

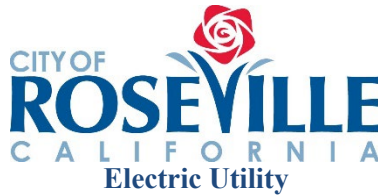
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# Roseville Peakers (RPEAK)

Roseville State Power Augmentation Power Site (21-TPG-01)

## **Petition for a Staff Approved Project Modification**

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## 1. Introduction

The City of Roseville Electric Utility (“Roseville” or “REU”) is submitting this Petition for a Staff Approved Modification (“Petition”) for the Roseville State Power Augmentation Power Site (21-TPG-01), now referred to as the Roseville Peakers or “RPEAK.”

RPEAK was certified in response to Governor Newsom’s July 30, 2021, Proclamation of a State of Emergency for California because of sudden and severe energy shortages resulting from extreme drought, wildfires, and record-breaking heat events throughout the Western United States. To take immediate action to reduce the strain on energy infrastructure and increase energy capacity, the Governor authorized the California Energy Commission (“CEC”) to license new emergency and temporary power generators of 10 megawatts (MW) or more that the CEC determined could deliver net peak energy before October 31, 2021. Using the CEC’s Order number 21-0817-2 establishing a self-certification process, on September 2, 2021, REU filed a self-certification application with the CEC requesting a license to temporarily host and operate two 33.6 MW General Electric (GE) TM2500-G4 gas turbine package units to be located near the south-eastern corner of the existing Roseville Energy Park (“REP”) site. On September 8, 2021, the CEC granted a license to operate the RPEAK emergency and temporary power generators. In November 2024, REU took ownership of the RPEAK turbines from the California Department of Water Resource (“CDWR”).

Both the REP and RPEAK operate under a consolidated Title V Operating Permit issued by the Placer County Air Pollution Control District (“PCAPCD”), Permit Number REP-001, with an Effective Date of August 3, 2023 and as such, both REP and RPEAK units combined must operate within the Facility-wide Emissions annual and quarterly limits. Additionally, the CEC approval of RPEAK provided that the project would be allowed to operate outside of emergencies once they are able to “comply with all local, state, and federal regulatory requirements.” (TN #: 239619, Approval of License for Roseville State Power Augmentation Power Site, p. 2.)

As discussed below, there are currently no daily emission limits for the simple-cycle RPEAK turbines. With the increase in hours, the quarterly and annual emissions from the RPEAK turbines will increase; however, the Facility-wide (REP and RPEAK emissions combined) quarterly and annual emissions will not increase. Thus, for the Facility-wide emissions, there will be no increase in daily, quarterly, annual or other emission limits as a result of the proposed modifications. Accordingly, the requested modifications can be approved as a Staff Approval of Project Modification pursuant to 20 C.C.R. 1769(a)(3)(B)(i).

### 1.1. Project Overview: Purpose of this Petition

RPEAK is filing this Petition for a Staff Approved Modification concurrently with its application recently filed with the PCAPCD. The Application for Authority to Construct

and Permit to Operate filed with the PCAPCD on May 28, 2025 includes the substantive information required for the Petition and is attached hereto as Appendix A.

The changes requested in the Application filed with the PCAPCD are summarized therein as follows:

- REU is proposing a reallocation of the existing Facility-wide Emissions annual and quarterly limits in order to increase the allowable operating hours for the two GE TM2500-G4 turbines located at the REP and also owned by REU, and sited North of Phillip Road in Roseville, California.
- On July 30, 2021, Governor Newsom issued a Proclamation of a State of Emergency for California because of sudden and severe energy shortages resulting from extreme drought, wildfires, and record-breaking heat events throughout the Western United States.
- To take immediate action to reduce the strain on energy infrastructure and increase energy capacity, the Governor authorized the CEC to license new emergency and temporary power generators of 10 megawatts (MW) or more that the CEC determines will deliver net peak energy before October 31, 2021.
- The CEC then issued Order number 21-0817-2 establishing a self-certification process for licensing new emergency and temporary power generators.
- On September 2, 2021, REU filed a self-certification application with the CEC requesting a license to temporarily host and operate two 33.6 MW General Electric (GE) TM2500-G4 gas turbine package units to be located near the south-eastern corner of the REP site. On September 8, 2021, the CEC granted a license to operate the RPEAK emergency and temporary power generators.
- Subsequently, on September 13, 2021 the PCAPCD issued an Authority to Construct and Temporary Permits to Operate #AC-REPR-21C and #AC-REPR-21D which were renewed in 2022 and then replaced with Operating Permit #REPR-20-03 and #REPR-20-04 on October 1, 2023 and renewed annually thereafter.
- The two TM2500 units commenced commercial operation in September 2021 and were limited in their PCAPCD permits to operate (PTOs) to 200 operating hours per year per turbine.
- In November 2024, REU took ownership of the turbines and these units are no longer restricted to run exclusively during declared emergency conditions, but the 200 operating hour limitation remains.
- REU now proposes to reallocate the existing Facility-wide Emissions annual and quarterly limits in order to increase the allowable operating hours for each of the RPEAK TM2500-G4 turbines.
- The modification will not result in an increase to the REP Facility-wide total quarterly and annual emission limits. (Appendix A, Executive Summary, p. 1-2.)

As set forth in Appendix A, REP Facility-wide quarterly and annual emissions will not increase, but quarterly and annual emissions from the two RPEAK turbines will increase.

Requested daily startup/shutdown limits are being increased from 4 to 6 events per day.

In addition, while a second Petition to Change Ownership is not required, REU is also requesting that the Commission change the common name of the project from the “Roseville State Power Augmentation Power Site” to “Roseville Peakers (RPEAK)”, consistent with REU’s ownership of the former CDWR turbines. (TN #: 260105.)

## 1.2. Information Requirements for Post-Certification Project Changes

This Petition is being submitted in accordance with CCR Title 20 Public Utilities and Energy. Section 1769(a)(1) of this Title provides the requirements for Post Certification Petitions for Changes in Project Design, Operation or Performance and Amendments to the Commission Decision.

## 2. Description of the Project Change

### 2.1. Section 1769 (A)(1)(A): A Description Of The Proposed Change, Including New Language For Any Conditions Of Certification That Will Be Affected.

REU is proposing to reallocate the existing Facility-wide Emissions annual and quarterly limits in order to increase the allowable operating hours for the two RPEAK turbines co-located at the REP owned by REU and sited North of Phillip Road in Roseville, California. In November 2024, REU took ownership of the turbines, and these units are no longer restricted to run exclusively during declared emergency conditions, with the only restriction on operation being the existing 200 operating hour limits.

All of Roseville’s generation capacity is either used to meet local demand or offered at market rates to other California utilities as conforming Resource Adequacy (“RA”) under CAISO or the Balancing Authority of Northern California (“BANC”), as applicable. The ability of the RPEAK turbines to operate without the current 200 hour annual limit is critical for ensuring reliable electricity supply to Roseville customers and for supporting grid operations throughout BANC and CAISO.

Of immediate need for REU, the current summer operations require the need to operate beyond the 200 hour per turbine limit. As the summer progresses, the risk to Roseville’s available capacity becomes more at risk due to dry summer conditions that greatly increase the risk of wildfire, threatening capacity in the Pacific Northwest that is accessed via the California-Oregon Intertie transmission lines. Roseville relies on this for approximately 75MW of capacity, and the state of California as a whole in excess of 4000MW, underscoring the importance of available local generation. Not only does wildfire threaten this capacity, but ongoing projects on this transmission system have also derated the capacity for this summer by approximately 10%. Additionally in late 2024, the Northern California Power Agency (“NCPA”) unexpectedly lost their Steam-Injected Gas Turbine (“STIG”) located at the Lodi Energy Center. This project provides approximately 50MW of capacity, 15MW of which belong to Roseville and are not available for this summer’s operations.

Also beginning October 1, 2025, both the CEC-jurisdictional REP and the non-jurisdictional Roseville Power Plant #2 (“RPP2”) generating facilities will be offline for several months due to scheduled maintenance and repowering activities. REP provides 165MW and RPP2 provides 48MW of capacity, respectively, and are expected to be unavailable for several months beginning in October 2025. Specifically, the REP is expected to be unavailable for 2-3 months for maintenance and the RPP2 unavailable until June 1, 2026 due to repowering activities.

RPP2 is being repowered using the CDWR units at the non-jurisdictional RPP2 site, as described in the March 19, 2025 letter of jurisdictional determination from Elizabeth Huber of the STEP Division: “Since the total additional capacity [of RPP2] remains below the Energy Commission’s 50-MW jurisdictional threshold, RPP2 will not be required to file a Small Power Plant Exemption or an Application for Certification with the Energy Commission.” The CDWR units at RPP2 will not be available to the grid to support reliability until they reach commercial operation on or around June 1, 2026. During this period of outage for both REP and RPP2, the RPEAK turbines will be Roseville’s sole source of local generation. Beyond the immediate need, the ability to run the units in a more flexible manner without the 200 hour limit is required to support the growing demands of our community, aid in the integration of renewable energy and support electrification in the community.

REU proposed in its filings with PCAPCD to reallocate the existing Facility-wide Emissions quarterly and annual limits in order to increase the allowable operating hours for each of the RPEAK turbines but is not proposing to change the REP Facility-wide total quarterly and annual emission limits. (See Attachment A.)

Please See Project Description in Section 1.1 above. Additional information on the Project is also found in Appendix A, Sections 1 and 2.1-2.2.9. A summary of the proposed modifications to Conditions of Certification are provided in Appendix A, Section 2.3, Proposed Revised Permit Conditions.

## **2.2. Section 1769 (A)(1)(B): A Discussion Of The Necessity For The Proposed Change And An Explanation Of Why The Change Should Be Permitted.**

The change should be permitted as the proposed modifications will provide critically needed grid support and reliability. The proposed modifications respond to the need for reliable, fast-starting energy to support California renewable energy integration, climate goals, and reliability needs. Additionally, as the RPEAK turbines are highly efficient and employ current emissions control technologies, they will be available to displace less efficient, higher polluting units in the state. The co-location of REP and RPEAK takes advantage of existing infrastructure both within the site and grid infrastructure in the vicinity. The proposed modifications will help serve critical reliability needs, renewable integration and will provide local resource adequacy capacity in the BANC and interconnected Balancing Authorities, including the CAISO.

### **2.3. Section 1769(A)(1)(C): A Description Of Any New Information Or Change In Circumstances That Necessitated The Change.**

Roseville was able to acquire ownership of the RPEAK from CDWR in late 2024. In the short-term, the RPEAK units will provide critically needed generation during the planned outage for REP and the replacement of the turbines at RPP2. In the longer term, the reallocation of the existing Facility-wide Emissions quarterly and annual limits is also critical to ensuring increased supply and electric reliability. The proposed modifications allow Roseville to optimize its energy portfolio by maximizing the benefits afforded by the larger combined cycle REP and the smaller, quick starting RPEAK turbines.

### **2.4. Section 1769(A)(1)(D): An Analysis Of The Effects That The Proposed Change May Have On The Environment And Proposed Measures To Mitigate Any Significant Environmental Effects.**

Any potentially significant environmental effects associated with the proposed project will be addressed by the PCAPCD permit review process. Under Rule 502, Section 408, the Placer County Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate if the Air Pollution Control Officer finds that the project which is the subject of an application would not comply with CEQA. The CEC acts as the CEQA lead agency for power plants under its jurisdiction. PCAPCD will act first per Rule 502, section 500, and will prepare a determination of compliance with all applicable PCAPCD regulations, or, if such a determination cannot be issued, shall so inform the CEC. The CEC will then act to approve or deny the project. The Title V permit will also be amended subject to compliance with federal Clean Air Act requirements.

### **2.5. Section 1769(A)(1)(E): An Analysis Of How The Proposed Change Would Affect The Project's Compliance With Applicable Laws, Ordinances, Regulations, And Standards.**

The proposed Modifications will not impact RPEAK's ability to comply with applicable LORS. Approval by the PCAPCD will ensure compliance with applicable LORS. The proposed project changes will allow RPEAK to run efficiently, while meeting environmental goals, and increasing available electrical production during periods of high electrical demand.

### **2.6. Section 1769(A)(1)(F): A Discussion Of How The Proposed Change Would Affect The Public.**

The proposed modifications will not adversely affect the public. The proposed changes do not result in significant unmitigated impacts to the environment and do not negatively impact air quality or public health. With implementation of proposed Conditions there will be no significant adverse effects on neighboring property owners.



**2.7. Section 1769(A)(1)(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 1000 Feet Of The Project Site.**

Consistent with privacy and security considerations, the Project Owner will provide a list of neighboring property owners directly to the Compliance Project Manager (“CPM”).

**2.8. Section 1769(A)(1)(H): Discussion Of The Potential Effect On Nearby Property Owners, Residents, And The Public.**

The proposed changes will have no significant environmental effects and will be in compliance with applicable LORS. Therefore, the proposed changes will have no impact on nearby property owners, residents, or the public.

**2.9. Section 1769(A)(1)(I): A discussion of any exemptions from the California Environmental Quality Act, commencing with section 21000 of the Public Resources Code, that the project owner believes may apply to approval of the proposed change.**

Given the operational changes proposed, the CEQA exemption for Air Quality Permits (Title 14, CCR, Section 15281) would not apply in this case, and no other exemptions appear to be applicable on these facts.

### **3. Request for a Staff Approved Modification and Change of the Common Name to the Roseville Peakers (RPEAK)**

REU appreciates the Commission Staff’s review and consideration of this Petition for Modification. REU has two requests.

First, REU requests a Staff Approved Project Modification of this Petition. As discussed above, for the Facility-wide emissions, the combined emissions of the REP and the RPEAK, there will be no increase in daily, quarterly, annual or other emission limits as a result of the proposed modifications. Accordingly, the requested modifications can be approved as a Staff Approval of Project Modification pursuant to 20 C.C.R. 1769(a)(3)(B)(i).

Second, to comport with REU’s own naming conventions and to reflect the REU as the owner of the former CDWR turbines (TN #: 260105), REU respectfully requests that the Commission change the common name of the former CDWR Peakers from “Roseville State Power Augmentation Power Site” to “Roseville Peakers (RPEAK)”, 21-TPG-01 on the Commission’s website, future correspondence, and related materials from and after your approval of this Petition.

## Appendix A --Application for Authority to Construct and Permit to Operate filed with the Placer County Air Pollution Control District on May 28, 2025

# **TURBINE OPERATING HOUR INCREASE**

**Application for Authority to Construct and  
Permit to Operate / PCAPCD**



## **Roseville Electric Utility / Roseville Energy Park**

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Project 250506.0001



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## 1. EXECUTIVE SUMMARY

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Roseville Electric Utility (REU) is proposing to increase the allowable operating hours for the two simple-cycle turbines (the Project) located at the Roseville Energy Park ("REP" or the Facility) owned by REU and sited North of Phillip Road in Roseville, California.

REP was originally permitted as a nominal 160-megawatt (MW) combined-cycle electricity generating facility consisting of two Siemens SGT-800 combustion turbine-generators, two heat recovery steam generators with duct burners, selective catalytic reduction and oxidation catalyst equipment to control NOx and carbon monoxide emissions, a single condensing steam turbine generator, a mechanical draft cooling tower using reclaimed water for cooling, and associated support equipment.

REP is located within the Sacramento Valley Air Basin and is permitted pursuant to Placer County Air Pollution Control District (PCAPCD) requirements. The California Energy Commission (CEC) certified the License for REP on April 13, 2005. REP was constructed and began commercial operations on October 15, 2007.

On July 30, 2021, Governor Newsom issued a Proclamation of State of Emergency for California because of sudden and severe energy shortages resulting from extreme drought, wildfires and record-breaking heat events throughout the Western United States. To take immediate action to reduce the strain on energy infrastructure and increase energy capacity, the Governor authorized CEC to license new emergency and temporary power generators of 10 megawatts (MW) or more that CEC determines will deliver net peak energy before October 31, 2021. CEC then issued Order number 21-0817-2 establishing a self-certification process for licensing new emergency and temporary power generators.

On September 2, 2021, REU filed a self-certification application with the CEC requesting a license to temporarily host and operate two 30 MW General Electric (GE) TM2500-G4 gas turbine package units to be located near the south-eastern corner of the REP site. On September 8, 2021 CEC granted a license to operate the emergency and temporary power generators. The two TM2500 units commenced commercial operation in September 2021 and were limited in their PCAPCD permits to operate (PTOs) to 200 operating hours per year per turbine. In November 2024, REU took ownership of the turbines and these units are no longer restricted to run exclusively during declared emergency conditions, with the only thing restricting operation being the existing 200 operating hour limits. REU now proposes to increase the allowable operating hours for each of the TM2500 turbines but is not proposing to change the REP Facility total quarterly and annual emission limits.

REU will pay all required application fees upon invoicing by PCAPCD.

This Application is organized as follows:

- Section 1: Executive Summary
- Section 2: Emission Calculations
- Section 3: Regulatory Analysis

## 2. EMISSION CALCULATIONS

### 2.1 Operating Permit Limits

Condition 38 of PCAPCD PTOs REPR-20-03 and REPR-20-04 for the TM2500 simple-cycle peaking turbines currently includes emission limits applicable to the entire REP Facility.

*38. Roseville Electric shall ensure that the quarterly emissions from all permitted stationary sources, including all four CTGs, all duct burners from the two HRSGs, and the water cooling towers, do not exceed the limits established in Table 1 below. Compliance with mass emissions of VOCs, PM<sub>10</sub>, and SO<sub>x</sub> shall be demonstrated by using the heat input-based emission factors established in Condition 30 multiplied by the applicable fuel consumption or heat input. (Basis: Rule 502, Section 303 Offset Requirements)*

**Table 1 – Roseville Energy Park Quarterly and Annual Emission Limits**

<b>Pollutant</b>	<b>Quarter 1 (lbs)</b>	<b>Quarter 2 (lbs)</b>	<b>Quarter 3 (lbs)</b>	<b>Quarter 4 (lbs)</b>	<b>Annual (tons/year)</b>
NO <sub>x</sub>	15,546	13,412	17,646	15,572	31.09
CO	27,121	33,872	28,515	30,202	59.86
VOCs	5,832	7,455	6,672	6,890	13.42
PM <sub>10</sub>	17,673	15,513	19,168	19,158	35.76
SO <sub>x</sub>	3,400	2,893	3,709	3,663	6.83

It should be noted that Condition 38 specifically requires that emission factors established per Condition 30 are to be used to verify compliance with the quarterly emission limits in Condition 38. Condition 30 requires that annual source tests be conducted to determine lb/MMBtu emission factors for VOC, SO<sub>x</sub> and PM<sub>10</sub> (pollutants not monitored by continuous emissions monitoring systems (CEMS)):

*30. On an annual basis, and within fourteen (14) months of the previous source test, Roseville Electric shall conduct District approved source testing on the CTG to determine compliance with the emission limitations specified in Conditions 34. The source tests shall determine concentrations and mass emissions of NO<sub>x</sub>, CO, VOC, and NH<sub>3</sub>. Fuel-based emission factors (lbs/MMBtu) for VOCs, SO<sub>x</sub> (as SO<sub>2</sub>) and PM<sub>10</sub> shall be established using the annual source test data. The source tests shall be performed while the CTG is operating at peak load firing conditions (100% load plus or minus 25%). The source tests shall include a minimum of three compliance runs, with a minimum run time of 30 minutes per run. [Emphasis added.]*

Therefore, compliance with the quarterly and annual emissions limits in Condition 38 is based on source test emission factors, rather than maximum permitted emission factors, for VOC, SO<sub>x</sub>, and PM<sub>10</sub>, while CEMS data is used for compliance with NO<sub>x</sub> and CO limits.

## 2.2 Emission Calculations

### 2.2.1 Regulated Pollutants

As discussed above, the Project will result in no change in the REP facility-wide potential to emit (PTE) for NO<sub>x</sub>, CO, VOC, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>.

REU will accept the current “cap” for REP emissions in Condition 38 and thereby not triggering emission offsets (see discussion below). The expected additional operating hours available to the simple-cycle turbines while operating under the REP emissions “cap” have been determined as described below.

### 2.2.2 Baseline Emissions

Because offsets are triggered on a quarterly or annual basis, historical quarterly emissions were reviewed to determine the most restrictive quarter affecting the proposed operating hours increase. Table 2-1 below summarizes the maximum quarterly emissions over the past 5 years (2020 to 2024) for all four combustion turbines for each quarter and each pollutant as reported by REU to PCAPCD in their Emission Inventory (EI) Reports. This method of choosing the highest quarter for each pollutant over the past 5 years results in a higher baseline than if the highest 12-month period was chosen and, therefore, results in a more conservative (lower) estimate of available simple-cycle turbine operating hours than if the highest 12-month baseline period was chosen.<sup>1</sup>

**Table 2-1 – REP Baseline Maximum Quarterly Total, 2020-2024**

Quarter	NO <sub>x</sub>	CO	PM <sub>10</sub>	SO <sub>2</sub>	VOC
Q1 (lbs)	7,657	5,969	1,939	985	3,234
Q2 (lbs)	5,638	3,966	1,959	662	1,875
Q3 (lbs)	9,898	3,491	2,858	1,081	3,446
Q4 (lbs)	9,942	4,162	2,331	1,077	3,573
Total tpy	16.6	8.8	4.5	1.9	6.1

All data from REP Annual EI Reports except 2024 based on CEMS data.  
Baseline maximum quarterly emissions only include REP Turbines 1 and 2

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<sup>1</sup> Note that CEMS data was used for the 2024 calendar year emissions because EI data is not yet available for 2024.

### 2.2.3 Proposed Operating Hour Increase

Using permitted emission rates for all pollutants and proposed startup (SU)/shutdown (SD) and normal operation hours for the two simple-cycle turbines, an estimate of quarterly emission increases was performed that allowed the two turbines to operate within the current permitted emission caps at the operating hour levels in Table 2-2.

**Table 2-2 – Proposed REP Peaking Turbine Operating Hours**

Quarter	SU/SD Events	Hours Per Turbine Per Quarter	
		SU/SD Hours	Normal Op Hours
Q1	190	142.5	550
Q2	190	142.5	550
Q3	190	142.5	550
Q4	190	142.5	550
Total	760	570	2,200

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes

### 2.2.4 Emissions from Two Simple-Cycle Turbines

The total emissions for two simple-cycle turbines associated with the startup/shutdown and operating hours listed above are as follows:

**Table 2-3 – Turbine Emissions Based on Proposed SU/SD and Op Hours**

Quarter	NOx	CO	PM <sub>10</sub>	SO <sub>2</sub>	VOC
Q1 (lbs)	5,451	18,484	5,920	592	1,372
Q2 (lbs)	5,451	18,484	5,920	592	1,372
Q3 (lbs)	5,451	18,484	5,920	592	1,372
Q4 (lbs)	5,451	18,484	5,920	592	1,372
Total (tpy)	10.9	37.0	11.8	1.2	2.7

Based on Table 2 SU/SD events and op hours and PTOs REPR-20-03, 04 emission factors.

### 2.2.5 Comparison of Baseline Plus Simple-Cycle Turbine and Permitted Emissions

Combined baseline maximum quarterly emissions and proposed emissions from the increased startup/shutdown and operation of the simple-cycle turbines are as follows:

**Table 2-4 – Baseline Maximum Quarter Plus Proposed Operating Hour Emissions**

Quarter	NOx	CO	PM <sub>10</sub>	SO <sub>2</sub>	VOC
Q1 (lbs)	13,108	24,453	7,859	1,577	4,606
Q2 (lbs)	11,089	22,450	7,879	1,254	3,247
Q3 (lbs)	15,349	21,975	8,778	1,673	4,818
Q4 (lbs)	15,393	22,646	8,251	1,669	4,945
Total (tpy)	27.5	45.8	16.4	3.1	8.8



The following table compares the emissions in Table 2-4 to the permit limits in Condition 38 above and indicates how much margin (pounds) there is between the baseline maximum quarterly plus proposed operating hour emissions and the Condition 38 quarterly and annual Facility permit limits.

**Table 2-5 – Permit Limit Minus (Baseline Plus Peaking Turbine Emissions)**

<b>Quarter</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>VOC</b>
Q1 (lbs)	2,438	2,668	9,814	1,823	1,226
Q2 (lbs)	2,323	11,422	7,634	1,639	4,208
Q3 (lbs)	2,297	6,540	10,390	2,036	1,854
Q4 (lbs)	179	7,556	10,907	1,994	1,945
Total (tpy)	3.6	14.1	19.4	3.7	4.6

As indicated in Table 2-5, NO<sub>x</sub> is the limiting pollutant, mainly in the 4th quarter. Monitoring NO<sub>x</sub> closely with the turbine CEMS will allow for ongoing compliance verification.

### 2.2.6 Alternative Turbine Heat Input Limits

As shown in the proposed revisions to Conditions 4 and 5 of PTOs REPR-20-03 and REPR-20-04 (see Section 2.3), REU is proposing turbine quarterly and annual total heat input limits, exclusive of startup and shutdown, in lieu of hourly operating limits:

$$550 \text{ hr/quarter} \times 366.1 \text{ MMBtu/hr} = 201,355 \text{ MMBtu/quarter}$$

$$550 \text{ hr/quarter} \times 4 \text{ qtr/yr} \times 366.1 \text{ MMBtu/hr} = 805,420 \text{ MMBtu/year}$$

### 2.2.7 Daily Startup and Shutdown Limits

REU is proposing to increase the maximum number of startups and shutdowns per day from 4 to 6 total per turbine, as summarized in Table 2-6. There are no daily emission limits in PTOs REPR-20-03 and REPR-20-04.

**Table 2-6 – Maximum Daily Turbine Emissions**

<b>Parameter</b>	<b>Events per Day</b>	<b>Hours per Day</b>	<b>Total NO<sub>x</sub> (lbs)</b>	<b>Total CO (lbs)</b>	<b>Total VOC (lbs)</b>	<b>Total SO<sub>x</sub> (lbs)</b>	<b>Total PM<sub>10</sub> (lbs)</b>
Startup	6	3.0	18.6	116.4	4.8	1.2	12.0
Shutdown	6	1.5	20.4	129.6	5.4	0.6	6.0
Normal Op	N/A	19.5	52.8	51.5	12.9	7.8	78.0
Total		24.0	91.8	297.5	23.1	9.6	96.0

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes  
 SU/SD and normal operation emission factors from PTOs REPR-20-03, 04 Conditions 34 and 35  
 Assumes no turbine downtime between startups and shutdowns

### 2.2.8 Quarterly Emission Limits

Increasing the number of startups, shutdowns and hours of operation as described in Table 2-2 above will result in increases in the quarterly emissions for the two simple-cycle turbines. Table 2-7 shows the proposed maximum quarterly emissions for each simple-cycle turbine.

**Table 2-7 – Maximum Quarterly Turbine Emissions**

Parameter	Events per Qtr	Hours per Quarter	Total NOx (lbs)	Total CO (lbs)	Total VOC (lbs)	Total SOx (lbs)	Total PM <sub>10</sub> (lbs)
Startup	190	95.0	589	3,686	152	38	380
Shutdown	190	47.5	646	4,104	171	19	190
Normal Op	N/A	550	1,491	1,452	363	220	2,200
Total		692.5	2,726	9,242	686	277	2,770

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes

SU/SD and normal operation emission factors from PTOs REPR-20-03, 04 Conditions 34 and 35

Assumes no turbine downtime between startups and shutdowns

Table 2-8 compares the proposed maximum turbine emissions to the current quarterly emission limits in PTOs REPR-20-03 and REPR-20-04.

**Table 2-8 – Quarterly Turbine Emissions Increase**

Parameter	NOx (lbs)	CO (lbs)	VOC (lbs)	SOx (lbs)	PM <sub>10</sub> (lbs)
Proposed Limit	2,726	9,242	686	277	2,770
Permit Limit	802	2,168	200	96	844
Increase	1,924	7,074	486	181	1,926

PTOs REPR-20-03, 04 Condition 36 lists the current quarterly emission limits

## 2.2.9 Annual Emission Limits

Table 2-9 shows the proposed maximum annual emissions for each simple-cycle turbine.

**Table 2-9 – Maximum Annual Turbine Emissions**

Parameter	Events per Year	Hours per Year	Total NOx (lbs)	Total CO (lbs)	Total VOC (lbs)	Total SOx (lbs)	Total PM <sub>10</sub> (lbs)
Startup	760	380	2,356	14,744	608	152	1,520
Shutdown	760	190	2,584	16,416	684	76	760
Normal Op	N/A	2,200	5,962	5,808	1452	880	8,800
Total		2,770	5.45	18.48	1.37	0.55	5.54

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes

SU/SD and normal operation emission rates from PTOs REPR-20-03, 04 Conditions 34 and 35

Assumes no turbine downtime between startups and shutdowns

Table 2-10 compares the proposed maximum turbine emissions to the current annual emission limits in PTOs REPR-20-03 and REPR-20-04.

**Table 2-10 – Annual Turbine Emissions Increase**

Parameter	NOx (tons)	CO (tons)	VOC (tons)	SOx (tons)	PM <sub>10</sub> (tons)
Proposed Limit	5.45	18.48	1.37	0.55	5.54
Permit Limit	0.40	1.08	0.10	0.05	0.42
Increase	5.05	17.40	1.27	0.50	5.12

## 2.3 Proposed Revised Permit Conditions

REU is proposing the following revisions to the following permit conditions for PTOs REPR-20-03 and REPR-20-04. Changes are in **bold** ~~strikeout~~ and underline.

4. Roseville Electric shall not operate the unit such that the heat input to the CTG exceeds ~~73,220~~ **201,355** MMBtu (HHV) per calendar quarter, ~~not including heat input attributable to startup and shutdown periods as defined in Conditions 10 and 11.~~
5. Roseville Electric shall not operate the unit such that the heat input to the CTG exceeds ~~73,220~~ **805,420** MMBtu (HHV) per calendar year, ~~not including heat input attributable to startup and shutdown periods as defined in Conditions 10 and 11.~~
- ~~6. Roseville Electric shall not operate the CTG such that the hours of operation exceed 200 hours per calendar quarter.~~
- ~~7. Roseville Electric shall not operate the CTG such that the hours of operation exceed 200 hours per year.~~
12. Roseville Electric shall limit the total CTG startup events to no more than ~~4~~ **6** startups per day, ~~40~~ **190** startups per calendar quarter, and ~~40~~ **760** startups per calendar year.
13. Roseville Electric shall limit the total CTG shutdown events to no more than ~~4~~ **6** shutdowns per day, ~~40~~ **190** shutdowns per calendar quarter, and ~~40~~ **760** shutdowns per calendar year.
36. Roseville Electric shall ensure that the quarterly emissions from the CTG, including emissions generated during gas turbine startups, shutdowns, and malfunctions, do not exceed the limits established in (a) through (e) below. Compliance with mass emissions of VOCs, PM10, and SOx shall be demonstrated by using the heat input-based emission factors established in Condition 30 multiplied by the CTG's quarterly fuel consumption or heat input:
  - a. NOx mass emissions (calculated as NO2) at the exhaust of the CTG shall not exceed ~~802~~ **2,726** pounds per quarter;
  - b. CO mass emissions at the exhaust of the CTG shall not exceed ~~2,168~~ **9,242** pounds per quarter;
  - c. VOC mass emissions (calculated as CH4) at the exhaust of the CTG shall not exceed ~~200~~ **686** pounds per quarter;
  - d. PM10 mass emissions at the exhaust of the CTG shall not exceed ~~844~~ **2,770** pounds per quarter;
  - e. SOx mass emissions (calculated as SO2) at the exhaust of the CTG shall not exceed ~~96~~ **277** pounds per quarter.
37. Roseville Electric shall ensure that the annual emissions from the CTG, including emissions generated during gas turbine startups, shutdowns, and malfunctions, do not exceed the limits established in (a) through (e) below. Compliance with mass emissions of VOCs, PM10,

*and SOx shall be demonstrated by using the heat input-based emission factors established in Condition 30 multiplied by the CTG's annual fuel consumption or heat input:*

- a. NOx mass emissions (calculated as NO<sub>2</sub>) at the exhaust of the CTG shall not exceed ~~0.40~~ **5.45** tons per year;*
- b. CO mass emissions at the exhaust of the CTG shall not exceed ~~1.08~~ **18.48** tons per year;*
- c. VOC mass emissions (calculated as CH<sub>4</sub>) at the exhaust of the CTG shall not exceed ~~0.10~~ **1.37** tons per year;*
- d. PM<sub>10</sub> mass emissions at the exhaust of the CTG shall not exceed ~~0.42~~ **5.54** tons per year;*
- e. SOx mass emissions (calculated as SO<sub>2</sub>) at the exhaust of the CTG shall not exceed ~~0.05~~ **0.55** tons per year.*

## 3. REGULATORY ANALYSIS

The Facility is subject to federal and PCAPCD air regulations. This section summarizes the air permitting requirements and the key air quality regulations that apply to the emission units impacted by the Project.

### 3.1 PCAPCD Requirements

#### 3.1.1 Regulation 5 – Permits

##### 3.1.1.1 Rule 501 – General Permit Requirements

Rule 501 states that any facility building, erecting, installing, altering, or replacing non-exempt equipment that causes or controls the emission of air pollutants must first obtain an authority to construct from the PCAPCD. Because REP simple-cycle turbines will be altering their permit conditions as a result of this Project, REU is submitting this application for an authority to construct.

##### 3.1.1.2 Rule 502 – New Source Review

PCAPCD adopted Rule 502 to provide for preconstruction review of new or modified facilities, to ensure that affected sources do not interfere with the attainment of ambient air quality standards. In general, Rule 502 contains four separate elements as part of a New Source Review (NSR) analysis:

- ▶ Best Available Control Technology (BACT);
- ▶ Emission Offsets;
- ▶ Air Quality Impact Analysis; and
- ▶ Public Notification Requirements.

In order to determine which of these NSR elements is applicable to the Project, we must first determine if REP is a “major stationary source” and then whether the Project is a “major modification.”

REP is a “major stationary source” per Rule 502, Section 229 for NO<sub>x</sub> per the information presented in Table 3-1.

**Table 3-1. PCAPCD Major Stationary Source Applicability Determination**

<b>Pollutant</b>	<b>Major Source Threshold (tpy)</b>	<b>Current REP Facility Annual Permit Limit (tpy)</b>	<b>Major Source?</b>
VOC	25	13.42	<b>No</b>
NO <sub>x</sub>	25	31.09	<b>YES</b>
SO <sub>2</sub>	100	6.83	<b>NO</b>
PM <sub>2.5</sub>	100	35.76	<b>NO</b>

A “major modification” can only apply to a pollutant for which the site is a “major stationary source,” and REP is only major for the pollutant NO<sub>x</sub>. Pursuant to Rule 502, Sections 231 and 252, a major modification for NO<sub>x</sub> requires an emission increase of 25 tons per year or more. Rule 502, Section

301 describes the calculation procedures for determining major modifications as well as BACT and offsets applicability.

*301 EMISSION AND OFFSET CALCULATIONS: The following provisions shall be used to calculate emission increases and decreases from all new and modified emissions units located at a stationary source.*

*301.1 **BACT – Emissions Increase:** The emissions increase for each emissions unit related to the project for the purposes of determining BACT applicability shall be calculated as the **Proposed Emissions minus the Baseline Actual Emissions**. Calculations shall be performed separately for each emissions unit for each calendar quarter.*

*301.2 Emissions Increase or Decrease for New Major Sources or **Major Modifications:** The emissions increase or decrease for each emissions unit related to the project for the purposes of determining Major Source or Major Modification applicability shall be calculated as the **Proposed Emissions, minus the Baseline Actual Emissions**. Emission increases or decreases shall be calculated for each emission unit and the project as a whole.*

*301.3 Emissions Increase or Decrease for **General (State) Offsets:** The emissions increase or decrease for each emission unit related to the project for the purpose of determining the quantity of offsets required shall be calculated as follows:*

*301.3.1 If the Potential to Emit of the **stationary source** prior to the modification exceeds the offset threshold in Section 303.1, then **subtract the Potential to Emit prior to the modification from the Proposed Emissions**.*

*301.3.2 If the Potential to Emit of the **stationary source** prior to the modification is below the offset threshold in Section 303.1, then subtract the offset threshold in Section 303.1 for that pollutant from the Proposed Emissions.*

*Emission increases or decreases shall be calculated for each emission unit and the project as a whole. [Emphasis added.]*

Per Section 301.2 above, the major modification calculation compares “baseline actual emissions” to “proposed” maximum potential emissions, and the maximum potential NO<sub>x</sub> emissions for REP are 31.09 tons/year per Table 1 in Condition 38 (see Section 2.1 above) which are not changing as part of the project. Baseline actual emissions are defined in Rule 502, Section 206 as the actual emissions averaged over the 2-year period immediately preceding the date of application, unless this 2-year period is not representative of normal source operations.

Baseline NO<sub>x</sub> emissions for REP for the 2-year period immediately prior to this application submittal are over 10 tons/year (see Attachment B), resulting in a maximum increase of 31.09 – 10 = 21.09 tons/year NO<sub>x</sub>, which is below the 25 tons/year major modification threshold. Therefore, the Project will not result in a major modification for NO<sub>x</sub>.

### 3.1.1.2.1 BACT Analysis

BACT requirements in the PCAPCD are triggered by emission increase calculations that compare “baseline actual emissions” to proposed emissions on a quarterly basis for new and modified sources. If a project results in a quarterly emissions increase above baseline emissions for any emissions unit, then the applicant must compare the maximum daily emissions per emissions unit to the BACT thresholds in Rule 502, Section 302.

The increase in operating hours for the REP simple-cycle turbines results in a quarterly emissions increase as shown in Table 2-8 above. Consequently, Table 3-2 compares the proposed maximum daily emissions for each simple-cycle unit to the BACT thresholds in Rule 502, Section 302:

**Table 3-2. PCAPCD BACT Applicability Determination**

<b>Pollutant</b>	<b>BACT Threshold (lb/day)</b>	<b>Proposed Maximum Emissions (lb/day)</b>	<b>BACT Triggered?</b>
VOC	10	23.1	<b>YES</b>
NOx	10	91.8	<b>YES</b>
SOx	80	9.6	<b>NO</b>
PM <sub>10</sub> /PM <sub>2.5</sub>	80	96.0	<b>YES</b>
CO	550	297.5	<b>NO</b>

As indicated in Table 3-2, BACT is triggered for NOx, VOC and PM<sub>10</sub>/PM<sub>2.5</sub>. However, BACT has not changed for simple-cycle turbines since these units were permitted in 2021. Therefore, BACT is proposed to be the following as currently listed in PTOs REPR-20-03 and REPR-20-04 Condition 34:

- ▶ The NOx emission concentration at the exhaust of the CTG shall not exceed 2.5 ppmv, on a dry basis, corrected to 15% O<sub>2</sub>, averaged over any 1-hour period;
- ▶ The CO emission concentration at the exhaust of the CTG shall not exceed 4.0 ppmv, on a dry basis, corrected to 15% O<sub>2</sub> averaged over any 1-hour period; and
- ▶ PM<sub>10</sub> mass emissions at the exhaust of the CTG shall not exceed 4.0 pounds per hour.

### 3.1.1.2.2 Offset Analysis

The Project will not result in a “major modification” and, as a result, the calculation procedure in Rule 502, Section 301.2 is not applicable to the Project. Instead, per Rule 502 Section 301.3, for “General (State) Offsets,” the “potential to emit” prior to the modification is compared to the “proposed emissions,” and the proposed quarterly and annual emissions for the REP Facility will not change as a result of the simple-cycle turbine Project.

Note that Rule 502 Section 301.3 requires that “emission increases or decreases shall be calculated for each emission unit and the project as a whole.” The simple-cycle turbine “emission unit” will result in quarterly and annual emission increases, but the REP Facility will not. Because REP Facility quarterly emissions will not increase, offsets are not required for this permit modification.

#### **3.1.1.2.3 Air Quality Impact Analysis**

Hourly emissions will not change for the simple-cycle turbines, and quarterly and annual emissions will not change for the REP Facility. The Project is not a major modification and does not trigger federal modeling requirements. Based on these considerations, ambient air quality modeling should not be required for this operating hour increase permit action pursuant to PCAPCD Rule 502, Section 305.2, which allows for a discretionary decision by the Air Pollution Control Officer (APCO) regarding air quality impact modeling:

*305.2 Ambient Air Quality Standards: In no case shall emissions from the new or modified stationary source prevent or interfere with the attainment or maintenance of any applicable ambient air quality standard. **The Air Pollution Control Officer (APCO) may require the use of an air quality model to estimate the effects of a new or modified stationary source. . . .***

#### **3.1.1.2.4 Public Notification Requirements**

Rule 502, Section 103 includes the public notice requirements for New Source Review. In general, public notice is required if a project in the Sacramento Valley Air Basin either 1) triggers offsets, or 2) emits increased actual lead emissions of 5 tons per year or greater. The Project does not trigger New Source Review public notice requirements according to these criteria.

In addition to the notification requirements of Rule 502, Section 103, California Health and Safety Code (HSC) Section 42301.6 requires that an additional public notice be distributed whenever an Authority to Construct is issued that would allow increased toxic air contaminant emissions within 1,000 feet of the outer boundary of a school site. However, the Project is not within 1,000 feet of the outer boundary of a school site and does not result in an increase in facility-wide toxic air contaminant emissions; therefore, notification is not required under HSC Section 42301.6.

#### **3.1.1.3 Rule 507 – Title V Federal Operating Permit Program**

REP is an existing Title V facility with Title V Operating Permit No. REP-001. The proposed Turbine Operating Hour Increase Project will require a significant modification to REP's Title V permit pursuant to Rule 507, Section 227, because emission limits, operating hours, and associated permit conditions will be revised as a result of the Project, and these revisions result in a case-by-case determination of an emission standard (BACT determinations for NO<sub>x</sub>, VOC, and PM<sub>10</sub>).

REP requests that the PCAPCD process this application and Title V permit modification as a significant Title V amendment. REP will submit the PCAPCD application forms necessary for this modification to the REP Title V permit at a later date. Rule 507, Section 302.6 requires REP to submit an application for a significant Title V permit modification within 12 months of commencing operation of the changes.

#### **3.1.1.4 Rule 518 – Prevention of Significant Deterioration (PSD) Permit Program**

Rule 518 incorporates the Federal Prevention of Significant Deterioration (PSD) program by reference (40 CFR 52.21). The PSD program requires pre-construction review and permitting of new or modified major stationary sources of air pollution to prevent significant deterioration of ambient air quality. PSD applies to pollutants for which ambient concentrations do not exceed the corresponding National Ambient Air Quality Standards



(i.e., attainment pollutants). For the proposed Turbine Operating Hours Increase Project, the emitted pollutants are NOx, SOx, CO, VOC, and PM<sub>10</sub>/PM<sub>2.5</sub>. While the Sacramento Air Basin portion of PCAPCD is classified as an attainment area for NOx, SOx, CO, and PM<sub>10</sub>, the project area is a nonattainment area with respect to the PM<sub>2.5</sub> and ozone (VOC) National Ambient Air Quality Standards. Consequently, the PSD regulations do not apply to VOC and PM<sub>2.5</sub> emissions from the Project.

The federal PSD requirements apply on a pollutant-specific basis to any project that is a new major stationary source or a major modification to an existing major stationary source (these terms are defined in the PSD regulations at 40 CFR 52.21). REP is not an existing PSD major source because its emissions are not permitted to exceed 100 tons per year per Condition 38, Table 1, as described in Section 2.1 above. Therefore, no PSD significant increase determination is required because the facility is not a PSD major stationary source.

### **3.1.2 Regulation 6 – Fees**

#### ***3.1.2.1 Rule 601 – Stationary Source Permit Fees***

The REP Turbine Operating Hours Increase Project permit application is subject to the permit fees established by Rule 601. The initial permit fee is determined in accordance with PCAPCD Rule 601 based on Sections 301 and 302 as follows:

##### ***301 APPLICATION FILING FEE:***

*301.1 Except as provided in Subsections 301.2, and Subsection 301.3, every applicant filing for a new initial permit, a modification of permitted equipment, the revision of conditions, or determination of emission reduction credits shall pay a filing fee as set forth in Schedule 601-A.1, of the District Fee Schedule.*

##### ***302 AUTHORITY TO CONSTRUCT FEE:***

*302.1 Except as provided in Section 310 for changes in ownership or name, and Section 311 for permit alterations, additions, or revisions, every applicant who files an application for a permit, including one for change of location, shall, in addition to the paying a filing fee, pay an engineering evaluation fee which includes the appropriate engineering analysis fee set forth in Section 305 and an emissions reduction credit analysis fee, when applicable.*

The application filing fee per Schedule 601-A.1 is \$434.06 per application, and the engineering evaluation fee is \$16,337.14 per Schedule 601-E.2 for fuel burning units larger than 200 MMBtu/hr. REP will be submitting the \$434.06 application filing fee with this application upon invoicing by PCAPCD. REP understands that PCAPCD will invoice REP separately for the Sacramento Valley Basin surcharge fee as well as the engineering evaluation fee.

### **3.1.3 Regulation 2 – Prohibitions**

#### **3.1.3.1 Rule 202 – Visible Emissions**

Rule 202 prohibits the emission of air contaminants that are darker than Ringelmann No. 1 or 20% opacity for more than 3-minutes in a 1-hour period. Water vapor is not included in an opacity determination per Rule 204. The gas-fired simple cycle turbines will not create visible emissions in excess of the limits of this rule.

#### **3.1.3.2 Rule 205 – Nuisance**

This rule prohibits the discharge of air contaminants in quantities that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. The Project will not affect REP's ongoing compliance with the Rule 205 nuisance provisions.

PCAPCD regulates new and modified sources of toxic air contaminants (TACs) under this rule by implementing what is commonly known as "Toxics New Source Review." Generally under this toxics policy, modified projects with TAC emission increases are required to perform a screening-level health risk assessment. REP was evaluated for health risk when it was originally permitted and the Turbine Operating Hours Increase Project will not result in an increase in site-wide fuel combustion. Therefore, site-wide TAC emissions are not expected to exceed the levels evaluated in that original permit application. Therefore, no further toxics review is required.

#### **3.1.3.3 Rule 207 – Particulate Matter**

Rule 207 prohibits emissions of particulate matter (PM) in excess of 0.1 gr/dscf. The exhaust PM concentration from the gas turbines has been measured on multiple occasions during annual source tests and demonstrated compliance with this requirement. The REP Turbine Increased Operating Hour Project will not change turbine PM emission rates. Therefore, the Project will continue to comply with the Rule 207 PM emission limit.

#### **3.1.3.4 Rule 210 – Specific Contaminants**

Rule 210 prohibits emissions of combustion contaminants in excess of 0.1 gr/dscf @ 12% CO<sub>2</sub>. As noted above, the exhaust PM concentration from the turbines has been measured on multiple occasions during annual source tests and has demonstrated compliance with this requirement.

Rule 210 also prohibits emissions of sulfur compounds in excess of 0.2% by volume, or 500 ppmv. The exhaust SO<sub>x</sub> concentration from the turbines is significantly less than 500 ppmv and has been measured during annual source tests and demonstrated compliance with this requirement. The REP Turbine Operating Hours Increase Project will not change turbine SO<sub>x</sub> emission rates. Therefore, the Project will continue to comply with the Rule 210 emission limits.

#### **3.1.3.5 Rule 250 – Stationary Gas Turbines**

Rule 250 prohibits NO<sub>x</sub> emissions in excess of 9 ppmv @ 15% O<sub>2</sub> based on a 1-hour average, with exceptions for startup and shutdown, from gaseous fuel-fired turbines with a maximum electrical output rating of 10 MW or greater operating 877 hours or more per

year. Rule 250 is applicable to the REP turbines, which have a maximum electrical output rating of 33.6 MW and operate more than 877 hours/year. At a permitted NO<sub>x</sub> concentration of 2.5 ppmv @ 15% O<sub>2</sub> averaged over one hour, the REP turbines comply with the Rule 250 NO<sub>x</sub> limit.

### **3.1.4 Standards of Performance for New Stationary Sources (NSPS)**

NSPS applies to certain types of equipment that are newly constructed, modified, or reconstructed after specified applicability dates. Only the NSPS subparts that may be potentially applicable to the REP simple-cycle turbines are addressed in this section.

#### **3.1.4.1 40 CFR 60 Subpart A – General Provisions**

All affected sources are subject to the general provisions of NSPS Subpart A unless specifically excluded by the source-specific NSPS. Subpart A requires initial notification and performance testing, recordkeeping, monitoring; provides reference methods; and mandates general control device requirements for all other subparts as applicable. REP will continue to meet all applicable requirements of the general provisions outlined in 40 CFR 60 Subpart A.

#### **3.1.4.2 40 CFR Part 60 Subpart KKKK – NSPS for Stationary Gas Turbines**

NSPS KKKK, *Standards of Performance for Stationary Gas Turbines*, applies to stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the lower heating value of the fuel fired. Based on the construction/modification date (after February 2005) and the heat input at peak loads, the simple-cycle combustion turbines at REP are subject to NSPS Subpart KKKK. However, the Project is not a “modification” under NSPS because it does not result in an increase in hourly emissions of a regulated NSPS pollutant and the increase in operating hours is accomplished without a capital expenditure per 40 CFR 60.14. REP will continue to comply with all applicable NSPS Subpart KKKK requirements as outlined in the current Title V permit.

#### **3.1.4.3 40 CFR Part 60 Subparts TTTT and TTTTa – Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units**

NSPS TTTT, *Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units*, applies to electric generating units that commenced construction after January 8, 2014 but before May 23, 2023 and/or commenced reconstruction after June 18, 2014 but before May 23, 2023. The simple-cycle combustion turbines at REP were constructed after January 8, 2014 but before May 23, 2023, as such, NSPS Subpart TTTT applies to the simple-cycle units at REP.

Section 60.5520(d)(1) exempts stationary combustion turbines firing natural gas fuel from most of the requirements in Subpart TTTT:

*60.5520(d)(1) Owners or operators of stationary combustion turbines that are only permitted to burn fuels with a consistent chemical composition (i.e., uniform fuels) that result in a consistent emission rate of 69 kilograms per gigajoule (kg/GJ) (160 lb CO<sub>2</sub>/MMBtu) or less are not subject to any monitoring or reporting requirements under this subpart. These fuels include, but are not limited to hydrogen, natural gas, methane, butane,*

*butylene, ethane, ethylene, propane, naphtha, propylene, jet fuel kerosene, No. 1 fuel oil, No. 2 fuel oil, and biodiesel. Stationary combustion turbines qualifying under this paragraph are only required to maintain purchase records for permitted fuels.*

The default CO<sub>2</sub> emission factor for natural gas fuel in 40 CFR 98, Table C-1 is 53.06 kg CO<sub>2</sub>/MMBtu, which is equivalent to 117.0 lb CO<sub>2</sub>/MMBtu, and which is below the 160 lb CO<sub>2</sub>/MMBtu standard in Subpart TTTT. Therefore, REP only has to maintain natural gas purchase records in order to comply with Subpart TTTT.

The GHG standards included in NSPS subpart TTTTa apply to any stationary combustion turbine that commences construction or reconstruction after May 23, 2023. The REP simple-cycle turbines were not constructed or reconstructed after May 23, 2023, and therefore subpart TTTTa does not apply to these turbines.

### **3.1.5 California Environmental Quality Act (CEQA)**

Under Rule 502, Section 408, the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate if the Air Pollution Control Officer finds that the project which is the subject of an application would not comply with CEQA. Because the REP simple-cycle turbines underwent review/approval by the CEC as new emergency and temporary generators, we expect that CEC staff will determine whether and to what extent this Project will require CEC and CEQA review.

## APPENDIX A. PCAPCD FORMS

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<b>AUTHORITY TO CONSTRUCT AND PERMIT TO OPERATE APPLICATION</b>		<b>FOR APCD USE ONLY</b>	
		Date APCD TO ENTER	Permit No. APCD TO ENTER
		Amt Pd. APCD TO ENTER	
COMPANY	Company/Owner (printed or typed) Roseville Electric Utility	Company Contact Julie Manfredi	
	Mailing Address 2090 Hilltop Circle	Title Electric Compliance Officer	
	City, State & Zip Code Roseville, CA 95747	Phone ( 916 ) 759-7433	Email jmanfredi@roseville.ca.us
FACILITY	Name of Facility (if different than above): Roseville Energy Park	Facility Contact and Title Nathan Ribordy	
	Street Address: 5120 Philip Road	Title Power Generation Superintendent	
	City, State and Zip Code Roseville, CA 95747	Phone ( 916 ) 746-1673	Email NRibordy@roseville.ca.us
PREPARER	Firm Name of Application Preparer Trinity Consultants	Name of Preparer Jeffrey Adkins	
	Mailing Address of Firm 7919 Folsom Blvd, Suite 320	Title Principal Consultant	
	City, State & Zip Code Sacramento, CA 95826	Phone ( 916 ) 273-5127	Email jadkins@trinityconsultants.com
APPLICATION TYPE	<input type="checkbox"/> Authority to Construct – New Facility <input type="checkbox"/> Permit Amendment <input type="checkbox"/> Title V (Major Source) <input checked="" type="checkbox"/> Authority to Construct – Modified Facility <input type="checkbox"/> Emission Reduction Credit <input type="checkbox"/> Synthetic Minor Source Status <input type="checkbox"/> Authority to Construct – Gasoline Dispensing Facility - Number of Nozzles (Gas Only) _____		
Is the location within 1000 feet from the boundary of a K – 12 school?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Brief Description of the Project/Request (attach detailed permit application information)			
<b>Increase operating hours for REP simple-cycle turbines PTOs REPR-20-03, 04</b>			
Schedule of Operation	Up to 24	hours/day	Up to 7
			days/week
			Up to 52
			weeks/year
What is this Facility's SIC (Standard Industrial Classification) Code?		4911	
For Authority to Construct applications, complete the following:			
Construction Start Date <u>N/A</u>		Construction Completion Date <u>N/A</u>	
		Start-up Date <u>N/A</u>	
Indicate where the following documents will be mailed:	Company	Facility	Preparer
Authority to Construct (check all that apply)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Permit(s) to Operate (check only one)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Invoice(s) (check only one)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Identify all emissions violations</b> for which a notice of violation was written and a variance was not in effect at any facility owned or operated by the applicant in the state in the last three years prior to the date of application. If no emission violations, check this box <input checked="" type="checkbox"/> None			
<b>Identify prior CEQA review</b> - Please indicate whether or not the subject of this permit has been previously reviewed under the California Environmental Quality Act. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, provide a copy of the environmental documents or indicate the name of the document and which agency approved it.			
CEC Application for Certification and CEC license to operate emergency and temporary power generators.			
<b>Statement of Company's Responsible Person</b> "I am familiar with the Rules and Regulation of the Placer County Air Pollution Control District and I certify that the information herein and the data submitted with the application is true with regards to the operation of the plant and /or equipment which is the subject of this application and that such operation will comply with said Rules and Regulations."			
The applicant/permittee has an obligation to defend and indemnify the District against third party challenges in accordance with District Rule 411, Indemnification of District.			
Signature of Company's Responsible Person		Title <u>Electric Compliance Officer</u>	
Name (Printed or Typed) <u>Julie Manfredi</u>		Date <u>May 28, 2025</u>	

## **APPENDIX B. EMISSION CALCULATIONS**

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## CT1 and CT2 - Fuel Use & CEMS Data

**Table B13 - REP Baseline CEMS Emissions**

CT1	Month	CO LBS.	NOX LBS.
2023	January	1,066.47	752.12
2023	February	927.62	1,092.90
2023	March	485.61	1,048.87
2023	April	0	0
2023	May	472.05	61.86
2023	June	72.62	115.58
2023	July	494.56	1,815.33
2023	August	404.28	1,607.97
2023	September	497.27	1,439.98
2023	October	309.32	325.07
2023	November	0	0
2023	December	0	0
2024	January	630.44	1,697.15
2024	February	239.34	750.92
2024	March	0	0
2024	April	453.67	1,317.72
2024	May	409.9	1,123.72
2024	June	686.17	663.79
2024	July	445.93	1,606.92
2024	August	442.11	1,372.25
2024	September	337.45	1,385.38
2024	October	437.23	1,483.15
2024	November	743.05	1,150.33
2024	December	849.41	1,802.89
Total (tons) =			5.65

CT2	Month	CO LBS.	NOX LBS.
2023	January	584.72	1,377.33
2023	February	1,489.42	2,412.98
2023	March	1,415.51	973.27
2023	April	0	0
2023	May	0	0
2023	June	0	0
2023	July	536.71	1,112.51
2023	August	538.35	1,720.21
2023	September	428.13	1,092.61
2023	October	261.4	605.95
2023	November	67.75	57.03
2023	December	0	0
2024	January	611.89	1,472.45
2024	February	98.76	56.14
2024	March	66.64	24.42
2024	April	377.22	76.55
2024	May	305.52	653.45
2024	June	574.63	1,458.95
2024	July	457.58	1,719.54
2024	August	597.8	1,380.55
2024	September	545	1,677.16
2024	October	465.08	1,196.46
2024	November	316.27	421.56
2024	December	0	0
Total (tons) =			4.87
Combined Total (tons) =			10.53



**Table B1 - RPEAK Hours Per Turbine**

Quarter	SU/SD Events	SU/SD Hours	Normal Op Hours
Q1	190	142.5	550
Q2	190	142.5	550
Q3	190	142.5	550
Q4	190	142.5	550
<b>Total =</b>	<b>760</b>	<b>570</b>	<b>2,200</b>

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes

**Table B2 - RPEAK Emission Factors (lb/hr)**

Pollutant	SU/SD	Normal
PM10	4.00	4.00
SO2	0.40	0.40
NOx	6.50	2.71
CO	41.00	2.64
VOC	1.70	0.66

Source: PTOs REPR-20-03, 04 Condition 34 and 35

**Table B3 - RPEAK Emissions (2 Turbines)**

Quarter	NOx	CO	PM10	SO2	VOC	Units
Q1	5,451	18,484	5,920	592	1,372	lbs
Q2	5,451	18,484	5,920	592	1,372	lbs
Q3	5,451	18,484	5,920	592	1,372	lbs
Q4	5,451	18,484	5,920	592	1,372	lbs
<b>All</b>	<b>10.9</b>	<b>37.0</b>	<b>11.8</b>	<b>1.2</b>	<b>2.7</b>	<b>tons/yr</b>

Based on Table B1 RPEAK SU/SD hours/turbine and Table B2 emission factors.

**Table B4 - REP Baseline Maximum Quarterly Total, 2020-2024**

Quarter	NOx	CO	PM10	SO2	VOC	Units
Q1	7,657	5,969	1,939	985	3,234	lbs
Q2	5,638	3,966	1,959	662	1,875	lbs
Q3	9,898	3,491	2,858	1,081	3,446	lbs
Q4	9,942	4,162	2,331	1,077	3,573	lbs
<b>All</b>	<b>16.6</b>	<b>8.8</b>	<b>4.5</b>	<b>1.9</b>	<b>6.1</b>	<b>tons/yr</b>

All data from REP Annual EI Reports except 2024 based on CEMS data.

Baseline maximum quarterly emissions only include REP Turbines 1 and 2

**Table B5 - REP Baseline + RPEAK Emissions**

Quarter	NOx	CO	PM10	SO2	VOC	Units
Q1	13,108	24,453	7,859	1,577	4,606	lbs
Q2	11,089	22,450	7,879	1,254	3,247	lbs
Q3	15,349	21,975	8,778	1,673	4,818	lbs
Q4	15,393	22,646	8,251	1,669	4,945	lbs
<b>All</b>	<b>27.5</b>	<b>45.8</b>	<b>16.4</b>	<b>3.1</b>	<b>8.8</b>	<b>tons/yr</b>

**Table B6 - REP Facility Permit Limits**

Quarter	NOx	CO	PM10	SO2	VOC	Units
Q1	15,546	27,121	17,673	3,400	5,832	lbs
Q2	13,412	33,872	15,513	2,893	7,455	lbs
Q3	17,646	28,515	19,168	3,709	6,672	lbs
Q4	15,572	30,202	19,158	3,663	6,890	lbs
<b>All</b>	<b>31.09</b>	<b>59.86</b>	<b>35.76</b>	<b>6.83</b>	<b>13.42</b>	<b>tons/yr</b>

Source: PTOs REPR-20-03, 04 Condition 38

**Table B7 - REP+RPEAK Emissions Compared to Permit Limits**

Quarter	NOx	CO	PM10	SO2	VOC	Units
Q1	2,438	2,668	9,814	1,823	1,226	lbs
Q2	2,323	11,422	7,634	1,639	4,208	lbs
Q3	2,297	6,540	10,390	2,036	1,854	lbs
Q4	179	7,556	10,907	1,994	1,945	lbs
<b>All</b>	<b>3.6</b>	<b>14.1</b>	<b>19.4</b>	<b>3.7</b>	<b>4.6</b>	<b>tons/yr</b>

Table shows Permit Limit minus (REP Baseline+RPEAK) Emissions

Red text indicates total REP+RPEAK emissions **not** within permit limits.

**Table B8 - Worst Case Daily Turbine Emissions**

Parameter	Proposed		Total Emissions (lb/day)				
	Number	Hours/day	NOx	CO	VOC	SOx	PM10
Startup	6	3	18.6	116.4	4.8	1.2	12.0
Shutdown	6	1.5	20.4	129.6	5.4	0.6	6.0
Normal Op	N/A	19.5	52.8	51.5	12.9	7.8	78.0
<b>Total</b>		<b>24</b>	<b>91.8</b>	<b>297.5</b>	<b>23.1</b>	<b>9.6</b>	<b>96.0</b>

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes

NOx, CO, and VOC startup and shutdown emission rates are per event, normal operation emission rates are per hour

Assumes no turbine downtime between startups and shutdowns

PTOs REPR-20-03, 04 Condition 35 lists startup and shutdown emission rates

PTOs REPR-20-03, 04 Condition 34 lists normal operating emission rates

**Table B9 - Worst Case Quarterly Turbine Emissions**

Parameter	Proposed		Total Emissions (lb/quarter)				
	Number	Hours/ Quarter	NOx	CO	VOC	SOx	PM10
Startup	190	95	589	3,686	152	38	380
Shutdown	190	48	646	4,104	171	19	190
Normal Op	N/A	550	1,491	1,452	363	220	2,200
<b>Total</b>		<b>693</b>	<b>2,726</b>	<b>9,242</b>	<b>686</b>	<b>277</b>	<b>2,770</b>

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes

NOx, CO, and VOC startup and shutdown emission rates are per event, normal operation emission rates are per hour

All SOx and PM10 emission rates are per hour.

Assumes no turbine downtime between startups and shutdowns

PTOs REPR-20-03, 04 Condition 35 lists startup and shutdown emission rates

PTOs REPR-20-03, 04 Condition 34 lists normal operating emission rates

**Table B10 - Quarterly Turbine Emissions Increase**

Parameter	Emissions (lb/quarter)				
	NOx	CO	VOC	SOx	PM10
Proposed	2,726	9,242	686	277	2,770
Permit Limit	802	2,168	200	96	844
<b>Increase</b>	<b>1,924</b>	<b>7,074</b>	<b>486</b>	<b>181</b>	<b>1,926</b>

PTOs REPR-20-03, 04 Condition 36 lists quarterly emission limits

**Table B11 - Worst Case Annual Turbine Emissions**

Parameter	Proposed		Total Emissions (lb/year)				
	Number	Hours/ Year	NOx	CO	VOC	SOx	PM10
Startup	760	380.0	2,356	14,744	608	152	1,520
Shutdown	760	190.0	2,584	16,416	684	76	760
Normal Op	N/A	2,200.0	5,962	5,808	1,452	880	8,800
<b>Total</b>		<b>2,770.0</b>	<b>5.45</b>	<b>18.48</b>	<b>1.37</b>	<b>0.55</b>	<b>5.54</b>

PTOs REPR-20-03, 04 Conditions 10 & 11 limit startup to 30 minutes and shutdown to 15 minutes

NOx, CO, and VOC startup and shutdown emission rates are per event, normal operation emission rates are per hour

All SOx and PM10 emission rates are per hour.

Assumes no turbine downtime between startups and shutdowns

PTOs REPR-20-03, 04 Condition 35 lists startup and shutdown emission rates

PTOs REPR-20-03, 04 Condition 34 lists normal operating emission rates

**Table B12 - Annual Turbine Emissions Increase**

	<b>Emissions (ton/yr)</b>				
<b>Parameter</b>	<b>NOx</b>	<b>CO</b>	<b>VOC</b>	<b>SOx</b>	<b>PM10</b>
Proposed	5.45	18.48	1.37	0.55	5.54
Permit Limit	0.40	1.08	0.10	0.05	0.42
<b>Increase</b>	<b>5.05</b>	<b>17.40</b>	<b>1.27</b>	<b>0.50</b>	<b>5.12</b>

PTOs REPR-20-03, 04 Condition 37 lists annual emission limits