

**CALIFORNIA ENERGY COMMISSION**

1516 Ninth Street  
Sacramento, California 95814

Main website: [www.energy.ca.gov](http://www.energy.ca.gov)  
CEC-57 (Revised 1/19)



## **STATEMENT OF STAFF APPROVAL OF PROPOSED CHANGE ROSEVILLE ENERGY PARK (REP) (03-AFC-01C)**

On January 5, 2021, DayZen LLC filed, on behalf of the Roseville Electric Utility the owner of the Roseville Energy Park (REP), a post certification petition with the California Energy Commission (CEC). The 120-megawatt (MW) facility was certified by the CEC in April 2005, and began commercial operation in November 2007. The facility is located on a 12-acre site adjacent to the north side of the Pleasant Grove Waste-Water Treatment Plant in the City of Roseville, Placer County.

### **DESCRIPTION OF PROPOSED CHANGE**

The petition requests the installation and operation of:

- Siemens A+ turbine upgrade package (A+ Turbine Upgrade) to both combustion turbines.
- Piezo-actuated valves for each burner to allow for a more stable combustion process and a more balanced combustion spread (Low Load Turndown).
- A control system upgrade that would enable the existing turbine governor to automatically take corrective actions in case of combustion instabilities in the combustion chamber.

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

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=03-AFC-01C>.

### **ENERGY COMMISSION STAFF REVIEW AND CONCLUSIONS**

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

CEC technical staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS). Staff's conclusions for all technical and environmental areas are summarized in **Table 1**.

Staff has determined that the technical or environmental areas of Biological Resources, Cultural Resources, Efficiency, Facility Design, Geological and Paleontological Resources, Hazardous Materials Management, Land Use, Public Health, Reliability, Socioeconomics, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Transmission System Engineering, Waste Management, Worker Safety and Fire Protection, and Visual Resources are not affected by the proposed changes.

For the technical areas of Air Quality and Noise and Vibration, staff has determined the project would continue to comply with applicable LORS, would not result in any significant adverse environmental impacts, and would not require a change to any conditions of certification in the Final Commission Decision (Decision). Staff notes the following for the technical areas affected by the proposed change:

### **AIR QUALITY**

The Placer County Air Pollution Control District (PCAPCD) reviewed the petition and issued Authorities to Construct/Temporary Permits to Operate (ATCs) for REP on February 11, 2021. The ACTs incorporated the proposed changes requested by Roseville Electric. Staff verified that the emissions of the criteria pollutants would be less for the proposed project modification than in the Decision. The predicted level for NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, or SO<sub>x</sub> emissions are well within the current permit limits identified for REP. Staff determined that the proposed changes would conform with the applicable LORS related to air quality and would not result in significant air quality impacts with implementation of the existing conditions of certification. Additionally, the proposed project modifications would not require any changes to the air quality conditions of certification. Please see the attached Air Quality analysis for a more detailed discussion.

### **NOISE AND VIBRATION**

Activities associated with this petition would be identical to those that take place during normal maintenance activities and outages. Any noise generated during these activities would be temporary, intermittent, and consistent with the local noise ordinance (City of Roseville Noise Ordinance). This work would result in a less-than-significant impact with implementation of the existing Noise conditions of certification in the Decision. The operational noise would not be affected as the result of the proposed changes.

**Table 1**  
**Summary of Impacts for all Technical and Environmental Areas**

Technical Areas Reviewed	Technical Area Not Affected	CEQA			Conforms with applicable LORS	Revised or New Conditions of Certification requested or recommended
		Potentially significant impact	Less than significant impact with mitigation	Less than significant impact		
Air Quality				X	X	
Biological Resources	X				X	
Cultural Resources	X				X	
Efficiency	X				X	
Facility Design	X				X	
Geological and Paleontological Resources	X				X	
Hazardous Materials Management	X				X	
Land Use	X				X	
Noise and Vibration				X	X	
Public Health	X				X	
Reliability	X				X	
Socioeconomics	X				X	
Soil and Water Resources	X				X	
Traffic and Transportation	X				X	
Transmission Line Safety and Nuisance	X				X	
Transmission System Engineering	X				X	
Visual Resources	X				X	
Waste Management	X				X	
Worker Safety and Fire Protection	X				X	

## **ENVIRONMENTAL JUSTICE**

**Figure 1** shows the 2010 census blocks in the six-mile radius of the Roseville Energy Park with a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States Environmental Protection Agency's *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. Staff conservatively obtains demographic data within a six-mile radius around a project site based on the parameters for dispersion modeling used in staff's air quality analysis. Air quality impacts are generally the type of project impacts that extend the furthest from a project site. Beyond a six-mile radius, air emissions have either settled out of the air column or mixed with surrounding air to the extent the potential impacts are less than significant. The area of potential impacts would not extend this far from the project site for most other technical areas included in staff's EJ analysis.

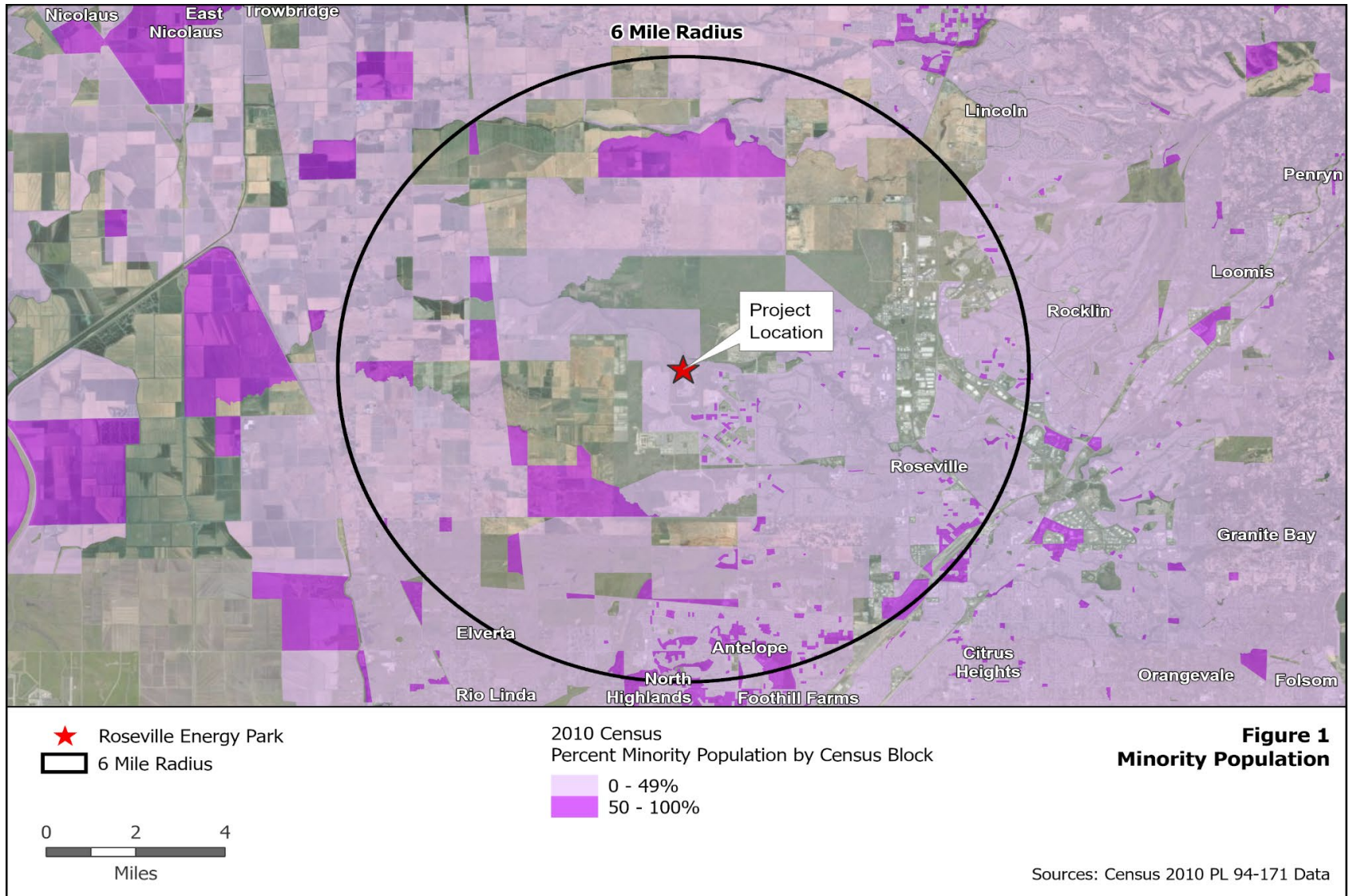
**Figure 2** shows the boundaries of the school district in relation to the six-mile radius around the Roseville Energy Park site. Based on California Department of Education data shown in **Table 2**, staff concludes that the percentage of those living in the Western Placer Unified, Roseville City Elementary, Elverta Joint Elementary, Dry Creek Joint Elementary, and Center Joint Unified school districts (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography, and thus are considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

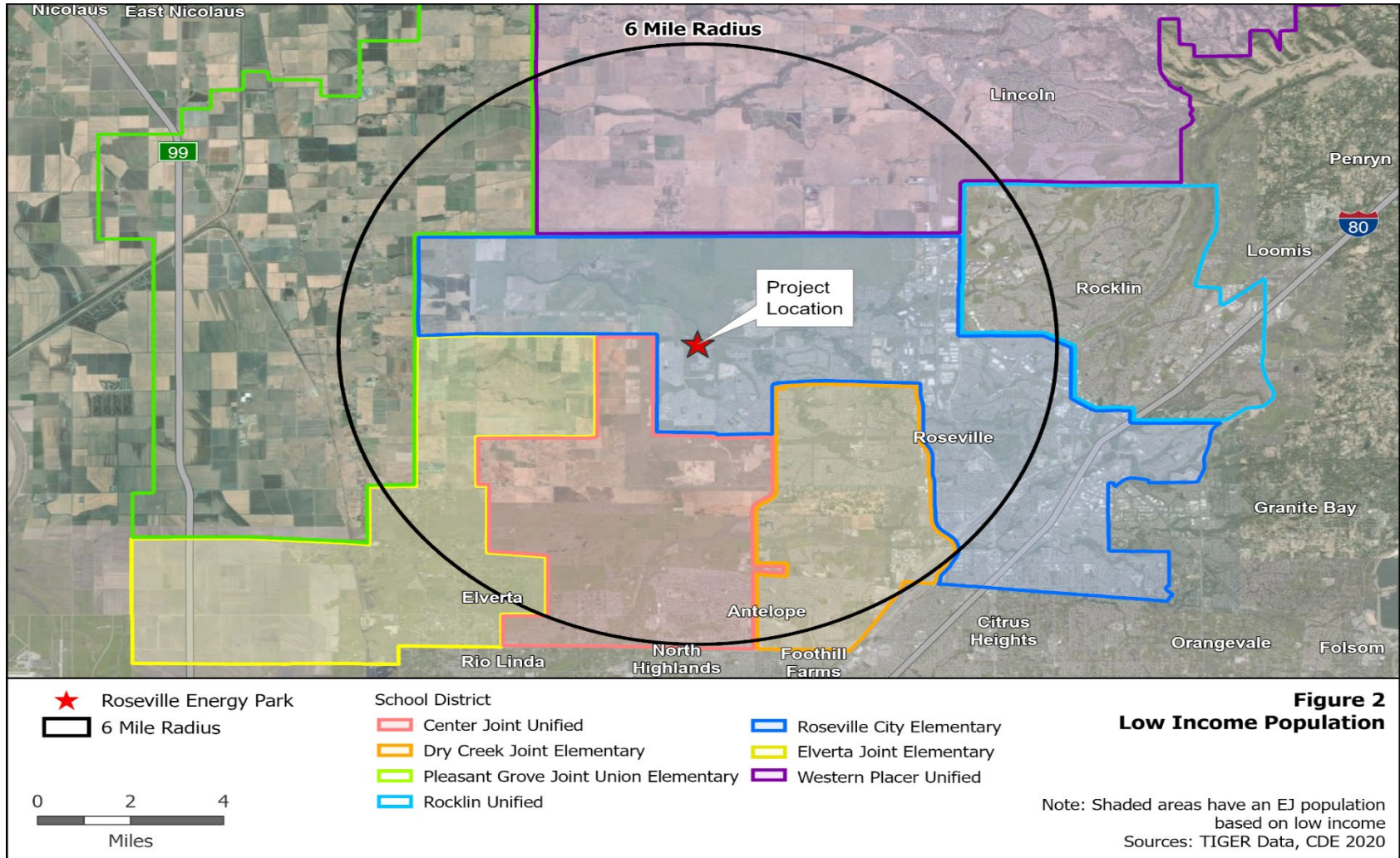
## **Environmental Justice Conclusions**

For the Air Quality and Noise and Vibration technical areas affected by the proposed project changes, staff concludes that impacts would be less than significant, and thus would be less than significant on the EJ population represented in **Figures 1** and **2**, and **Table 2**.

**Table 2**  
**Low Income Data within the Project Area**

<b>PLACER COUNTY SCHOOL DISTRICT IN SIX-MILE RADIUS</b>	<b>Enrollment Used for Meals</b>	<b>Free or Reduced Price Meals</b>	
Dry Creek Joint Elementary	6,681	2,869	42.9%
Rocklin Unified	14,145	2,496	17.6%
Roseville City Elementary	11,487	3,301	38.7%
Western Place Unified	9,712	3,233	33.3%
<b>REFERENCE GEOGRAPHY</b>			
Placer County	75,217	21,117	28.1%
<b>SACRAMENTO COUNTY SCHOOL DISTRICTS IN SIX-MILE RADIUS</b>			
	<b>Enrollment Used for Meals</b>	<b>Free or Reduced Price Meals</b>	
Center Joint Unified	4,258	2,729	64.1%
Elverta Joint Elementary	312	203	65.1%
<b>REFERENCE GEOGRAPHY</b>			
Sacramento County	249,542	150,025	60.1%
<b>SUTTER COUNTY SCHOOL DISTRICTS IN SIX-MILE RADIUS</b>			
	<b>Enrollment Used for Meals</b>	<b>Free or Reduced Price Meals</b>	
Pleasant Grove Joint Union	165	52	31.5%
<b>REFERENCE GEOGRAPHY</b>			
Sutter County	14,897	23,308	63.9%
<b>Source:</b> CDE 2020. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2019-2020, < <a href="http://dq.cde.ca.gov/dataquest/">http://dq.cde.ca.gov/dataquest/</a> >.			





## **ENERGY COMMISSION STAFF DETERMINATION**

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

- i. there is no possibility that the change may have a significant impact on the environment;
- ii. the change would not cause the project to fail to comply with any applicable laws, ordinances, regulations, or standards; and
- iii. the change will not require a change to, or deletion of a condition of certification adopted by the commission in the final decision or subsequent amendments.

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

## **WRITTEN COMMENTS**

This statement of staff approval of the proposed project changes has been filed in the docket for this project. Pursuant to section 1769(a)(3)(C), any person may file an objection to staff's determination within 14 days of the filing of this statement on the grounds that the project change does not meet the criteria set forth in sections 1769(a)(3)(A). 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. 03-AFC-01C  
1516 Ninth Street  
Sacramento, CA 95814-5512

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

If you have questions about this notice, please contact Elizabeth Huber, Compliance Office Manager, at (916) 776-0609, or via email at [Elizabeth.Huber@energy.ca.gov](mailto:Elizabeth.Huber@energy.ca.gov).



For information on public participation, please contact the Public Advisor, at 916-654-4489, or send your email to [publicadvisor@energy.ca.gov](mailto: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](mailto:mediaoffice@energy.ca.gov).

Mail List: 7172

List Serve: Roseville Electric

**ROSEVILLE ENERGY PARK (03-AFC-01)**  
**Petition to Amend Commission Decision - Turbine Upgrade**  
**AIR QUALITY**

Huei-An (Ann) Chu, Ph.D.

## **INTRODUCTION AND SUMMARY**

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The Roseville Energy Park (REP) is a nominal 160-megawatt (MW) combined-cycle electricity generating facility consisting of two Siemens SGT-800 combustion turbine-generators (CTGs), two heat recovery steam generators (HRSGs) with duct burners, selective catalytic reduction (SCR) and oxidation catalyst equipment to control NO<sub>x</sub> and carbon monoxide (CO) emissions, a single condensing steam turbine generator (STG), a de-aerating surface condenser, 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 currently permitted under the Placer County Air Pollution Control District (PCAPCD) requirements. The California Energy Commission (CEC) certified the License for the REP on April 13, 2005. The REP was constructed and began commercial operations in October 15, 2007.

On January 5<sup>th</sup>, 2021, REP filed a petition (REP 2021a) with the CEC, requesting three modifications. The first is to install and operate the Siemens A+ turbine upgrade package (A+ Turbine Upgrade) to both combustion turbines to be completed during the scheduled February 2021 outage. The second modification is to install and operate piezo-actuated valves individually for each burner which would allow a more stable combustion process and a more balanced combustion spread (Low Load Turndown). The third modification is to install and operate a control system upgrade that introduces a new function into the existing turbine governor that automatically takes corrective actions in case combustion instabilities (pulsations) are detected in the combustion chamber (Advanced Emissions Tuning or AET).

The PCAPCD issued Authorities to Construct/Temporary Permits to Operate (ATCs) for REP on February 11, 2021 (REP 2021b) which incorporated the requested changes. According to the analysis in the Petition to Amend (PTA) Appendix A, the proposed modifications would not result in significant environmental impacts, the project would continue to comply with current air quality laws, ordinances, regulations and standards (LORS), and would not undermine any of the findings and conclusions of the Decision. The analysis also demonstrates that no modifications to any Air Quality Conditions of Certification are necessary or proposed.

## ANALYSIS

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### AIR QUALITY

Based on the performance data provided by Siemens for the A-Plus upgrade, emissions of criteria pollutants are expected to decrease on an hourly basis as compared to the currently permitted emission limits. However, the facility owner did not propose any changes in emissions of criteria pollutants associated with the upgrade project. The facility short-term, quarterly, and annual potential to emit (PTE) would remain as listed in the current Title V operating permit. The proposed project modification does not propose any changes to conditions of certification.

According to Table 2 of the PTA Appendix A (REP 2021a, Appendix A), the fuel uses would increase in the proposed project modification. However, when comparing Table 12 and Table 14 of the PTA Appendix A (REP 2021a, Appendix A), the emissions of the criteria pollutants would be less in the proposed project modification. Also, the predicted emissions in Table 14 for the post-modification turbines are well within the current permit limits and as such REP is not proposing to change any current mass emissions limits in the permits for NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, or SO<sub>x</sub>.

To estimate the air quality impact, the project owner did a AERMOD modeling for normal operation, cold-start-up, start-up/shutdown and commissioning.

Maximum REP concentrations are compared in **Table 1** to the CAAQS and NAAQS. The combined impacts (modeled + background) are less than all the CAAQS and NAAQS except for the 24-hour and annual PM<sub>10</sub> CAAQS and the annual PM<sub>2.5</sub> CAAQS. The exceedances of the CAAQS for PM<sub>10</sub> are due to high background concentrations, which already exceed the CAAQS and NAAQS (the area is already designated as State nonattainment for the PM<sub>10</sub> CAAQS and Federal for PM<sub>2.5</sub>). As the facility is projected to have maximum impacts less than the SILs for the 24-hour PM<sub>10</sub> averaging period, REP would not contribute to current exceedances of the PM<sub>10</sub> standard.

The results of the modeling analysis for commissioning are presented in **Table 2**. Note that the 8-hour modeled CO concentration increase does not exceed the 500 ug/m<sup>3</sup> offset significance level from, as per PCAPCD Rule 502 (New Source Review 303.9.3) requirements.

Therefore, there are no significant air quality impacts anticipated from emissions of criteria pollutant to the air from the proposed facility.

**Table 1  
Air Quality Impact Results – Ambient Air Quality Standards**

Pollutant	Averaging Period	Maximum Concentration ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	Total ( $\mu\text{g}/\text{m}^3$ )	Ambient Air Quality Standards ( $\mu\text{g}/\text{m}^3$ )	
					CAAQS	NAAQS
<b>Normal Operating Conditions</b>						
NO <sub>2</sub> *	1-hour maximum (CAAQS)	66.39	101.6	167.99	339	-
	3-year average of 1-hour yearly 98th% (NAAQS)	4.43	79.00	83.43	-	188
	Annual maximum	0.24	13.20	13.44	57	100
CO	1-hour maximum	41.50	4466	4507.50	23,000	40,000
	8-hour maximum	6.97	4352	4358.97	10,000	10,000
SO <sub>2</sub>	1-hour maximum (CAAQS)	2.52	19.1	21.62	655	-
	3-year average of 1-hour yearly 99th% (NAAQS)	1.04	10.5	11.54	-	196
	3-hour maximum	1.46	19.1	20.56	-	1,300
	24-hour maximum	0.75	15.40	16.15	105	365
	Annual maximum	0.05	1.0	1.05	-	80
PM <sub>10</sub>	24-hour maximum (CAAQS)	4.09	211.3	215.39	50	-
	24-hour 4 <sup>th</sup> highest over 3 years (NAAQS)	3.24	64.00	67.24	-	150
	Annual maximum (CAAQS)	0.37	22.80	23.17	20	-
PM <sub>2.5</sub>	3-year average of 24-hour yearly 98th %	1.74	31.3	33.04	-	35
	Annual maximum (CAAQS)	0.37	12.20	12.57	12	-
	3-year average of annual concentrations (NAAQS)	0.30	8.60	8.90	-	12.0
<b>Cold Start-up Periods</b>						
NO <sub>2</sub> *	1-hour maximum (CAAQS)	75.90	101.6	177.5	339	-
	3-year average of 1-hour yearly 98th % (NAAQS)	61.47	79.00	140.47	-	188
CO	1-hour maximum	203.45	4466	4669.45	23,000	40,000
<b>Start-up/Shutdown Periods</b>						
CO	8-hour maximum	26.31	4352	4378.31	10,000	10,000
*1-hour and annual NO <sub>2</sub> impacts for all operating conditions were evaluated with OLM for CAAQS and NAAQS.						

**Table 2  
 Commissioning Air Quality Impact Results – Ambient Air Quality Standards**

Pollutant	Averaging Period	Maximum Concentration (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	Total (µg/m <sup>3</sup> )	Ambient Air Quality Standards (µg/m <sup>3</sup> )	
					CAAQS	NAAQS
<b>A+ Upgrade Commissioning</b>						
NO <sub>2</sub> *	1-hour maximum (CAAQS)	43.77	101.6	145.37	339	-
	3-year average of 1-hour yearly 98th % (NAAQS)	34.95	79.0	113.95	-	188
CO	1-hour maximum	1026.68	4466	5492.68	23,000	40,000
CO	8-hour maximum	440.94	4352	4792.94	10,000	10,000
*1-hour NO <sub>2</sub> impacts under the Commissioning Operating Conditions were evaluated with OLM for CAAQS and NAAQS.						

**ENVIRONMENTAL JUSTICE**

Air quality impacts from the proposed project modifications would be less than significant, including impacts to environmental justice populations. Emissions would stay below the PTE of the existing facility. There would be no increase in emissions of criteria pollutants or toxic air contaminants. Therefore, there are no air quality environmental justice issues related to the evaluated facility modifications and no minority or low-income populations would be significantly or adversely impacted.

**CONCLUSIONS AND RECOMMENDATIONS**

Staff recommends approval of the proposed project modifications without accompanying changes to the air quality conditions of certification. All proposed changes would conform with the applicable LORS related to air quality and would not result in significant air quality impacts. The PCAPCD has analyzed requested changes and issued ATCs for REP on February 11, 2021 (REP 2021b).

**AMENDED CONDITIONS OF CERTIFICATION**

No condition would be changed due to this PTA.

**REFERENCES**

**REP 2021a** – Roseville Electric Utility, Roseville Electric Utility PTA - REP Turbine Upgrade (TN 236223), January 5<sup>th</sup>, 2021.

**REP 2021b** – Roseville Electric Utility, PCAPCD ATC for Turbine Upgrade, Low Load Turn Down Modifications to REP (TN 236808), February 16<sup>th</sup>, 2021.