emergency fire pump engines of 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, based on the power rating of the engine and the engine model year. 40 CFR Part 60 Subpart IIII, and 40 CFR Part 63 Subpart ZZZZ, 17 CCR §93115]~~

~~**Verification**: The project owner shall provide to the CPM for review and approval engine documentation demonstrating compliance with the condition at least 30 days prior to purchasing the engine.~~

AQ-93 **Deleted.**~~This EPA certified engine shall be installed, configured, operated and maintained according to the manufacturer's emission related instructions. The owner or operator may not change any emission related~~

~~settings unless those changes are permitted by the manufacturer and do not affect the engine's compliance with the emission standards to which it is certified. [40 CFR 60 subpart IIII]~~

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

AQ-94 The engine shall be operated exclusively during emergencies as defined in Rule 69.4.1~~, 40 CFR Part 60 Subpart IIII~~ **or Rule 12** or 17 CCR §93115 as applicable, or for maintenance and testing.

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

AQ-95 Engine operation for maintenance and testing purposes shall not exceed 35 hours per calendar year unless otherwise required by ~~the~~ National Fire Protection Association (NFPA) Section 25. [~~Rules 69.4.1, 40 CFR Part 60 Subpart IIII,~~17 CCR §93115**, Rule 1200, NSR**]

Verification: The project owner shall submit to the CPM the fire pump engine operating data demonstrating compliance with this condition as part of the Quarterly Operation Report
(**AQ-SC8**).

AQ-96 The engine shall only use CARB **d**~~D~~iesel **f**~~F~~uel. [**Rule 12,** Rule~~s~~ ~~20.3(d)(1),~~ 69.4.1, ~~and~~ 17 CCR §93115**, 40 CFR 60 Subpart IIII**]

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

AQ-100 A non-resettable engine hour meter shall be installed on this engine, maintained in good working order, and used for recording engine ~~operating~~**operation** hours. If a meter is replaced, the Air Pollution Control District's Compliance Division shall be notified in writing within **10**~~ten~~ calendar days. The written notification shall include the following information:

A. Old meter's hour reading~~.~~**,**
B. Replacement meter's manufacturer name, model, and serial number if available and current hour reading on replacement meter~~.~~**, and**
C. Copy of receipt of new meter or of installation work order.

A copy of the meter replacement notification shall be maintained on site and made available to the Air Pollution Control District upon request. [**Rule 12,** Rule 69.4.1, 17 CCR §93115, ~~and~~ 40 CFR ~~Part~~ 60 Subpart IIII**, 40 CFR 63 Subpart ZZZZ**]

Verification: The project owner shall provide notification to the District as required by this condition and shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-101 The owner or operator **of this engine** shall conduct periodic maintenance of ~~this~~ **the** engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedure**s**. ~~The periodic~~ **M**~~m~~aintenance shall be conducted at least once each calendar year**, and shall include, but is not limited to, the following:**~~.~~
1) Change oil and filter, or test in accordance with the requirements of 40 CFR §63.6625(i) or (j);
2) Inspect and clean air filters, replacing as necessary; and
3) Inspect all hoses and belts, replacing as necessary.
Documentation of oil and filter changes or copies of the oil test analysis shall be kept on site and made available upon request. If testing in accordance with 40 CFR §63.6625(i) or (j), the oil analysis program must analyze the Total Base Number, viscosity and percent water content (for compression ignition engines) and the Total Acid Number, viscosity and percent water content (for spark ignited engines). If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
[**Rule 12,** Rule 69.4.1**, 40 CFR 63 Subpart ZZZZ** ~~and 40 CFR Part 60 Subpart IIII~~]

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

AQ-102 ~~The owner or operator shall keep manuals of recommended maintenance as provided by the engine and control equipment manufacturers for at least the same period of time as the engine to which the records apply is located on site. [Rule 69.4.1 and 40 CFR Part 60 Subpart IIII]~~ **The owner or operator of this engine shall install, configure, operate, and maintain this engine and control device, if any, according to the manufacturer's emission-related written instructions. The owner or operator may change only those emission-related settings that are permitted by the manufacturer. The periodic maintenance shall be conducted at least once each calendar year. [Rule 12, Rule 69.4.1, 40 CFR 60 Subpart IIII]**

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

AQ-103 The owner or operator of this engine shall maintain ~~records of all maintenance conducted on the engine, including a description of the~~

~~maintenance and date the maintenance was performed~~. **the following records on site for at least the same period of time as the engine to which the records apply is located at the site:**
(a) documentation shall be maintained identifying the fuel as CARB diesel, and
(b) manual of recommended maintenance provided by the manufacturer.
[Rule 69.4.1 ~~and~~ **17 CCR §93115,** 40 CFR Part 60 Subpart IIII]

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

AQ-104 ~~The owner or operator shall maintain documentation for all fuel deliveries identifying the fuel as CARB diesel. [Rule 69.4.1, 17 CCR §93115, and 40 CFR Part 60 Subpart IIII]~~ **All records required by this permit shall be maintained on site and readily available for District inspection for a minimum of 36 months from their date of creation unless otherwise indicated by the conditions of this permit. [Rule 12, Rule 69.4.1, 40 CFR 60 Subpart IIII]**

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

AQ-105 The owner or operator of this engine shall maintain a monthly operating log containing, at a minimum, the following:

(a) **d**~~D~~ates and **elapsed** times of **every instance of** engine operation **based on actual readings of the engine hour meter;**~~,~~ whether the operation was for **maintenance and testing purposes,** compliance with the testing requirements of National Fire Protection Association (NFPA) **Section** 25 or emergency use**;**~~,~~ and the nature of the emergency ~~if known~~;

b) if located within 500 feet of a school, the time of day of every instance of engine operation for testing and maintenance, unless
the engine emits no more than 0.01 g/bhp-hr of diesel particulate
matter or meets the requirements specified in 17 CCR, Section 93115.13(f);

c) total cumulative hours of operation per calendar year;

d) records of annual engine maintenance shall include the date the
maintenance was performed and the nature of the maintenance; and

(~~b~~**e**) **h**~~H~~ours of operation for all uses other than those specified above and identification of the nature of that use.

[**Rule 12,** Rule 69.4.1, ~~40 CFR 60 subpart IIII and~~ 17 CCR §93115**, 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ**]

Verification: The project owner shall submit to the CPM the fire pump engine operating data demonstrating compliance with this condition as part of the Quarterly Operation Report (AQ-SC8).

(Deleted)~~CONDITIONS FOR EMERGENCY ENGINES (GENERATOR)~~

~~District Application Number 2014-APP-003480~~

~~Emergency diesel engine generator: Caterpillar model C15 ATAAC; S/N TBD; EPA Certified Tier 4i, family ECPXL15.2HZA; 779 bhp rated; turbocharged with charge air cooler and exhaust gas recirculation for emission control; driving a 500 kW generator.~~

~~AQ-106~~ ~~The exhaust stack for the emergency generator engine shall be a minimum of 70 feet in height above grade and a maximum of 0.46 feet in diameter at the point of release and shall not be equipped with a rain cap unless it is of flapper valve design. [Rules 1200, 20.3(d)(2)]~~

~~Verification~~: ~~The project owner shall submit to the CPM for review the exhaust stack specification at least 60 days before the installation of the stack.~~

~~AQ-107~~ ~~The engine shall be EPA certified to the applicable emissions requirements for emergency engines of 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, based on the power rating of the engine and the engine model year. [40 CFR Part 60 Subpart IIII, and 40 CFR Part 63 Subpart ZZZZ, 17 CCR §93115]~~

~~Verification~~: ~~The project owner shall provide to the CPM for review and approval engine documentation demonstrating compliance with the condition at least 30 days prior to purchasing the engine.~~

~~AQ-108~~ ~~This EPA certified engine shall be installed, configured, operated and maintained according to the manufacturer's emission related instructions. The owner or operator may not change any emission related settings unless those changes are permitted by the manufacturer and do not affect the engine's compliance with the emission standards to which it is certified. [40 CFR 60 subpart IIII]~~

~~Verification~~: ~~The project owner shall make the site available for inspection of equipment and records by representatives of the District, ARB, and the Energy Commission.~~

~~AQ-109~~ ~~The engine shall be operated exclusively during emergencies as defined in Rule 69.4.1, 40 CFR Part 60 Subpart IIII or 17 CCR §93115 as applicable, or for maintenance and testing.~~

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

~~AQ-110~~ ~~Engine operation for maintenance and testing purposes shall not exceed 50 hours per calendar year. [Rule 69.4.1, 40 CFR Part 60 Subpart IIII, 17 CCR §93115]~~

Verification: The project owner shall submit to the CPM the emergency generator engine operating data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC8**).

AQ-111 The engine shall only use CARB Diesel Fuel. [Rules 20.3(d)(1), 69.4.1, and 17 CCR §93115]

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

AQ-112 Visible emissions including crankcase smoke shall comply with Air Pollution Control District Rule 50. [Rule 50]

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

AQ-113 The equipment described above shall not cause or contribute to public nuisance. [Rule 51]

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

AQ-114 This engine shall not operate for nonemergency use during the following periods, as applicable:

A. Whenever there is any school sponsored activity, if engine is located on school grounds or
B. Between 7:30 and 3:30 PM on days when school is in session, if the engine is located within 500 feet of, but not on school grounds.

This condition shall not apply to an engine located at or near any school grounds that also serve as the student's place of residence. [17 CCR §93115]

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

AQ-115 A non-resettable engine hour meter shall be installed on this engine, maintained in good working order, and used for recording engine operating hours. If a meter is replaced, the Air Pollution Control District's Compliance Division shall be notified in writing within ten calendar days. The written notification shall include the following information:

A. Old meter's hour reading.
B. Replacement meter's manufacturer name, model, and serial number if available and current hour reading on replacement meter.
C. Copy of receipt of new meter or of installation work order.

A copy of the meter replacement notification shall be maintained on site and made available to the Air Pollution Control District upon request. [Rule 69.4.1, 17 CCR §93115, and 40 CFR Part 60 Subpart IIII]

Verification: The project owner shall provide notification to the District as required by this condition and shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-116 The owner or operator shall conduct periodic maintenance of this engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedure. The periodic maintenance shall be conducted at least once each calendar year. [Rule 69.4.1 and 40 CFR Part 60 Subpart IIII]

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

AQ-117 The owner or operator shall keep manuals of recommended maintenance as provided by the engine and control equipment manufacturers for at least the same period of time as the engine to which the records apply is located on site. [Rule 69.4.1 and 40 CFR Part 60 Subpart IIII]

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

AQ-118 The owner or operator of this engine shall maintain records of all maintenance conducted on the engine, including a description of the maintenance and date the maintenance was performed. [Rule 69.4.1 and 40 CFR Part 60 Subpart IIII]

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

AQ-119 The owner or operator shall maintain documentation for all fuel deliveries identifying the fuel as CARB diesel. [Rule 69.4.1, 17 CCR §93115, and 40 CFR Part 60 Subpart IIII]

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

AQ-120 The owner or operator of this engine shall maintain a monthly operating log containing, at a minimum, the following:

a. dates and times of engine operation; whether the operation was for maintenance and testing purposes or emergency use; and the nature of the emergency, if known;
b. hours of operation for all uses other than those specified above and identification of the nature of that use. [Rule 69.4.1, 40 CFR 60 subpart IIII and 17 CCR §93115]

Verification: The project owner shall submit to the CPM the emergency generator engine operating data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC8**).

AQ-121 Within 120 days of startup of this engine, the owner or operator shall submit a notification to the District indicating that this source is a major source of HAP. [40 CFR 63 Subpart ZZZZ]

~~**Verification**: The project owner shall provide the notification as required to the District within the timeframe required and shall provide a copy of this notification to the CPM in the Quarterly Operation Report that follows the timing of the notification (**AQ-SC8**).~~

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CEC 2015a – California Energy Commission (CEC). Carlsbad Energy Center Project Amendments Final Staff Assessment (TN 203696), docketed February 17, 2015.

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