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Carlsbad Energy Center Project (07-AFC-06C)
Supplemental Petition to Amend: for Amendments to Air Quality Conditions of Certification

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1.0 INTRODUCTION

Carlsbad Energy Center LLC (CECL) operates the Carlsbad Energy Center Project (CECP) located at 4950 Avenida Encinas in Carlsbad, CA. The California Energy Commission approved the Amended CECP (Docket #07-AFC-06C), issuing a Final Decision dated July 2015 (TN# 205625), which contains the Conditions of Certification (COCs) under which the power plant is allowed to operate. As discussed in Section 1.2 below, CECP replaced a prior power plant located nearby and CECL has been operating the CECP since late 2018.

1.1 Air Permit Modification Overview

In mid-2019, soon after the new power plant first began operation, the generation equipment was not able to meet its emission requirements during startup events in all ambient conditions. This inability to meet emissions limits during all starts required obtaining a variance, followed by a series of permitting actions with the San Diego County Air Pollution Control District (SDAPCD or District). An Authority to Construct (ATC) application for this change was submitted to the SDAPCD in September 2019 followed by some supplemental information in October 2019. The ATC application was followed with a Petition to Amend (PTA) submitted by CECL to the Energy Commission in February 2020 (docketed 2/5/2020, TN# 231945) that sought to revise Air Quality COCs AQ-40 to modify the permitted carbon monoxide (CO) startup mass emission limit and AQ-14 to modify the turbine shutdown condition definition. Because the power plant was operating under a variance from the SDAPCD Hearing Board, the Energy Commission staff requested that CECL provide the revised SDAPCD permit prior to the Energy Commission acting on the February 2020 PTA.

In response to the ATC application, the SDAPCD proposed changes to the permit conditions which were much more extensive than the initial two conditions (AQ-14 and AQ-40) that CEPL expected to need revision. Additional information was provided by CECL to SDAPCD, and discussion of the draft revised Startup Authorization (SA) ensued to resolve differences, leading to a series of revised SAs over the next three and a half years from the initial ATC application submittal. Other changes needed to the permit conditions included: 1) an ATC application to request an allowance for periodic tuning submitted in June 2021; 2) an ATC application in January 2022 to request the ability to use alternative (like-in-kind) SuperCores during maintenance of the gas turbines; and 3) a request for removal of the volatile organic compound (VOC) to CO surrogate relationship requirement in July 2022, that were also factors in this timeline.

On August 25, 2022, SDAPCD issued a preliminary decision to issue a Title V Operating Permit for public comment which incorporated the revised permits to operate (PTOs) for the equipment which included all of the above changes as well as other updates to the PTOs. The final Title V Operating Permit and PTOs were issued in February 2023, a few minor corrections were made, and the final permits resent on March 16, 2023. A copy of the final Title V Operating Permit, one of the five identical proposed PTOs for the combustion turbine generators (CTGs), and the PTO for the emergency fire-water pump engine are provided in Appendix A of this petition.

This Supplemental PTA for Post-Certification Amendments is being filed with the Energy Commission to update (replace) the PTA filed in February 2020 and to conform the Air Quality COCs that were approved by the Energy Commission in July 2015 with permit modifications made by SDAPCD in March 2023.

1.2 Project Background

The Energy Commission approved the Application for Certification (AFC) for the CECP in May 2012. CECL filed a Petition for Amendments to obtain approval for an amended project in May 2014. The SDAPCD issued a Revised Final Determination of Compliance (FDOC) for the Amended CECP in April 2015, and the Energy Commission approved the amendments to the Final Decision in July 2015.

The Amended CECP was approved for the construction and operation of six General Electric (GE) LMS100-PA natural gas-fired, diffusion-flame turbine engines operating in simple-cycle configuration. Although six CTGs were approved for the Amended CECP, five CTGs with a total net output capacity of approximately 527 megawatts (MW) were constructed. Major milestones in the Amended CECP development included:

- The contract with the San Diego Gas & Electric Company (SDG&E) was approved by the California Public Utilities Commission in 2015 and was subsequently clear of appeals in January 2016;
- Construction of five CTGs was completed sequentially with the fifth unit completed in September 2018;
- The five CTGs were each commissioned from May to October 2018, leading to a site-wide declaration of commercial online date in December 2018;
- Encina Power Station (EPS) was retired in December 2018; and
- The SDAPCD issued a Startup Authorization on May 1, 2019, with an expiration of October 27, 2019, which was subsequently extended several times until the final PTOs were issued in March 2023.

1.3 Subsequent Permitting Actions and Reasons for Air Quality Condition Revisions

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 (issued July 30, 2019, and effective July 26 through August 24, 2019) followed by an Interim Variance (issued August 22 and effective through September 19, 2019) for Units 8-10 and an Emergency Variance (issued September 10 and effective through October 20, 2019) for Unit 6. CECL conducted extensive analyses of the equipment and was unable to identify a specific system failure, mechanical defect, or other irregularity that would explain the non-conforming emissions and for which a specific repair could be affected. The Interim Variance was converted to a Regular Variance (Petition 4507) 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.

An Authority to Construct (ATC) application was filed with the SDAPCD on September 20, 2019, to request a change in the CO limit during startups in compliance with the Regular Variance. Changes to the manner that shutdowns were defined in the permit were also requested. As noted above, the SDAPCD issued an SA with an increased CO emission limit that allowed the continued operation of the CECP upon expiration of the Regular Variance and continued to assess how to address the requested change in the shutdown definition.

In February 2020, CECL also filed an Amendment Petition with the Energy Commission for the following two proposed amendments:

1. To request a modification of COC AQ-40 (SDAPCD SA Condition 40) to allow for higher CO emissions during startup; and
2. To make administrative changes to COC AQ-14 (SDAPCD SA Condition 14) as it pertained to the definition of shutdown without a change in emissions.

The SDAPCD continued processing CECL's application for these revisions to the conditions in CECP's SA. In July 2020, the SA was again extended by the SDAPCD to December 7, 2020. Due to changes in personnel working on the permit, the SA was again extended, this time until May 24, 2021. SDAPCD determined that changes to additional permit conditions beyond Condition 14 were needed related to the change in the shutdown definition. Specifically, in addition to modifications to AQ-14 to further define a shutdown period as differentiation from normal operations and for AQ-40 to adopt the new CO startup emission limit, SDAPCD also revised other permit conditions (i.e., Conditions 15, 27, 28, 29, 39, 41, and 85 in the SA) to address shutdowns that occur during startups.

In April 2021, a complaint was filed related to the power plant operating outside of its COC AQ-SC9 restricted operating hours of 06:00 am to midnight (see TN# 237516). The Energy Commission explained in a response to the complaint letter dated April 22, 2021 why these occurrences were not considered to be violations of AQ-SC9 (see TN# 237517). In order to meet a California Independent System Operator (ISO)-scheduled dispatch at 0600 hours (6:00 am), the operator needs to initiate startup in enough time before 0600 to ramp-up to the dispatch power level by 0600, and at the end of dispatch ending at 2400 hours, needs several minutes after midnight for the turbines to spin down for cooling to final shutdown. The Energy Commission also noted that CECP's 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. The Energy Commission further noted that this condition is not necessary for air quality reasons but was implemented for noise impact mitigation. In order to avoid future confusion, this COC (AQ-SC9) is proposed to be deleted since the requirement is not related to air quality, and retain COC **NOISE-4**, which allows for exceptions to the operating-hours limitations for "…reliability-related purposes, or as otherwise required by the ISO Tariff." This exception is seen as allowing the addition time before 6:00 am for startup and after midnight for shutdown if needed to meet ISO dispatch requirements.

With ongoing discussions between SDAPCD and CECL regarding the permit condition changes, the SA was again extended from May 24 to August 24, 2021. In the meantime, CECL recognized that further changes were needed to the permit conditions to allow for the periodic tuning requirements for the CTGs. An ATC application was filed with the SDAPCD on June 14, 2021 to

propose a new condition with a definition and emissions limit for tuning request changes to Conditions 27 – 33 and 39 – 43; these changes requested incorporating tuning into the conditions that already allow for additional emissions during activities such as startup and/or shutdown. In its June 2021 ATC application, CECL also requested changes to Condition 36, which was related to only five of the 6 permitted CTGs being built, and deletion of Condition 47, which was related to the transition from the EPS to the CECP.

Since the SDAPCD was still processing the ATC application related to tuning that had been submitted in June 2021, the SDAPCD extended the SA from August 24, 2021 to November 24, 2021, and then extended it again to February 24, 2022. The draft August 24, 2021 SA incorporated the changes to the permit conditions related to startup and shutdown, Condition 62 related to timing of the initial Relative Accuracy Testing Audit (RATA), and changes to delete references to the application for the sixth CTG and the emergency generator that were permitted but not installed (but did not include the changes for tuning from the June 2021 ATC application). The SDAPCD also made other minor stylistic edits throughout that SA for current convention.

On January 3, 2022, CECL submitted an application associated with replacement of components of the gas turbine SuperCore for Unit #6. Although SDAPCD issued an SA to cover this occurrence, CECL requested a more general permit change, i.e., a new permit condition, so that an application is not needed when a like-in-kind replacement is needed for maintenance of the units. While SDAPCD agreed to make this change, the District also indicated that another extension of the SA was needed, and the SA for the SuperCore replacement had an expiration date of July 26, 2022.

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 for one hour on May 5, 2022. This NOV related to the CO limit led the SDAPCD to examine what that meant for determining compliance with VOC limits that were to be determined with a presumed VOC to CO surrogate relationship. SDAPCD proposed further revisions to the SA, but CECL submitted additional information to demonstrate that a surrogate relationship does not exist between the VOC and CO emissions at this facility, and that source tests for VOC emissions have been consistently very low. Based on this information, SDAPCD agreed that the requirement for using a VOC to CO surrogate relationship for compliance purposes was not needed and instead, given the presence of an oxidation catalyst (and CO CEMS to show it is working effectively), the source test requirements for VOC already in the permit are sufficient to determine compliance. The SA was then extended to August 24, 2022.

On August 25, 2022, the SDAPCD issued a preliminary decision to issue a federal Title V Operating Permit for the CECP, which references draft PTOs for the five CTGs and one fire-water pump engine that were installed at the power plant. All of the changes described above were incorporated into the permit conditions in the PTOs. Due to comments filed during the public comment period, revisions to the draft Title V permit were made and the revised draft permit was issued on November 25, 2022. There was a 30-day public review period that ended on 25, 2022 and a concurrent 45-day EPA comment period ending on January 9, 2023. The notice also indicated that there would be a 60-day appeal period after the close of the EPA comment period.

Because the changes described above resulted in several new permit conditions, removal of obsolete conditions, and modification to most of the remaining conditions, the SDAPCD

completely revamped the permit conditions, with new numbers/order. This PTA requests that the Energy Commission incorporate similar changes in the COCs for this power plant.

1.4 Proposed Revisions to the Air Quality COCs

Based on the series of SA changes and recent updates to the SDAPCD PTO conditions, CECL is submitting this Supplemental PTA to the Energy Commission to update the PTA submitted in February 2020 and to conform the July 2015 Amended CECP Air Quality COCs. This Supplemental PTA completely replaces the Petition submitted by CECL to the Energy Commission in February 2020.

A complete set of the Air Quality COCs with the proposed changes shown in bold **underline** for new text and ~~**strikeout**~~ for deleted text is provided in Appendix B. As shown in Appendix B, the changes have been color coded to distinguish between the changes SDAPCD adopted in the PTOs related to different applications. A summary of the changes proposed is provided in Section A of this PTA, an analysis of why the changes are needed is provided in Section B, and an analysis of the potential impacts to air quality for these modification is provided in Section D.

Pursuant to California Code of Regulations (CCR) Title 20 Section 1769(a)(1) as revised in September 2019, the proposed post-certification amendments comply with all laws, ordinances, regulations, and standards (LORS) and do not have a significant environmental impact, as further described in this Amendment Petition. Except for CO emission limits during startup events and to allow for short-term periodic emissions during tuning, the proposed revisions to the COCs will not result in increased permitted maximum hourly, daily, quarterly, or annual emissions and will not have any significant impact on property owners, the public, or any other parties.

1.5 Information Requirements for Post-Certification Amendments

This Supplemental Petition contains the information required under the Energy Commission's Siting Regulations for post-certification project modifications [CCR Title 20, Section 1769(a)(1)], including the following:

A. A complete description of the proposed change, including new language for any conditions of certification that will be affected;
B. A discussion of the necessity for the proposed change and an explanation of why the change should be permitted;
C. A description of any new information or change in circumstances that necessitated the change;
D. An analysis of the effects that the proposed change to the project may have on the environment and proposed measures to mitigate any significant environmental effects;
E. An analysis of how the proposed change would affect the project's compliance with applicable laws, ordinances, regulations, and standards;
F. A discussion of how the proposed change would affect the public;
G. A list of current assessor's parcel numbers and owners' names and addresses for all parcels within 500 feet of any affected project linears and 1,000 feet of the project site;
H. A discussion of the potential effect of the proposed change on nearby property owners, residents, and the public; and

I. A discussion of any exemptions from the California Environmental Quality Act, of the Public Resources Code, that the project owner believes may apply to approval of the proposed change.

This Supplemental Petition contains the information necessary for Energy Commission staff to determine that the proposed revisions to Air Quality COCs as described in this PTA (a) will not significantly affect the environment, (b) will not cause the project to fail to comply with applicable LORS, and (c) will not result in the increase of daily, quarterly, or annual permit emissions limits as a result of the change.

2.0 REQUIRED INFORMATION FOR POST-CERTIFICATION AMENDMENTS

A. Complete description of the proposed change, including new language for any conditions of certification that will be affected.

A.1 Facility Background Information

The Amended CECP consists of five[1] GE LMS100-PA natural gas-fired, diffusion-flame turbine engines operating in simple-cycle configuration with a total net output capacity of about 527 MW. These CTGs are designed both for efficient operation (up to 44% thermal efficiency) in simple-cycle mode and for fast starting – they are capable of reaching 100% load in 10 minutes or less with ramp rates of up to 50 MW per minute. Five of the six licensed CTGs were installed at CECP, and the ATC permit for the original six units expired in June 2019. Therefore, the sixth unit will not be installed as part of the current SDAPCD permit or FDOC.

Each CTG is equipped with an inlet air evaporative cooler. Cooling for each turbine is provided by a dry air fin-fan cooler, shell and tube heat exchanger, and intercooler between the low- and high-pressure compressor stages. Each CTG operates with demineralized water injection to control the formation of pollutants. Emissions from each turbine are further controlled using exhaust after-treatment consisting of an oxidation catalyst and selective catalytic reduction (SCR) system. The oxidation catalyst is designed to reduce emissions of CO, VOCs, and various toxic air contaminants (TACs). The SCR system injects a reductant (ammonia) into the exhaust stream; the ammonia reacts with oxides of nitrogen (NO_x) in a catalyzed reaction to form nitrogen (N_2) and water.

Combustion air for the gas turbine is initially filtered to remove particulates to protect the gas turbine engine interior. When evaporative cooling is enabled, the inlet air is also cooled and densified as it passes through the evaporative cooling section. The air is then drawn through a multistage compressor section of the turbine, where the pressure is further increased. Unlike typical simple-cycle turbines, air is removed from an intermediate stage of the compression process in the LMS100-PA and passed through an external cooling system using ambient air, which improves the turbine efficiency and lowers the exhaust temperature. The air then passes to the combustion section where natural gas fuel is introduced and combusted, resulting in rapid temperature and pressure increases in the air/gas mixture. Water is injected directly into the combustion mixture at this stage to minimize flame temperature, which reduces NO_x formation.

[1] The Energy Commission license for the facility allows the installation of a sixth CTG. The sixth unit has not been installed and the SDAPCD has removed reference to this unit in the final PTO.

The exhaust gas then begins to expand as it passes through the turbine section of the engine, which turns a shaft that is attached to a generator for producing electric power.

The exhaust from the gas turbine then passes through the oxidation catalyst and SCR before being vented to the atmosphere. In the oxidation catalyst section, incompletely combusted organic compounds and CO are further oxidized on the catalyst and converted primarily to carbon dioxide (CO_2) and water. In the SCR section, aqueous ammonia (NH_3) is introduced into the exhaust stream through lances inserted into the exhaust ducting. The NH_3 mixes with the exhaust gas and reacts with NO_x on the surface and interior of the catalyst to produce N_2 and water. Some residual ammonia (known as "ammonia slip") remains in the exhaust gas. Sulfur oxides (SO_x) and particulate matter (PM, PM_{10}, $PM_{2.5}$) pollutants are minimized by using natural gas as the fuel source. These pollutants, along with the ammonia slip, are released into the atmosphere. The stack of each turbine is equipped with continuous monitors to measure and record the concentrations of NO_x, CO, and oxygen (O_2) in the exhaust gas, along with monitors to measure and record operational characteristics, including the natural gas flow rate.

An additional feature of the CTGs is their ability to quickly start and ramp to full load. This feature is important for air pollution, since emissions are typically elevated during these times. The manufacturer estimates that the turbines can reach 100% load within 10 minutes. However, because the oxidation catalyst and SCR catalyst have minimum temperature values below which they are not effective at controlling emissions, it is estimated that for up to 25 minutes after startup, the emissions from the turbine will not meet the required emission levels for steady-state operation. The acceptable temperature range for the SCR catalyst is a minimum of 540 degrees Fahrenheit (°F) before ammonia injection can begin and a sustained maximum of 870°F. The SCR catalyst can tolerate intermittent temperatures of 932°F with no major detrimental effects. The oxidation catalyst does not have a minimum temperature since no reagents are injected, but based on manufacturer data, CO emissions are expected to be controlled at 90% or higher for catalyst temperatures 400°F or higher. VOC emissions are expected to be controlled at approximately 40% starting at a catalyst temperature of 400°F increasing to 50% control or more at 750°F or higher. During normal operations, the turbine exhaust temperature through the catalyst section ranges from about 750°F to 850°F. The manufacturer did not provide a maximum temperature for the catalyst, but typical maximums for this type of catalyst are 1,250°F to 1,350°F to prevent damage to the catalyst. The sustained exhaust gas temperature of the turbines is expected to remain below the sustained high temperature limits for the catalysts.

The CTGs are permitted for 2,700 hours of normal operation and 400 starts per unit per year. Units 6 through 9 are dispatched at 230 kilovolts (kV) and Unit 10 is dispatched at 138 kV.

A.2 Proposed Changes to the Conditions of Certification

Table 1 provides a list of the Air Quality COCs as issued in the CECP Final Decision in 2015 and the permit condition numbers (#) are in the recently issued PTOs (provided in Appendix A). The 3rd column provides a suggested revised COC number, where we have assumed that the current COC numbering will be retained rather than adopting the new numbering in the PTOs. The new PTO conditions can either be inserted where COC's have been deleted or added at the end. The notes column provides a summary of the changes. A full markup of the Air Quality COCs is provided in Appendix B.

Note, Table 1 also contains a listing of Permit Conditions in the recently issued Title V Operating Permit (also in Appendix A). For Column 3 Suggested Revised COC Numbers, we have shown current COC numbers that deal with similar requirements, e.g., AQ-7 deals with access and I.C.1 also deals with access, but somewhat differently. Requirements related to submission of Title V renewal applications have been suggested as possible addition to AQ-SC6 since this COC requires that applications be provided to the Energy Commission after submittal to the SDAPCD. AQ-6 requires consistency with past applications and that records at the site be available for inspection by other agencies, while I.D.1 requires compliance with applicable rules and permit terms and I.D.2 requires that records be provided upon request. AQ-12 deals with records retention, but the requirement has been deleted from the PTO and there are two slightly different conditions (I.C.2 and II.D.2) in the new Title V Operating Permit. Due to such variations and inconsistencies, the changes to reflect the new PTOs have been incorporated into the mark-up of the COCs in Appendix B, however the Title V Operating Permit conditions have not been incorporated except for AQ-12.

Table 1: Mapping of Energy Commissions and District Condition Numbering with Summary Notes of the Modifications

Energy Commission COC Numbers	SDAPCD New TV/PTO Condition Numbers	Suggested Revised COC Numbers	Notes
AQ-SC1	(none)	AQ-SC1	No change.
AQ-SC2	(none)	AQ-SC2	No change.
AQ-SC3	(none)	AQ-SC3	No change.
AQ-SC4	(none)	AQ-SC4	No change.
AQ-SC5	(none)	AQ-SC5	No change.
AQ-SC6	(none)	AQ-SC6	No change.
AQ-SC7	(none)	AQ-SC7	No change.
AQ-SC8	(none)	AQ-SC8	No change.
AQ-SC9	(none)	AQ-SC9	Proposed to be deleted since covered by NOISE-4 and not needed as an air quality requirement.
AQ-SC10	(none)	--	Previously deleted.
AQ-SC11	(none)	AQ-SC11	No change.
AQ-SC12	(none)	--	Proposed to be deleted since the EPS has been demolished.
AQ-SC13	(none)	--	Proposed to be deleted since the EPS has been demolished.
SDAPCD Title V Operating Permit Conditions			
(none)	I.A.1	AQ-SC6	Indicates that the Title V permit expires in 5 years from the date of issuance (2/2/2023).
(none)	I.A.2	TBD	These permit conditions give standard SDAPCD Title V Administrative Permit Terms such as specifying the SDAPCD's ability to revoke the permit for cause, the validity of the permit during modifications or challenges, and that the permit does not preclude the use of credible evidence in establishing violations. A general COC requiring compliance with the Title V Operating Permit (for these and other Title V conditions) might suffice.
(none)	I.A.3	TBD	
(none)	I.A.4	TBD	
(none)	I.A.5	TBD	
(none)	I.A.6	TBD	
(none)	I.A.7	TBD	
(none)	I.A.8	TBD	

Energy Commission COC Numbers	SDAPCD New TV/PTO Condition Numbers	Suggested Revised COC Numbers	Notes
(none)	I.B.1	AQ-SC6	Requires that a permit renewal application be submitted within standard Title V required timeline (at least 12 and no more than 18 months before expiration).
(none)	I.B.2	AQ-SC6	Provides for an Application Shield during application processing.
(none)	I.C.1	AQ-7	Requires access to all equipment and records, not only what is needed for testing and inspections.
(none)	I.C.2	AQ-12	Requires all records and reports to be kept for at least 5 years, with at least 3 years onsite, rather than all 5 years onsite.
(none)	I.C.3	AQ-88	Provides for later filing dates for semi-annual reports unless the filing dates in the PTOs are shorter. Non-compliance with federal requirements must be clearly identified.
(none)	I.C.4	AQ-89	Requires an annual compliance certification report.
(none)	I.C.5	AQ-89	Requires that any compliance certification reports be signed by a Responsible Official.
(none)	I.C.6	AQ-89	Trade secret designations shall be made in compliance with Rule 176.
(none)	I.C.7	AQ-76	All deviations and breakdowns must be reported as specified.
(none)	I.D.1	AQ-6	Requires compliance with all permit terms, including PTOs and federally enforceable applicable rules, identified in the Title V permit.
(none)	I.D.2	AQ-6	Requires that any information or records requested by the District that are needed to determine compliance must be provided upon request.
(none)	I.D.3	TBD	Requires the payment of fees.
(none)	I.D.4	AQ-7	Requires access and safety equipment for testing and inspection.
(none)	I.D.5	AQ-SC6	Permit must always be kept on site and available for review.
(none)	I.D.6	AQ-SC6	Changes can only be made if allowed by the permit and that comply with requirements for permit amendments and changes under Rules 1410 and 10.
(none)	I.D.7	TBD	Only rules as identified in the Appendix B Rule Reference Table or that are subsequently approved by EPA into the State Implementation Plan (SIP) are considered federally enforceable.
(none)	II.D.1	AQ-22	Requires use of CPUC quality natural gas.
(none)	II.D.2	AQ-12	Similar to I.C.2 but qualifies that records need only be kept on site for one year if they can be made readily available upon request.
(none)	II.D.3	AQ-6	Similar to I.D.1 which requires compliance with all terms and conditions of the permit including the Rule Reference table but calls out 40 CFR Parts 60 and 63.
(none)	II.E.1	AQ-11	The COC requires compliance with 40 CFR Part 73 related to SO_2 allowances while the Title V permit indicates that the emissions cannot exceed the allowances held pursuant to Title IV requirements.
(none)	II.E.2	AQ-69	The COC includes requirements for CO and NOx while the Title V permit is for CO_2 and NOx.
(none)	II.E.3	AQ-68	The COC is generic and refers to all CEMS requirements per 40 CFR Parts 75 and 60 while the Title V permit is specific to a NOx CEMS Quality Assurance program per 40 CFR Parts 72 and 75.
(none)	II.E.4	AQ-67	The COC gives the specific requirements for sulfur content monitoring while the Title V permit indicates that SO2 emissions shall be monitored pursuant to 40 CFR Parts 72 and 75.

Energy Commission COC Numbers	SDAPCD New TV/PTO Condition Numbers	Suggested Revised COC Numbers	Notes
(none)	II.E.5	AQ-77	The COC requires CEMS reports to be submitted in compliance with Rule 19.2 and the CEMS protocol while the Title V permit requires quarterly electronic data reports to be submitted to EPA per 40 CFR 75.
Combustion Turbine Generator (CTG) Conditions			
AQ-1	deleted	--	This condition referenced the original application numbers, including the 6th CTG and is no longer included in the PTO.
AQ-2	deleted	--	This condition requires the cancellation of prior applications and permits that are no longer being pursued. With the decommissioning of the EPS, this condition is considered obsolete and should be deleted.
AQ-3	deleted	--	This condition requires cancellation of applications submitted prior to the facility redesign to the current configuration. Since the new facility is constructed, this condition is considered obsolete and should be deleted.
AQ-4	deleted	--	ERCs were surrendered as required, so this condition is considered obsolete and should be deleted. Any new modifications that require additional ERCs would require a new COC specific to the changes.
AQ-5	1	AQ-5	No changes.
--	New 2	TBD	New PTO condition 2 related to allowed SuperCore replacements.
--	New 3	TBD	New PTO condition 3 is related to the process for replacing SuperCores during maintenance.
AQ-6	deleted	--	This COC requires that the project be operated in accordance with all data and specifications submitted in applications. See above for potential replacement with Title V permit conditions related to compliance with applicable rules and permit conditions.
AQ-7	71	AQ-7	PTO #71 contains some slight differences which can be incorporated.
AQ-8	deleted	--	This COC is not in the PTO; it states that SDAPCD Rule 10 must be met (which is true regardless) and does not add any project specific requirement, so it should be deleted.
AQ-9	4	AQ-9	Minor rule updates only.
AQ-10	deleted	AQ10	These COC require compliance with applicable requirements of the Acid Rain program. Although they have been deleted in the PTO, the Title V Operating Permit requires compliance with the Acid Rain requirements (see II.E.1 – II.E.5 above).
AQ-11	deleted	AQ-11	
AQ-12	--	AQ-12	The COC requires retention of records for 5 years. This condition is not in the PTO but is in the Title V Operating Permit.
AQ-13	deleted	--	The COC restricts operation to testing only one of the fire-water pump engine or the emergency engine at a time. Since the emergency engine has not been installed, the COC is not needed.
--	New 6	TBD	A definition for tuning operations has been added.
AQ-14	7	AQ-14	The definition of shut down is revised to correct the accounting error described in the initial PTA submitted in February 2020.
AQ-15	8	AQ-15	The definition of startup is revised to exclude shutdown.
AQ-16	9	AQ-16	No change.
AQ-17	10	AQ-17	Slight update to a rule reference.
AQ-18	deleted	--	

Energy Commission COC Numbers	SDAPCD New TV/PTO Condition Numbers	Suggested Revised COC Numbers	Notes
AQ-19	deleted		These two COC pertain to the initial startup and commissioning of the CTGs and have been removed by SDAPCD from the PTO as obsolete.
AQ-20	5	AQ-20	No change.
AQ-21	11	AQ-21	No change.
AQ-22	12	AQ-22	No change.
AQ-23	13	AQ-23	Slight rule reference change (Remove Rule 69.3).
AQ-24	14	AQ-24	Slight rule reference change (Remove Rule 69.3).
AQ-25	15	AQ-25	Slight rule reference change (Remove Rule 69.3).
AQ-26	16	AQ-26	Slight rule reference change (Remove Rule 69.3).
AQ-27	17	AQ-27	AQ-27, AQ-28, AQ-29, AQ-39, AQ-41, and AQ-85 were revised (in addition to AQ-14 and AQ-15) to implement changes that SDAPCD felt were needed to ensure that the change in shutdown definition could not lead to emissions increases pursuant to NSR. In addition, reference to the VOC/CO surrogate relationship was deleted in AQ-29.
AQ-28	18	AQ-28	
AQ-29	19	AQ-29	
AQ-30	20	AQ-30	Deleted reference to commissioning and added tuning. (District-only condition).
AQ-31	21	AQ-31	Added the exception for tuning.
AQ-32	22	AQ-32	Added the exception for tuning.
AQ-33	23	AQ-33	Added the exception for tuning.
AQ-34	24	AQ-34	Added the exception for tuning.
AQ-35	25	AQ-35	Added a compliance demonstration clarification.
AQ-36	26	AQ-36	Adjusted to reflect only 5 CTGs installed instead of 6.
AQ-37	27	AQ-37	No change.
AQ-38	28	AQ-38	No change
AQ-39	29	AQ-39	See note for AQ-27. Also, deleted reference to commissioning and added tuning. And added a clarification for compliance based on source testing.
--	New 30	TBD	New PTO condition gives emission limits during tuning operations.
AQ-40	31	AQ-40	This COC was revised to allow for higher CO emissions during startup. The CO limit for startup of each unit was changed from 7.4 pounds per event (lbs/event) to 17.3 lbs/event. Hourly and daily CO emission limits were also imposed to restrict emissions to not trigger further requirements under New Source Review (NSR). This is one of the COC changes requested in the PTA submitted in February 2020.
AQ-41	32	AQ-41	See note for AQ-27.
AQ-42	33	AQ-42	Deleted reference to commissioning and added tuning.
AQ-43	34	AQ-43	Deleted reference to commissioning and added tuning.
AQ-44	35	AQ-44	Deleted reference to commissioning as obsolete.
AQ-45	deleted	--	The COC gave an annual CO limit for when commissioning also occurred, this condition can be deleted as obsolete.
AQ-46	36	AQ-46	Minor correction and rule reference updates.

Energy Commission COC Numbers	SDAPCD New TV/PTO Condition Numbers	Suggested Revised COC Numbers	Notes
AQ-47	deleted	--	This COC provided emission limits for the transfer from EPS to CECP and is deleted as obsolete.
AQ-48	37	AQ-48	Minor change and rule reference updates.
AQ-49	38	AQ-49	Minor change.
AQ-50	39	AQ-50	Deleted reference to commissioning as obsolete.
AQ-51	deleted	--	Deleted as it applies during commissioning and is obsolete.
AQ-52	deleted	--	Required information on the SCR design prior to the start of construction. The SCR systems have been installed so this COC is obsolete.
AQ-53	40	AQ-53	No change.
AQ-54	41	AQ-54	See note for AQ-27. Also deleted requirements that only applied prior to system installation.
AQ-55	42	AQ-55	No change.
AQ-56	43	AQ-56	No change.
AQ-57	44	AQ-57	No change.
AQ-58	46	AQ-58	No change.
AQ-59	47	AQ-59	No change.
AQ-60	deleted	--	Requirements for submitting plans prior to construction deleted.
AQ-61	49	AQ-61	Reference to commissioning delete but otherwise slight changes.
AQ-62	48	AQ-62	Minor changes.
AQ-63	50	AQ-63	Clarification of RATA testing added.
AQ-64	deleted	--	Requirement for initial toxics testing deleted as obsolete, but AQ-65 for potential on-going testing retained with no change.
AQ-65	52	AQ-65	
AQ-66	51	AQ-66	Slight rule update.
AQ-67	53	AQ-67	Reference to initial startup deleted.
AQ-68	54	AQ-68	No change.
AQ-69	55	AQ-69	Requirement during tuning added and rule reference updated.
AQ-70	56	AQ-70	Requires keeping an approved CEMS protocol on site rather than a requirement to provide the protocol prior to initial startup deleted.
AQ-71	deleted	--	Requirement for a RATA test at the start of operation deleted
AQ-72	57	AQ-72	No changes.
AQ-73	58	AQ-73	Minor rule changes.
AQ-74	59	AQ-74	Slight rule reference change (Remove Rule 69.3).
AQ-75	60	AQ-75	No change.
AQ-76	61	AQ-76	Rule updates.
AQ-77	62	AQ-77	Rule updates.
AQ-78	63	AQ-78	Rule updates.
AQ-79	deleted	--	COC that required determination of a VOC/CO surrogate relationship deleted.
AQ-80	64	AQ-80	Slight rule reference change (Remove Rule 69.3).

Energy Commission COC Numbers	SDAPCD New TV/PTO Condition Numbers	Suggested Revised COC Numbers	Notes
AQ-81	65	AQ-81	Slight rule reference change (Remove Rule 69.3).
AQ-82	deleted	--	Requirement for a turbine monitoring protocol prior to initial startup deleted
AQ-83	66	AQ-83	Added tuning to this requirement. Slight rule reference change (Remove Rule 69.3).
AQ-84	67	AQ-84	Deleted reference to the commissioning period.
AQ-85	deleted	--	Deleted obsolete requirement for a commissioning period report.
AQ-86	deleted	--	Deleted requirements for notifications upon initial startup.
AQ-87	68	AQ-87	Rule updates.
AQ-88	69	AQ-88	Rule updates.
AQ-89	70	AQ-89	No change.
AQ-90	deleted	--	Deleted requirements under 40 CFR 63 for notifications upon initial startup.
--	New 72	TBD	General requirement to comply with other agency permits.
--	New 73	TBD	General requirement to comply with the AB 2588 program.
Emergency Fire-water Pump Engine			
AQ-91	1	AQ-91	No change.
AQ-92	deleted	--	These COCs related to type of engine and installation requirements were deleted.
AQ-93	deleted	--	
AQ-94	2	AQ-94	Rule updates.
AQ-95	3	AQ-95	Rule updates.
AQ-96	4	AQ-96	Rule updates.
AQ-97	5	AQ-97	No change.
AQ-98	6	AQ-98	No change.
AQ-99	7	AQ-99	No change.
AQ-100	8	AQ-100	Rule update.
AQ-101	9	AQ-101	Detailed compliance requirements added.
AQ-102	10	AQ-102	Rule update.
AQ-103	11	AQ-103	Rule update.
AQ-104	13	AQ-104	Requirement to demonstrate that fuel deliveries are CARB diesel is deleted and replaced by a more general record keeping requirement.
AQ-105	12	AQ-105	Detailed compliance requirements added.
	14	TBD	Same as new CTG condition 70
	15	TBD	Same as new CTG condition 71
	16	TBD	Same as new CTG condition 72
Emergency Generator Engine			
AQ-106 – AQ-121	deleted		The emergency generator was not installed, so all 16 COCs related to this equipment are deleted.

The following categories of changes are reflected in the table above:

- The Air Quality COCs have been revised to reflect the various project changes described in this Supplemental PTA, including changes to the startup and shutdown conditions, addition of tuning, allowance for SuperCore replacement, removal of the VOC/CO surrogate relationship requirement, etc.;
- Deletion of reference to the sixth CTG in the equipment description and the emergency generator COCs (AQ-106 – AQ-121) since this equipment was not installed;
- Deletion of COCs related to construction which are no longer needed, i.e., AQ-SC12 and AQ-SQ13, as well as AQ-47 which dealt with a transition from EPS to CECP and AQ-36 adjustment to account for five CTGs instead of six;
- Deletion of all reference to commissioning and deletion or changes to COCs that required plans, protocols, or other action associated with initial startup (first fire) of the turbines;
- Updates to the rule references for changes made, such as the repeal of Rule 69.3 in 2021 and revisions to other rules; and
- Miscellaneous changes that reflect other revisions made by SDAPCD in the PTO, such as changing numbers to numerals and "percent" to "%". Note, the PTOs also contain revisions of "project owner" to either "permittee" or "Applicant". Because CECL considers all three of these terms, as well as "operator" and "permit holder", to refer to the same entity (CECL), this change has not been proposed in the Air Quality COC changes shown in Appendix B but is highlighted in yellow.

A complete set of the Air Quality COCs with the proposed changes shown in bold **underline** for new text and ~~**strikeout**~~ for deleted text are provided in Appendix B. The changes in Appendix B are color coded as follows:

- Changes to address an issue related to dispatch of the CECP raised during the variance hearing related to AQ-SC9 are shown in bold orange, i.e., ~~**strikeout**~~;
- COCs related to project construction are no longer needed and are proposed to be deleted, are shown in bold brown, i.e., ~~**strikeout**~~. These COCs include AQ-SC12 and AQ-SQ13;
- Changes that the SDAPCD made to the permit conditions as reflected in the August 24, 2021 SA (mostly related to changes in the startup and shutdown provisions and deletion of commissioning) are shown in bold green, i.e., **underline** and ~~**strikeout**~~;
- Changes that SDAPCD made in response to CECL's June 2021 ATC application related to tuning are shown in bold blue, i.e., **underline** and ~~**strikeout**~~; and
- Recent changes related to SuperCore replacement, updates to source test requirements and removal of the VOC/CO surrogate relationship, as well as various other recent updates the SDAPCD made to the PTO conditions are shown in bold black, i.e., **underline** and ~~**strikeout**~~.

Discussions of why these changes are needed and an analysis of potential impacts are provided in Sections B – H. Additional changes to reflect the Title V Operating Permit conditions have been left to Energy Commission staff's discretion.

B. A discussion of the necessity for the proposed change and an explanation of why the change should be permitted.

The proposed revisions to applicable Air Quality COCs are necessary to be consistent with the SDAPCD PTOs. Modifications to the Energy Commission's Final Decision Air Quality COCs would allow the project to continue to operate in compliance with the Energy Commission and the District. Additional details about the reasons for the various modifications made by the SDAPCD are described below.

B.1 CO Startup Emission Limits

The request regarding revision of the CO startup emissions limit was made because the CTGs at the facility occasionally exceeded the permitted limits for CO emissions during startup beginning in July 2019 under ambient conditions which appear to be elevated in temperature and/or humidity. Due to the inability to consistently meet the CO emission limits in the initial SDAPCD SA under expected operating conditions, CECL obtained an Emergency Variance (issued July 30 and effective July 26 through August 24, 2019) followed by an Interim Variance (issued August 22 and effective through September 19, 2019) for Units 8-10 and an Emergency Variance (issued September 10 and effective through October 20, 2019) for Unit 6. CECL conducted extensive analyses of the equipment and was unable to identify a specific system failure, mechanical defect, or other irregularity that would explain the non-conforming emissions and for which a specific repair could be affected. The Interim Variance was converted to a Regular Variance (Petition 4507) through the approval of the SDAPCD Hearing Board on September 19, 2019. The Regular Variance included Units 6, 8, 9, and 10 and was effective September 19, 2019, through March 1, 2020. Unit 7 was not initially included since CO startup exceedances had not yet occurred in that CTG, but Unit 7 was added to the variance later when it also exceeded the CO limit during startup.

The purpose of the variances was to allow continued operation of the CTGs under a modified permit limit while troubleshooting the CO startup exceedances and implementing modifications as warranted. Other than the CO startup exceedances that precipitated the need for a variance, there were no other reported exceedances for other constituents. The Regular Variance specified a CO startup limit of 17.9 lbs/event from September 19, 2019, through March 1, 2020. The Regular Variance also required that CECL pursue a permit modification to increase the CO limit, with an application filed no later than October 4, 2019. An ATC application was filed with the SDAPCD on September 20, 2019, to request these changes in compliance with the Regular Variance.

CECL conducted extensive troubleshooting in connection with Variance Petitions 4506, 4507, and 4510 to help 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 to date, CECL determined that the CTGs are incapable of meeting the initial permitted limits consistently under expected operating conditions and, therefore, sought modification of Condition 40 in the SDAPCD permit.

The CO emission limit established in the SDAPCD SA 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 (see Appendix C for the information provided by GE for the Amended CECP), not on rule limits or Best Available Control Technology (BACT) requirements. The requested change in the CO startup emission limits is necessary to achieve continuous compliance and reflect what the CTGs can achieve in practice.

As shown in the proposed PTO in Appendix A, SDAPCD agreed to change the CO startup limit from 7.4 lbs/event to 17.3[2] lbs/event, as well as implemented a daily CO limit to remain below the Air Quality Impact Analysis (AQIA) threshold.

B.2 Shutdown Definition

The revision to the definition of shutdown was needed because AQ-14 of the CTG permits requires an accounting of emissions for a full 13 minutes prior to loss of flame. The shutdown period was defined by AQ-14 as follows: "For purposes of determining compliance with the emission limits of this permit, a shutdown period is the 13-consecutive-minute period preceding the moment at which fuel flow to the combustion turbine ceases." This amount of time was initially requested to allow for an 11-minute cooldown period following the initial couple of minutes of a shutdown during normal operations of the CTGs.

However, if the shutdown is less than 13 minutes, this language requires the back calculation of the NO_x emissions from the time gas flow ceases to the turbine. The back-calculation process in instances where an emergency stop (trip) occurs includes as much as 10 minutes of normal operating minutes (likely full load emissions). Similarly, in the event of an aborted startup, 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 NO_x in COC AQ-41 led to exceedances of the shutdown limits when the shutdown lasts less than 13 minutes (AQ-41 also contains shutdown limits for CO and VOC, but those limits were not exceeded). Seven of these events occurred (five abrupt shutdowns and two aborted startups) in the 14 months after the start of commissioning, and breakdown reports were filed. While breakdown relief was afforded in those instances, there were no actual excess emissions, since this is merely an accounting problem, and a change in the shutdown definition in the permit to prevent this incorrect accounting of normal operating or startup emissions with the shutdown emissions was needed.

Three actual examples of these two types of unplanned shutdowns are illustrated below from filed breakdown reports to demonstrate how these occurrences are only an accounting problem caused by the abrupt shutdowns/aborted startups and do not lead to actual excess emissions:

- **Abrupt Shutdown**

  At 12:05 PM on August 30, 2018, it was discovered that the gas compressors that provide gas pressure to the combustion turbines experienced an emergency stop due to over-pressurization of the gas system. The emergency stop shuts off gas pressure to the operating units. Units 8, 9, and 10 had just initiated a shutdown at 12:03 PM and were starting to power down and start the cool-down process when the loss of gas pressure forced the units into an emergency stop as well. All three units stopped within 2 minutes at 12:05 PM, bypassing the normal shutdown operating condition, which entails an 11-minute cooldown process that GE has programmed into each of the CECP gas turbines.

  In the case of this particular breakdown event, 10 minutes of normal compliant operating minutes and 3 minutes of emissions associated with the abrupt shutdown were used to calculate a 13-minute shutdown condition per AQ-14. The calculated 13-minute shutdown

[2] Initially, 17.9 lbs/event was proposed. However, it was later determined by SDAPCD that in order to ensure that the change remained below a 100 lbs/day threshold, the limit was reduced to 17.3 lbs/day.

emissions for this event totaled 1.2 lbs of NO_x for Unit 8, 1.4 lbs NO_x for Unit 9, and 1.4 lbs of NO_x for Unit 10, which are in excess of the 0.6 lbs/event of NO_x allowed per AQ-41, but only because 10 minutes at normal operating emissions were included.

The operational minutes (i.e., 10 minutes) and shutdown minutes (i.e., 3 minutes) included in this non-normal shutdown event were all in compliance with the NO_x concentration and mass operational permit limits of 2.5 parts per million (ppm) and 9.1 lbs/hour, respectively. The actual shutdown emissions of 0.101 to 0.143 lbs, which occurred after normal operations ceased were below the 0.6 lb NO_x per shutdown event limit in AQ-41.

- **Aborted Startup**

  At 9:41 PM on February 19, 2019, startup was initiated on CECP Unit 6. The synchronization breaker malfunctioned and would not close, and the startup was aborted. The entire operation duration was 18 minutes, with the final 11 minutes being mandatory turbine cooldown. Due to the permit language of AQ-14, the final 13 minutes of gas flow were counted as a shutdown event, even though the turbine was still in the 25-minute startup period as defined in AQ-15. Due to the short operating duration, the unit did not reach the required SCR temperature to initiate ammonia injection prior to the shutdown, which caused the shutdown NO_x total to be 1.29 lbs, 0.69 lb higher than the limit in COC AQ-41.

  At 6:08 AM on April 4, 2019, startup was initiated on CECP Unit 6. At 6:16 AM, the unit tripped off due to low pressure in the power turbine purge air system. Due to the permit language of FDOC condition 14, the final 13 minutes of gas flow were counted as a shutdown event, even though the turbine was still within the 25-minute startup period as defined in AQ-15. Because the turbine only ran for 9 minutes, the entire duration was counted as a shutdown event. Due to the abbreviated startup, the pollution control equipment (NO_x water injection and ammonia injection) was not fully operational, and a normal shutdown including the cooldown routine was not activated. The shutdown occurred within less than one minute. The CEMS calculated the shutdown NO_x lbs total for the 9-minute event as 3.6 lbs, 3.0 lbs higher than the limit in COC AQ-41. The startup and shutdown emissions per the shutdown definition were the same.

The NO_x, CO, and VOC shutdown emissions established in the permits were based on the manufacturer's estimate for a 13-minute shutdown as an extended cool-down period below normal CTG operations/output ranges but should not preclude the scenario that the shutdown may occur in less than 13 minutes (i.e., *up to* 13 minutes), since shorter unplanned shutdowns have occurred. Regardless of the exact shutdown duration, emissions would be up to respective limits in COC AQ-41 during that shutdown (i.e., operations below normal CTG operations/output ranges).

CECL made the necessary operational changes to ensure that shutdowns (when plant initiates shutdown instruction below minimum operating output) are 13 minutes in duration in most cases. This should minimize the times that minutes during normal operating loads or aborted startups are counted as shutdown emissions. However, the AQ-14 definition language still needed to be modified to address abrupt, unplanned shutdowns when they cannot be avoided and to allow the facility to have normal, less-than-13-minute shutdowns that reduce the duration of fuel flow and corresponding emissions without the consequence of a recorded emissions violation.

Although CECL felt that a simple change in the definition of shutdown would address the problem, SDAPCD determined that additional changes were needed to restrict the emissions that might occur in an hour with a less than 13-minute shutdown. Therefore, in addition to the change of the shutdown definition in AQ-14, the SDAPCD made changes to AQ-15 to revise the definition of startup, and to AQ-27, AQ-8, AQ-29, AQ-39, AQ-41, and AQ-85 (AQ-85 was later deleted by the SDAPCD in the proposed PTOs) to restrict the emissions in clock hours in which the shutdown occurs. The changes implemented to the permit conditions by the SDAPCD to address their concern are shown in Appendix B.

B.3 Tuning

An ATC application was submitted by CECL to the SDAPCD in June 2021 to allow for periodic tuning of the CTGs. Tuning is a necessary operation to ensure the emissions control systems on the CTGs are working optimally. Tuning is done to evaluate the performance of the emissions control system while the gas turbines and control equipment are in operation, but emissions of pollutants may be temporarily higher during tuning activities than the controlled emissions levels that can be achieved during normal operations. NO_x emissions from the gas turbines (pre-SCR system) may be higher than normal operating levels because the SCR emission control system may not be fully optimized for the temporary inlet NO_x concentrations during tuning; post-tuning turbine exhaust and SCR are anticipated to be performing optimally. Similarly, CO emissions may be temporarily higher than normal while optimization of the turbine performance and the oxidation catalyst system is in process.

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. (See proposed definition for tuning in new/replacement AQ-13 in Appendix B). Rules 69.3 and 69.3.1 indicate that emission standards of this rule apply at all times except during certain operating conditions including "testing of gas turbine engines or their components." Since tuning qualifies as testing, this exemption from the normal operating limits should be allowed. As shown in Appendix B, the SDAPCD added tuning as exempt from emission limits similar to startup and shutdown, see AQ-27 – AQ-34, AQ-39, AQ-42, and AQ-43.

Emissions associated with tuning events are anticipated to be similar to the testing that occurs during commissioning, e.g., the Emission Control System (ECS) test. Emissions during tuning will generally be lower than uncontrolled emissions or maximum startup/shutdown scenario hourly emissions because the emission control equipment is operating and does achieve some emissions reduction. However, due to the variability of the tuning, NO_x and/or CO emissions may be uncontrolled for a portion of the tuning event. As such, the maximum hourly emissions estimated for tuning would be less than the uncontrolled hourly emissions in existing conditions AQ-42 and AQ-43 which are 90 pounds per hour (lbs/hr) for NO_x and 248 lbs/hr for CO, respectively. CECL also proposed to add a new condition limiting tuning emissions to 53 lbs/hr for NO_x and 135 lbs/hr for CO per CTG. The SDAPCD reduced this NOx limit to 49.3 lbs/hr and also included daily limits for tuning operations, see proposed new (replacement) AQ-45 in Appendix B. No changes to the maximum hourly emissions for VOC, SO_x, PM_{10}, or $PM_{2.5}$ were proposed. Tuning operations were also added to the reporting requirements in AQ-69 and AQ-83 (Appendix B).

B.4 Like-In-Kind Replacements

A portion of the Carlsbad Energy Center Unit #6's SuperCore (S/N 878-176) experienced a mechanical failure on December 10, 2021. This failure necessitated the temporary replacement of the High Pressure (HP) Compressor, Combustor, and HP Turbine within the SuperCore with identical GE LMS100PA SuperCore parts while the Unit #6 SuperCore parts were repaired. For this repair, CECL leased the SuperCore parts from GE's pool of identical model number of SuperCore parts (i.e., model 878) as installed at Carlsbad Energy Center.

The LMS100PA is comprised of several major components: Low Pressure (LP) Compressor, Intercooler, HP Compressor, Combustor, HP Turbine, Intermediate Pressure (IP) Turbine, Power Turbine, and Generator. The SuperCore consists of the HP Compressor, Combustor, HP Turbine, and IP Turbine. After inspection, it was determined that the IP Turbine section of the original SuperCore was not damaged, such that the other three replaced components (HP Compressor, Combustor, and HP Turbine) of the leased SuperCore (S/N 878-119) could remain. Note that the capital cost of a SuperCore is about a third of the capital costs of a new LMS100 turbine and the failed SuperCore parts needing repair are a fraction of the overall SuperCore costs. All other components of Unit #6 remained the existing and installed equipment.

Previously Units #8 and #10 underwent similar identical replacement in October 2018 with Carlsbad Energy Center spare and leased pool SuperCores and these units were subsequently source tested in Spring 2019 with passing results. Unit #7 also underwent SuperCore component identical replacement in November 2019 with spare parts and was subsequently source tested in Spring 2020 with passing results. This Unit #6 repair event comprises less components than the Unit #8 and Unit #10 repairs, which were previously approved by the SDAPCD in 2018 without requiring an ATC application and instead done through the compliance determination of Rules 10 and 11 noted in the emails exchanged with SDAPCD at that time.

Rather than require notification followed by an application for repairs of the LMS100PA gas turbines when identical or like-kind replacements are involved, CECL requested that the SDAPCD consider addition of a permit condition that would serve as a more general solution to this type of repair occurrence. SDAPCD issued an SA on January 26, 2022 to allow for operation of Unit #6 under a temporary Permit to Operate pursuant to Rule 21 while the repairs are being done. SDAPCD subsequently proposed two new conditions 2 and 3 be added to the CTG PTOs (Appendix A).

B.5 VOC/CO Surrogate Relationship and Source Test Compliance Demonstration

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 for one hour on May 5, 2022. Because the CO 1-hour emission limit is 4 ppm and the VOC limit is 2 ppm, there was a presumed CO to VOC relationship of 2 to 1, in which case this CO exceedance was initially also presumed to be a VOC exceedance.

In response to this NOV, CECL provided the results of four years of source test data collected at Carlsbad to date to the SDAPCD. Many tests in the four years of testing show zero or non-detect VOC emissions for the same test that CO emissions were measurable. When the VOC emission source test results are measurable, the results 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. As shown in Appendix B, the compliance method in AQ-29 is revised to reference source test data rather than a VOC to CO relationship based on the CO CEMS, and AQ-79 which required a protocol for establishing the VOV to CO surrogate relationship has been deleted. Further discussion with the SDAPCD confirmed that the source tests during normal operation is also sufficient for demonstrating compliance of the VOC limits during startup and shutdown operations, by showing that operations remain within normal emissions ranges.

In addition to the change to AQ-29, modification to AQ-35, AQ-39, and AQ-40 was also made to clarify that compliance would be based on the arithmetic average of three tests. AQ-63 was revised to clarify the RATA compliance requirements for the CO CEMS. Several conditions that were only applicable to the initial source tests of the units have been deleted, keeping the conditions that require on-going source tests.

B.6 Permit Housekeeping

The SDAPCD PTO contained in Appendix A includes deletion of references to the sixth CTG and the emergency generator that has not yet been installed and there are no current plans to do so. These modifications are also shown in Appendix B. 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 are also reflected in the COC changes shown in Appendix B. Note, the PTOs also contain revisions of "project owner" to either "permittee" or "Applicant". Because CECL considers all three of these terms to refer to the same entity (CECL), this change has not been proposed in the Air Quality COC changes shown in Appendix B but is highlighted in yellow.

C. A description of any new information or change in circumstances that necessitated the change.

The change in circumstances that necessitates these changes is the realization that the emission rates provided by GE for CO during startup were only estimates based on specific atmospheric conditions, and that higher emissions can occur during other atmospheric conditions, such as higher humidity.

Similarly, although most shutdowns can follow the normal procedure to allow an 11-minute cooldown period, there are instances when abrupt shutdowns can occur, but actual excess emissions are not formed.

It was not recognized during permitting that an allowance for CTG tuning was needed. It's necessary to operate the equipment without the emissions control systems in order to ensure it is properly tuned. Many power plants have needed to modify permits to allow for tuning activities after the initial permitting was completed, as this need was only identified after the start of operations.

A complaint was filed related to AQ-SC9, and changes are proposed to clarify the intention and ensure dispatch requirements can be met.

In December 2021, some components of the Unit #6 SuperCore failed, requiring replacement of the components with identical or like-in-kind parts. Similar failures to Units #8, #10, and #7 had occurred in 2018 and 2019, and follow-up source testing showed that the Units remained in

compliance with emissions limits. A less burdensome solution was requested to revise permits via notification and without requiring a permit application process.

In response to an NOV for CO, it was recognized that a VOC to CO surrogate relationship could not be established for the CTGs at CECP.

Other changes to modify and/or delete COCs are proposed to reflect the fact that five of the six CTGs were installed and that the emergency generator was not installed. COCs applicable to construction and related to the transition from EPS to CECP are outdated and no longer needed, so have been proposed to be deleted consistent with the SDAPCD PTOs issued in March 2023.

D. An analysis of the effects that the proposed change to the project may have on the environment and proposed measures to mitigate any significant environmental effects.

The proposed amendments to the Air Quality COCs will only allow for a slight increase in CO emissions during some of the turbine startups and a short-term increase in emissions during periodic tuning. As such, the proposed changes will not have significant adverse impacts on air quality as shown by analyses provided in this Section, and there is no need for any mitigation measures necessary to offset significant impacts to the air quality or the environment as a result of the proposed revisions to the Air Quality COCs.

An analysis of the potential impacts related to 1) the change in CO emissions during startup is provided in Section D.1; 2) the change in Shutdown definition in Section D.2; tuning activities in Section D.3: and the like-in-kind replacement explanation in D.4. The other changes proposed would not be expected to impact air quality since they do not affect facility emissions. A summary of the expected impacts on each of the other (in addition to air quality) environmental resource areas is provided in Table 2.

Table 2: Environmental Impact Summary

Resource Area	Analysis
Air Quality	An air quality analysis related to the change in CO emissions during startup is provided in Section D.1 and for tuning in Section D.3. As discussed, no significant impacts are expected from the proposed changes.
Biological Resources	No physical changes to the project footprint are proposed and the small CO startup and tuning emissions increases would not impact biological resources.
Cultural Resources	No physical changes to the project footprint are proposed and there would be no impact to cultural resources.
Geology and Paleontology	No physical changes to the project footprint are proposed and there would be no impact to geologic or paleontological resources.
Hazardous Materials	The proposed changes do not involve hazardous materials, hence there will be no impact.
Land Use	The proposed changes will not affect land use, hence there will be no impact.
Noises and Vibration	No construction is needed, and the proposed changes will not cause a change in noise or vibration from the facility, hence there will be no impact.

Resource Area	Analysis
Public Health	The proposed changes will not affect the operating profile or natural gas usage of the CTGs, thus will not change the facility TAC emissions. Therefore, there would be no change to the health risk assessment and would not impact public health.
Socioeconomic Resources	The proposed changes do not require any changes in workforce, hence there will be no socioeconomic impact.
Soil and Water Resources	No physical changes, ground disturbance, or increased water usage are proposed, hence there would be no impact to soil or water resources
Traffic and Transportation	The proposed changes do not require any changes in workforce, hence there will be no traffic or transportation impact.
Visual Resources	No physical changes to the project appearance are proposed, hence there would be no impact to visual resources.
Waste Management	The proposed changes will not affect the level of waste production from the facility, hence there will be no impact.
Worker Safety and Fire Protection	No construction, physical changes to the facility, or change in workforce are proposed, hence there will be no impact related to worker safety or fire protection.

D.1 Air Quality Analysis of CO Startup Emissions Impacts

The potential impacts to air quality from the proposed changes to AQ-40 are described below.

D.1.1 CO Emissions Calculations

The proposed change to AQ-40 only affects CO emissions during startup. The proposed startup emissions limit is based on a review of other permits for similar GE LMS100-PA installations. Specifically, the Revised FDOC for the Amended CECP indicates that the SDAPCD reviewed the permit information for the Pio Pico Energy Center, CPV Sentinel, Walnut Creek Energy Park, and Panoche Energy Center – all of which include GE LMS100-PA CTGs – in making the BACT determination for CECP. This review indicated a startup event duration of 25 minutes[3] and a shutdown event duration of 13 minutes.[4]

The Amended CECP FDOC indicates that the Pio Pico project was permitted by the SDAPCD with a CO startup limit of 17.9 lbs/event. Although the permits of the two facilities in the SCAQMD, i.e., CPV Sentinel and Walnut Creek, do not include specific emissions limits for startup events, the CECP FDOC indicates that the SDAPCD identified CPV Sentinel's CO startup emission rate as 15.89 lbs/event based on a review of the permit application for that facility. For this application, CECP selected Pio Pico's CO startup emission rate of 17.9 lbs/event based on the direct relevance of Pio Pico's permit as compared to CECP's permit (i.e., common air basin, common time period from when the facilities were permitted and commissioned, and the SDAPCD's analysis). This CO startup

[3] BACT is not applicable to CO emissions. Recent power plant projects were reviewed to determine what CO emission limits have been approved for comparable projects.

[4] The application submitted to SDAPCD requested that the definition of shutdown be changed to be consistent with normal operating practices that can result in shutdowns that are less than 13 minutes and abrupt, unplanned shutdowns (i.e., equipment that trips offline) that are less than 13 minutes. The startup and shutdown durations are consistent with those analyzed in the FDOC for the Amended CECP.

emission rate appears to be achievable at CECP based on the startups to date by the five CTGs and as demonstrated in the Applicant's Regular Variance Petition 4507.

Consistent with the emissions scenarios outlined in the FDOC, since a single startup or shutdown does not last a full hour and these CTGs operate for peaking power, it is possible that more than one startup and/or shutdown could occur within a 1-hour period. For this reason, multiple operating scenarios were evaluated to determine the maximum hourly emissions. Based on the FDOC, those scenarios included:

1. The CTG starts up (25-minute duration), operates at the maximum steady-state emission level for 22 minutes (pounds of emissions for this period being 22/60 x maximum hourly emission rate), 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).

FDOC scenario 2 was selected for further analysis since it was determined to have the highest CO emissions, although more than one startup in a single hour is highly unlikely as there would normally be an offline period of up to an hour before a CTG is restarted. The 1-hour emissions for the three scenarios presented above are summarized in Table 3.

Table 3: Maximum Hourly CO Emission Scenarios for Startup

Scenario		(lbs/hour)
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, 100% operating load with no evaporative cooling (CO = 8.83 lbs/hr, see Table 3 of the Revised FDOC, April 17, 2015). The CO emissions used for each period (hourly, daily, and annual) are summarized in Table 4 and an emissions calculation worksheet is provided in Appendix D. In comparison to the previously FDOC-analyzed combined CTG emissions, hourly CO emissions increase, while daily and annual emissions decrease.

Table 4: Summary of Hourly, Daily, and Annual CO Emissions

Units in Operation	lbs/hour	lbs/day	tons/year
One Turbine	37.05	274.75	15.06
Five Turbines	185.25	1,373.75	75.3

These scenarios are for estimating maximum emissions per given period to ensure that the emissions limits are not exceeded and are not meant to limit the number of startups per day or year as long as the daily and annual emissions caps in the permit are not exceeded.

D.1.2 CO Air Quality Impact Analysis

Under SDAPCD Rule 20.3, an AQIA is required if the proposed emissions increase due to the modification are greater than levels defined in the rule. Although the proposed CO emissions increases per unit and project modification are below the screening levels indicated in Table 20.3-1, an AQIA was prepared to provide a complete assessment of the impacts of the CO emissions during startup. The AQIA was based on total CO emissions during startup, not just the increment between the currently permitted level and the proposed permitted level.

To assess this modification to the CO emissions during startup, a revised AQIA was conducted based on the modeling presented in the Revised FDOC dated April 17, 2015 and the AERMOD files provided by Energy Commission dated April 2014. The changes made from the AQIA for the FDOC include use of the higher CO emission rate during startup and different stack parameters. Rather than the 25% load stack parameters previously used as representative of startup conditions, SDAPCD requested that actual startup stack data be used for this updated modeling.

The actual startup stack parameters were obtained from the 1-minute Plant Information (PI) system data for 2019 for each CTG. The stack flowrate was calculated in cubic meters per second (m^3/s) using EPA Method 19 with moisture and temperature corrections. The average stack exhaust temperature and exit velocity for the 25-minute period from start of the CTG were calculated. These stack parameters were averaged for the year to obtain typical startup parameters and shown in Table 5.

Ambient Air Quality Standards (AAQS) for CO for both a one- and an eight-hour averaging period have been set by both California and the federal government for the protection of human health. In order to assess the potential impacts, maximum operating scenarios were developed to assess the impacts of maximum emissions during both averaging times.

Table 5: Average Startup Parameters from 2019 PI System Data

CTG	Total Running Time (hours)	Number of Startups	25-Minute Average Startup Exit Temperature (K)	25-Minute Average Startup Exit Velocity (m/s)
Unit 6	1,554	351	543	16.5
Unit 7	1,558	349	554	17.4
Unit 8	1,535	349	551	17.2
Unit 9	1,609	359	556	17.7
Unit 10	1,234	345	566	18.8
Average	**1,498**	**351**	**554**	**17.5**

Note: For comparison, the 25% load parameters from GE used in the FDOC were an exit temperature of 729.93°K and exit velocity of 18.6 m/s.

To estimate the maximum emissions that could occur in one hour, several scenarios were reviewed in the FDOC. This AQIA uses the same methodology, including meteorological data, rural dispersion parameters, receptors, and buildings used for the AQIA in the FDOC. Most of the modeled sources remained the same except CTG Unit 11 and the emergency generator (and the buildings associated with these sources) were removed from the modeling

input file as these sources were not constructed. Only the modeling of CO emissions and stack parameters during startup have been updated.

The stack parameters for the CTGs during this hypothetical worst-case startup hour are based on the average startup parameters from 2019 PI system data presented in Table 5. The parameters that were used in the modeling for each source are presented in Table 6. Background data were obtained from EPA Air Data – Air Quality Statistics Report for the highest station in San Diego County for 2016-2018 and are provided in Table 7.

The FDOC modeling analyzed the worst-case startup hour consisting of an hour that includes a CTG startup (25-minute duration), a shutdown (13-minute duration), and initiation of a second startup (only completes 22 minutes of the 25-minute startup). For this scenario, based on the revised startup CO emissions of 17.9 lbs/event, the CO emissions were estimated to be 37.05 lbs/hr (4.668 m/s) per CTG. Although highly unlikely, 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 FDOC, 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 testing the fire water pump (FWP) 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 the FDOC.

Based on the inputs described above, AERMOD was used to determine maximum 1-hour and 8-hour CO concentrations. The modeled CO concentrations were added to the CO background levels based on available monitoring data to determine the maximum impacts. Modeled concentrations, background concentrations, applicable ambient standards, and results of the comparisons to the standards are shown in Table 8.

The CTGs were the primary contributors to the maximum modeled concentrations, the FWP's contribution was minimal. Based on these results, the proposed change in CO startup emissions limits is not expected to contribute to violations or cause any additional violations of any applicable standard, which satisfies the requirements of Section 20.3(d)(2).

Although no significant impacts related to the AAQS were found based on the proposed 17.9 lbs/event CO limit, it was later determined by SDAPCD that under the worst-case scenario, total emissions for each CTG could be above the 100 lbs/day AQIA threshold. Therefore, the CO startup limit for each CTG was reduced to 17.3 lbs/day and a combined daily CO limit of 1,691 lbs/day was added by SDAPCD to AQ-40.

Table 6: AERMOD Stack Parameters

Source ID	Description	Base Elevation (m)	Release Height (m)	Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Emission Rate (g/s)	UTM Easting (m)	UTM Northing (m)
STCO1	CTG 1 (Unit 6)	10.52	27.43	4.115	17.50	554.00	4.668	468,806	3,667,051
STCO2	CTG 2 (Unit 7)	10.52	27.43	4.115	17.50	554.00	4.668	468,808	3,667,046
STCO3	CTG 3 (Unit 8)	10.52	27.43	4.115	17.50	554.00	4.668	468,855	3,666,935
STCO4	CTG 4 (Unit 9)	10.52	27.43	4.115	17.50	554.00	4.668	468,857	3,666,930
STCO5	CTG 5 (Unit 10)	10.52	27.43	4.115	17.50	554.00	4.668	468,934	3,666,754
CO1FPMP	FWP 1-hour	10.52	6.10	0.152	48.30	723.15	0.0318	468,890	3,666,851
CO8FPMP	FWP 8-hour						0.0040		

Note: Coordinates are in UTM NAD83 zone 11.

Table 7: Background Ambient Air Quality

Pollutant	Averaging Time	Standard	Background (ppm) 2016	Background (ppm) 2017	Background (ppm) 2018	Max Background (ppm)	Background Concentration (µg/m³)	Ambient Air Quality Standard (µg/m³)
CO	1-Hour	Federal	2.20	2.00	1.90	2.20	2,562	40,000
		California	2.20	2.00	1.90	2.20	2,562	23,000
	8-Hour	Federal	1.70	1.50	1.40	1.70	1,980	10,000
		California	1.70	1.50	1.40	1.70	1,980	10,000

Note: Data from EPA Air Data – Air Quality Statistics Report for the highest station in San Diego County (https://www.epa.gov/outdoor-air-quality-data/air-quality-statistics-report).

Table 8: CO AQIA Results

Averaging Period	Standard	Modeled Concentration (µg/m^3)	Background (µg/m^3)	Modeled + Background (µg/m^3)	AAQS (µg/m^3)	Modeled + Background Exceeds Standard?
1 Hour	Federal	138.8	2,562	2,701	40,000	No
	California				23,000	No
8 Hour	Federal	45.2	1,980	2,025	10,000	No
	California				10,000	No

D.2 Shutdown Definition

The proposed modification related to the shutdown definition does not affect actual NO_x, CO, or VOC emissions. A shutdown that lasts less than 13 minutes does not add incremental emissions; rather, emissions of up to 0.6 lbs NO_x or less, for instance, could occur in 13 minutes or less. No changes were proposed by CECL to COCs AQ-6, AQ-34, AQ-42, AQ-43, AQ-44, or AQ-46 in the permits, which govern the total hourly and annual NO_x and CO emissions and include all operating conditions, i.e., startups, shutdowns, and tuning, as well as normal operations.

For the FDOC, maximum hourly emissions were used to determine that the CECP would not adversely impact air quality related to the 1-hour NO_2 and 1- and 8-hour CO AAQS (there are no VOC AAQS). No changes to any of the shutdown emissions limits or the modeling assumptions related to the NO_2 impact analysis on which the permit was based are proposed. No changes to the annual NO_x emission limits for the five CTGs are proposed.

Although CECL proposed only revising to the shutdown definition in AQ-14, the SDAPCD felt that changes to additional conditions were needed 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. Therefore, revisions to AQ-15 to revise the definition of startup to exclude shutdown, and to AQ-27, AQ-28, AQ-29, AQ-39, AQ-41, and AQ-85 to implement changes that SDAPCD felt were needed to ensure that the change in shutdown definition could not lead to emissions increases were also included by the SDAPCD in the SA and later in the PTO. SDAPCD subsequently deleted AQ-85.

D.3 Tuning

As described in Section B.3, tuning is a necessary operation to ensure the emissions control systems on the CTGs are working optimally. CECL proposes to tune no more than one turbine at a time. During tuning, operators and equipment vendors must collect and evaluate real-time performance data, which necessitates that each turbine train be tuned sequentially (in series), never in parallel, to provide the attention needed to effectively tune each combustion system. Annual tuning for all five CTGs combined is expected to be completed within 65 hours.

Due to the variable emission rates during the tuning event, the daily and annual tuning emissions per turbine will be limited to the current Potential to Emit (PTE) per unit, thus no change to the daily or annual PTE is proposed. For efficiency and to streamline this permitting effort, CECL did not request an increase in the daily or annual emissions, and hence operations (such as the

number of startups/shutdowns and operating hours) will be adjusted during each compliance year (reporting period) to ensure that the total emissions from tuning, startup, shutdown, and steady state operations do not exceed the current PTE for CECP. Table 9 presents a summary of the hourly, daily, and annual PTE per CTG and for all five CTGs combined.

The only change to PTE from the prior SA is the potential short-term increase in hourly emissions during the tuning event. The maximum hourly emissions analyzed for the FDOC represent an hour consisting of a startup, shutdown and partial startup. CECL's June 2021 ATC application proposed to change the hourly PTE per CTG from 28.2 to 53 lbs/hr of NO_x, and 35.9 to 135 lbs/hr of CO. Both incremental changes are less than the AQIA threshold of 25 lbs/hr and 100 lbs/hr, respectively, thus an AQIA is not triggered nor is public notification. Hourly NO_x and CO emissions from all CTGs combines are based on four CTGs in non-tuning mode plus one CTG in tuning mode. COCs AQ-44 and AQ-46 limit the annual emissions, and no changes to the daily or annual PTE were proposed.

The maximum hourly uncontrolled emissions were used to determine that the CECP would not adversely impact air quality related to the short-term (1- and 8-hour) NO_2 and CO AAQS in the commissioning modeling analysis for the FDOC. Thus, the proposed change to include tuning events is not an actual or potential emissions increase over what was analyzed for the initial permitting. The changes related to tuning have been incorporated into the PTOs by SDAPCD. A new COC (AQ-45 in Appendix B) was added which slightly reduced the hourly NO_x limit to 49.3 lbs/hour and also added daily emissions limits applicable when tuning occurs.

Table 9: Summary of CTG Potential to Emit

Sources	NO_x	CO	VOC	SO_x	PM_{10}	$PM_{2.5}$
Hourly Emissions (lbs/hour)						
One CTG	53.0	135.0	7.2	2.1	5.0	5.0
All CTGs[1]	166.0	278.7	36.0	10.5	25.0	25.0
Daily Emissions (lbs/day)						
One CTG	256	272	72	47	120	120
All CTGs	1,280	1,691[2]	360	237	600	600
Annual Emissions (tons/year)						
One CTG	14.3	14.9	4.0	0.9	4.7	4.7
All CTGs[3]	84.18	77.8	24.1	5.6	28.4	28.4

Notes:

1. Based on one CTG in tuning mode and four CTGs with maximum non-tuning hourly emissions per pollutant based on either normal operations or a combination of normal, startup and shutdown emissions.
2. Based on the SDAPCD revised CO limit in AQ-40.
3. Based on the limits in AQ-44.

D.4 Like-In-Kind Replacement

An identical or like-in-kind replacement for repairs and maintenance is not expected to increase emissions or require permit changes. As noted above is Section C.4, source testing that followed SuperCore repairs in 2018 and 2019 demonstrated that the Units #8, #10, and #7 remained in compliance after the repairs were completed. Therefore, this change is not expected to have any environmental impact.

E. An analysis of how the proposed change would affect the project's compliance with applicable laws, ordinances, regulations, and standards.

The proposed 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. Therefore, the following discussion of compliance with LORS is only for applicable air quality rules and regulations.

E.1 SDAPCD Regulation II – Permits

E.1.1 Rule 10 – Permits Required and Rule 11 – Exemptions from Rule 10 Permit Requirements

Rule 10 requires written authorization to be obtained before constructing or operating or replacing any equipment which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants. An application for the CO startup and shutdown definition modifications was submitted to SDAPCD in September 2019, an application to allow for tuning was submitted in June 2021, and an application related to the SuperCore components replacement was submitted on January 3, 2022, all three applications were to comply with Rule 10. The PTOs that incorporate these changes have been issued by SDAPCD (Appendix A). These PTOs will be maintained at the facility and renewed annually.

Regarding the Unit #6 SuperCore replacement application, SDAPCD Rule 11, *Exemptions from Rule 10 Permit Requirements*, provides many exemptions from the requirement in Rule 10, *Permits Required*, to obtain a permit for equipment which may cause the issuance of air contaminants, including replacements. Specific to the Unit #6 SuperCore replacement project, Rule 11(d)(5)(i) provides the following exemption from permitting:

> "Identical replacement in whole or part of any article, machine, equipment or other contrivance for which a Permit to Operate has previously been granted for such equipment. Identical means the same manufacturer, model number, and type."

Although Rule 11(a)(4) indicates that this exemption may not be available for equipment which emits over 100 pounds per day (lb/day) of listed criteria pollutants, its noted that federal PSD regulations under 40 CFR 52.21(b)(2)(iii)(a) also indicate that modifications do not include "Routine maintenance, repair, or replacement". Therefore, CECL requested that this type of change be handled through a notification process rather than a permit application process since no changes to emissions are expected.

E.1.2 Rule 14 – Applications

Rule 14 requires the submittal of the SDAPCD's application form and information necessary to enable the Air Pollution Control Officer (APCO) to make the determination required by Rules 20 through 20.7. As noted above in Rule 10, application packages containing the forms and information necessary for the SDAPCD to process and approve the modification applications were submitted to comply with this requirement.

E.1.3 Rule 20.1 – New Source Review (NSR) – General Provisions

CECP is a major source as defined by Rule 20.1 because the NO_x PTE exceeds the major source threshold of 50 tons/year as defined in Table 20.1-6b.

Since the CECP emissions of nonattainment pollutants were completely offset through the transition from EPS, the project incremental emissions are estimated based on the difference of the pre-project to post-project PTE on an hourly, daily and annual basis. Since the PTO reflects the change to the CO startup emissions, only the hourly emission change due to the addition of the tuning events, thus the hourly net project emissions are presented in Table 10. There are no increases in the daily or annual emissions associated with tuning as described in Section D.

Since there are no annual emission increases associated with the proposed amendments to the permit conditions, the proposed modifications do not qualify as a major modification per Rule 20.1(c)(41).

Table 10: Pre-Project, Post-Project, and Net Increment Hourly PTE

	One CTG (lbs/hr)		Five CTGs (lbs/hr)	
	NO_x	CO	NO_x	CO
Pre-Project	28.2	35.9	141.0	179.5
Post-Project	53.0	135.0	165.8	278.6
Net Project Increment	24.8	99.1	24.8	99.1

E.1.3.1 Rule 20.1(d)(2) Pre-Project Actual (Baseline) Emissions

In accordance with Rule 20.1(d)(1)(i)(C), if an Authority to Construct has previously been issued for an emission unit pursuant to New Source Review rules for the SDAPCD, and the previous emissions increases that resulted from that emission unit were offset in accordance with the New Source Review rules in effect at that time, the emission unit's pre-project potential to emit shall be as calculated pursuant to Subsection (d)(1)(i)(A) and (B). The CECP emissions were offset using contemporaneous reductions from the EPS and purchased offsets, in accordance with the rules in effect at that time. Thus, the applicable paragraph for determining pre-project emissions is (d)(1)(i)(A), which reads: "Permit Limitations on Pre-Project and Post-Project Potential to Emit Shall be Used…if specific enforceable permit limitations on potential to emit restrict or will restrict maximum potential emissions of an emission unit on an hourly, daily or annual basis to a lower level, these limitations shall be used to calculate the pre-project or post-project potential to emit, as applicable, on an hourly, daily and annual basis."

The facility's permit contains conditions limiting the number of starts and stops, the emissions from each event, and the maximum hourly and annual emissions, in addition to a facility cap for offset purposes. COC AQ-6 also requires that the facility be operated consistently with the permit applications. The facility PTE is based on the emissions inventory provided in the FDOC (April 17, 2015), which is reproduced as Table 11.

Table 11: CECP Facility Potential to Emit from the FDOC

Sources	NO_x	CO	VOC	SO_x	PM_{10}	$PM_{2.5}$	NH_3
Hourly Emissions (lbs/hour)							
One CTG	28.2	17.3	7.2	2.07	5	5	6.7
Six CTGs[5]	169.4	103.9	43.1	12.4	30	30	40.2
Daily Emissions (lbs/day)							
One CTG	255.9	232.8	71.8	49.6	120	120	160.9
Six CTGs	1,535.2	1,396.8	430.6	297.9	720	720	965.2
Annual Emissions (tons/year)							
One CTG	14.15	12.96	3.97	0.93	4.7	4.7	9
Six CTGs	84.9	77.8	23.8	5.6	28.4	28.4	54.3

E.1.3.2 Rule 20.1(c)(35), 20.1(c)(33): Major Stationary Source and Major Modification

A major stationary source as defined in SDAPCD Rule 20.1 is any emission unit or stationary source that has or will have after issuance of a permit an aggregate PTE in excess of any of the limits for each of the corresponding pollutants listed in Table 12 (for a severe ozone non-attainment area).

Table 12: Major Source and Modification Thresholds

Pollutant	Major Source Threshold (tons/year)	Major Modification Threshold (tons/year)
$PM_{2.5}$	100	10
PM_{10}	100	15
NO_x	25	25
VOC	25	25
SO_x	100	40
CO	100	100
Lead	100	0.6

After commissioning, emissions from the CECP will exceed these levels (PTE basis) for only NO_x. The stationary source is, therefore, an existing major source and will remain a major source after implementation of the proposed change to the CO emission limit.

A major modification is defined in SDAPCD Rule 20.1 as a physical or operational change which results or may result in a contemporaneous emission increase at an existing major source in excess of the limits for each of the corresponding pollutants listed in Table 12.

The permit conditions contain an annual emissions limit covering the CECP that limits total emissions from this equipment to 77.8 tons of CO per year. The proposed

[5] As noted elsewhere, the facility was originally permitted for six CTG; only five were installed. However, emission reductions from the EPS were surrendered for the full emission rate of six turbines. Thus, the facility PTE is based on the emissions from six CTGs.

modification will not cause the facility to exceed the permitted limits (post-modification CO emissions are 75.3 tons per year, see Table 4).

The proposed modifications are not expected to increase hourly or annual NO_x or VOC emissions. Therefore, the proposed modifications do not qualify as a major modification.

E.1.3.3 Rule 20.1(c)(58): Prevention of Significant Deterioration Stationary Source and PSD Modifications

The SDAPCD is not currently authorized by EPA to implement the Federal Prevention of Significant Deterioration (PSD) program. However, SDAPCD Rule 20.3 contains similar provisions implemented by the SDAPCD on a local basis [with the notable exceptions of greenhouse gases (GHGs) and $PM_{2.5}$, the latter of which is in effect regulated as a subset of PM_{10} under the SDAPCD rule].

A PSD stationary source is defined by Rule 20.1 as any stationary source that has or will have after issuance of a permit an aggregate PTE in excess of thresholds that depend on the type of stationary source. If the facility is classified as a "fossil fuel-fired steam electrical plant of more than 250 MMBtu per hour heat input," those thresholds are 100 tons per year of any of the following pollutants: PM_{10}, NO_x, VOC, SO_x, or CO. Following the retirement of the EPS boilers, this facility ceased to be a steam-generating electrical plant. Emissions of each pollutant are less than 250 tons per year, and therefore, the facility is not a PSD source. Because the facility is not a PSD source, the proposed modification is not a PSD major modification.

E.1.4 Rule 20.3 – New Source Review (NSR) – Major Stationary Sources and PSD Stationary Sources

E.1.4.1 Rule 20.3(d)(1): Best Available Control Technology and Lowest Achievable Emission Rate

Except as provided in Subsection (d)(1)(v) of the rule, any new or modified emission unit which has any increase in its PTE of PM_{10}, NO_x, VOC, or SO_x and which unit has a post-project PTE of 10 pounds per day or more of PM_{10}, NO_x, VOC, or SO_x shall be equipped with BACT for each such air contaminant. The proposed modifications are not expected to impact the emission rates of PM_{10}, NO_x, VOC, or SO_x; therefore, BACT is not required for the modification application.

Pursuant to paragraph (d)(1)(vi) of the rule, any new, modified, relocated or replacement emission unit at a PSD stationary source, which emission unit has an emission increase of one or more air contaminants which constitutes a new PSD stationary source or PSD modification, shall be equipped with BACT for each such air contaminant. Since the project emission increase is not a PSD source and the proposed modifications are not a PSD modification for CO, BACT is not required for CO.

As stated in the CECP FDOC, "For startup and shutdown operations, BACT is typically considered to be a limitation on the mass emissions during each startup and shutdown period along with a limitation on the duration of each startup and shutdown."

Permits issued for similar CTG equipment were reviewed to verify that the emission rates and startup and shutdown times proposed for this project are consistent with other permits issued for projects with similar power generating equipment. Specifically, other projects

utilizing LMS100-PA turbines were reviewed. The Pio Pico project was permitted (FDOC) with a startup maximum emission rate for CO of 17.9 lbs/event. The CECP FDOC indicated that SDAPCD determined that the CPV Sentinel project used CO emissions of 15.89 lbs/event based on review of the permit application.

LMS100-PA turbines are advertised as having some of the lowest startup times for large simple-cycle turbines, with startup duration estimated at 25 minutes. Although the information provided by the manufacturer (GE) for CECP indicated that emission rates for CO of 7.4 lbs/event, BACT must be "achieved in practice," and the Applicant's experience at the CECP is that the equipment does not consistently meet this limit, and hence the manufacturer's claims are not achieved in practice and cannot be BACT.

Based on the above information, BACT is satisfied by limiting startup duration to no more than 25 minutes per event and limiting the facility CO emissions to 17.3 lbs/event (slightly lower than an issued permit for the Pio Pico project in the SDAPCD's jurisdiction). Note that CO emissions are not subject to BACT requirements.

With respect to tuning, per Rule 20.3(d)(1), any new or modified emission unit which has a post-project PTE of 10 pounds per day or more of PM_{10}, NO_x, VOC, or SO_x shall be equipped with BACT for each such air contaminant. CECL will limit the number of startups and operations on days during which tuning is performed such that no changes to the daily or annual PTE are proposed. Because the proposed modifications will not increase the daily emission rates of PM_{10}, NO_x, VOC, or SO_x, BACT is not required.

E.1.4.2 Rule 20.3(d)(2): AQIA

This rule section requires that the SDAPCD conduct an AQIA for all projects resulting in increases of emissions above thresholds listed in Table 20.3-1 of the rule to assess the impacts of the proposed equipment on compliance with applicable ambient air quality standards. Each project must be shown not to cause new violations or additional violations of either the State or National AAQS or prevent or interfere with the attainment or maintenance of those standards. As noted in Section D.1, even though the CO emissions related to the CO emission increase during startup is below the threshold in Table 20.3-1, an AQIA was performed and the AQIA demonstrated that the increase in CO during startup would not cause an exceedance of the CO AAQS.

The emissions associated with the tuning of each turbine range from uncontrolled to normal steady state levels. The proposed NO_x and CO hourly emissions increase shown in Table 9 are less than the Rule 20.3 AQIA thresholds, therefore an AQIA related to tuning is not required.

In addition, uncontrolled to normal steady state turbine emissions have already been assessed in the FDOC AQIA modeling for the commissioning of the turbines and during normal, startup and shutdown operations, respectively. The previous AQIA modeling found that emissions from the facility did not violate or contribute to a violation of a national or California AAQS. Tuning emissions will occur for brief intermittent periods. Per EPA modeling guidance for the 1-hour NO_2 NAAQS, due to the statistical nature of the NAAQS, intermittent emissions do not need to be included in the analysis if they do

not "occur frequently enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations."[6]

E.1.4.3 Rule 20.3(d)(3) and (4): PSD

As previously discussed, following the retirement of the EPS boilers, this facility ceased to be a steam-generating electrical plant. Emission of each pollutant are less than 250 tons per year, and therefore, the facility is not a PSD source. Because the facility is not a PSD source, the proposed modification is not a PSD major modification.

E.1.4.4 Rule 20.3(d)(4): Public Notice and Comment

The APCO shall not issue an Authority to Construct or modified Permit to Operate for any emission unit or project subject to the AQIA or notification requirements of Subsections (d)(2) or (d)(3) of the rule, nor for any emission unit or project which results in an emissions increase of VOC equal to or greater than 250 pounds per day or 40 tons per year, nor for any emission unit or project that would otherwise constitute a new major stationary source or a major modification.

The proposed CO startup and tuning modifications are not subject to the AQIA requirements of Section (d)(2) of the rule because the increase in total project emissions is less than 100 pounds per hour and less than 550 pounds per day. The project is not a PSD source or PSD modification subject to (d)(3) of the rule. The proposed modifications will not cause emissions greater than 250 pounds per day or 40 tons per year of VOC. Therefore, public notice is not required for this application.

E.1.4.5 Rule 20.3(d)(5)-(8): Emission Offsets

Emission offsets are required for any project that results in a major modification at an existing major source or results in a new major stationary source by itself for federal nonattainment air pollutants or their precursors. The SDAPCD is currently nonattainment of only the federal 8-hour ozone standard.[7] As ozone precursors, NO_x and VOCs are the only nonattainment pollutants in the SDAPCD and the only pollutants for which offsets are required. The proposed modifications are not expected to cause an increase in either NO_x or VOC emissions; therefore, offsets are not required for the project.

Note that the Amended CECP has installed only five of the six permitted CTGs. The post-project PTE for the facility for CO (as shown in Table 3) related to the startup emissions change is 75.3 tons per year. The permitted facility PTE for CO is 77.8 tons per year. Changes related to the facility annual PTE are not proposed related to tuning. Thus, the proposed modifications will not cause the facility to exceed the facility cap for CO emissions.

E.1.4.6 Rule 20.3(e)(1): Compliance Certification

Prior to receiving an Authority to Construct or modified Permit to Operate pursuant to this rule, an applicant for any new federal major stationary source or federal major modification

[6] EPA, Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard, March 1, 2011.
[7] EPA Region 9 Air Quality Maps and Geographic Information. https://www3.epa.gov/region9/air/maps/ Ozone 8-hour map updated June 8, 2021.

shall certify that all major stationary sources owned or operated by such person, or by any entity controlling, controlled by, or under common control with such a person, in the State are in compliance or on an approved schedule for compliance with all applicable emission limitations and standards under the federal Clean Air Act.

The facility is a major stationary source, and thus, a Compliance Certification was required and was provided with the modification applications.

E.1.4.7 Rule 20.3(e)(2): Alternate Siting and Alternatives Analysis

This rule requires that the applicant for any new federal major stationary source or federal major modification shall conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source or modification which demonstrates that the benefits of the proposed source or modification outweigh the environmental and social costs imposed as a result of its location or construction. Analyses conducted in conjunction with State or federal statutory requirements may be used.

The Applicant provided an analysis of various alternatives to the project through the Energy Commission licensing process. This analysis included a No Project alternative, alternative sites, and alternative technologies. Since all of San Diego County is currently classified as nonattainment for ozone, an alternative location within San Diego County would not avoid the project being located in an ozone nonattainment area. Regarding alternative sizes of equipment, the BACT/LAER review conducted by the SDAPCD included review of simple-cycle turbines of different sizes and did not find that any combination of turbines of different sizes than those proposed would result in lower emission levels for about the same total project power.

E.1.5 Rule 20.5 – Power Plants

This rule requires that the SDAPCD issue a preliminary determination of compliance (PDOC) as part of the application for certification process once it has determined that the proposed power plant will comply with all applicable SDAPCD regulations. After a comment period has been provided and the SDAPCD has considered any comments submitted, the SDAPCD issues a FDOC, which will confer the same rights and privileges as an Authority to Construct after the project license application is approved by the CEC. The SDAPCD issued a PDOC and FDOC prior to the Energy Commission's July 2015 Final Decision in accordance with these requirements.

On August 25, 2022, the SDAPCD issued the preliminary decision to issue the Title V Operating Permit that includes the draft PTOs that incorporate the changes that are discussed in this PTA. The Title V Operating Permit and associated PTOs were finalized in March 2023, and it is expected that the Energy Commission will amend the Air Quality COCs for CECP separately using the approved SDAPCD modifications. This Supplemental PTA is submitted to fulfill the Applicant's obligation under this rule.

E.2 SDAPCD Regulation IV – Prohibitions

E.2.1 Rule 50: Visible Emissions

This rule limits the opacity of air emissions to a shade no darker than that designated Number 1 on the Ringlemann Chart, or an equivalent opacity (20%). This requirement is

specified in permit conditions and the use of natural gas as fuel is expected to ensure compliance with this requirement.

E.2.2 Rule 51: Nuisance

This rule prohibits the discharge of air contaminants in such quantities which cause injury, detriment, nuisance, or annoyance to a considerable number of persons or the public; which endanger the comfort, repose, health, or safety of any such persons of the public; or which have a natural tendency to cause injury or damage to business or property. Permit conditions specify the use of natural gas as fuel, and these conditions ensure that no public nuisance results from this equipment.

E.2.3 Rule 69.3: Stationary Gas Turbines Reasonably Available Control Technology

This rule was repealed in December 2021 when the revised Rule 69.3.1 was adopted. The permit conditions in the new PTOs were modified to no longer reference Rule 69.3 as an underlying requirement.

E.2.4 Rule 69.3.1: Stationary Gas Turbines Best Available Retrofit Control Technology

Except for some exemptions, this rule applies to stationary gas turbine engines with a power rating of 0.3 MW or greater. This rule limits NO_x emissions from gas turbines based on the thermal efficiency of the turbine. For units with a power rating greater than 10 MW, the standards, when operating on gaseous fuel, are (in ppmvd corrected to 15% O_2): 15 x E/25 when no post combustion controls are installed and 9 x E/25 when post combustion (SCR/oxidation catalyst) controls are installed, where E is the thermal efficiency based on the fuel's lower heating value (LHV).

The rule requires the installation of continuous emissions monitoring systems (CEMS) to show compliance with the NO_x emission limits, requires the facility to keep records of startup and shutdowns, and requires annual source testing. The performance specifications for the NO_x CEMS must be done in compliance with 40 CFR 60 and 40 CFR 75 per Rule 69.3.1(e)(2), but there is no requirement for CO CEMS.

The proposed change to the definition of shutdown does not impact actual or potential NO_x emissions during startup, shutdown, or normal operations. This rule has no applicable requirements for CO emissions. Emission standards of this rule do not apply to periods of testing of gas turbine engines or their components per 69.3.1(b)(1)(i), which includes tuning. Therefore, continued compliance is expected.

E.3 SDAPCD Regulation XII – Toxic Air Contaminants; Rule 1200: Toxic Air Contaminants – New Source Review

Rule 1200 regulates the emissions of TACs in San Diego County by placing limits on allowable health risk and health effects on surrounding residences and businesses due to increases in emissions of these TACs. Compliance with this requirement is typically accomplished through a health risk assessment that models dispersion of TACs based on emission rates, exhaust properties, atmospheric data, and geography. Rule 1200 limits the increase in health hazard index (HHI) to no more than 1.0 for both chronic and acute health effects. HHI is a ratio of potential exposure to the exposure required to produce health effects in more sensitive individuals, so a value less than 1.0 indicates no expected adverse health effects. Cancer risk increase is limited to an increase of

no more than one in 1 million, unless the equipment is equipped with Toxics Best Available Control Technology (T-BACT), in which case the standard is no more than an increase of ten in 1 million.

The PTOs for the CTG indicates that the permit condition that could require source testing of selected air toxics to demonstrate compliance with Rule 1200 is a "District-Only Enforceable Condition."

The revised permit conditions are not expected to allow an increase in emissions of any TACs and, thus, are not expected to cause adverse health risk impacts.

E.4 SDAPCD Regulation XIV – Title V Federal Operating Permits

The initial Title V Operating Permit for this facility was issued in March 2023 along with the new PTOs. The relevant changes discussed herein were incorporated. A copy of the Title V Operating Permit is provided in Appendix A.

E.5 State Regulations Implemented by the SDAPCD

E.5.1 California Health and Safety Code Section 42301.6: School Notification

This law requires that the SDAPCD prepare a public notice for all proposed projects located within 1,000 feet of a school that will result in the emission of TACs. There are no schools located within this distance of the CECP, so this modification is not subject to this public notification requirement.

E.6 Federal Rules

E.6.1 New Source Performance Standards

The CTGs are subject to New Source Performance Standards (NSPS) Code of Federal Regulations (CFR) Title 40 Part 60, Subparts KKKK and TTTT.

E.6.1.1 40 CFR Part 60 Subpart KKKK – 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 NO_x and sulfur dioxide (SO_2). The rule has no applicable requirements for CO emissions.

The proposed change to the definition of shutdown does not impact actual or potential NO_x emissions during startup, shutdown, or normal operations. This rule has no applicable requirements for CO emissions. Therefore, the proposed changes of conditions do not adversely impact compliance with Subpart KKKK.

E.6.1.2 40 CFR Part 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 a steam generating unit, Integrated Gasification Combined Cycle (IGCC), or a stationary combustion turbine that commences construction after January 8, 2014, or commences modification or reconstruction after June 18, 2014. An affected steam generating unit, IGCC, or stationary combustion turbine shall, for the purposes of this subpart, be referred to as an affected Electrical Generating Unit (EGU).

Because the change in the CO startup limit only affects CO emissions, which is not a GHG, this change does not adversely impact compliance with Subpart TTTT. The proposed change in the shutdown definition does not affect GHG emissions. Likewise, no change in facility daily or annual PTE are proposed related to tuning, which would also be true for the GHG PTE. Therefore, this federal regulation is not affected by the proposed modifications.

E.6.2 National Emission Standards for Hazardous Air Pollutants

The National Emission Standards for Hazardous Air Pollutants (NESHAPs) 40 CFR Part 63, Subpart YYYY is applicable to gas turbines. Rule applicability and compliance are evaluated.

E.6.2.1 40 CFR Part 63 Subpart YYYY – Stationary Combustion Turbines

This rule applies to combustion turbines installed at major sources of HAPs. A major source of HAPs has a PTE of greater than 10 tons per year of a single HAP or 25 tons per year of any combination of HAPs. For the evaluation of the licensed Amended CECP, the SDAPCD determined that this site was a major HAP source with a PTE of more than 10 tons per year of hexane from the EPS boilers. The boilers have been removed. This facility no longer has a PTE in excess of 10 tons per year of any single HAP or 25 tons per year of combined HAP, so it is no longer a major source, and Subpart YYYY is no longer applicable.

The proposed modifications impact CO emissions during startup; they do not impact HAP emissions. The proposed change in the shutdown definition does not affect HAP emissions. No changes to the daily or annual PTE is proposed related to tuning. Hence, there are no applicable requirements associated with the NESHAPs related to the proposed modifications.

E.6.3 Acid Rain

E.6.3.1 40 CFR Part 72 Subpart A – Acid Rain Program

This subpart includes general provisions including definitions and applicability for the Acid Rain Program. This program is designed to reduce emissions of compounds that form acid, including NO_x and SO_x. Compliance with this regulation is accomplished through a market-based trading program where sources of pollution are assigned allowances based on their level of electricity production and emissions. These allowances may be transferred between parties, with each entity required to hold sufficient allowances to cover their emissions. Each gas turbine is subject to this program as a new "utility unit."

This rule has no applicable requirements for CO emissions. The proposed change to the definition of shutdown does not impact actual or potential NO_x emissions during startup, shutdown, or normal operations. The allowance for tuning is not a federal major modification. Therefore, the proposed changes of conditions do not adversely impact compliance with this subpart.

E.6.3.2 40 CFR Part 72 Subpart C – Acid Rain Permit Applications

This subpart requires that the Applicant submit an Acid Rain application to the EPA prior to the applicable deadline. Section 72.30(b)(2)(ii) requires the application be submitted

24 months prior to operation of each unit. Additionally, the units cannot be operated until an acid rain permit is issued by the EPA. The requirements are specified in the permit conditions.

This rule has no applicable requirements for CO emissions. The proposed change to the definition of shutdown does not impact actual or potential NO_x emissions during startup, shutdown, or normal operations. The allowance for tuning is not a federal major modification. Therefore, the proposed changes of conditions do not adversely impact compliance with this subpart.

E.6.3.3 40 CFR Part 73 – Sulfur Dioxide Allowance System

This part contains requirements for allocating allowances, tracking allowances, transferring allowances, auctions and direct sales, energy conservation, and renewable energy reserve. The requirement to hold allowances is contained in permit conditions.

This rule has no applicable requirements for CO emissions. The proposed change to the definition of shutdown does not impact actual or potential SO_2 emissions during startup, shutdown, or normal operations. The allowance for tuning is not a federal major modification. Therefore, the proposed changes of conditions do not adversely impact compliance with this subpart.

E.6.3.4 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. Since these units combust only gas, they are only required to monitor NO_x and CO_2 (or O_2) and have the choice of monitoring SO_x or using fuel flow monitoring and default sulfur emission factors to calculate emissions. Additionally, Subpart C of this part contains requirements for operating and maintaining the CEMS to ensure that accurate, valid data are collected. The CEMS is required to be initially certified and requires recertification if certain modifications are made. Required Quality Assurance (QA) activities include linearity checks, 7-day calibration error tests, and relative accuracy test audits (RATA). Linearity and calibration error tests ensure that the monitors are measuring emissions accurately. RATA compare the CEMS readings to the results determined using a source test. The RATA must be conducted annually except in certain situations where the turbine does not operate for more than 168 hours per calendar quarter. Finally, this part contains requirements for substituting data in a conservative manner for any hour when the CEMS does not record valid data, and these requirements are specified in the permit conditions. Additionally, the facility is required to operate according to an approved CEMS protocol, which will contain the above requirements and specific procedures in detail.

This rule has no applicable requirements for CO emissions. The proposed change to the definition of shutdown does not impact actual or potential NO_x or SO_x emissions during startup, shutdown, or normal operations. The allowance for tuning is not a federal major modification. Therefore, the proposed changes of conditions do not adversely impact compliance with this subpart.

F. A discussion of how the proposed change would affect the public.

The proposed changes would not affect the public. The small increase in CO during startup would not cause or contribute to an exceedance of an AAQS. In fact, the predicted impacts were well below the applicable 1- and 8-hour standards even with extremely conservative assumptions of a full and a partial startup and a shutdown all occurring within the same hour and, furthermore, that all five CTGs would experience this same extreme scenario in the same hour.

Likewise, the emissions during tuning would be similar to the emissions during startup and shutdown, as well as initial plant commissioning. The proposed maximum hourly emissions are below the Rule 20.3 thresholds that require an AQIA, and prior modeling of commissioning for the full six CTGs during the original permitting showed compliance with the applicable AAQSs.

The like-in-kind replacements are not expected to change emissions from the units, so would not affect the public. Similarly, the change in compliance demonstration methodology for the VOC limits is also not considered a change in the emissions.

G. A list of current assessor's parcel numbers and owners' names and addresses for all parcels within 500 feet of any affected project linears and 1,000 feet of the project site.

Nearby property owners, the public, and Parties to the Application Proceeding will not be affected by the proposed modifications, since the proposed changes will be consistent with the current operation of the power plant, will have less than significant environmental effects, and will be in compliance with applicable LORS. Because there are no potentially affected property owners, a list of property owners is not included in this Supplemental PTA. A list of property owners within 1,000 feet of the power plant site has previously been provided to the Energy Commission Compliance Program Manager (CPM) for previous Post-Certification Amendments, including the prior PTA for the startup and shutdown revisions submitted in February 2020 (TN# 231945).

H. A discussion of the potential effect of the proposed change on nearby property owners, residents, and the public.

See Section F – the relatively small increase in CO emissions during startup would have a negligible effect on nearby property owners, residents, and the public. Similarly, emissions during tuning would be similar to emissions during startup/shutdown, which have been demonstrated to not a significant impact. Startup, shutdown, and tuning are short-term as well and do not impact the annual PTE for the facility.

I. A discussion of any exemptions from the California Environmental Quality Act, of the Public Resources Code, that the project owner believes may apply to approval of the proposed change.

No changes are being sought to the hourly, daily, or annual emissions limits applicable to normal operations currently in the air quality permit. The CO startup emissions have been modeled to show no impacts above the applicable AAQS. The proposed change to the shutdown definition is considered administrative to correct an accounting problem during unplanned shutdowns, does not change the facility's potential to emit and, hence, does not trigger NSR. The tuning activities will

not occur on a regular basis and are consistent with the emissions analyzed for commissioning. Like-In-Kind replacements are not expected to impact emissions.

3.0 CONCLUSIONS

Based on the information contained in this filing, CECL, the Project Owner, concludes that there will be no significant environmental impacts associated with revision of the CO startup emissions limit or the definition of shutdown. These changes are necessary because:

1. It has been determined that the CTGs cannot meet the CO startup emission limit every time that was initially proposed because, it is based on manufacturer's (GE's) data that appear to have been based on specific ambient conditions and was not a guaranteed emission rate. Actual conditions vary from the conditions upon which the manufacturer's emissions claims were based and emissions exceeding the manufacturer's claims have been observed; and
2. While a normal shutdown includes 11 minutes of cooldown, abrupt emergency shutdowns when the unit trips offline and/or after an aborted startup may not include the full 11-minute cooldown period, resulting in shutdowns that are less than 13 minutes.

The change to the CO limit is based on a CO startup emission limit granted to another similar GE LMS100-PA installation in San Diego County by the SDAPCD. Modeling of the impacts of this proposed CO limit provided results that are less than 20% (including background) of the 1- and 8-hour CO AAQS, even though extremely conservative operating scenarios were assumed. Since the impacts would be less-than-significant, no additional mitigation is proposed.

The change to the shutdown definition is necessary to remedy the need to report breakdowns when the shutdown is less than 13 minutes, and the recorded emissions include non-shutdown-related emissions due to an accounting problem and not an actual emissions exceedance. No changes to any of the shutdown emissions limits, the hourly, daily, or annual emission limits, which include startup and shutdown emissions, or the modeling assumptions related to NO_2 on which the permit was based are needed. Several conditions were modified by SDAPCD to ensure that emissions during clock hours in which the shutdown occurs cannot be higher than previously allowed.

The addition of an allowance for tuning was overlooked at the time the permitting for CECP was initially conducted but is now recognized as a necessary activity that requires the power generation equipment to be operated for part of the tuning process without emissions controls engaged. Although an increase in NO_x and CO hourly emissions is needed during tuning, the plant operation will be managed such that no increase in daily or annual PTE will be needed to accommodate tuning emissions. Tuning of all five CTGs will be limited to no more than a total of 65 hours per year, with only one CTG being tuned at a time. Therefore, no significant impact from this activity is expected.

In 2022, the Unit #6 SuperCore components failed, following similar issues with Units #8 and 10 in 2018 and Unit #7 in 2019. Both SDAPCD Rule 11 and the federal PSD regulations provide exemptions from permitting for maintenance, repair, and replacement. No emissions increases are expected for this activity.

A compliance issue was raised related to AQ-SC9 for which a modification is suggested to avoid future misunderstanding of the requirement. A few COCs related to construction and transition from EPS to CECP are requested to be deleted as no longer necessary. Equipment descriptions

and references in the COCs related to equipment that was not installed has been deleted, and other changes for consistency have been included in the revised PTOs.

Additionally, a more recent compliance issue with respect to the hourly CO emissions limit identified that the VOC emissions are not related to the CO emissions at this facility, and hence a VOC to CO surrogate relationship cannot be used to demonstrate compliance. Therefore, the permit was changed by the SDAPCD to instead use the required source tests to demonstrate compliance with all VOC limits.

This Supplemental PTA contains the information necessary for staff to determine that the proposed revisions to COCs as described in this Petition (a) will not significantly affect the environment, (b) will not cause the project to fail to comply with applicable LORS, and (c) will not result in the increase of daily, quarterly, or annual permit emissions limits as a result of the change. Therefore, the proposed changes shown to the Air Quality COCs provided in Appendix B should be approved.

APPENDIX A – TITLE V OPERATING PERMIT, APCD2021-TVP-00046, INCLUDING PERMIT TO OPERATE FOR A COMBUSTION TURBINE GENERATOR AND EMERGENCY FIRE-WATER PUMP ENGINE

Note: Only one of the five PTOs for the CTGs is included because all five PTOs have identical permit conditions.

San Diego County Air Pollution Control District

10124 Old Grove Rd
San Diego, CA 92131-1649
(858) 586-2600

TITLE V OPERATING PERMIT
APCD2021-TVP-00046

Issued To:
Carlsbad Energy Center LLC
Site ID # APCD1982-SITE-00195

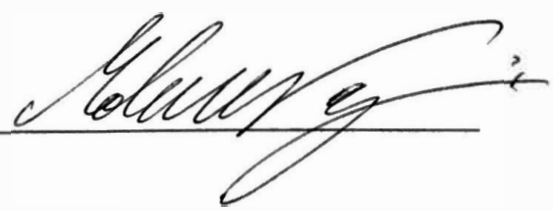
Site Address
4950 A venida Encinas
Carlsbad, CA. 92008
(760) 615-2011

Mailing Address
4950 Avenida Encinas
Carlsbad, CA. 92008

Responsible Official – Paul Mattesich
Facility Contact – Paul Mattesich
Permit Information Contact – Paul Mattesich

Issued by the San Diego County Air Pollution Control District on February 2, 2023.

This Title V Operating Permit expires on February 2, 2028.

X 

Mohsen Nazemi,
Engineering Division Chief, San Diego County Air Pollution Control District

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PREAMBLE

This Title V Operating Permit consists of this document and all appendices, including District permits incorporated by reference. The facility is subject to all applicable requirements identified within this permit, unless a specific permit shield is specified within this permit. If an applicable requirement is omitted from this permit, the facility is still obligated to comply with such an applicable requirement. The permittee must comply with all of the terms listed in each section of this permit.

This permit contains five major sections: Section I contains the Regulation XIV requirements required to carry out the Title V Operating Permit program. Section II contains the requirements that are applicable to the facility on a facility-wide basis. Section III contains the requirements that are applicable to individual emission units which have been issued District permits or District registration, or which have been determined to be insignificant emission units. Section IV contains terms and requirements pertaining to variance procedures and compliance schedules, if applicable to the facility. Section V contains three appendices. Appendix A contains all the District permits incorporated within this permit. Appendix B contains a table of all SIP approved and District approved rules. Appendix C contains a list of abbreviations used within this permit.

Copies of the Rules and Regulations of the Air Pollution Control District of San Diego County and the Rules and Regulations for San Diego County contained in the State Implementation Plan (SIP) approved by EPA may be obtained at the District. Copies are also available for review at the following locations:

SD Air Pollution Control District (Library & Public Review Area)	County of SD Law Library (Downtown)	County of SD Law Library (North County)
10124 Old Grove Rd	1105 Front St.	325 S. Melrose Suite 300
San Diego, CA 92131-1649	San Diego, CA 92101	Vista, CA 92083
(858) 586-2600	(619) 531-3900	(760) 940-4386

The current Rules and Regulations of the Air Pollution Control District of San Diego County may also be viewed and downloaded using the following internet address:

www.sdapcd.org

The following addresses should be used to submit any certifications, reports or other information required by this permit:

SD Air Pollution Control District	USEPA Region IX
Compliance Division	Director of the Air Division Attn: Air-3
10124 Old Grove Rd	75 Hawthorne Street
San Diego, CA 92131-1649	San Francisco, CA 94105

SECTION I. REGULATION XIV PERMIT REQUIREMENTS

A. ADMINISTRATIVE PERMIT TERMS

1. This Title V Operating Permit expires 5 years from date of issuance. [Rule 1410]
2. Commencing or continuing operation under this permit to operate shall be deemed acceptance of all terms and conditions specified within this permit. This does not limit the right of the applicant to seek judicial review or seek federal EPA review of a permit term or condition. [Rule 1421]
3. This permit may be modified, revoked, reopened, and reissued, or terminated by the District for cause. [Rule 1421]
4. The filing of a request by the facility for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay the applicability of any permit condition. [Rule 1421]
5. This permit does not convey any property rights of any sort, or any exclusive privilege. [Rule 1421]
6. The need for the permittee to halt or reduce a permitted activity in order to maintain compliance with any term or condition of this permit shall not be a defense for any enforcement action brought as a result of a violation of any such term or condition. [Rule 1421]
7. In the event of challenge to any portion of this permit, the rest of the permit remains valid. [Rule 1421]
8. For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any applicable requirement in this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. [62 Federal Register 8314; Rule 1421]

B. RENEWAL REQUIREMENTS AND TERMS

1. The permittee shall submit a complete application for renewal of this permit to the Air Pollution Control Officer at least 12 months, but not more than 18 months, prior to permit expiration. [Rule 1410]
2. If an administratively complete application for renewal of this permit has been submitted to the Air Pollution Control Officer within the timeframe specified in Section I.B.1. , the terms and conditions of this permit shall remain in effect and the source may continue operations under these terms and conditions until the Air Pollution Control Officer issues or denies the permit renewal. [Rule 1410]

C. MONITORING, RECORDKEEPING & REPORTING REQUIREMENTS

1. The permittee shall provide the District access to the facility and all equipment subject to this permit, and access to all required records pursuant to California Health and Safety Code Section 41510. [Rule 1421]
2. The permittee shall maintain all records required by this permit including any calibration, maintenance, and other supporting information and copies of all reports required by this permit for at least five years from their date of creation. Such records shall be maintained on-site for a minimum of three years. [Rule 1421]
3. The permittee shall submit monitoring and recordkeeping summary reports and all other monitoring and recordkeeping reports required by this permit to the District every six months, unless a shorter time frame is required by a specific permit condition contained in Section III of this permit. Unless other dates are specified in Section III, reports for data required to be collected from January 1 through June 30, shall be submitted no later than September 1 of the calendar year, and reports for data required to be collected from July 1 through December 31, shall be submitted no later than March 1 of the following calendar year. The report for the final six months of the year may be consolidated with the annual compliance certification required below. All instances of noncompliance from federally enforceable applicable requirements shall be clearly identified in these reports. (Timely completion of District Certification Reports Form J1 and Form J2, if applicable, and all indicated attachments, fulfills the requirements of this condition.) [Rule 1421]
4. Each calendar year, the permittee shall submit to the District and to the federal EPA an annual compliance certification, in a manner and form approved in writing by the District, for the previous calendar year that includes the identification of each applicable term or condition of the final permit for which the compliance status is being certified, the compliance status and whether the facility was in continuous or intermittent compliance during the previous calendar year, identification of the method used to determine compliance during the previous calendar year, and any other information required by the District to determine the compliance status. The annual compliance certification for a calendar year shall be submitted no later than March 1 of the following calendar year and may be consolidated with the monitoring and recordkeeping report for the last six months of the year for which compliance is certified. (Timely completion of District Certification Reports Form J1 and Form J2, if applicable, and all indicated attachments, fulfills the requirements of this condition.) [Rule 1421]
5. Any report submitted to the District or federal EPA pursuant to this permit to comply with a federally enforceable applicable requirement, shall be certified by a responsible official stating that, based on information and belief formed after reasonable inquiry, the report is true, accurate and complete. [Rule 1421]
6. The permittee shall make any trade secret designations of records, documents, or other information submitted to the District or federal EPA in accordance with District Rule 176. [Rule 176]
7. The permittee shall promptly, as defined here, report all deviations from any and all federally enforceable permit terms and conditions including: (a) breakdowns, whether or not they result in excess emissions, (b) deviations that result in excess emissions of any regulated air

pollutant, and (c) deviations from monitoring, recordkeeping, reporting and other administrative requirements that do not result in excess emissions. For deviations that result from breakdowns under District Rule 98, the permittee shall report the breakdown within two hours of detection of the breakdown and provide a follow-up written report after corrective actions have been taken. For deviations not due to a breakdown but which result in excess emissions, the permittee shall report the deviation within ten calendar days of detection. For all other deviations where no specific time frame for reporting a deviation applies, the permittee shall report the deviation at the time of the next semi-annual monitoring summary or annual compliance certification, whichever occurs first. If an underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, then the criteria for the applicable requirement shall apply. The report must include the probable cause of such deviations and any corrective actions or preventive measures taken. [Rule 1421]

D. GENERAL PERMIT REQUIREMENTS

1. The permittee shall comply with all terms and conditions of this permit. This permit consists of this document and Appendices A, B and C. Any noncompliance with the federally applicable terms and conditions of this permit shall constitute a violation of the federal Clean Air Act. Noncompliance with any federally applicable permit term or condition of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Noncompliance with any District permit term or condition is grounds for enforcement action by the District. [Rule 1421]
2. Upon a written request by the District, the permittee shall furnish to the District any information needed to determine whether cause exists for modifying, revoking, and reissuing, or terminating this permit; any information required to determine compliance with this permit; or any records required to be maintained pursuant to this permit. Such information shall be provided within a reasonable time, as specified within the District's written request. [Rule 1421]
3. The permittee shall pay annual fees in accordance with District Rule 40. [Rule 1421]
4. The permittee shall provide access, facilities, utilities and any necessary safety equipment for source testing and inspection upon request from the District. [Rule 19]
5. This permit shall be maintained on-site at all times and be made available to the District upon request. [Rule 1410]
6. The permittee shall only make changes to its operations as allowed by this permit and that comply with the requirements for permit amendments, modifications and other changes as given in Rules 1410 and 10. [Rules 1410(i) through (o) and (q); Rule 10]
7. The Rule Reference Table provided in Appendix B shall be used to determine whether a cited rule is a federally and District enforceable requirement or a District only enforceable requirement. Any new or revised District rule shall not be considered federally enforceable until the rule is approved by EPA into the SIP. In cases where SIP approval is pending for a revised District rule, the rule citation shall refer to both the current SIP approved rule and the revised District rule. [Rule 1421]

SECTION II. FACILITY-WIDE REQUIREMENTS

A. GENERAL PERMIT PROGRAM APPLICABLE REQUIREMENTS

The permittee shall comply with the applicable requirements specified in the Rules and Regulations cited below, unless specifically exempted by the same Rule or Regulation.

Regulation	Rule Citation	Title
SDCAPCD Reg. II	10	Permits Required
SDCAPCD Reg. II	19	Provision of Sampling & Testing Facilities
SDCAPCD Reg. II	19.3	Emission Information
SDCAPCD Reg. II	20, 20.1, 20.2, 20.3, 20.5	New Source Review
SDCAPCD Reg. II	21	Permit Conditions
SDCAPCD Reg. II	24	Temporary Permit to Operate
SDCAPCD Reg. II	25	Appeals
SDCAPCD Reg. IV	60	Circumvention
SDCAPCD Reg. V	98	Breakdown Conditions: Emergency Variance
SDCAPCD Reg. VI	101	Burning Control
40 CFR Part 82	Subpart A	Production and Consumption Controls
40 CFR Part 82	Subpart F	Recycling and Emission Reducing
40 CFR Part 59	Part 59	VOC Standards for Consumer Products

B. GENERAL PROHIBITORY REQUIREMENTS

The permittee shall comply with the generally applicable requirements specified in the Rules and Regulations cited below, unless specifically exempted by the same Rule or Regulation. These generally applicable requirements apply on a facility-wide basis to all permitted equipment, registered equipment, and insignificant activities. In cases where a requirement, in addition to being generally applicable, is also specifically applicable to one or more permitted emission units, the requirement is also included in Section III.A. of this permit.

Regulation	Rule Citation	Title
SDCAPCD Reg. IV	50	Visible Emissions
SDCAPCD Reg. IV	51	Nuisance
SDCAPCD Reg. IV	52	Particulate Matter
SDCAPCD Reg. IV	53	Specific Contaminants
SDCAPCD Reg. IV	62	Sulfur Content of Fuels
SDCAPCD Reg. IV	67.0	Architectural coating
SDCAPCD Reg. IV	67.17	Storage Material coating
SDCAPCD Reg. IV	69.3.1	Stationary Gas Turbine Engines
SDCAPCD Reg. IV	69.4.1	Stationary Internal Combustion Engines
SDCAPCD Reg. IV	71	Abrasive Blasting
SDCAPCD Reg. VI	101	Burning Control

SDCAPCD Reg. X	Subpart A	NSPS General Provisions
SDCAPCD Reg. XI	Subpart A	NESHAP General Provisions
40 CFR Part 61	Subpart M	NESHAP - Asbestos
40 CFR Part 60	Subpart IIII	Standards of Performance for Compression Ignition Reciprocating Internal Combustion Engines
40 CFR Part 60	Subpart KKKK	Standards of Performance for Stationary Gas Turbines
40 CFR Part 63	Subpart YYYY	National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines
40 CFR Part 63	Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines
40 CFR Part 72	Subpart A	Acid Rain Permit Application
40 CFR Part 72	Subpart C	Acid Rain Program
40 CFR Part 73		Sulfur Dioxide Allowance System
40 CFR Part 75		Continuous Emissions Monitoring
40 CFR Part 82	Subpart A	Production and Consumption Controls
40 CFR Part 82	Subpart F	Recycling and Emissions Reduction
SDCAPCD Reg. XII	1200	Toxic Air Contaminants – New Source Review
SDCAPCD Reg. XII	1206	Asbestos Removal, Renovation, and Demolition

C. PERMIT SHIELDS

1. No permit shield applies.

D. ADDITIONAL TERMS

1. Any emission unit described in this Title V operating permit as being fired on natural gas, shall only use Public Utility Commission (PUC)-quality natural gas, unless the emission unit permit specifies otherwise. [Rules 53, 62]
2. 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 21]
3. The permittee shall comply with all applicable requirements, including but not limited to, those applicable requirements of 40 CFR Parts 60 and 63.

E. TITLE IV (ACID RAIN) REQUIREMENTS

1. The permittee shall not exceed any emission allowances that are lawfully held under Title IV of the federal Clean Air Act or the regulations promulgated thereunder. [Rule 1421]
2. The permittee shall install, operate, and maintain equipment for monitoring CO2 and NOx on each applicable exhaust stack in accordance with 40 CFR Parts 72 and 75. [40 CFR Parts 72 and 75]

3. The permittee shall prepare and maintain onsite a written Quality Assurance program in accordance with 40 CFR Part 75, Appendix B for the continuous monitoring of NOx emissions from each applicable exhaust stack. The components of the Quality Assurance program include, but are not limited to, procedures for daily calibration testing, quarterly linearity testing, recordkeeping and reporting implementation, and relative accuracy testing. [40 CFR Parts 72 and 75]
4. The permittee shall monitor SO2 emissions in accordance with 40 CFR Part 72 and 75. [40 CFR Parts 72 and 75]
5. The permittee shall submit quarterly electronic data reports to EPA for the emissions from each applicable exhaust stack in accordance with 40 CFR Part 75. These reports must be submitted within 30 days following the end of each calendar quarter and shall include all information required in § 75.64. [40 CFR Part 75]

SECTION III. EMISSION UNIT REQUIREMENTS

A. DISTRICT PERMITTED EMISSION UNITS

The District Permits listed below and attached in Appendix A, including all terms and conditions of such permits, constitute the emission unit portion of this Title V Operating Permit document.

Permit Number	Permit Description
APCD2022-PTO-004219	Combustion Turbine Generator (Unit #6)
APCD2022-PTO-004220	Combustion Turbine Generator (Unit #7)
APCD2022-PTO-004221	Combustion Turbine Generator (Unit #8)
APCD2022-PTO-004222	Combustion Turbine Generator (Unit #9)
APCD2022-PTO-004223	Combustion Turbine Generator (Unit #10)
APCD2020-PTO-003631	Emergency Engine

B. REGISTERED AND LEASED EMISSION UNITS

The permittee shall comply with the source specific applicable requirements specified in the Rules and Regulations cited below for all registered emission units, unless specifically exempted by the same Rule or Regulations.

Regulation	Rule Citation	Title
SDCAPCD Reg. II	NSR	New Source Review
SDCAPCD Reg. IV	52	Particulate Matter
SDCAPCD Reg. IV	53	Specific Contaminants
SDCAPCD Reg. IV	54	Dust and Fumes
SDCAPCD Reg. IV	62	Sulfur Content of Fuels

C. INSIGNIFICANT EMISSION UNITS AND ACTIVITIES

The permittee shall comply with the source specific applicable requirements in the District Rules and Regulations for any Insignificant Units located at this facility that are listed at District Regulation XIV, Appendix-A, for which a permit is not required (no insignificant units were listed in the permittee's application).

SECTION IV. DISTRICT-ONLY PROVISIONS

VARIANCE PROCEDURES

The permittee may seek relief from District enforcement action in the event of a breakdown in accordance with District Rule 98. Notwithstanding the foregoing, the granting by the District of breakdown relief or the issuance by the Hearing Board of a variance does not provide relief from federal enforcement or citizen's suits. [Rule 98]

SECTION V. APPENDICES

APPENDIX A: DISTRICT PERMITS

Permit Number	Source Category
APCD2022-PTO-004219	Combustion Turbine Generator (Unit #6)
APCD2022-PTO-004220	Combustion Turbine Generator (Unit #7)
APCD2022-PTO-004221	Combustion Turbine Generator (Unit #8)
APCD2022-PTO-004222	Combustion Turbine Generator (Unit #9)
APCD2022-PTO-004223	Combustion Turbine Generator (Unit #10)
APCD2020-PTO-003631	Emergency Engine

San Diego County Air Pollution Control District

COUNTY OF SAN DIEGO, AIR POLLUTION CONTROL DISTRICT
10124 OLD GROVE ROAD, SAN DIEGO, CA 92131
PHONE (858) 586-2600 Fax (858) 586-2601
www.sdapcd.org

Sectors: 1, C
Site ID: APCD2022-PTO-004219
App ID: APCD2014-APP-003482

PERMIT ID
APCD2022-PTO-004219

Carlsbad Energy Center LLC
Plant Manager Paul Mattesich
4950 Avenida Encinas
Carlsbad CA, 92008

EQUIPMENT ADDRESS
Carlsbad Energy Center LLC
Plant Manager Paul Mattesich
4950 Avenida Encinas
Carlsbad CA 92008

PERMIT TO OPERATE

This permit is not valid until required fees are received by the District.

The above is hereby granted a Permit To Operate the article, machine, equipment or contrivance described below. This permit is not transferable to a new owner nor is it valid for operation of the equipment at another location except as specified. This Permit To Operate or copy must be posted on or within 25 feet of the equipment, or readily available on the operating premises.

EQUIPMENT OWNER

Carlsbad Energy Center LLC Owner Manager 4950 Avenida Encinas, Carlsbad, CA 92008

EQUIPMENT DESCRIPTION

Unit #6: One nominal 105.3 MW (net) natural-gas-fired simple-cycle General Electric LMS100-PA combustion turbine generator with demineralized water injection; 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.

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 Rules 10, 20, 40, 50, 51.

Fee Schedules: 1 [20F] Non- Aircraft Turbine Engine

BEC: APCD2022-CON-001914

FAILURE TO OPERATE IN COMPLIANCE IS A MISDEMEANOR SUBJECT TO CIVIL AND CRIMINAL PENALTIES

A. FEDERALLY-ENFORCEABLE AND DISTRICT-ENFORCEABLE CONDITIONS

1. This equipment shall be properly maintained and kept in good operating condition at all times, and, to the extent practicable, the owner or operator shall maintain and operate the equipment and any associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. [Rule 21 and/or 40 CFR §60.11]
2. 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-004220, APCD2022-PTO-004222, and APCD2022-PTO-004223.

3. 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-004220, 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.
4. 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 21].
5. For each combustion turbine, a unit operating day, hour, and minute mean the following:
a. A unit operating day means any calendar day in which the turbine combusts fuel.
b. A unit operating hour means any clock hour in which the turbine combusts fuel.
c. A unit operating minute means any clock minute in which the turbine combusts fuel.
[Rule 21, 40 CFR Part 75, Rule 20.3(d)(1), 40 CFR Part 60 Subpart KKKK]
6. 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.
7. A shutdown period is the period of up to 13 consecutive clock minutes prior to the clock minute that 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)]
8. A startup occurs when fuel flows to the combustion turbine following a non-operational period. And, unless 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)]
9. A non-operational period is any five-consecutive-minute period when fuel does not flow to the combustion turbine. [Rule 20.3(d)(1)]
10. 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 69.3.1, 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]
11. The exhaust stack for each combustion turbine shall be at least 90 feet in height above site base elevation, and with an interior exhaust stack diameter of no more than 13.5 feet at the point of release unless it is demonstrated to the District that all requirements of District rules 20.3 and 1200 are satisfied with a different stack configuration. [Rules 20.3(d)(2) and 1200]

12. The combustion turbines shall be fired on Public Utility Commission (PUC) quality natural gas. The permittee shall maintain, on site, quarterly records of the natural gas sulfur content expressed in units of grains of sulfur per 100 dscf of natural gas and hourly records of the higher heating values of the natural gas expressed in units of Btu/scf. These records shall be provided to District personnel upon request. Natural gas sulfur content records must be kept with a minimum reporting limit of 0.25 grains sulfur compounds per 100 dscf of natural gas. [Rule 20.3(d)(1)]
13. Unless otherwise specified in this permit, all continuous monitoring data shall be collected at least once every clock-minute. [Rules 69.3.1, and 20.3(d)(1)]
14. 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 69.3.1, 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, 40 CFR Part 60 Appendix B and F, and 40 CFR Part 75]
15. 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 69.3.1, 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, 40 CFR Part 60 Appendix B and F, and 40 CFR Part 75]
16. 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 69.3.1, and 20.3(d)(1)]
17. 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% oxygen, averaged over a 1-clock-hour period, except during 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)]
18. When a combustion turbine is operating, the emission concentration of carbon monoxide (CO) shall not exceed 4.0 ppmvd corrected to 15% oxygen, averaged over a 1-clock-hour period, except during 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)]
19. 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% oxygen, averaged over a 1-clock-hour period, except during 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 source testing, an average of three subtests shall be used. [Rule 20.3(d)(1)]
21. 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-clock-hour period and corrected to 15% oxygen, except for tuning operations, and startup and shutdown periods for that turbine, as defined in Rule 69.3.1. [Rule 69.3.1]
22. 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 1-clock-hour period and corrected to 15% oxygen, except for tuning operations, and startup and shutdown periods for that turbine, as defined in Rule 69.3.1. [Rule 69.3.1]
23. 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-clock-hour period and corrected to 15% oxygen, except for tuning operations, and periods of startup and shutdown, as defined in Rule 69.3.1. [Rule 69.3.1]

24. 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% oxygen or, alternatively, as elected by the permittee, 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% O2	Emission Limit, lb/MWh
i. All four hours at or above 75% Load	15	0.43
ii. All four hours below 75% Load	96	4.7
iii. Combination of hrs	(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 include emissions during all 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]

25. The emissions of particulate matter less than or equal to 10 microns in diameter (PM10) from the exhaust stack of each 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)]

26. The emissions of particulate matter less than or equal to 10 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 combustion turbines, calculated as the arithmetic average of the most recent source test for each turbine. [Rule 20.3(d)(1),(2)]

27. The discharge of particulate matter from the exhaust stack of each combustion turbine shall not exceed 0.10 grains per dry standard cubic foot (0.23 grams/dscm) corrected to 12% carbon dioxide by volume. The District may require periodic testing to verify compliance with this standard. [Rule 53]

28. Visible emissions from the lube oil vents and the exhaust stack of each combustion turbine shall not exceed 20% opacity for more than three (3) minutes in any period of 60 consecutive minutes. [Rule 50]

29. 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 tuning operations, startup periods and any clock minutes that are not excluded from shutdown periods for that turbine. A 1-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.

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

[Rule 20.3(d)(2)]

30. 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

31. Cumulative 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.

Pollutant	Emission Limit, lbs
a. NOx	14.7
b. CO	17.3
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)]

32. Excluding any clock minutes that are coincident with a startup period, cumulative 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.

Pollutant	Emission Limit, lbs
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)]

33. 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-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-clock-hour period and corrected to 15% oxygen. These emission limits shall apply during all times a turbine is operating, including, but not limited to emissions during tuning operations, and startup and shutdown periods for that turbine. [Rule 20.3(d)(2)]

34. The carbon monoxide (CO) emissions from each combustion turbine shall not exceed 248 pounds per hour measured over each 1-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-clock-hour period and corrected to 15% oxygen. This emission limit shall apply during all times that a turbine is operating, including, but not limited to emissions during tuning operations, and startup and shutdown periods. [Rule 20.3(d)(2)(i)]

35. 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, 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
a. NOx	84.18
b. CO	77.8
c. VOC	24.1
d. PM10	28.4
e. SOx	5.6

The aggregate emissions of each pollutant shall include emissions during all times that the equipment is operating. 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 20.3(d)(2), Rule 20.3(d)(5), Rule 21]

36. Total emissions from each combustion turbine shall not exceed 14.2 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 20.3(d)(2), Rule 20.3(d)(5), Rule 21]

37. For each calendar month and each rolling 12-calendar-month period, the owner or operator 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 initial 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 20.3(d)(5), Rule 21]

38. For each combustion turbine, the number of operating hours in each calendar year shall not exceed 2700. 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]

39. For each combustion turbine, the number of startup periods occurring in each calendar year shall not exceed 400. [Rules 1200, 20.3(d)(2) and 21]

40. When a combustion turbine is operating, ammonia shall be injected at all times that the associated selective catalytic reduction (SCR) system catalyst outlet temperature is 540 degrees Fahrenheit or greater. [Rules 20.3(d)(1)]

41. 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. The monitors shall be in full operation at all times when the turbine is in operation. [Rules 20.3(d)(1)]

42. Except during periods when the ammonia injection system is being tuned or one or more ammonia injection systems is in manual control for compliance with applicable permit conditions, the automatic ammonia injection system serving each SCR system shall be in operation in accordance with manufacturer's specifications at all times when ammonia is being injected into the SCR system. Manufacturer specifications shall be maintained on site and made available to District personnel upon request. [Rules 20.3(d)(1), 21]

43. The concentration of ammonia solution used in the ammonia injection system shall be less than 20% ammonia by weight. Records of ammonia solution concentration shall be maintained on site and made available to district personnel upon request [Rules 14, 21].

44. All source tests or other tests required by this permit shall be performed by the District or an independent contractor approved by the District. Unless otherwise specified in this permit or authorized in writing by the District, if testing will be performed by an independent contractor and witnessed by the District, a proposed test protocol shall be submitted to the District for written approval at least 60 days prior to source testing. Additionally, the District shall be notified a minimum of 30 days prior to the test so that observers may be present unless otherwise authorized in writing by the District. [Rules 20.3(d)(1) and 1200 and 40 CFR Part 60 Subpart KKKK and 40 CFR §60.8]

45. Within 30 days of the issuance of this Permit to Operate, the owner or operator of this equipment shall submit a source test protocol to measure concentrations and mass emissions of Volatile Organic Compounds (VOCs), including formaldehyde, during startup and shutdown conditions. Measurement of VOC emissions shall be conducted in accordance with EPA Method 18, or alternative methods approved by the District and EPA. Measurement of emissions of formaldehyde shall be conducted in accordance with EPA Method 316 or 323, or an alternative method approved by the District and EPA. This test shall be conducted on the same dates as the first renewal test performed for each turbine after the approval of the source test protocol and subsequently during the first permit year of each five-year Title V Permit renewal. [Rule 20.3]

46. Unless otherwise specified in this permit or authorized in writing by the District, within 45 days after completion of a source test or Relative Accuracy Test Audit (RATA) performed by an independent contractor, a final test report shall be submitted to the District for review and approval. [Rules 20.3(d)(1) and 1200 and 40 CFR Part 60 Subpart KKKK, 40 CFR §60.8, and 40 CFR Part 75]

47. All testing conducted to measure concentrations or emissions of Volatile Organic Compounds (VOCs) shall include measurement of formaldehyde and the result shall be added to the result determined for other VOC concentrations or emissions, as applicable. Measurement of VOC emissions shall be conducted in accordance with EPA Method 18, or alternative methods approved by the District and EPA. Measurement of emissions of formaldehyde shall be conducted in accordance with EPA Method 316 or 323, or an alternative method approved by the District and EPA.

48. 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. All source tests shall be performed or witnessed by the District. The renewal source test shall be conducted once each permit year. For the purposes of this permit, a permit year is the 12-month period ending on the last day of the permit expiration month. Each annual source test shall be separated by at least 90 days from any annual source test performed in a different permit year. It is the responsibility of the permittee to schedule the annual source test with the District. 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 approved in advance by the District. [Rules 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

49. 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% 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 monitoring system (CEMS) Relative Accuracy Test Audit (RATA).
[Rules 20.3(d)(1) and 1200]

50. Relative Accuracy Test Audits (RATAs) and all 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 20.3(d)(1), 40 Part 60 Subpart KKKK, 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 n 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.

51. 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 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

53. 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 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]

54. The permit holder shall comply with the applicable continuous emission monitoring requirements of 40 CFR Part 75 and 40 CFR Part 60. [40 CFR Part 75 and 40 CFR Part 60]

55. 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% oxygen;
b. Clock-hourly average concentration of carbon monoxide (CO) in parts per million (ppmvd) both uncorrected and corrected to 15% 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% 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% 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 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

56. 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.

57. A monitoring plan in conformance with 40 CFR 75.53 shall be submitted to U.S. EPA Region 9 and the District at least 45 days prior to the Relative Accuracy Test Audit test, as required in 40 CFR 75.62. (40 CFR Part 75)

58. The oxides of nitrogen (NOx) and oxygen (O2) components of the CEMS shall be certified and maintained in accordance with applicable federal regulations including the requirements of §§ 75.10 and 75.12 of Title 40 Code of Federal Regulations Part 75 (40 CFR 75), the performance specifications of Appendix A of 40 CFR 75, the quality assurance procedures of Appendix B of 40 CFR 75 and the CEMS Protocol approved by the District. The carbon monoxide (CO) component of the CEMS shall be certified and maintained in accordance with District Rule 19, 40 CFR 60, appendices B and F and the CEMS Protocol approved by the District. (District Rules 69.3.1, 20.3(d)(1); 40 CFR 60 Subpart KKKK; 40 CFR 60, appendices B and F; 40 CFR Part 75)

59. The CEMS shall be in operation in accordance with the District-approved CEMS Protocol at all times when the turbine is in operation. A copy of the District-approved CEMS Protocol shall be maintained on site and made available to District personnel upon request. (District Rules 69.3.1, and 20.3(d)(1); 40 CFR 60 Subpart KKKK; 40 CFR Part 75)

60. When the CEMS is not recording data and the combustion turbine is operating, hourly NOx emissions for purposes of calendar year and rolling 12-calendar-month period emission calculations shall be determined in accordance with 40 CFR 75 Subpart C. Additionally, hourly CO emissions for rolling 12-calendar-month period emission calculations shall be determined using CO emission factors to be determined from source test emission factors, recorded CEMS data, and fuel consumption data, in terms of pounds per hour of CO for the gas turbine. Emission calculations used to determine hourly emission rates shall be reviewed and approved by the District, in writing, before the hourly emission rates are incorporated into the CEMS emission data. [Rules 20.3(d)(3) and 21 and 40 CFR Part 75]

61. Any violation of any emission standard as indicated by the CEMS shall be reported to the District's Compliance Division within 96 hours after such occurrence. (CA Health and Safety Code, Division 26, Part 4, Chapter 5 § 42706)

62. The CEMS shall be maintained and operated, and reports submitted, in accordance with the requirements of Rule 19.2 Sections (D), (E), (F)(2), (F)(3), (F)(4) and (F)(5) and CEMS Protocol approved by the District. [Rule 19.2]

63. 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 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

64. 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 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

65. Each combustion turbine shall be equipped with continuous monitors to measure, calculate, and record unit operating days, hours, 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 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

66. 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 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]
67. The 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)]
68. The permittee shall file semiannual reports in accordance with 40 CFR § 60.4375. (40 CFR 60 Subpart KKKK § 60.4375 (a))
69. 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 60 Subpart KKKK; Rule 21)
70. All semiannual compliance reports shall be submitted to the District Compliance Division. (40 CFR § 60.7)
71. Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.

B. DISTRICT-ONLY ENFORCEABLE CONDITIONS

20. When a combustion turbine is operating, the ammonia concentration (ammonia slip), shall not exceed 5.0 ppmvd corrected to 15% oxygen and averaged over a 1-clock-hour period, except during tuning operations, and startup and shutdown periods for that turbine. [Rule 1200]
51. The District may require one or more of the following compounds, or additional compounds, to be quantified through source testing periodically to ensure compliance with Rule 1200 and other conditions of this permit and to quantify toxic emissions:
    a. Acetaldehyde
    b. Acrolein
    c. Benzene
    d. Formaldehyde
    e. Toluene
    f. Xylenes
    If the District requires the permittee to perform this source testing, the District shall request the testing in writing a reasonable period of time prior to the testing date. [Rule 1200, California H&S Code §41510]
72. This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.
73. The permittee 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.)

San Diego County Air Pollution Control District

COUNTY OF SAN DIEGO, AIR POLLUTION CONTROL DISTRICT
10124 OLD GROVE ROAD, SAN DIEGO, CA 92131
PHONE (858) 586-2600 Fax (858) 586-2601
www.sdapcd.org

Sectors: 1, C
Site ID: APCD1982-SITE-00195
App ID: APCD2015-APP-003281

PERMIT ID
APCD2020-PTO-003631

Carlsbad Energy Center LLC
Plant Manager Paul Mattesich
4950 Avenida Encinas
Carlsbad CA, 92008

EQUIPMENT ADDRESS
Carlsbad Energy Center LLC
Plant Manager Paul Mattesich
4950 Avenida Encinas
Carlsbad CA 92008

PERMIT TO OPERATE

This permit is not valid until required fees are received by the District.

The above is hereby granted a Permit To Operate the article, machine, equipment or contrivance described below. This permit is not transferable to a new owner nor is it valid for operation of the equipment at another location except as specified. This Permit To Operate or copy must be posted on or within 25 feet of the equipment, or readily available on the operating premises.

EQUIPMENT OWNER

Carlsbad Energy Center LLC Owner Manager 4950 Avenida Encinas, Carlsbad, CA 92008

EQUIPMENT DESCRIPTION

Emergency fire pump diesel engine: John Deere/Clark model JW6H-UFADF0; S/N RG6090L130217; EPA certified Tier 3, family HJDXL09.0114; 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 Rules 10, 20, 40, 50, 51.

Fee Schedules: 1 [34H] California Certified Emergency Standby Engine

BEC: APCD2020-CON-001772

FAILURE TO OPERATE IN COMPLIANCE IS A MISDEMEANOR SUBJECT TO CIVIL AND CRIMINAL PENALTIES

A. FEDERALLY-ENFORCEABLE AND DISTRICT-ENFORCEABLE CONDITIONS

1. The exhaust stack for the emergency fire pump engine shall be a minimum of 20 feet in height above grade and a maximum of 0.5 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)]
2. The engine shall be operated exclusively during emergencies as defined in Rule 69.4.1 or Rule 12 or 17CCR93115 as applicable, or for maintenance and testing.
3. Engine operation for maintenance and testing purposes shall not exceed 35 hours per calendar year unless otherwise required by National Fire Protection Association (NFPA) Section 25. (17 CCR 93115, Rule 1200, NSR)
4. This engine shall only use CARB diesel fuel. (Rule 12, Rule 69.4.1, 17 CCR 93115, 40 CFR 60 Subpart IIII)
5. Visible emissions including crank case smoke shall comply with Air Pollution Control District Rule 50. (Rule 50)
6. The equipment described above shall not cause or contribute to a public nuisance. (Rule 51)

7. This engine shall not operate for non-emergency 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 7:30am and 3:30pm 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 students' place of residence. (17 CCR 93115)

8. A non-resettable engine hour meter shall be installed on this engine, maintained in good working order, and used for recording engine operation hours. If a meter is replaced, the Air Pollution Control District's Compliance Division shall be notified in writing within 10 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 onsite and made available to the Air Pollution Control District upon request.
(Rule 12, Rule 69.4.1, 17 CCR 93115, 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ)

9. The owner or operator of this engine shall conduct periodic maintenance of 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 procedures. Maintenance 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)

10. 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)

11. The owner or operator of the engine shall maintain 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 12, Rule 69.4.1, 17 CCR 93115, 40 CFR 60 Subpart IIII)

12. The owner or operator of this engine shall maintain a monthly operating log containing, at a minimum, the following:
(a) dates 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;
(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 17CCR, 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
(e) hours of operation for all uses other than those specified above and identification of the nature of that use.
(Rule 12, Rule 69.4.1, 17 CCR 93115, 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ)

13. 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)

14. Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.

B. DISTRICT-ONLY ENFORCEABLE CONDITIONS

15. This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.

16. The permittee 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.)

APPENDIX B. RULE REFERENCE TABLE

Rule Citation[1]	RULE TITLE	A/R[2]	District Adoption Date[3]	SIP FR Approval Date
	REGULATION I - GENERAL PROVISIONS			
1	Title	F	04/30/80	09/28/81
2	Definitions	F	07/11/17	02/03/00[4]
4	Review of Rules	F	01/01/70†	09/22/72
5	Authority to Arrest	F	03/24/76†	05/11/77
	REGULATION II - PERMITS			
10	Permits Required	F	04/27/00	03/11/98
10.1††	NSPS & NESHAPS Requirements	D	11/8/76	N/A
11	Exemptions from Rule 10 Permit Requirements	D/F	10/13/22	Pending
12	Registration of Specified Equipment	D	03/10/22	N/A
12.1	Portable Equipment Registration	D	10/30/19	N/A
14	Applications	F	04/30/80	09/28/81
15	Permit Process - Public Notifications	D/F	09/18/90	Pending
17	Cancellation of Applications	F	11/25/81	03/11/98
18	Action on Applications	F	01/17/72	09/22/72
18	Action on Applications	D/F	09/18/90	Pending
19	Provision of Sampling and Testing Facilities	F	04/06/93	03/11/98
19.1††	NSPS & NESHAPS Provision of Sampling and Testing Facilities Requirements	D	11/08/76	N/A
19.2	Continuous Emission Monitoring Requirements	F	01/12/79	09/28/81
19.3	Emission Information	F	12/09/21	03/09/00
20	Standards for Granting Permits	D/F	04/25/89	Pending
20.1	Definitions, Emission Calculations, Emission Offsets and Banking, Exemptions, and Other Requirements	F	10/14/21	04/14/81
20.1	NSR - General Provisions	D/F	10/14/21	Pending
20.2	Standards for Authority to Construct - Best Available Air Pollution Control Technology	F	06/26/19	04/14/81
20.2	NSR - Non-major Stationary Sources	D/F	06/26/19	Pending
20.3	Standards for Authority to Construct - Air Quality Analysis	F	10/14/21	04/14/81
20.3	NSR - Major Stationary Source and PSD Stationary Source	D/F	10/14/21	Pending
20.4	Standards for Authority to Construct - Major Stationary Sources	F	10/14/21	04/14/81
20.4	NSR - Portable Emission Units	D/F	10/14/21	Pending
20.5	Power Plants	F	07/05/79	04/14/81
20.6	Standards for Permit to Operate - Air Quality Analysis	F	04/27/16	04/14/81
20.6	Standards for Permit to Operate Air Quality Analysis	D/F	04/27/16	Pending
20.8	Special Offset Requirement Relating to Banking	D	2/16/83	N/A
21	Permit Conditions	F	11/29/94	03/11/98

22	Denial of Applications	F	01/01/69†	09/22/72
23	Further Information	F	01/01/69†	09/22/72
24	Temporary Permit to Operate	F	06/29/16	10/24/08
25	Appeals	F	01/01/69†	09/22/72
25	Appeals	D/F	06/21/00	Pending
26.0	Banking of Emission Reduction Credits (ERCs) - General Requirements	D/F	06/26/19	Pending
26.1	Standards for Granting Emission Reduction Credits (ERCs)	D/F	10/22/97	Pending
26.2	Use of Emission Reduction Credits (ERCs)	D/F	10/22/97	Pending
26.3	Reclassification of Class B Emission Reduction Credits (ERCs)	D/F	10/22/97	Pending
26.4	Permanency of Banked Emission Reduction Credits (ERCs)	D/F	10/22/97	Pending
26.5	Transfer of Emission Reduction Credits (ERCs)	D/F	10/22/97	Pending
26.6	District Banking of Emission Reduction Credits (ERCs)	D/F	10/22/97	Pending
26.7	Shutdown and Related Emission Unit	D/F	10/22/97	Pending
26.8	Banking of Limited Emission Reductions	D/F	10/22/97	Pending
26.9	Emission Reduction Credit Certificates and The Emission Reduction Credit Register	D/F	10/22/97	Pending
26.10	Banking For BRAC Military Base Closure or Realignment Actions	D/F	10/22/97	Pending
27	Banking of Mobile Source Emission Reduction Credits	D/F	11/29/94	Pending
27.1	Federal Requirements for San Diego County APCD Alternative Mobile Source Emission Reduction Program Approved On 9/8/2000	F	08/06/08	06/03/09
	REGULATIONS III - FEES			
40	Permit Fees	D	07/01/22	N/A
42	Hearing Board Fees	D	07/01/22	N/A
44	Technical Reports, Charges for	D	12/7/83	N/A
	REGULATIONS IV - PROHIBITIONS			
50	Visible Emissions	F	08/13/97	12/7/98
50.1††	NSPS & NESHAPS Visible Emissions Requirements	D	11/08/76	N/A
51	Nuisance	F	01/01/69†	09/22/72
52	Particular Matter	F	01/22/97	12/9/98
52.1††	NSPS & NESHAPS Particular Matter Requirements	D	11/08/76	N/A
53	Specific Contaminants	F	01/22/97	12/9/98
53.1	Scavenger Plants	F	01/01/69†	09/22/72
53.2††	NSPS & NESHAPS Specific Contaminants Requirements	D	11/08/76	N/A
54	Dusts and Fumes	F	01/22/97	12/9/98
54.1	NSPS & NESHAP Dust and Fumes Requirement	D	11/08/76	N/A
58	Incinerator Burning	F	01/17/73†	05/11/77
59	Control of Waste Disposal - Site Emissions	D	11/03/87	Withdrawn
59.1	Municipal Solid Waste Landfills	D	06/17/98	N/A
60	Circumvention	F	05/17/94	03/09/00
60.2	Limiting Potential to Emit - Synthetic Minor Sources	D	04/04/12	N/A

61.0	Definitions Pertaining to the Storage & Handling of Organic Compounds	F	10/16/90	09/13/93
61.1	Receiving & Storing Volatile Organic Compounds at Bulk Plants & Bulk Terminals	F	01/10/95	08/08/95
61.2	Transfer of Volatile Organic Compounds into Mobile Transport Tanks	F	01/10/21	08/26/03
61.3	Transfer of Volatile Organic Compounds into Stationary Storage Tanks	F	10/16/90	06/30/93
61.3.1	Transfer of Gasoline into Stationary Underground Storage Tanks	D	03/01/06	N/A
61.4	Transfer of Volatile Organic Compounds into Vehicle Fuel Tanks	F	03/26/08	05/13/93
61.4	Transfer of Volatile Organic Compounds into Vehicle Fuel Tanks	D/F	03/26/08	Pending
61.4.1	Transfer of Gasoline from Stationary Underground Storage Tanks into Vehicles Fuel Tanks	D	03/26/08	N/A
61.5	Visible Emission Standards for Vapor Control Systems	F	09/20/78†	04/14/81
61.6	NSPS Requirements for Storage of Volatile Organic Compounds	D	01/13/87	Withdrawn
61.7	Spillage and Leakage of Volatile Organic Compounds	F	01/13/87	03/11/98
61.8	Certification Requirements for Vapor Control Equipment	F	01/13/87	03/11/98
62	Sulfur Content of Fuels	F	10/21/81	07/06/82
62.1††	NSPS Requirements for Sulfur Content of Fuels	D	11/08/76	N/A
64	Reduction of Animal Matter	F	08/21/81	07/06/82
66	Organic Solvents	F	07/25/95	08/11/98
66.1	Miscellaneous Surface Coating Operations and Other Processes Emitting VOCs	D/F	05/11/16	Pending
67.0	Architectural Coatings	F	04/09/03	03/27/97
67.0	Architectural Coatings	D/F	12/12/01	Pending
67.1	Alternative Emission Control Plans	F	05/15/96	03/27/97
67.2	Dry Cleaning Equipment Using Petroleum - Based Solvent	F	05/15/96	03/27/97
67.3	Metal Parts and Products Coating Operations	F	04/09/03	03/27/97
67.4	Metal Container, Metal Closure and Metal Coil Coating Operations	F	11/09/11	11/03/97
67.5	Paper, Film and Fabric Coating Operations	F	05/15/96	03/27/97
67.6.1	Cold Solvent Cleaning and Stripping Operations	F	02/10/21	10/13/09
67.6.2	Vapor Degreasing Operations	F	02/10/21	10/13/09
67.7	Cutback and Emulsified Asphalts	F	05/15/96	03/27/97
67.9	Aerospace Coating Operations	F	04/30/97	08/17/98
67.10	Kelp Processing and Bio-Polymer Manufacturing	F	06/25/97	06/22/98
67.11	Wood Parts and Products Coating Operations	D/F	06/27/12	Pending
67.11.1	Large Coating Operations for Wood Products	F	09/25/02	06/05/03
67.12	Polyester Resin Operations	F	05/15/96	03/27/97
67.15	Pharmaceutical and Cosmetic Manufacturing Operations	F	05/15/96	03/27/97
67.16	Graphic Arts Operations	F	05/09/12	03/27/97
67.17	Storage of Materials Containing Volatile Organic Compounds	F	05/15/96	03/27/97

67.18	Marine Coating Operations	F	05/15/96	03/27/97
67.19	Coating and Printing Inks Manufacturing Operations	F	05/15/96	01/19/00
67.20.1	Motor Vehicle and Mobile Equipment Coating Operations	D	06/30/10	N/A
67.21	Adhesive Material Application Operations	D	11/14/08	N/A
67.22	Expandable Polystyrene Foam Products Manufacturing Operations	D	05/15/96	N/A
67.24	Bakery Ovens	F	05/15/96	03/27/97
68	Fuel-Burning Equipment – Oxides of Nitrogen	F	09/20/94	04/09/96
68.1††	NSPS Requirements for Oxides of Nitrogen from Fuel-Burning Equipment	D	11/08/76	N/A
69	Electrical Generating Steam Boilers, Replacement Units & New Units	D	12/12/95	N/A
69.2	Industrial & Commercial Boilers, Process Heaters & Steam Generators	F	09/27/94	02/09/96
69.2.1	Small Boilers, Process Heaters and Steam Generators	D	03/25/10	N/A
69.3.1	Stationary Gas Turbine Engines	D	12/09/21	N/A
69.4.1	Stationary Internal Combustion Engines	D	07/08/20	N/A
69.5.1	Natural Gas-Fired Water Heaters	D	06/24/15	N/A
69.6	Natural Gas-Fired Fan-Type Central Furnaces	D	06/17/98	N/A
70	Orchard Heaters	F	01/17/72	09/22/72
71	Abrasive Blasting	F	03/30/77	08/31/78
	REGULATION V - PROCEDURES BEFORE THE HEARING BOARD			
75	Procedure Before the Hearing Board	D/F	09/17/85	Pending
75.1††	NSPS & NESHAPS Variance Procedures	D	09/17/85	7/30/79
97	Emergency Variance	D/F	07/25/95	Pending
98	Breakdown Conditions: Emergency Variance	D	07/25/95	Withdrawn
	REGULATION VI - BURNING CONTROL			
101	Burning Control	F	09/25/02	04/30/03
	REGULATION VII - VALIDITY AND EFFECTIVE DATE			
140	Validity	F	01/01/69†	09/22/72
141	Effective Date	F	01/01/69†	09/22/72
	REGULATION VIII - SAN DIEGO AIR POLLUTION EMERGENCY PLAN			
126	Applicability	F	05/25/77	08/31/78
127	Episode Criteria Levels	F	09/17/91	03/18/99
128	Episode Declaration	F	09/17/91	03/18/99
129	Episode Termination	F	05/25/77	08/31/78
130	Episode Actions	F	09/17/91	03/18/99
131	Stationary Source Curtailment Plan	F	04/01/81	06/21/82
132	Traffic Abatement Plan	F	04/01/81	06/21/82
132	Traffic Abatement Plan	D/F	12/17/97	Pending

133	Schools	F	05/25/77	08/31/78
134	Source Inspection	F	04/01/81	06/21/82
135	Air Monitoring Stations	F	05/25/77	08/31/78
136	Interdistrict and Interbasin Coordination	F	05/25/77	08/31/78
137	Emergency Action Committee	F	05/25/77	08/31/78
138	Procedures and Plans	F	05/25/77	08/31/78
	APPENDIX A - Persons to be Notified on Episode Declaration	F		
	REGULATION IX - PUBLIC RECORDS			
175	General	F	12/19/89†	05/11/77
176	Information Supplied to District	F	05/22/74†	05/11/77
177	Inspection of Public Records	F	03/30/77	08/31/78
177	Inspection of Public Records	D/F	06/20/01	Pending
	REGULATION XII - TOXIC AIR CONTAMINANTS			
1200	Toxic Air Contaminants - New Source Review	D	02/26/21	N/A
1202	Hexavalent Chromium - Cooling Towers	D	07/25/95	N/A
1203	Ethylene Oxide Sterilizers and Aerators	D	07/26/00	N/A
1205	Control of Dioxins Emissions from Medical Waste Incinerators	D	01/01/94	N/A
1210	Toxic Air Contaminant Public Health Risks - Public Notification and Risk Reduction	D	11/04/21	N/A

	REGULATION XIV - TITLE V OPERATING PERMITS			
1401	General Provisions	F	02/27/04	02/27/04
1410	Permit Required	F	02/27/04	02/27/04
1411	Exemption from Permit to Operate for Insignificant Units	F	03/07/95	11/30/01
1412	Federal Acid Rain Program Requirements	F	01/18/94	11/30/01
1413	Early Reduction of Hazardous Air Pollutants	F	03/07/95	11/30/01
1414	Applications	F	03/07/95	11/30/01
1415	Permit Process-Public Notification	F	02/27/04	02/27/04
1417	Pendency & Cancellation of Applications	F	03/07/95	11/30/01
1418	Action on Applications	F	02/27/04	11/30/01
1419	Provisions of Sampling & Testing Facilities & Emission Information	F	03/07/95	11/30/01
1420	Standards for Granting Permits	F	03/07/95	11/30/01
1421	Permit Conditions	F	02/27/04	02/27/04
1422	Denial or Cancellation Of Applications	F	03/07/95	11/30/01
1423	Further Information	F	01/18/94	11/30/01
1424	Applications Deemed Denied	F	01/18/94	11/30/01
1425	Appeals & Judicial Review	F	02/27/04	02/27/04
	APPENDIX A - Insignificant Units	F	02/27/04	11/30/01
	REGULATION XV - FEDERAL CONFORMITY			
1501	Conformity of General Federal Actions	F	06/22/99	04/23/99

1. Rule Citations marked with an "††" contain no substantive requirements and are listed for informational purposes only.
2. 'A/R' Denotes enforceability of the listed applicable requirement as follows:
   'F' Denotes a Federal applicable requirement that is federally enforceable and District enforceable.
   'D/F' Denotes a District applicable requirement which is pending SIP approval. When such a rule receives SIP approval, it supersedes the existing SIP rule and becomes the Federal applicable requirement.
   'D' Denotes a District only applicable requirement. This may include some state requirements that are enforceable by the District.
3. District adoption dates marked with an "†" are the effective date of the rule, the actual adoption date is uncertain.
4. On September 17, 2010, EPA approved the District's November 4, 2009, revision to the table of exempt compounds in Rule 2, which can be administratively amended without Board action to amend the rule.

The following NSPS and NESHAP have been adopted locally by the District. EPA has granted the District delegation for each of these rules. Therefore, these rules, as adopted by the District are the federally applicable requirements. For all other NSPS and NESHAP, the versions cited in the CFR are the federally applicable requirements.

Subpart & Citation	RULE TITLE	District Adoption Date	Federal Delegation Date
Part 60	**REGULATION X - STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES**		
A	General Provisions	Unknown 11/03/92	11/08/76
E	Standards of Performance for Incinerators	Unknown	03/30/77
I	Standards of Performance for Asphalt Concrete Plants	Unknown 01/13/87	11/08/76
L	Standards of Performance for Secondary Lead Smelters	Unknown	11/08/76
M	Standards of Performance for Secondary Brass and Bronze Ingot Production Plants	Unknown 09/17/85*	03/30/77
O	Standards of Performance for Sewage Treatment Plants	01/13/87	09/17/87
DD	Standards of Performance for Grain Elevators	Unknown	05/24/82
EE	Standards of Performance for Surface Coating Metal Furniture	03/04/86 11/03/92	03/19/87
QQ	Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing	08/24/83	12/22/83
RR	Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations	09/17/86 11/03/92	03/19/87
SS	Standards of Performance for the Industrial Surface Coating Large Appliances	02/22/84 11/03/92*	04/24/84
TT	Standards of Performance for Metal Coil Surface Coating	02/22/84 11/03/92*	04/24/84
BBB	Standards of Performance for the Rubber Tire Manufacturing Industry	03/14/89	07/18/89
FFF	Standards of Performance for Flexible Vinyl and Urethane Coating and Printing	09/17/86	03/19/87
JJJ	Standards of Performance for Petroleum Dry Cleaners	12/15/87	07/18/89
Part 61	**REGULATION XI- NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)**		
A	General Provisions	01/13/87	05/24/82
C	National Emission Standard for Beryllium	Unknown	11/08/76
D	National Emission Standard for Beryllium Rocket Motor Firing	Unknown	11/08/76
E	National Emission Standard for Mercury	03/27/90	05/17/91
F	National Emission Standard for Vinyl Chloride	08/17/77 06/16/78	11/21/77
M	National Emission Standard for Asbestos	06/04/85 02/01/95	07/18/89

The following ATCM and NESHAP have not been adopted by the District but are being implemented and enforced by the District as ATCM's.

Subpart & Citation	RULE TITLE	A/R	Most Recent Adoption Date
	DISTRICT RULES AND REGULATIONS APPENDIX A - CALIFORNIA AIRBORNE TOXIC CONTROL MEASURES (ATCM)		
17 CCR § 93102	Hexavalent Chromium ATCM for Chrome Plating & Chromic Acid Anodizing Operations	D/F	12/7/06
17 CCR § 93109	ATCM For Emissions of Perchloroethylene From Dry Cleaning Operations	F	01/25/07
17 CCR § 93101.5	ATCM to Reduce Emissions of Hexavalent Chromium and Nickel from Thermal Spraying	D	09/30/05
17 CCR § 93105	ATCM for Construction, Grading, Quarrying, and Surface Mining Operations	D	07/26/01
17 CCR § 93106	Asbestos ATCM for Surface Applications	D	07/20/00
17 CCR § 93107	ATCM For Emissions of Toxic Metals From Non-Ferrous Metal Melting	D	01/14/93
17 CCR § 93111	ATCM for Emissions of Chlorinated Toxic Air Contaminants from Automotive Maintenance & Repair Activities	D	04/27/00
17 CCR § 93112	ATCM for Emissions of Hexavalent Chromium and Cadmium from Motor Vehicle and Motor Equipment Coatings	D	09/20/01
17 CCR § 93113	ATCM to Reduce Emissions of Toxic Air Contaminants from Outdoor Residential Waste Burning	D	02/03/03
17 CCR § 93115	ATCM for Stationary Compression Ignition Engines	D	05/19/11
17 CCR § 93116	ATCM for Portable Diesel-Fueled Engines	D	02/19/11
Part 63	**DISTRICT RULES AND REGULATIONS APPENDIX B - NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) FOR SOURCE CATEGORIES**		
A	General Provisions	F	05/16/07
N	Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks	F	04/20/06
O	Ethylene Oxide Sterilization Facilities	F	12/28/07
R	Gasoline Distribution	F	01/24/11
T	Halogenated Solvent Cleaning	F	09/08/00
DD	Off-site Waste & Recovery Operations	F	07/20/99
GG	Aerospace Manufacturing and Rework Facilities	F	12/08/00
II	Shipbuilding and Ship Repair (Surface Coating)	F	12/15/95
JJ	Wood Furniture Manufacturing Operations	F	12/28/98
VVV	Publicly Owned Treatment Works	F	10/21/02
AAAA	Municipal Solid Waste Landfills	F	01/16/03
EEEE	Organic Liquids Distribution (non-gasoline)	F	07/17/08
MMMM	Surface Coating of Miscellaneous Metal Parts and Products	F	04/26/04
PPPP	Plastic Parts (surface coating)	F	04/24/07
SSSS	Surface Coating of Metal Coil	F	03/17/03
VVVV	Boat Manufacturing	F	08/22/01

WWWW	Reinforced Plastic Composites Production	F	8/25/05
YYYY	Stationary Combustion Turbines	F	08/18/04
ZZZZ	Stationary Reciprocating Internal Combustion Engines	F	03/09/11
DDDDD	Industrial, Commercial, and Institutional Boilers and Process Heaters	F	05/18/11
GGGGG	Site Remediation	F	11/29/06
HHHHH	Miscellaneous Coating Manufacturing	F	10/04/06
PPPPP	Engine Test Cells/Stands	F	08/28/03
WWWWW	Hospital Ethylene Oxide Sterilizers Area Sources	F	12/28/07
BBBBBB	Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities	F	01/24/11
CCCCCC	Gasoline Dispensing Facilities	F	01/24/11
HHHHHH	Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources	F	01/09/08
JJJJJJ	Area Sources: Industrial, Commercial, and Institutional Boilers	F	3/21/11
QQQQQQ	Wood Preserving Area Sources	F	07/16/07
VVVVVV	Chemical Manufacturing Area Sources	F	11/29/09
WWWWWW	Plating and Polishing Operations Area Sources	F	07/01/08
XXXXXX	Metal Fabrication and Finishing Area Sources	F	7/23/08
AAAAAAA	Asphalt Processing and Asphalt Roofing Manufacturing Area Sources	F	12/02/09
CCCCCCC	Paint and Allied Products Manufacture Area Sources	F	12/03/09

The following NSPS have been adopted by the District by reference. The rules listed below are the CFR versions of these rules which are federally applicable requirements.

Subpart & Citation	RULE TITLE	Latest EPA Promulgation Date	District Adoption Date	Delegation Date
Part 60	**DISTRICT RULES AND REGULATIONS APPENDIX C - STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES (NSPS)**			
D	Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971	10/17/00 01/28/09	10/17/01 06/24/09	01/03/08 Pending
Da	Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978	06/11/01 01/28/09	10/17/01 06/24/09	01/03/08 Pending
Db	Standards of Performance for Industrial-Commercial - Institutional Steam Generating Units	10/01/01 01/28/09	04/25/01 06/24/09	01/03/08 Pending
Dc	Standards of Performance for Small Industrial-Commercial -Institutional Steam Generating Units	05/08/96 01/28/09	08/13/97 06/24/09	06/24/98 Pending
GG	Standards of Performance for Stationary Gas Turbines	06/27/89 02/24/06	10/17/01 02/25/09	01/03/08 Pending
K	Standards of Performance for Storage Vessels for Petroleum Liquids Construct After June 11, 1973 and Prior to May 19, 1978	10/17/00	06/20/07	01/03/08
Ka	Standards of Performance for Storage Vessels for Petroleum Liquids Construction after May 18, 1978	12/14/00	06/20/07	01/03/08
Kb	Standards of Performance for Volatile Organic Liquid Sto Vessels (Including Petroleum Liquid Storage Vessels) fo Which Construction, Reconstruction, or Modification Commenced after July 23, 1984	10/15/03	06/20/07	01/03/08
AAA	Standards of Performance for New Residential Wood Heaters	06/12/99 10/17/00	04/12/00 N/A	01/03/08 N/A
OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	06/09/97 10/17/00	04/28/99 N/A	05/28/02 N/A
UUU	Standards of Performance for Calciners and Dryers in Mineral Industries	07/29/93 10/17/00	11/17/99 N/A	05/28/02 N/A
VVV	Standards for Polymeric Coating of Supporting Substrates Facilities	09/11/89	05/23/07	01/03/08
WWW	Standards of Performance for Municipal Solid Waste Landfills	04/10/00	08/13/97	06/24/98
AAAA	Standards of Performance for Small Municipal Waste Combustion Units	12/06/00	06/20/07	01/03/08
CCCC	Standards of Performance for Commercial and Industrial Solid Waste Incineration Units	12/01/00	06/20/07	01/03/08
EEEE	Standards of Performance for Other Solid Waste Incineration Units	12/16/05	06/20/07	01/03/08
KKKK	Standards of Performance for Stationary Combustion Turbines	07/06/06	02/25/09	06/01/09

The following NSPS have not been adopted by the District and are not delegated to the District. However, the District has the authority to enforce the NSPS through the Title V program. The rules listed below are the CFR versions of these rules, which are federally applicable requirements.

Subpart & Citation	RULE TITLE	Latest EPA Promulgation Date	District Adoption Date	Delegation Date
Part 60				
IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	07/11/06	N/A	N/A
JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	01/18/08	N/A	N/A

APPENDIX C: ABBREVIATIONS USED IN THIS PERMIT

APCO	Air Pollution Control Officer
ASTM	American Society for Testing and Methods
BACT	Best Available Control Technology
CAA	federal Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
District	San Diego County Air Pollution Control District
EF	Emission Factor
EPA	US Environmental Protection Agency
HAP	Hazardous Air Pollutant
I&M	Inspection and Maintenance
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
[NSR]	New Source Review based condition
NO_X	Oxides of nitrogen
O_2	Oxygen
OES	Office of Environmental Services
O&M	Operation and maintenance
Pb	Lead
PM	Total Particulate Matter
PM_{10}	Particulate matter with aerodynamic equivalent diameter of ≤ 10 microns
PSD	Prevention of Significant Deterioration
RMP	Risk Management Plan
SDCAPCD	San Diego County Air Pollution Control District
SIP	State Implementation Plan
SO_X	Oxides of sulfur
Title IV	Title IV of the federal Clean Air Act
Title V	Title V of the federal Clean Air Act
VOC	Volatile organic compound

Units of Measure:

dscf	=	Dry standard cubic foot
g	=	grams
gal	=	gallon
gr/dscf	=	Grains per dry standard cubic foot
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
min	=	minute
MM Btu	=	Million British thermal units
psia	=	pounds per square inch, absolute
scf	=	Standard cubic foot
scfm	=	standard cubic feet per minute
yr	=	year

APPENDIX B – PROPOSED CHANGES TO AIR QUALITY CONDITIONS OF CERTIFICATION

The changes to the Conditions of Certification shown in this Appendix are color coded as follows:

- Changes to address an issue related to dispatch of the CECP raised during the variance hearing related to AQ-SC9 are shown in bold orange, i.e., **~~strikeout~~**;
- COCs related to project construction that are no longer needed and are proposed to be deleted, are shown in bold brown, i.e., **~~strikeout~~**. These COCs include AQ-SC12 and AQ-SQ13;
- Changes that the SDAPCD made to the permit conditions as reflected in the August 24, 2021 SA (mostly related to changes in the startup and shutdown provisions and deletion of commissioning) are shown in bold green, i.e., **underline** and **~~strikeout~~**;
- Changes that SDAPCD made in response to CECL's June 2021 ATC application related to tuning are shown in bold blue, i.e., **underline** and **~~strikeout~~**; and
- Recent changes related to SuperCore replacement, updates to source test requirements and removal of the VOC/CO surrogate relationship, as well as various other recent updates the SDAPCD made to the PTO conditions are shown in bold black, i.e., **underline** and **~~strikeout~~**.
- Referral to "project owner" that the SDAPCD changed to "permittee" or "Applicant" were not made but are highlighted in yellow.

AIR QUALITY

STAFF CONDITIONS

AQ-SC1 Air Quality Construction/Demolition Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with conditions **AQ-C3, AQ-SC4,** and **AQ-SC5** for the entire project site and linear facility construction/demolition. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities and shall have the authority to stop any or all construction/demolition activities as warranted by applicable construction/demolition mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval the name, resume, qualifications, and contact

information for the on-site AQCMM and all AQCMM Delegates. The AQCMM and all Delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 Air Quality Construction/Demolition Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with conditions AQ-SC3, AQ-SC4, and AQ-SC5.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. The AQCMP must be approved by the CPM before the start of ground disturbance.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the project site and linear facility routes. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All unpaved roads and disturbed areas in the project and laydown construction/demolition sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of AQ-SC4. The frequency of watering may be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed ten miles per hour on unpaved areas within the project and laydown construction/demolition sites.

c) The construction/demolition site entrances shall be posted with visible speed limit signs.

d) All construction/demolition equipment vehicle tires shall be inspected and washed as necessary to be cleaned and free of dirt prior to entering paved roadways.

e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

f) All unpaved exits from the construction/demolition site shall be graveled or treated to prevent track-out to public roadways.

g) All construction/demolition vehicles shall enter the construction/ demolition site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

h) Construction/demolition areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent runoff to roadways.

i) All paved roads within the construction/demolition site shall be swept at least twice daily (or less during periods of precipitation) on days when construction/demolition activity occurs to prevent the accumulation of dirt and debris.

j) At least the first 500 feet of any public roadway exiting the construction/demolition site shall be swept visually clean, using wet sweepers or air filtered dry vacuum sweepers, at least twice daily (or less during periods of precipitation) on days when construction/ demolition activity occurs or on any other day when dirt or runoff from the construction/demolition site is visible on the public roadways.

k) All soil storage piles and disturbed areas that remain inactive for longer than ten days shall be covered or shall be treated with appropriate dust suppressant compounds.

l) All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions shall be provided with a cover or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.

m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction/ demolition areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

n) Disturbed areas will be re-vegetated as soon as practical.

o) Haul trucks used during the Encina Power Station demolition shall be limited to traveling on paved or graveled surfaces at all times within the boundary of the Encina Power Station property.

The fugitive dust requirements listed in this condition may be replaced with as stringent or more stringent methods as required by SDAPCD Rule 55.

Verification: The project owner shall include in the MCR: (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of any complaints filed with the air district in relation to project construction/demolition, and (3) any other

documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or Delegate shall monitor all construction/demolition activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported: (1) off the project site, (2) 200 feet beyond the centerline of the construction of linear facilities, (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner, or (4) within 50 feet upwind of the I-5 freeway indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes, other than those occurring upwind of the I-5 Freeway, are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shut-down source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes occurring within 50 feet upwind of the I-5 Freeway are observed:

Step 1: The AQCMM or Delegate shall immediately cease the activities causing the visible dust plumes if any obscuration of visibility is

occurring to drivers on the I-5 freeway. The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods immediately if the visible plumes are seen within 50 feet of the I-5 freeway but are not causing obscuration of visibility to drivers.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression and monitor the start-up and/or continuation of the dust causing activities to ensure that the additional mitigation is effective.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2 specified above fails to result in effective mitigation. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes that could impact visibility on the I-5 Freeway will not occur upon restarting the shut-down fugitive dust source.

Verification: The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits or directions specified.

AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction/demolition mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction/demolition-related emissions. The following off-road diesel construction/demolition equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by AQ-SC2, and any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

a) All diesel-fueled engines used in the construction/demolition of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.

b) All construction/demolition diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 4 or 4i California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b) (1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 or 4i engine is not available for any off-road equipment larger than 50 hp, that equipment shall be equipped with a Tier 3 engine, or an engine that is equipped with retrofit

controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons.

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 3 equivalent emission levels and the highest level of available control using retrofit or Tier 2 engines is being used for the engine in question; or
2. The construction/demolition equipment is intended to be on site for ten working days or less.
3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.

c) The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within ten working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within ten days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:

1. The use of the retrofit control device is excessively reducing the normal availability of the construction/demolition equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
2. The retrofit control device is causing or is reasonably expected to cause engine damage.
3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

d) All heavy earth-moving equipment and heavy duty construction/ demolition-related trucks with engines meeting the requirements of (b)

above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

e) All diesel heavy construction/demolition equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

f) Construction/demolition equipment will employ electric motors when feasible.

Verification: The AQCMM shall include in a table in the Monthly Compliance Report the following to demonstrate control of diesel construction/demolition-related emissions:

A. A summary of all actions taken to control diesel construction/demolition-related emissions;

B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and

C. Any other documentation deemed necessary by the CPM, and the AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 The project owner shall submit to the CPM for review and approval any project air permit modification proposed by the project owner. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. EPA and any revised permit issued by the District or U.S. EPA for the project.

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-SC7 The project owner shall not conduct any on-site remediation of contaminated soils at the project site, other than removal and transport.

Verification: The project owner shall provide transportation and disposition records of the contaminated soil removal and off-site remediation completion demonstrating compliance with this condition as part of the applicable Monthly Compliance Report (MCR) until the contaminated soil removal is complete.

AQ-SC8 The project owner shall submit to the CPM Quarterly Operation Reports, following the end of each calendar quarter that include operational and emissions information as necessary to demonstrate compliance with the

conditions of certification herein. The Quarterly Operation Report will specifically state that the facility meets all applicable conditions of certification or note or highlight all incidences of noncompliance.

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.

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-SC10 [Deleted]

AQ-SC11 The project owner shall develop and implement a Leak Detection and Repair (LDAR) plan for the onsite natural gas compressors.

Verification: The project owner shall provide the LDAR plan to the CPM for review and approval at least 60 days prior to the start of installation of the natural gas compressors. The LDAR plan shall follow the general procedures outlined in the U.S. EPA's "Leak Detection and Repair – A Best Practices Guide" document. If requested the project owner shall provide records of the implementation of the LDAR plan.

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.~~

District ~~Final~~ Revised Determination of Compliance Conditions (SDAPCD ~~2015~~ Permit to Operate 3/25/2023)

~~FACILITY-WIDE GENERAL CONDITIONS~~

Note: Facility-wide General Conditions are included in the Title V permit but not in the SDAPCD PTOs. To the extent still applicable, the facility wide COCs are listed below with the Combustion Turbine Generator Conditions.

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 LMS100 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 LMS100 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.

Unit #11 not installed, so has been removed from the permits.

~~**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.**~~

Condition AQ-1 deleted:

~~**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.**~~

~~**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.~~

Condition AQ-2 deleted:

~~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):~~

~~**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.~~

New Condition PTO-2 added:

TBD 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: TBD [Suggested: None required].

Condition AQ-3 deleted:

~~AQ-3 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.~~

New Condition PTO-3 added:

TBD **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: TBD [Suggested: 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.]

Condition AQ-4 deleted:

~~**AQ-4** **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.~~

Condition AQ-5 is PTO-1:

AQ-5 This equipment shall be properly maintained and kept in good operating condition at all times, and, to the extent practicable, the project owner shall

maintain and operate the equipment and any associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. [Rule 21 and**/or** 40 CFR §60.11]

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

Condition AQ-6 deleted (see Table 1 notes related to TVOP I.D.1, I.D.2, and II.D.3):

~~**AQ-6 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. APCD2014-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.**~~

Condition AQ-7 is PTO-71:

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.

Condition AQ-8 deleted:

~~**AQ-8 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]**~~

~~**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.**~~

Condition AQ-9 is PTO-4:

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.

Condition AQ-10 is not in the PTO but the Title V Permit Requires compliance with the Acid Rain Program:

AQ-10 Pursuant to 40 CFR §72.30(b)(2)(ii) of the Federal Acid Rain Program, the project owner shall submit an application for a Title IV Operating Permit at least 24 months prior to the date the first turbine commences operation as defined in 40 CFR §72.2. [40 CFR Part 72]

Verification: The project owner shall submit to the CPM copies of the acid rain permit application within five working days of its submittal by the project owner to the District.

Condition AQ-11 is not in the PTO but the Title V Permit Requires compliance with the Acid Rain Program:

AQ-11 The project owner shall comply with all applicable provisions of 40 CFR Part 73, including requirements to offset, hold and retire sulfur dioxide (SO_2) allowances. [40 CFR Part 73]

Verification: The project owner shall submit to the CPM and the District the combustion turbine generator (CTG) annual SO_2 emission total and SO_2 allowance information demonstrating compliance with all applicable provisions of 40 CFR 73 as part of the Quarterly Operation Reports (AQ-SC8).

Condition AQ-12 is not in the PTO but the Title V Operating Permit Requires compliance with this requirement:

AQ-12 **The permittee shall maintain** ~~**A**~~all records required by this permit**, 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 ~~**five**~~ **three** 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.

Condition AQ-13 deleted:

~~**AQ-13 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.**~~

DEFINITIONS

New Condition PTO-6 added:

TBD 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: TBD [Suggested: 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.]

Condition AQ-14 is PTO-7:

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**).

Condition AQ-15 is PTO-8:

AQ-15 A startup occurs when fuel flows to the combustion turbine following a non-operational period. And, ~~U~~unless 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**).

Condition AQ-16 is PTO-9:

AQ-16 A non-operational period is any five-consecutive-minute period when fuel does not flow to the combustion turbine. [Rule 20.3(d)(1)]

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

Condition AQ-17 is PTO-10:

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.

Condition AQ-18 deleted:

~~**AQ-18** 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.~~

Condition AQ-19 deleted:

~~**AQ-19** 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 Required.~~

Condition AQ-20 is PTO-5:

AQ-20 For each combustion turbine, a unit operating day, hour, and minute mean the following:

a. A unit operating day means any calendar day in which the turbine combusts fuel.

b. A unit operating hour means any clock hour in which the turbine combusts fuel.

c. A unit operating minute means any clock minute in which the turbine combusts fuel.

[Rule 21, 40 CFR Part 75, Rule 20.3(d)(1), 40 CFR Part 60 Subpart KKKK]

Verification: None required.

GENERAL CONDITIONS

Condition AQ-21 is PTO-11:

AQ-21 The exhaust stack for each combustion turbine shall be at least 90 feet in height above site base elevation, and with an interior exhaust stack diameter of no more than 13.5 feet at the point of release unless it is demonstrated to the District that all requirements of District rules 20.3 and 1200 are satisfied with a different stack configuration. [Rules 20.3(d)(2) and 1200]

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

Condition AQ-22 is PTO-12:

AQ-22 The combustion turbines shall be fired on Public Utility Commission (PUC) quality natural gas. The project owner shall maintain, on site, quarterly records of the natural gas sulfur content expressed in units of grains of sulfur per 100 dscf of natural gas and hourly records of the higher ~~**and lower**~~ heating values of the natural gas expressed in units of Btu/scf. These records shall be provided to District personnel upon request. Natural gas sulfur content records must be kept with a minimum reporting limit of 0.25 grains sulfur compounds per 100 dscf of natural gas. [Rule 20.3(d)(1)]

Verification: The project owner shall submit the quarterly fuel sulfur content values in the Quarterly Operation Reports **(AQ-SC8)** and make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

Condition AQ-23 is PTO-13:

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.

EMISSION LIMITS

Condition AQ-24 is PTO-14:

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)**.

Condition AQ-25 is PTO-15:

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)**.

Condition AQ-26 is PTO-16:

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)**.

Condition AQ-27 is PTO-17:

AQ-27 When a combustion turbine is combusting fuel (operating), the emission concentration of oxides of nitrogen (NO_X), calculated as nitrogen dioxide (NO_2), 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, ~~and,~~ 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)**.

Condition AQ-28 is PTO-18:

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, ~~and,~~ 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)**.

Condition AQ-29 is PTO-19:

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, ~~and,~~ 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 1one-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 ~~CEMS data, using the~~ appropriate ~~CO/VOC surrogate relationship,~~ source test data to demonstrate compliance with this condition as part of the Quarterly Operation Reports **(AQ-SC8)**.

Condition AQ-30 is PTO-20:

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)**.

Condition AQ-31 is PTO-21:

AQ-31 When a combustion turbine is operating, the emission concentration of NO_X, calculated as nitrogen dioxide (NO_2), 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)**.

Condition AQ-32 is PTO-22:

AQ-32 When a combustion turbine is operating with post-combustion air pollution control equipment that controls oxides of nitrogen (NO_X) emissions, the emission concentration of NO_X, calculated as nitrogen dioxide (NO_2), shall not exceed 13.6 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)**.

Condition AQ-33 is PTO-23:

AQ-33 When a combustion turbine is operating without any post-combustion air pollution control equipment that controls oxides of nitrogen (NO_X) emissions, the emission concentration of NO_X calculated as nitrogen dioxide (NO_2) 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. [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)**.

Condition AQ-34 is PTO-24:

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 (NO_2) 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~~ O_2**	**Emission Limit, lb/MWh**
i. All four hours at or above 75% Load	15	0.43
ii. All four hours below 75% Load	96	4.7
iii. 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 include emissions during all 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)**.

Condition AQ-35 is PTO-25:

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**.

Condition AQ-36 is PTO-26:

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**.

Condition AQ-37 is PTO-27:

AQ-37 The discharge of particulate matter from the exhaust stack of each combustion turbine shall not exceed 0.10 grains per dry standard cubic foot (0.23 grams/dscm) corrected to 12**% ~~percent~~** carbon dioxide **by volume**. The District may require periodic testing to verify compliance with this standard. [Rule 53]

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**.

Condition AQ-38 is PTO-28:

AQ-38 Visible emissions from the lube oil vents and the exhaust stack of each combustion turbine shall not exceed 20**% ~~percent~~** opacity for more than three **(3)** minutes in any period of 60 consecutive minutes. [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.

Condition AQ-39 is PTO-29:

AQ-39 Mass emissions from each combustion turbine of oxides of nitrogen (NO_X), calculated as NO_2; 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 minutes 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**s/hr**
a.	NO_X	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)**.

Condition AQ-40 is PTO-31:

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 (NO_x), calculated as NO_2; 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.

Pollutant		Emission Limit, lb**s**
a.	NO_X	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)**.

Condition AQ-41 is PTO-32:

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 (NO_X), calculated as NO_2; 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. ~~[Rule 20.3(d)(1)]~~

Pollutant		Emission Limit, lbs
a.	NO_X	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)**.

Condition AQ-42 is PTO-33:

AQ-42 Emissions of oxides of nitrogen (NO_X), calculated as nitrogen dioxide (NO_2), 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 NO_2, 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)**.

Condition AQ-43 is PTO-34:

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)**.

Condition AQ-44 is PTO-35:

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
a.	NO_X	84.18
b.	CO	77.8
c.	VOC	24.1
d.	PM_{10}	28.4
e.	SO_x	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)**.

Condition AQ-45 is deleted:

~~**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]**~~

~~**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).**~~

New Condition PTO-30 added:

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

Condition AQ-46 is PTO-36:

AQ-46 Total emissions from each combustion turbine shall not exceed ~~14.3~~14.2 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.

Condition AQ-47 is deleted:

~~**AQ-47 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.~~

Condition AQ-48 is PTO-37:

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 NO_X calculated as NO_2, CO, VOCs calculated as methane, PM10, and SO_X calculated as SO_2, 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 **initial P**~~p~~ermit to **O**~~o~~perate 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)(**53**), ~~**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.

Condition AQ-49 is PTO-38:

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**).

Condition AQ-50 is PTO-39:

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)**.

Condition AQ-51 is deleted:

~~**AQ-51** 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

Condition AQ-52 is deleted:

~~**AQ-52** 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.~~

Condition AQ-53 is PTO-40:

AQ-53 When a combustion turbine is operating, ammonia shall be injected at all times that the associated selective catalytic reduction (SCR) system

catalyst outlet temperature is 540 degrees Fahrenheit or greater. [Rule 20.3 (d)(1)]

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

Condition AQ-54 is PTO-41:

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.

Condition AQ-55 is PTO-42:

AQ-55 Except during periods when the ammonia injection system is being tuned or one or more ammonia injection systems are in manual control for compliance with applicable permit conditions, the automatic ammonia injection system serving each SCR system shall be in operation in accordance with manufacturer's specifications at all times when ammonia is being injected into the SCR system. Manufacturer specifications shall be maintained on site and made available to District personnel upon request. [Rule**s** 20.3(d)(1), 21]

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

Condition AQ-56 is PTO-43:

AQ-56 The concentration of ammonia solution used in the ammonia injection system shall be less than 20**% ~~percent~~** ammonia by weight. Records of

ammonia solution concentration shall be maintained on site and made available to District personnel upon request. [Rules 14, 21]

Verification: The project owner shall maintain on site and provide on request of the CPM or District the ammonia delivery records that demonstrate compliance with this condition.

Testing witnessed by the District, a proposed test protocol shall be submitted to the District for written approval at least 60 days prior to source testing. Additionally, the District shall be notified a minimum of 30 days prior to the test so that observers may be present unless otherwise authorized in writing by the District. [Rules 20.3(d)(1) and 1200 and 40 CFR Part60 Subpart KKKK and 40 CFR.

TESTING

Condition AQ-57 is PTO-44:

AQ-57 All source test**s** or other tests required by this permit shall be performed by the District or an independent contractor approved by the District. Unless otherwise specified in this permit or authorized in writing by the District, if testing will be performed by an independent contractor and witnessed by the District, a proposed test protocol shall be submitted to the District for written approval at least 60 days prior to source testing. Additionally, the District shall be notified a minimum of 30 days prior to the test so that observers may be present unless otherwise authorized in writing by the District. [Rules 20.3(d)(1) and 1200 and 40 CFR Part 60 Subpart KKKK and 40 CFR §60.8]

Verification: The project owner shall submit to the CPM for review and the District for approval the initial source test protocol at least 60 days prior to the initial source test. The project owner shall notify the CPM and District no later than 30 days prior to the proposed source test date and time.

Condition AQ-58 is PTO-46:

AQ-58 Unless otherwise specified in this permit or authorized in writing by the District, within 45 days after completion of a source test or Relative Accuracy Test Audit (RATA) performed by an independent contractor, a final test report shall be submitted to the District for review and approval. [Rules 20.3(d)(1) and 1200 and 40 CFR Part 60 Subpart KKKK, 40 CFR §60.8, and 40 CFR Part 75]

Verification: 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.

Condition AQ-59 is PTO-47:

AQ-59 All testing conducted to measure concentrations or emissions of Volatile Organic Compounds (VOCs) shall include measurement of formaldehyde and the result shall be added to the result determined for other VOC concentrations or emissions, as applicable. Measurement of VOC emissions shall be conducted in accordance with EPA Method 18, or alternative methods approved by the District and EPA. Measurement of emissions of formaldehyde shall be conducted in accordance with EPA Method 316 or 323, or an alternative method approved by the District and EPA.

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**.

Condition AQ-60 is deleted:

~~**AQ-60** **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.**~~

Condition AQ-61 is PTO-49:

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 NO_X, 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 NO_X and CO concentrations and emissions and oxygen (O_2) 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 **D**istrict 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 NO_X, CO, VOC, PM10**,** and ammonia concentrations and emissions, as applicable, shall be conducted concurrently with the NO_X 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**.

Condition AQ-62 is PTO-48:

AQ-62 A renewal source test and a NO_X and CO Relative Accuracy Test Audit (RATA) shall be periodically conducted on each combustion turbine to demonstrate compliance with the NO_X, 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 NO_X 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** ~~**except that for any renewal source test conducted before June 30, 2019, only one turbine needs to be tested for compliance with the particulate matter emission standards of this permit approved in writing by the District**~~. [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.**

Condition AQ-63 is PTO-50:

AQ-63 Relative Accuracy Test Audit**s** (RATAs) and all ~~**other**~~ required certification tests shall be performed and completed on the NO_X 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**.

Condition AQ-64 is deleted:

~~**AQ-64 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 is~~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.**~~

Condition AQ-65 is PTO-50:

AQ-65 The District may require one or more of the following compounds, or additional compounds, to be quantified through source testing periodically to ensure compliance with Rule 1200 and other conditions of this permit and to quantify toxic emissions:

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

If the District requires the project owner to perform this source testing, the District shall request the testing in writing a reasonable period of time prior to the testing date. [Rule 1200, California H&S Code §41510]

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

Condition AQ-66 is PTO-51:

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.

Condition AQ-67 is PTO-53:

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.

CONTINUOUS MONITORING

Condition AQ-68 is PTO-54:

AQ-68 The project owner shall comply with the applicable continuous emission monitoring requirements of 40 CFR Part 75 and 40 CFR Part 60. [40 CFR Part 75 and 40 CFR Part 60]

Verification: The project owner shall maintain a copy of the CEMS protocol required by **AQ-70** on site and provide it, other CEMS data, and the CEMS for inspection on request by representatives of the District, ARB, and the Energy Commission.

Condition AQ-69 is PTO-55:

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 (NO_X) 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 (O_2) in the exhaust gas for each unit operating minute;

d. Clock-hourly mass emissions of oxides of nitrogen (NO_x) calculated as NO_2, in pounds;

e. Cumulative mass emissions of oxides of nitrogen (NO_x) calculated as NO_2 in each tuning operation, and startup and shutdown period, in pounds;

f. Calendar -daily mass emissions of oxides of nitrogen (NO_X) calculated as NO_2, in pounds;

g. Calendar monthly mass emissions of oxides of nitrogen (NO_X) calculated as NO_2, 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 (NO_X), calculated as NO_2, 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 NO_2, in tons;

k. Cumulative mass emissions of carbon monoxide (CO) in each tuning ~~period~~**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 (NO_x) 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 (NO_x) calculated as NO_2 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.

Condition AQ-70 is PTO-56:

AQ-70 **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. ~~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]~~**

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.

Condition AQ-71 is deleted:

AQ-71 **~~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 NO_x 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 NO_x 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.**~~

Condition AQ-72 is PTO-57:

AQ-72 A monitoring plan in conformance with 40 CFR 75.53 shall be submitted to U.S. EPA Region 9 and the District at least 45 ~~**calendar**~~ days prior to the Relative Accuracy Test Audit ~~**(RATA)**~~**test**, as required in 40 CFR 75.62. [40 CFR Part 75]

Verification: The project owner shall submit to the CPM for review and the District and the U.S. EPA Region 9 for approval a monitoring plan in compliance with this condition at least 45 days prior to the RATA test.

Condition AQ-73 is PTO-58:

AQ-73 The oxides of nitrogen (NO_X) and oxygen (O_2) components of the CEMS shall be certified and maintained in accordance with applicable **f**~~**F**~~ederal **r**~~**R**~~egulations including the requirements of ~~**s**~~**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) component~~**s**~~ 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.

Condition AQ-74 is PTO-59:

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.

Condition AQ-75 is PTO-60:

AQ-75 When the CEMS is not recording data and the combustion turbine is operating, hourly NO_x emissions for purposes of calendar year and rolling 12-calendar-month period emission calculations shall be determined in accordance with 40 CFR 75 Subpart C. Additionally, hourly CO emissions for rolling 12-calendar-month period emission calculations shall be determined using CO emission factors to be determined from source test emission factors, recorded CEMS data, and fuel consumption data, in terms of pounds per hour of CO for the gas turbine. Emission calculations used to determine hourly emission rates shall be reviewed and approved by the District, in writing, before the hourly emission rates are incorporated into the CEMS emission data. [Rules 20.3(d)(3) and 21 and 40 CFR Part 75]

Verification: The project owner shall provide the District for approval and the CPM for review all emission calculations required by this condition, in a manner and time required by the District, and shall provide notation of when such calculations are used in place of operating CEMS data in the Quarterly Operation Reports **(AQ-SC8)**.

Condition AQ-76 is PTO-61:

AQ-76 Any violation of any emission standard as indicated by the CEMS shall be reported to the District's **Cc**~~c~~ompliance **Dd**~~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)**.

Condition AQ-77 is PTO-62:

AQ-77 The CEMS shall be maintained and operated, and reports submitted, in accordance with the requirements of Rule 19.2 Sections (**Dd**~~d~~), (**Ee**~~e~~), ~~**(f)(1),**~~ (**Ff**~~f~~)(2), (**Ff**~~f~~)(3), (**Ff**~~f~~)(4) and (**Ff**~~f~~)(5)~~,~~ and ~~**a**~~ CEMS **Pp**~~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.

Condition AQ-78 is PTO-63:

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)**.

Condition AQ-79 is deleted:

~~**AQ-79 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.**~~

Condition AQ-80 is PTO-64:

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**).

Condition AQ-81 is PTO-65:

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.

Condition AQ-82 is deleted:

~~**AQ-82 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.

Condition AQ-83 is PTO-66:

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 are 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.

~~COMMISSIONING AND SHAKEDOWN~~

Condition AQ-84 is PTO-67:

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 NO_x 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)**.

Condition AQ-85 is deleted:

~~**AQ-85 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 NO_X and CO during startup and shutdown periods, and the emissions of NO_X 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 (NO_X) 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 (O_2) in the exhaust gas;**

d. **Mass emissions of oxides of nitrogen (NO_x) calculated as NO_2, in pounds;**

e. **Cumulative mass emissions of oxides of nitrogen (NO_x) calculated as NO_2 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.~~

Condition AQ-86 is deleted:

~~AQ-86 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 5 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.**~~

REPORTING

Condition AQ-87 is PTO-68:

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.

Condition AQ-88 is PTO-69:

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.

Condition AQ-89 is PTO-70:

AQ-89 All semiannual compliance reports shall be submitted to the District Compliance Division. [40 CFR § 60.7]

Verification: None required.

Condition AQ-90 is deleted:

~~**AQ-90 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).**~~

New Condition PTO-72 added:

TBD **This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.**

Verification: TBD

New Condition PTO-73 added:

TBD **The permittee 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: TBD

CONDITIONS FOR EMERGENCY FIRE PUMP ENGINE

Application 2014-APP-003481 is now Permit to Operate 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.

Condition AQ-91 is PTO-1:

AQ-91 The exhaust stack for the emergency fire pump engine shall be a minimum of 20 feet in height above grade and a maximum of 0.5 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.

Condition AQ-92 is deleted:

~~**AQ-92** **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.**~~

Condition AQ-93 is deleted:

~~**AQ-93 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.**~~

Condition AQ-94 is PTO-2:

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.

Condition AQ-95 is PTO-3:

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)**.

Condition AQ-96 is PTO-4:

AQ-96 The engine shall only use CARB **d**iesel **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.

Condition AQ-97 is PTO-5:

AQ-97 Visible emissions including crank case 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.

Condition AQ-98 is PTO-6:

AQ-98 The equipment described above shall not cause or contribute to **a** 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.

Condition AQ-99 is PTO-7:

AQ-99 This engine shall not operate for non-emergency 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**am** 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**~~ **students'** 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.

Condition AQ-100 is PTO-8:

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.

Condition AQ-101 is PTO-9:

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.

Condition AQ-102 is PTO-10:

AQ-102 **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]~~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.

Condition AQ-103 is PTO-11:

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 12,~~ Rule 69.4.1, **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.

Condition AQ-104 is PTO-13:

AQ-104 **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]~~**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.

Condition AQ-105 is PTO-12:

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

a) **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**

e) **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**).

The following three conditions are also in the Fire Pump Engine PTO, but are the same general permit requirements as the Combustion Turbine Generator, PTO-71 (AQ-7), 72, and 73.

New Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.

New This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.

New The permittee 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.)

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

~~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).

APPENDIX C – GE STARTUP AND SHUTDOWN EMISSIONS DATA FOR LMS100-PA TURBINES

LMS100 PA Estimated Startup Stack Emissions - Gas Fuel Operation

Event	Duration (min)	Heat Input (MMBTU - HHV)	NOx (lb)	CO (lb)	VOC (lb)
Startup	25	293.57	14.7	7.4	2.0

** Fuel Must Meet GE Gas Fuel Spec (MID-TD-0000-1 LATEST REVISION)

Based on a Ramp to 100% Load. 60.3°F, 79.1%RH, No Inlet Conditioning, Inlet/Exhaust Loss (inH2O) 5.0/10.0, at 20.9ft. AMSL, Gas Fuel900-4103 (Steve Rose Sample 59F) Btu/lb (LHV/HHV) (20,598/22,836), Water Injected to 0 ppmvdc, Dry Secondary Cooler, G0179

VOC's are defined as non-methane, non-ethane, 50% saturated. VOC mass rates reported as methane.

LMS100 PA Estimated Shutdown STACK Emissions - Gas Fuel Operation

Event	Duration (min)	Heat Input (MMBTU - HHV)	NOx (lb)	CO (lb)	VOC (lb)
Shutdown	13	48.63	0.6	3.4	2.4

*Fuel Must Meet GE Gas Fuel Spec (MID-TD-0000-1 LATEST REVISION)

Based on a Ramp to 100% Load. 60.3°F, 79.1%RH, No Inlet Conditioning, Inlet/Exhaust Loss (inH2O) 5.0/10.0, at 20.9ft. AMSL, Gas Fuel900-4103 (Steve Rose Sample 59F) Btu/lb (LHV/HHV) (20,598/22,836), Water Injected to 25 ppmvdc, Dry Secondary Cooler, G017

VOC's are defined as non-methane, non-ethane, 50% saturated. VOC mass rates reported as methane.

APPENDIX D – EMISSION CALCULATIONS RELATED TO THE CHANGE IN STARTUP CO EMISSIONS

Yorke ENGINEERING, LLC
www.YorkeEngr.com

CO Emission Estimates

Startup & Shutdown Emissions		
Scenario	**Emissions (lbs/event)**	**Event Duration (minutes)**
Start-up Emissions	17.9	25
Shutdown Emissions	3.4	13

Normal Operating Emissions									
Operating Scenario	**Heat Input HHV (MMBtu/Hr)**	**NOx (lbs/hr)**	**CO (lbs/hr)**	**VOC (lbs/hr)**	**SOx (short term) (lbs/hr)**	**SOx (long term) (lbs/hr)**	**NH3 (lbs/hr)**	**PM10 (lbs/hr)**	**PM2.5 (lbs/hr)**
Cold, 100% Load	969	8.93	8.7	2.48	2.04	0.68	6.6	5	5
Cold, 25% Load	377	3.47	3.38	0.97	0.79	0.26	2.57	5	5
Hot, 100% Load, Evap	908	8.37	8.15	2.33	1.91	0.64	6.19	5	5
Hot, 100% Load, No Evap	881	8.12	7.91	2.26	1.85	0.62	6	5	5
Hot, 25% Load	352	3.24	3.16	0.9	0.74	0.25	2.4	5	5
Avg., 100% Load, Evap	982	9.05	8.81	2.52	2.06	0.69	6.69	5	5
Avg., 100% Load, No Evap	984	9.07	8.83	2.52	2.07	0.69	6.7	5	5
Avg., 50% Load	377	3.47	3.38	0.97	0.79	0.26	2.57	5	5
Maximum	984	9.07	8.83	2.52	2.07	0.69	6.7	5	5

Reference: FDOC

Maximum 1-Hour Emissions	
Scenario	**CO Emissions (lbs/hr)**
Start + 22 min normal + Shutdown	24.54
Start + Shutdown + Partial Start (22 min)	37.05
Shutdown + Start + 9 min normal + shutdown	26.02

CO Emissions			
CO Emissions	**lbs/hr**	**lbs/day**	**ton/yr**
One Turbine	37.05	274.75	15.06
Five turbines	185.25	1373.75	75.3

Data and Parameters		
Max starts & stops	4	per day
Max starts & stops	400	per year
Start Duration	25	minutes
Stop Duration	13	minutes
Total Run time	2700	hours/yr
Number of Turbines	5	each