



STATEMENT OF STAFF APPROVAL OF PROPOSED CHANGE

ORANGE GROVE ENERGY CENTER (OGE) (08-AFC-4C)

On August 13, 2021, Orange Grove Energy Center, LP, filed a post certification petition for a project change for the Orange Grove Energy Center (OGE). The 96-megawatt (MW), natural gas-fired, simple-cycle electric generating facility was certified by the California Energy Commission (CEC) on April 8, 2009 and began operation on June 17, 2010. The facility is located in the unincorporated area of Pala, in San Diego County, California.

DESCRIPTION OF PROPOSED CHANGE

The post certification petition request includes the following changes:

- Modification of Air Quality conditions of certification to allow for short-term temporary turbine replacement consistent with changes to the permit issued by the San Diego County Air Pollution Control District (SDAPCD).
- Additional changes are requested for consistency with the SDAPCD Permit.

The petition is available on the CEC's OGE webpage at

<https://www.energy.ca.gov/powerplant/peaker/orange-grove-energy-center>

ENERGY COMMISSION STAFF REVIEW AND CONCLUSIONS

Title 20, California Code of Regulations, section 1769 states that a project owner shall petition the CEC for approval of any change it proposes to the project design, operation, or performance requirements of a previously certified facility.

CEC technical staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS). Staff has determined that Air Quality is the only technical or environmental area affected by the project change.

For Air Quality, staff has determined the project would continue to comply with applicable LORS and would not result in any significant adverse environmental impacts. The proposed changes would conform with changes made by the SDAPCD to its permit language and would require updating of some Air Quality

conditions of certification in the Commission Decision. No daily, quarterly, annual or other emission limits would increase because of this change (**Attachment A**).

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

Summary of Staff Responses to Petition

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

ENVIRONMENTAL JUSTICE

The project would continue to comply with all air quality-related LORS during short-term like-kind replacement of turbines. Air quality, public health, and greenhouse gas emissions and impacts are not expected to increase. Impacts would remain less than significant, including impacts to environmental justice populations. Therefore, there are no air quality, public health, or greenhouse gas environmental justice issues related to the proposed modifications and no minority or low-income populations would be significantly or adversely impacted.

ENERGY COMMISSION STAFF DETERMINATION

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

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

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

WRITTEN COMMENTS

This Statement of Staff Approval of the proposed project changes has been filed in the docket for this project. Pursuant to Title 20, California Code of Regulations, section 1769(a)(3)(C), any person may file an objection to staff's determination within 14 days of the filing of this statement on the grounds that the project change does not meet the criteria set forth in sections 1769(a)(3)(A) and (B). Absent any objections as specified in 1769(a)(3)(C), this petition will be approved 14 days after this statement is filed.

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

Written comments or objections may also be mailed to:

California Energy Commission
Docket Unit, MS-4
Docket No. **08-AFC-4C**
715 P Street
Sacramento, CA 95814-5512

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

If you have questions about this notice, please contact Joseph Douglas, Compliance Project Manager, at (916) 956-9527, or via email at joseph.douglas@energy.ca.gov.

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

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

List Serve: 7245

ATTACHMENT A

ORANGE GROVE ENERGY PROJECT (08-AFC-4C)

Staff Approved Project Change Short-Term Like-Kind Replacement of Turbines Air Quality, Public Health, and Greenhouse Gases

Wenjun Qian, PH.D., P.E.

INTRODUCTION AND SUMMARY

On August 13, 2021, Orange Grove Energy (OGE) filed a petition with the California Energy Commission (CEC) requesting minor modifications to the Final Commission Decision on the Orange Grove Power Plant to (1) allow for short-term like-kind replacement of turbines when turbine maintenance offsite is needed; and (2) make CEC conditions of certification consistent with new Permits to Operate (PTOs) issued by the San Diego Air Pollution Control District (SDAPCD or district) that allow for such replacement (OGE 2021).

OGE has been corresponding with SDAPCD to obtain revisions to PTOs to allow for short-term like-kind replacement of turbines when turbine maintenance offsite is needed. SDAPCD reviewed the request and issued revised PTOs on July 14, 2021.

Staff reviewed the petition and the associated SDAPCD PTOs attached to the petition. Staff proposes to incorporate the new permit conditions as Air Quality Conditions of Certification (COC) **AQ-61** through **AQ-65** to allow for short-term like-kind replacement of turbines. Staff agrees with the proposed deletion of obsolete COCs **AQ-59** and **AQ-60** that were related to a one-time maintenance of the selective catalytic reduction (SCR) systems, which was completed several years ago. Staff agrees with the proposed administrative changes in the condition description, equipment description, and COCs **AQ-13**, **AQ-16**, **AQ-35**, **AQ-41** and **AQ-46** to be consistent with the current SDAPCD PTOs.

The project would continue to comply with all laws, ordinances, regulations, and standards (LORS) during short-term like-kind replacement of turbines. Air quality, public health, and greenhouse gas emissions and impacts are not expected to increase. Impacts would remain less than significant, including impacts to environmental justice populations. Therefore, there are no air quality, public health, or greenhouse gas environmental justice issues related to the

proposed modifications and no minority or low-income populations would be significantly or adversely impacted.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

All previously analyzed LORS continue to apply to the project and the proposed changes do not trigger any additional air quality, public health, or greenhouse gas LORS. The SDAPCD issued the revised PTOs on July 14, 2021 (OGE 2021), demonstrating the project would continue to comply with all applicable LORS.

ANALYSIS

Routine maintenance and repair is commonly required for turbine installations. Without the proper and required maintenance and repair, the turbines could be damaged with continued operation. The components must be serviced off-site due to the nature of the repairs. However, OGE is under a CAISO must-run contract. A temporary replacement of the turbines is required to keep producing electricity while the units are removed for maintenance and repair.

The temporary replacement would be an identical gas turbine (General Electric, Model LM-6000 PC SPRINT, 49.8 MW nominal output). Emissions of the identical turbine would be controlled by the same emission control system (i.e. SCR unit with ammonia injection control system and an oxidation catalyst). The identical turbine will operate under the same permit conditions, including the new conditions. It is expected that the emissions of the identical turbine would not exceed any permitted emission limits. Compliance with the emission limits will be confirmed by continuous emissions monitoring (CEMS) in accordance with existing conditions of certification and PTOs.

Air quality, public health, and greenhouse gas emissions and impacts are not expected to increase during short-term like-kind replacement of the turbine generator Units 1 and 2 while they undergo routine maintenance and repair. In the revised PTOs, the SDAPCD added five new conditions to ensure the impacts during the temporary replacement would be less than significant. The addition of emission limits of 100 pounds per calendar day in the new PTO conditions 2, 3, and 4 for the replacement turbine ensures that the short-term like-kind replacement does not trigger the need for a new permit under SDAPCD's Rule 10.

The new PTO conditions are numbered from 1 to 5 in the SDAPCD revised PTOs. OGE proposes to add them as Air Quality COCs **AQ-1** through **AQ-5** and

renumber all the other conditions accordingly. To simplify the analysis, staff proposes to add the new PTO conditions as Air Quality COCs **AQ-61** through **AQ-65** so that the original numbering for other conditions would not change.

OGE also requests to delete two COCs **AQ-59** and **AQ-60**, which were removed by SDAPCD from the PTOs. These are obsolete conditions that were related to a one-time maintenance of the SCR systems that was completed several years ago and verification fully satisfied. Staff agrees with the deletion.

OGE also proposes the following administrative changes in the condition description, equipment description, and conditions of certification to be consistent with the current PTOs: 1) delete "Authority to Construct" (ATC) in the description of district conditions since they are not ATC conditions anymore, but PTO conditions; 2) add unit numbers in the equipment description; 3) change "the emissions from each turbine" to "the emissions from each unit exhaust stack" in COC **AQ-13** to be more accurate and consistent with current PTOs; 4) add regulation number "40 CFR Subpart KKKK" in COC **AQ-16** which was inadvertently left out previously; 5) delete the requirement of U.S. EPA approval of alternative test methods (which was included in district's previous ATCs but not in the current PTOs) in COC **AQ-35** because the district has jurisdiction for approving the use of alternative methods; 6) change source test reporting time frame from 30 days (shown in district's previous ATC) to 45 days (shown in current PTOs) after the completion a renewal source test or RATA in COCs **AQ-41** and **AQ-46**; 7) delete regulations shown in previous ATCs but not in the current PTOs in COC **AQ-46**. Staff agrees with the proposed changes. Staff also proposes deletion of some phrases in COCs **AQ-35** and **AQ-41** which were included in the district's previous ATCs but not in current PTOs.

CONCLUSIONS AND RECOMMENDATIONS

Staff intends to approve the requested modification to allow temporary replacement of the turbine generator Units 1 and 2 while they undergo routine maintenance and repair. There would be no change in permitted emissions limits at OGE. With the addition of Air Quality COCs **AQ-61** through **AQ-65**, deletion of COCs **AQ-59** and **AQ-60**, and administrative changes in condition description, equipment description, and COCs **AQ-13**, **AQ-16**, **AQ-35**, **AQ-41** and **AQ-46**, the project would continue to comply with all applicable LORS.

AMENDED CONDITIONS OF CERTIFICATION

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

~~DISTRICT AUTHORITY TO CONSTRUCT AND PERMIT TO OPERATE CONDITIONS~~

Equipment Description – Permit to Operate No. APCD2011-PTO-000889: Once natural gas simple cycle combustion turbine generator #1: Make General Electric, Model LM-6000 PC SPRINT, nominal output 49.8 MW, **SN 191-617**, with water injection, a selective catalytic reduction (SCR) unit with ammonia injection control system, an oxidation catalyst, a data acquisition system (DAHS); and continuous emission monitoring system (CEMS).

Equipment Description – Permit to Operate No. APCD2011-PTO-00890: One natural gas simple cycle combustion turbine generator #2: Make General Electric, Model LM-6000 PC SPRINT, nominal output 49.8 MW, **SN 191-638**, with water injection, a selective catalytic reduction (SCR) unit with ammonia injection control system; an oxidation catalyst, a data acquisition system (DAHS), and continuous emission monitoring system (CEMS).

AQ-13 During startup conditions, the emissions from each ~~turbine~~ **unit exhaust stack** shall not exceed the following emission limits as determined by the continuous emission monitoring system (CEMS) and/or District-approved emission testing. Compliance with each limit shall be based on the startup period.

Pollutant	Limit, lbs/hour
Oxides of Nitrogen (NO _x), calculated as NO ₂	13.25
Carbon Monoxide (CO)	12.05
Volatile Organic Compounds (VOC)	1.95

Verification: The project owner shall submit to the CPM the CTG operating data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-SC11).

AQ-16 For each affected unit required to continuously monitor parameters or emissions the project owner must submit to the District reports of excess emissions and monitor downtime, in accordance with **40 CFR Subpart KKKK** § 60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and

malfunction. Reports submitted pursuant to this requirement shall be postmarked no later than the 30th day following the end of the 6-month reporting period. 6-month reporting periods comprise January 1 through June 30, and July 1 through December 31.

Verification: The project owner shall submit to the CPM demonstrating compliance with this condition. Reports submitted pursuant to this requirement shall be postmarked no later than the 30th day following the end of the 6-month reporting period.

AQ-35 The permittee shall submit a source test protocol to the District for approval ~~for any source test to determine compliance with the emission standards of this permit or any Relative Accuracy Test Audit (RATA) and other required certification tests for the CEMS.~~ The source test protocol shall comply with the following requirements ~~and any other applicable requirements of this permit:~~

- A. Measurements of NO_x, CO, and O₂ emissions shall be conducted in accordance with U.S. Environmental Protection Agency (U.S. EPA) methods 7E, 10, and 3A, respectively, and District Source Test, method 100, or alternative methods approved by the District ~~and U.S. EPA;~~
- B. Measurement of VOC emissions shall be conducted in accordance with U.S. EPA Methods 25A and/or 18, or alternative methods approved by the District ~~and U.S. EPA;~~
- C. Measurements of PM₁₀ emissions shall be conducted in accordance with U.S. EPA Methods 5 and 201A or 202 or alternative methods approved by the District ~~and U.S. EPA;~~
- D. Measurements of ammonia emissions shall be conducted in accordance with Bay Area Air Quality Management District ST-1B or an alternative method approved by the District;
- E. Source testing shall be performed at the normal load level, as specified in 40 CFR part 75 Appendix A Section 6.52.1.d, provided it is not less than 80% of the unit's rated load unless it is demonstrated to the satisfaction of the District that the unit cannot operate under these conditions. If the demonstration is accepted, then emissions source testing shall be performed at the highest achievable continuous level power level.

- F. Measurements of opacity shall be conducted in accordance with U.S. EPA Method 9 or an alternative method approved by the District ~~and U.S. EPA.~~
- G. Measurement of fuel flow shall be conducted in accordance with an approved test protocol.

Verification: The project owner shall submit to the CPM for review, and the District for approval, the source test protocol in compliance with requirements of this condition at least 30 days prior to the initial source test.

AQ-41 Within ~~30~~**45** days after completion of a renewal source test or RATA ~~performed by an independent contractor,~~ a final written test report shall be submitted to the District for review and approval.

Verification: The project owner will submit all RATA or source test reports to the CPM for review and the District for approval within ~~30~~**45** days of the completion of those tests.

AQ-46 A Relative Accuracy Test Audit (RATA) and other required certification tests shall be performed and completed on the CEMs in accordance with 40 CFR Part 75 Appendix A **Specifications and Test Procedures** ~~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.~~ At least 30 days prior to the test date, the project owner shall submit a test protocol to the District for written approval. Additionally, the District shall be notified a minimum of 21 days prior to the test so that observers may be present. Within ~~30~~**45** days of completion of this test, a written test report shall be submitted to the District for approval.

Verification: The project owner shall submit to the CPM for review and the District for approval the RATA certification test protocol at least 30 days prior to the RATA test and shall submit to the CPM for review and the District for approval a copy of the written test report within ~~30~~**45** days after test completion.

The project owner shall also notify the CPM and District of the RATA test date at least 21 days prior to conducting the RATA and other certification tests.

AQ-59 ~~**Deleted** Notwithstanding any other condition of this permit, for each turbine, not later than 60 calendar days after completion of the repair and maintenance of the emission control system as described in Application No. APCD2016-APP-004406, a source test and Relative~~

~~Accuracy Test Audit (RATA) and applicable certification tests shall be conducted on the CEMS of each turbine to demonstrate compliance with the NO_x, CO, VOC, and ammonia emission standards of this permit and applicable relative accuracy requirements and certifications for the NO_x and CO CEMS using District approved methods. The source test shall be conducted in accordance with a protocol complying with all the applicable requirements for source test protocols as specified in this permit.~~

~~**Verification:**—The project owner shall submit to the CPM for review and the District for approval the source test, RATA, and applicable certification test protocol at least 30 days prior to the tests and shall submit to the CPM for review and the District for approval a copy of the written test report within 30 days after test completion. The project owner shall also notify the CPM and District of the test date at least 21 days prior to conducting the RATA and other certification tests.~~

AQ-60 Deleted ~~Unless a later date is approved in writing by the District, not later than 30 calendar days prior to the start of the repair and maintenance project the project owner shall submit to the District the final selection of the catalyst manufacturers and design parameters and details of the selective catalytic reduction (SCR) and oxidation catalyst emission control systems for the combustion turbines. Unless the District approves an alternative, the submittal shall include at a minimum the type of catalyst; active catalyst material; catalyst volume per turbine; and control efficiency of the SCR for NO_x and the control efficiency of the oxidation catalyst for VOCs and CO at temperatures between 100 °F and 1000 °F at a space velocity corresponding to 100% load. Such information may be submitted to the District as trade secret and confidential pursuant to District Rules 175 and 176.~~

~~**Verification:**—Unless a later date is approved in writing by the District, not later than 30 calendar days prior to the start of the repair and maintenance project the project owner shall submit to the CPM and the District the final selection of the catalyst manufacturers and design parameters and details of the SCR and oxidation catalyst emission control systems for the combustion turbines.~~

AQ-61 In the event that the Unit 1 or Unit 2 gas turbine engine is removed from service for required repair, the project owner may install an identical gas turbine (General Electric, Model LM-6000, 49.8 MW capacity) as a temporary replacement. The temporary gas turbine may be operated for a time period not to exceed 120 calendar days for each time the Unit 1 or Unit 2

gas turbine is repaired. This time period shall begin on the day that construction has been completed on the installation of the temporary replacement gas turbine. At least twenty-four (24) hours prior to operating the temporary replacement gas turbine, the project owner shall notify the District and the CEC, in writing that this construction has been completed. The time period shall end on the day that construction has been completed on the re-installation of the Unit 1 or Unit 2 gas turbine after it has been repaired. At least twenty-four (24) hours prior to operating the repaired Unit 1 or Unit 2 gas turbine, the project owner shall notify the District and the CEC, in writing, that this construction has been completed. The total duration of the time period shall be calculated from the date construction of the replacement gas turbine has been completed until the date reinstallation of the repaired Unit 1 or Unit 2 gas turbine has been completed, regardless of whether the temporary gas turbine operates on any individual day. The cumulative, total duration of operation of the temporary gas turbine under this condition shall not exceed 120 days in any consecutive 12-month period.

Verification: The Project Owner shall notify the CPM in writing concurrent with each required notification to the District.

AQ-62 At all times when the temporary gas turbine is in operation, including periods of startup and shutdown, emissions of oxides of nitrogen (NOx) and carbon monoxide (CO), shall each not exceed 100 pounds per calendar day as determined by the NOx and CO Continuous Emissions Monitoring System (CEMS).

Verification: If and when the temporary gas turbine is installed and operated, the Project Owner shall submit to the CPM the CTG operating and/or source test data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-SC11).

AQ-63 At all times when the temporary gas turbine is in operation, including periods of startup and shutdown, emissions of volatile organic compounds shall not exceed 100 pounds per calendar day, as determined by the CO Continuous Emissions Monitoring System (CEMS) and the CO/VOC surrogate relationship.

Verification: If and when the temporary gas turbine is installed and operated, the Project Owner shall submit to the CPM the CTG operating and/or source test data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-SC11).

AQ-64 At all times when the temporary gas turbine is in operation, including periods of startup and shutdown, emissions of sulfur oxides (SOx) and particulate matter (PM10) shall each not exceed 100 pounds per calendar day, as determined by a source test or emissions calculations using emission factors or mass balance.

Verification: If and when the temporary gas turbine is installed and operated, the Project Owner shall submit to the CPM the CTG operating and/or source test data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-SC11).

AQ-65 In the event that a source test or RATA is required to be conducted at the time a temporary engine is installed, the owner or operator shall be required to conduct any required tests using the temporary gas turbine and must conduct the same tests within 60 days of completing reinstallation of the repaired gas turbine.

Verification: The Project Owner shall provide the source test data as part of the Quarterly Operations Reports (AQ-SC11), due in the quarter after the source test report is completed.

REFERENCES

OGE 2021 – Orange Grove Energy (OGE). Petition for Minor Amendments to CEC Decision. Orange Grove Energy Project – Compliance (08-AFC-04C), dated August 13, 2021. Available Online at:
<https://efiling.energy.ca.gov/GetDocument.aspx?tn=239305&DocumentContentId=72761>