

## DOCKETED

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<b>Project Title:</b>	Roseville Energy Park Compliance
<b>TN #:</b>	213762
<b>Document Title:</b>	Roseville Energy Park - Revised Notice of Determination 20160922
<b>Description:</b>	Roseville Energy Park - Revised Notice of Determination 20160922
<b>Filer:</b>	Mary Dyas
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	9/22/2016 12:18:54 PM
<b>Docketed Date:</b>	9/22/2016

**CALIFORNIA ENERGY COMMISSION**

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SACRAMENTO, CA 95814-5112  
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## **REVISED NOTICE OF DETERMINATION PETITION TO AMEND THE ROSEVILLE ENERGY PARK (03-AFC-1C)**

On March 28, 2016, the City of Roseville Electric Department filed a Petition to Amend the Air Quality conditions of certification in the California Energy Commission's Final Decision, as amended, for the Roseville Energy Park, pursuant to Air Quality Condition of Certification **AQ-SC9**. The 160-megawatt project was certified by the Energy Commission on April 13, 2005, and began commercial operation in October 2007. The facility is located in the City of Roseville, in Placer County.

Air Quality Condition of Certification **AQ-SC9** provides that the Compliance Project Manager, in consultation with the Placer County Air Pollution Control District, may approve any change to a condition of certification regarding air quality, as an insignificant change, provided that:

1. The project remains in compliance with all applicable laws, ordinances, regulations, and standards;
2. The requested change clearly will not cause the project to result in a significant environmental impact;
3. No additional mitigation or offsets will be required as a result of the change;
4. No existing daily, quarterly, or annual permit limit will be exceeded as a result of the change; and
5. No increase in any daily, quarterly, or annual permit limit will be necessary as a result of the change.

Energy Commission staff has reviewed the request to ensure it meets the above mentioned requirements in **AQ-SC9**.

The purpose of the Energy Commission's review process is to assess the impacts of this proposal on environmental quality and on public health and safety. The review process includes an evaluation of the consistency of the proposed changes with the Energy Commission's Decision and a determination on whether the facility would remain in compliance with applicable laws, ordinances, regulations and standards (Cal. Code of Regs., tit. 20, § 1769).

### **DESCRIPTION OF PROPOSED MODIFICATION**

Roseville Electric is requesting the following modifications:

1. Change the conditions of certification to refer to the combustion turbines as Siemens SGT800 turbines, rather than Alstom GX100 turbines. The Final Decision approved the installation of either the Alstom GTX100 combustion turbine generator or the General Electric LM6000PC Sprint combustion turbine

generator. The Final Decision included Air Quality conditions of certification that were applicable dependent on which combustion turbine generator was selected. Roseville Electric elected to install two Alstom GTX100 combustion turbine generators, which were renamed as the Siemens SGT800 when Siemens bought the Alstom combustion turbine product line;

2. Eliminate those conditions that are expressly applicable to the GE LM6000 PC combustion turbines, which were not installed;
3. Delete Air Quality Condition of Certification **AQ-13** as it is no longer needed since the mass emission limits in Conditions of Certification **AQ-59**, **AQ-60**, and **AQ-63** are more restrictive than the limitation of hours of operation in Condition of Certification **AQ-13**. Roseville Electric requests that this change be approved contingent upon the corresponding changes in the Title V Operating Permit and Permit to Operate being approved; and
4. Modify Air Quality Condition of Certification **AQ-51**. Roseville Electric has requested that the selective catalytic reduction (SCR) catalyst be replaced, repaired, or reconditioned within 24 months of an ammonia slip exceeding 7 parts per million (ppm) rather than 5 ppm.

The Energy Commission's webpage for this facility, <http://www.energy.ca.gov/sitingcases/roseville/index.html>, has a link to the amendment petition on the right side of the webpage in the box labeled "Compliance Proceeding." Click on the "Documents for this Proceeding (Docket Log)" option.

## **ENERGY COMMISSION STAFF REVIEW AND DETERMINATION**

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Energy Commission staff reviewed the petition for potential environmental effects and consistency with the Energy Commission Decision and applicable laws, ordinances, regulations, and standards (LORS). Energy Commission staff has determined that the proposed amendment would have no significant adverse impacts. In addition, the project modification would not significantly affect any population including the Environmental Justice population as shown in the attached **Figure 1 Environmental Justice Population Figure**. Staff's conclusions in each technical area are summarized in **Table 1**, below.

**Table 1  
Summary of Conclusions for Each Technical Area**

TECHNICAL 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	N/A	N/A
Biological Resources	X		N/A	N/A
Cultural Resources	X		N/A	N/A
Facility Design	X		N/A	N/A
Geological Resources	X		N/A	N/A
Hazardous Materials Management	X		N/A	N/A
Land Use	X		N/A	N/A
Noise and Vibration	X		N/A	N/A
Paleontological Resources	X		N/A	N/A
Power Plant Efficiency	X		N/A	N/A
Power Plant Reliability	X		N/A	N/A
Public Health	X		N/A	N/A
Socioeconomics	X		N/A	N/A
Soil and Water Resources	X		N/A	N/A
Traffic & Transportation	X		N/A	N/A
Transmission Line Safety and Nuisance	X		N/A	N/A
Transmission System Engineering	X		N/A	N/A
Visual Resources	X		N/A	N/A
Waste Management	X		N/A	N/A
Worker Safety and Fire Protection	X		N/A	N/A

\* Table 1 - The proposed modifications will not have a significant effect on the environment, and the modifications will not result in a change in or deletion of a condition adopted by the Energy Commission in the Decision, or make changes that would cause project noncompliance with any applicable laws, ordinances, regulations, or standards (Cal. Code Regs., tit. 20, § 1769 (a)(2).)

Energy Commission technical staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS). Staff has determined that the technical or environmental areas of Biological Resources, Cultural Resources, Facility Design, Geological Resources, Hazardous Materials Management, Land Use, Noise and Vibration, Paleontological Resources, Public Health, Power Plant Efficiency, Power Plant Reliability, Socioeconomics, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Transmission System Engineering, Visual Resources, Waste Management, and Worker Safety and Fire Protection are not affected by the proposed changes.

The technical area of Air Quality has determined the amended project would continue to comply with applicable LORS and no changes are needed to any conditions of certification to ensure impacts would be less than significant.

The Air Quality analysis of the proposed changes pursuant to Condition of Certification **AQ-SC9** is attached to the docketed version of the Notice of Determination as **Appendix A** and is available on the project webpage for this facility, <http://www.energy.ca.gov/sitingcases/roseville/index.html>

## **ENERGY COMMISSION STAFF DETERMINATION**

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Section 1769(a)(2) of Title 20, California Code of Regulations, states, “[w]here staff determines that there is no possibility that the modifications may have a significant effect on the environment, and if the modifications will not result in a change or deletion of a condition adopted by the commission in the final decision or make changes that would cause the project not to comply with any applicable laws, ordinances, regulations, or standards, no commission approval is required....”

Energy Commission staff has determined for this petition that:

- The modifications will not have any significant effect on the environment;
- Existing conditions of certification are sufficient to cover the proposed modification without changes to, or deletions of, any conditions of certification;
- The project as modified will maintain full compliance with applicable LORS; and,
- Pursuant to section 1769(a)(2) and based on staff’s determinations, formal approval by the full Commission at a noticed Business Meeting is not required.

The Energy Commission’s webpage for this facility, <http://www.energy.ca.gov/sitingcases/roseville/index.html>, has a link to the petition and the Staff Analysis on the right side of the webpage in the box labeled “Compliance Proceeding.” Click on the “Documents for this Proceeding (Docket Log)” option. After the Final Decision, the Energy Commission’s Order regarding this petition will also be available from the same webpage.

Any person may file an objection to staff's determination within 14 days of the date of this Notice on the grounds that the project modification does not meet the criteria set forth in Title 20, California Code of Regulations, section 1769(a)(2). Absent any objections, the amendment petition will be approved 14 days after this Notice is docketed. To use the Energy Commission's electronic commenting feature to object to staff's determination, go to the Energy Commission's webpage for this facility, cited above, click on the "Submit e-Comment" link, and follow the instructions in the on-line form. Be sure to include the facility name in your comments. Once submitted, the Energy Commission Dockets Unit reviews and approves your comments, and you will receive an e-mail with a link to them.

This Notice of Determination has been mailed to the Energy Commission's facility mail list of interested parties and property owners adjacent to the facility site. It has also been e-mailed to the facility listserv. The listserv is an automated Energy Commission e-mail system by which information about this facility is e-mailed to parties who have subscribed. To subscribe, go to the Energy Commission's webpage for this facility, cited above, scroll down the right side of the project's webpage to the box labeled "Subscribe," and provide the requested contact information.

Written comments may also be mailed or hand-delivered to:

California Energy Commission  
Dockets Unit, MS-4  
Docket No. 03-AFC-1C  
1516 Ninth Street  
Sacramento, CA 95814-5512

All comments and materials filed with and approved by the Dockets Unit will be added to the facility Docket Log and become publically accessible on the Energy Commission's webpage for the facility.

If you have questions about this notice, please contact Mary Dyas, Compliance Project Manager, at (916) 651-8891, or by fax to (916) 654-3882, or via e-mail to [mary.dyas@energy.ca.gov](mailto:mary.dyas@energy.ca.gov).

For information on participating in the Energy Commission's review of the petition, call Alana Mathews, Public Adviser, at (916) 654-4489 or (800) 822-6228 (toll-free in California) or send your e-mail to [publicadviser@energy.ca.gov](mailto:publicadviser@energy.ca.gov).

News media inquiries should be directed to the Energy Commission Media Office at (916) 654-4989, or by e-mail to [mediaoffice@energy.ca.gov](mailto:mediaoffice@energy.ca.gov).

Date: September 22, 2016

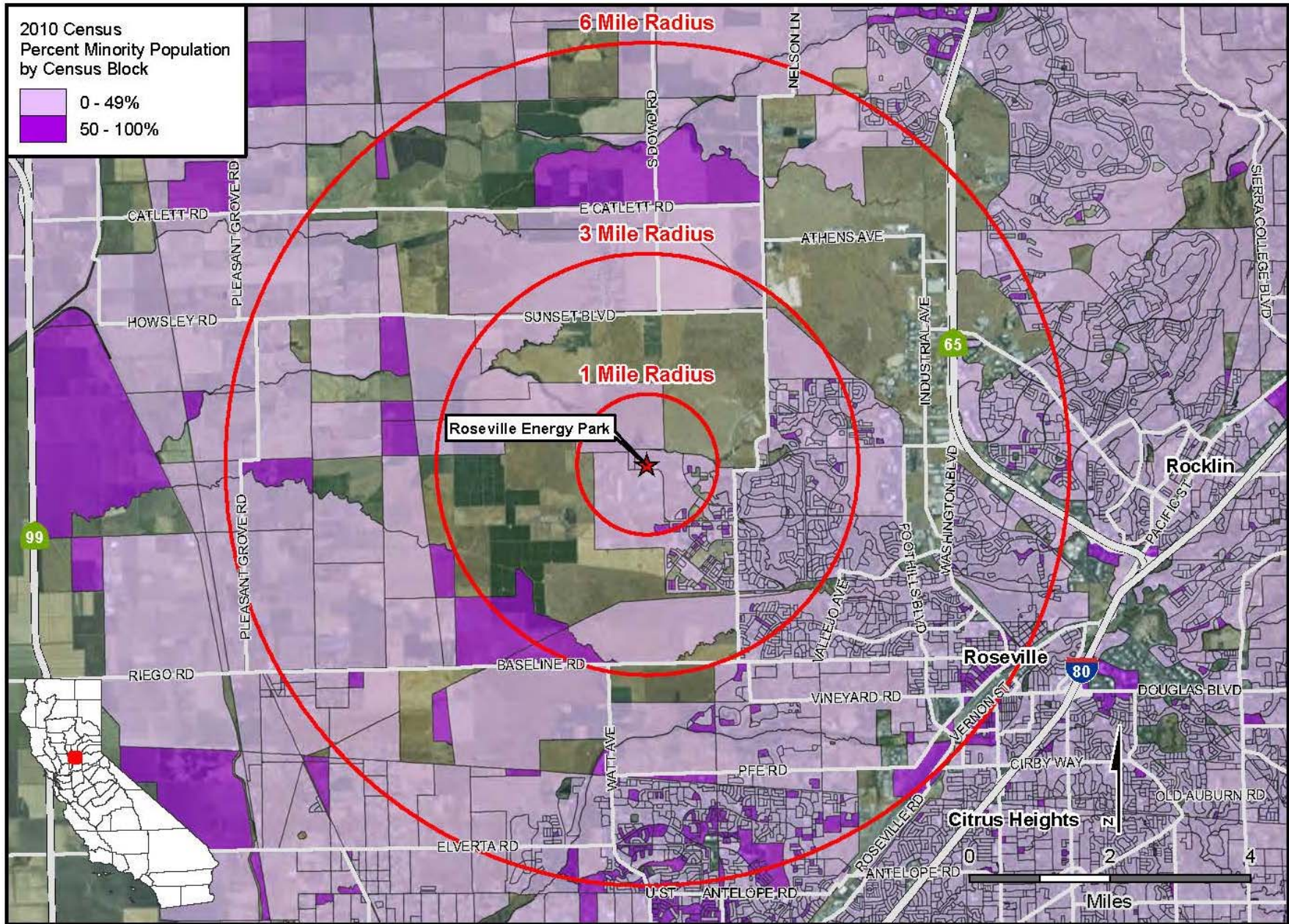
<<Signature on file>>

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**CHRISTINE ROOT**  
Compliance Office Manager  
Siting, Transmission, & Environmental Protection  
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**SOCIOECONOMICS - FIGURE 1**  
 Roseville Energy Park - Census 2010 Minority Population by Census Block



SOCIOECONOMICS





**APPENDIX A**  
**ROSEVILLE ENERGY PARK (03-AFC-01C)**  
Petition for Project Modification Pursuant to AQ-SC9  
Air Quality  
Jacquelyn Record

## **INTRODUCTION**

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On March 8, 2016, the Roseville Energy Park (REP) project owner, City of Roseville, Roseville Electric, filed a Petition for Project Modifications (Petition) pursuant to **AQ-SC9** (COR 2016). The Petition is requesting the following modifications:

1. Change the conditions of certification to refer to the combustion turbines as Siemens SGT800 combustion turbines, rather than Alstom GX100. The Final Decision approved the installation of either the Alstom GTX100 combustion turbine generator or the General Electric LM6000PC Sprint combustion turbine generator. The Final Decision included Air Quality Conditions of Certification that were applicable dependent on which combustion turbine generator was selected. Roseville Electric elected to install two Alstom GTX100 combustion turbine generators, which were renamed as the Siemens SGT800 when Siemens' bought the Alstom combustion turbine product line;
2. Eliminate those conditions that are expressly applicable to the GE LM6000 PC combustion turbines, which were not installed;
3. Delete Air Quality Condition of Certification **AQ-13** as it is no longer needed since the mass emission limits in Conditions of Certification **AQ-59**, **AQ-60**, and **AQ-63** are more restrictive than the limitation of hours of operation in Condition of Certification **AQ-13**. Roseville Electric requests that this change be approved contingent upon the corresponding changes in the Title V Operating Permit and Permit to Operate being approved; and
4. Modify Air Quality Condition of Certification **AQ-51**. Roseville Electric has requested that the Selective Catalytic Reduction (SCR) catalyst be replaced, repaired, or reconditioned within 24 months of an ammonia slip exceeding 7 parts per million (ppm) rather than 5 ppm.

The 160-megawatt project was certified by the Energy Commission on April 13, 2005, and began commercial operation in October 2007. The facility is located in the City of Roseville, in Placer County.

## **SCOPE OF ANALYSIS**

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The scope of this analysis is to determine whether the requested changes meet the requirements below as part of Air Quality Condition of Certification **AQ-SC9**. This staff condition allows for staff approval of administrative changes as long as:

1. The Project remains in compliance with all applicable laws, ordinances, regulations, and standards (LORS);

2. The requested changes clearly will not cause the Project to result in a significant environmental impact;
3. No additional mitigation or offsets will be required as a result of the changes;
4. No existing daily, quarterly, or annual permit limit will be exceeded as a result of the changes; and
5. No increase in any daily, quarterly, or annual permit limit will be necessary as a result of the changes.

## **ANALYSIS OF IMPACTS**

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This analysis will evaluate each of the requested changes and determine whether each requested change meets all five criteria established in **AQ-SC9**. The five criteria are shown above in the Scope of Analysis section, and will be herein addressed as Item 1 through Item 5.

The REP project owner has proposed to change the conditions of certification to refer to the turbines as Siemens SGT800 combustion turbines, rather than Alstom GX100 combustion turbines. The Final Decision approved the installation of either Alstom GTX100 combustion turbine generators or General Electric LM6000PC Sprint combustion turbine generators. The Final Decision included Air Quality Conditions of Certification that were applicable dependent on which combustion turbine vendor was selected. After the adoption of the Final Decision, the Alstom GX100 was renamed the Siemens SGT800, due to the acquisition by Siemen Power Generation Group of Alstom Power's small and medium-sized combustion turbines and industrial steam turbine business (COR 2016).

During the original proceeding, because the applicant at the time had not chosen a turbine vendor, the Alstom GX100 branded combustion turbines and GE LM6000 PC branded combustion turbines were both analyzed as part of the air quality analysis. Since the GE LM6000 PC was not installed, REP's project owner has now proposed to delete all reference to this turbine type. Therefore, this proposed change is administrative in nature and meets Items 1 through 5. Because the GE LM6000 PC combustion turbines were never installed, **AQ-1**, **AQ-2**, **AQ-61** and **AQ-62** are no longer applicable and there are two Air Quality conditions of certification (COCs) that reference these conditions which are specifically related to the GE LM6000 PC combustion turbines. Staff recommends deleting the referenced COCs in two additional AQ COCs that are impacted by this change (**AQ-SC8** and **AQ-5**).

The REP project owner has proposed to delete Air Quality Condition of Certification **AQ-13**. In the original proceeding, the Air Quality analysis was restricted to a limited number of operating hours due to insufficient Emission Reduction Credits (ERCs) for nitrogen oxides (NOx). Subsequently, Air Quality Conditions of Certification in the Final Decision were amended (Order No. 08-423-2) to allow for a different source of ERCs and to allow a different emission limit for NOx. In the process of updating the emission limits of Approved Order No. 08-423-2, the limitation on the hours of operation for the project

should have been addressed at that time, but was not. According to the project owner, due to the design of the REC combustion turbines, the Air Quality Condition which already exists (**AQ-59**) limits daily mass emissions, along with **AQ-60** and **AQ-63** which limit the total pounds per quarter of each criteria pollutant, and these conditions are more restrictive than the limitation of the hours of operation in **AQ-13**. The project owner is not requesting any change to daily, quarterly or annual mass emission limits. Therefore, **AQ-13** is not needed and can be removed. The District will implement this change to their Permit to Operate once the Energy Commission decides whether or not to remove **AQ-13**.

The REP project owner has proposed to modify Air Quality Condition of Certification **AQ-51**. Roseville Electric has requested that the Placer County Air Pollution Control District amend the Title V Operating Permit and Permit to Operate such that the SCR catalyst be replaced, repaired, or reconditioned within 24 months of an ammonia slip exceeding 7 ppm, instead of the current requirement that the SCR catalyst to be replaced, repaired, or reconditions within 12 months of an ammonia slip exceeding 5 ppm. The requested modification does not change the assumptions or rationales for the Final Decision for the REP. For LORS purposes, the REP would continue to comply with 10 ppm @ 15 percent O<sub>2</sub> averaged over 1 hour for the project's ammonia slip requirement in the Final Decision. The District will implement this change to their Permit to Operate once the Energy Commission decides whether or not to change **AQ-51**.

Since the original proceeding, the area has gone from nonattainment to attainment for the state standard for particulate matter less than 2.5 microns in size (PM<sub>2.5</sub>). The status changed in 2010, well after the Final Decision in 2005. The original proceeding indicated the area was ammonia limited, and this condition was used as the justification for limiting ammonia slip, which would require the SCR to be reconditioned, replaced, or repaired within 12 months after reaching 5 ppm ammonia slip. The area is now considered ammonia rich (CEC 2016). In ammonia rich areas, ammonium nitrate and ammonium sulfate formation are limited by (1) the availability of nitrate and sulfate precursors, and (2) meteorologically conducive conditions (Pun et al, 2001, Lurmann et al, 2006). Thus, in the area downwind from REP, the changes in ammonium nitrate and ammonium sulfate are affected more by changes in Nitrogen Oxides (NO<sub>x</sub>) and Sulfur Oxides (SO<sub>x</sub>) precursor emissions than by changes in ammonia concentrations (SMAQMD 2013). Therefore, the proposed change is purely administrative in nature and meets Items 1 through 5. The project would still be required to comply with a 10 ppm @ 15 percent O<sub>2</sub>, ammonia slip limit and still offset all of its NO<sub>x</sub> and PM<sub>10</sub> precursor emissions as required in the Final Decision, as specified in Air Quality Conditions of Certification **AQ-3** through **AQ-5**.

The project modification would not affect the REP's ability to continue to comply with all Laws, Ordinances, Regulations and Standards (LORS).

## CONCLUSIONS AND RECOMMENDATIONS

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Staff has analyzed the proposed changes and concludes that there are no new or additional significant impacts associated with approval of the petition. Staff concludes the project would remain in compliance with all applicable laws, ordinances, regulations, and standards. Staff concludes the requested changes clearly would not cause the project to result in a significant environmental impact. Staff concludes there would not be a need for additional mitigation or offsets required as a result of the requested changes. Staff concludes no existing daily, quarterly, or annual permit limit will be exceeded as a result of the changes; and no increase in any daily, quarterly, or annual permit limit will be necessary as a result of the changes. Staff recommends the following modifications to conditions of certification **AQ-13** and **AQ-51**. Staff also recommends all references of GE LM6000 PC be removed from conditions of certification **AQ-1**, **AQ-2**, **AQ-13**, **AQ-54**, **AQ-56**, **AQ-58**, **AQ-61**, and **AQ-62**. This change also affects, by reference, **AQ-SC8** and **AQ-5**. Finally, staff recommends all references to “Alstom GX100” be replaced by “Siemens SGT800”.

## PROPOSED CHANGES OR MODIFICATION TO CONDITIONS OF CERTIFICATION

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Staff has proposed modifications to the Air Quality Conditions of Certification as shown in the following paragraphs. (Note: deleted text is in ~~striketthrough~~; new text is **bold and underlined**).

**AQ-SC8** The Project owner shall be limited to 23.4 tons of NO<sub>x</sub> emissions per year from the facility as a whole including both combustion turbine exhaust stacks, the auxiliary boiler exhaust stack, the emergency IC engine and the firewater pump engine exhaust until compliance with Conditions of Certification **AQ-6**, **-7**, **-8** and **-9** has been demonstrated. This emission limit supersedes the emission limits in Conditions of Certification **AQ-60**, **-61**, **-62** and **-63**.

**Verification:** The Project owner shall include all operational data necessary to demonstrate compliance with this condition as part of the Quarterly Air Quality Report required by Condition of Certification **AQ-SC6** or the verification of compliance required in Conditions of Certification **AQ-6**, **-7**, **-8** and **-9**.

## SPECIFIC FACILITY CONDITIONS

### Offsets

**AQ-1** (~~Deleted in response to petition filed by the City of Roseville on March 8, 2016~~) If the ~~GE LM-6000 turbines are selected, emission offsets shall be provided for all calendar quarters for NO<sub>x</sub> and PM10 in the following amounts, at the offset ratio specified in the PCAPCD Rule 502, New Source Review (8/01). (Offsets are not required for CO, SO<sub>x</sub> and VOC emissions under PCAPCD Rules and Regulations.)~~

<b>GE LM6000 - OFFSETS REQUIRED</b>					
<b>POLLUTANT</b>	<b>Quarter 1 (Lbs/Quarter)</b>	<b>Quarter 2 (Lbs/Quarter)</b>	<b>Quarter 3 (Lbs/Quarter)</b>	<b>Quarter 4 (Lbs/Quarter)</b>	<b>Tons/year</b>
NOx	15,546	13,412	17,646	15,572	31.09
PM10	17,523	15,246	18,999	18,788	35.28

**Verification:** The Project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in Condition of Certification AQ-2 have been surrendered as required if the GE LM6000 turbines are selected.

**AQ-2** (Deleted in response to petition filed by the City of Roseville on March 8, 2016) The ERC certificates to be surrendered if the GE LM-6000 turbines are selected shall include the following:

<b>NOX</b>	<b>District/ Certificate</b>	<b>Quarter 1 (lbs)</b>	<b>Quarter 2 (lbs)</b>	<b>Quarter 3 (lbs)</b>	<b>Quarter 4 (lbs)</b>	<b>Annual (Tons)</b>
City of Roseville	PCAPCD/ 2001-23 (2004-03)	5,050	5,050	5,050	5,050	10.1
Calpine Corp.	YSAQMD/ EC-209 (EC-238)	0	6,199	0	3,188	4.69
Calpine Corp.	YSAQMD/ EC-210	0	9,558	0	3,973	6.77
Energy 2001 or SMAQMD Bank		5,300	5,300	5,250	4,150	10.00

<b>VOCS for NOX</b>	<b>District/ Certificate</b>	<b>Quarter 1 (lbs)</b>	<b>Quarter 2 (lbs)</b>	<b>Quarter 3 (lbs)</b>	<b>Quarter 4 (lbs)</b>	<b>Annual (Tons)</b>
City of Roseville	PCAPCD/ 2001-26 (2004-04)	33,512	33,512	33,512	33,512	67.0

<b>PM10</b>	<b>District/ Certificate</b>	<b>Quarter 1 (lbs)</b>	<b>Quarter 2 (lbs)</b>	<b>Quarter 3 (lbs)</b>	<b>Quarter 4 (lbs)</b>	<b>Annual (Tons)</b>
City of Roseville	PCAPCD/ 2001-24 (2004-04)	22,680	0	13,252	21,490	28.71
City of Roseville	PCAPCD/ 2001-22 (2004-02)	2,578	19,820	16,085	15,916	27.20

**Verification:** The Project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in this Condition have been surrendered as required in Conditions of Certification AQ-5, -6, -7, -8 and -9 if the GE LM6000 turbines are selected.

**AQ-3** If the Alstom GX100 For the Siemens SGT800 turbines are selected, emission offsets shall be provided for all calendar quarters for NO<sub>x</sub> and PM-10 in the following amounts, at the offset ratio specified in the PCAPCD Rule 502, New Source Review (8/01). (Offsets are not required for CO, SO<sub>x</sub> and VOC emissions under PCAPCD Rules and Regulations.)

<b>ALSTOM GX100 Siemens SGT800 - OFFSETS REQUIRED</b>					
<b>POLLUTANT</b>	<b>Quarter 1 (Lbs/ Quarter)</b>	<b>Quarter 2 (Lbs/ Quarter)</b>	<b>Quarter 3 (Lbs/ Quarter)</b>	<b>Quarter 4 (Lbs/ Quarter)</b>	<b>Tons/year</b>
NO <sub>x</sub>	15,546	13,412	17,646	15,572	31.09
PM10	17,673	15,513	19,168	19,158	35.95

**Verification:** The Project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in Condition of Certification **AQ-4** have been surrendered as required if for the Alstom GTX100 Siemens SGT800 turbines are selected.

**AQ-4** The ERC certificates to be surrendered if for the Alstom Siemens SGT800 turbines are selected shall include the following:

<b>NOX</b>	<b>District/ Certificate</b>	<b>Quarter 1 (lbs)</b>	<b>Quarter 2 (lbs)</b>	<b>Quarter 3 (lbs)</b>	<b>Quarter 4 (lbs)</b>	<b>Annual (Tons)</b>
City of Roseville	PCAPCD/ 2001-23 (2004-03)	5,050	5,050	5,050	5,050	10.1
Calpine Corp.	YSAQMD/ EC-209 (EC- 238)	0	6,199	0	3,188	4.69
Calpine Corp.	YSAQMD/ EC-210	0	9,558	0	3,973	6.77
Energy 2001 or SMAQMD Bank		5,300	5,300	5,250	4,150	10.00
<b>VOCS FOR NOX</b>	<b>District/ Certificate</b>	<b>Quarter 1 (lbs)</b>	<b>Quarter 2 (lbs)</b>	<b>Quarter 3 (lbs)</b>	<b>Quarter 4 (lbs)</b>	<b>Annual (Tons)</b>
SMUD	2008-02	12,475	12,695	12,573	12,644	24.19
SMUD	2006-09	1,260	1,260	1,260	1,260	2.52
SMUD	2007-03	2,200	470	1,359	924	2.48
SMUD	2007-06	431	557	557	475	1.01

City of Roseville	PCAPCD/ 2001-26	33,512	33,512	33,512	33,512	67.0
<b>PM10</b>	<b>District/ Certificate</b>	<b>Quarter 1 (lbs)</b>	<b>Quarter 2 (lbs)</b>	<b>Quarter 3 (lbs)</b>	<b>Quarter 4 (lbs)</b>	<b>Annual (Tons)</b>
City of Roseville	PCAPCD/ 2001-22	2,578	20,167	16,085	15,916	27.37
City of Roseville	PCAPCD/ 2001-24	22,680	-	13,440	22,680	29.40
Enron North America	PCAPCD/ 22001-24 (2004-06)	362	-	420	-	0.39

**Verification:** The Project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in this Condition have been surrendered as required in Conditions of Certification **AQ-5, -6, -7, -8, -9** and **-9.5** if for the ~~Alstom GTX100~~ **Siemens SGT800** turbines are selected.

**AQ-5** The ERC Certificates PCAPCD 2001-23, YSAQMD EC-209 (EC-238), YSAQMD EC-210, PCAPCD 2001-26, PCAPCD 2001-24 and PCAPCD/ 2001-22 shall be submitted to the PCAPCD with copies submitted to the CPM prior to start of construction. For the purpose of this condition, start of construction shall be defined as the pouring of foundation on site. The Project owner shall submit copies of a PCAPCD confirmation that the ERCs identified have been surrendered at the specified time and amounts to the CPM.

**Verification:** The ERC certificates identified above shall be surrendered to the PCAPCD in the amounts shown in either Condition of Certification **AQ-2** or **-4** based on the turbine selection at least 30 days prior to the commencement of construction with copies of the confirmation of surrender being sent to the CPM no later than 30 days following the commencement of construction.

## SPECIFIC FACILITY CONDITIONS

### Operating Limitations

**AQ-13** ~~(Deleted in response to petition filed by the City of Roseville on March 8, 2016)~~ The hours of operation of each of the gas turbines shall not exceed the following:

#### ~~Power Plant Gas Turbine Operating Schedule~~

	<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>	<b>Annual</b>
<b>Total Operating Hours</b>	2,096	1,864	2,132	2,145	8,237



**Verification:** The Project owner shall include all operational data identified in this condition as part of the Quarterly Air Quality Report required by Condition of Certification **AQ-SC6**.

**AQ-51** The ammonia slip shall not exceed 10 ppmv @ 15 percent O<sub>2</sub> averaged over 1 hour. The SCR catalyst shall be replaced, repaired or otherwise reconditioned within ~~12~~**24** months of the ammonia slip reaching ~~5~~**7** ppm @ 15 percent O<sub>2</sub> averaged over 24 hours. The SCR ammonia injection grid replacement, repair or reconditioning scheduled event may be canceled if the Project owner can demonstrate to the CPM that, subsequent to the initial exceedance, the ammonia slip consistently remains below ~~5~~**7** ppm @ 15 percent O<sub>2</sub> averaged over 24 hours and that the initial exceedance does not accurately indicate expected future operating conditions.

Compliance with ammonia slip limits shall be demonstrated by using the following calculation procedure:

ammonia slip ppmv @ 15% O<sub>2</sub> = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where

a = ammonia injection rate(lb/hr)/17(lb/lb. mol),

b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol),

c = change in measured NO<sub>x</sub> concentration ppmv at 15% O<sub>2</sub> across catalyst, and

d = correction factor.

The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip.

**Verification:** The Project owner shall include ammonia slip concentrations averaged on an hourly and 24-hour basis calculated via the protocol provided as part of the Quarterly Air Quality Report required in Condition of Certification **AQ-SC6**. The Project owner shall notify the CPM within 10 days of an exceedance of the ~~7~~**5**-ppm ammonia slip limit herein. The Project owner shall notify the CPM no less than 30 days prior to the scheduled date of the SCR catalyst replacement, repair, or reconditioning event. If the Project owner finds that the exceedance of the ~~7~~**5**-ppm ammonia slip limit does not accurately reflect expected future operation as provided for in this condition, the Project owner shall submit all relevant information to the CPM no less than 30 days prior to the scheduled date of the SCR catalyst replacement, repair or reconditioning event in order to cancel the event.

**AQ-54** ~~(Deleted in response to petition filed by the City of Roseville on March 8, 2016)~~ If the GE LM6000 turbines are selected for the Project, emission rates from each gas turbine and heat recovery steam generator exhaust during startup and shutdown shall not exceed the following:

<b>GE LM6000 Combustion Turbine Emission Limitations during Startup and Shutdown</b>		
<b>Pollutant</b>	<b>Maximum Pounds Per Hour (worst-case turbine)</b>	<b>Pounds per Startup or Shutdown (both turbines combined)</b>
NO <sub>x</sub>	19.3	49.7
CO	14.3	42.2

**Verification:** ~~The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification~~ **AQ-SC6**.

**AQ-55** If the Alstom GX100 **For the Siemens SGT800** turbines are selected for the Project, emission rates from each gas turbine and heat recovery steam generator exhaust during startup and shutdown shall not exceed the following:

<b>Alstom GX100 <u>Siemens SGT800</u> Combustion Turbine Emission Limitations during Startup and Shutdown</b>		
<b>Pollutant</b>	<b>Maximum Pounds Per Hour (worst-case turbine)</b>	<b>Pounds per Startup or Shutdown (both turbines combined)</b>
NO <sub>x</sub>	37.1	122.8
CO	14.3	204.8

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification **AQ-SC6**.

**AQ-56** ~~(Deleted in response to petition filed by the City of Roseville on March 8, 2016)~~ If the GE LM6000 turbines are selected for the Project, emission rates from each gas turbine and heat recovery steam generator exhaust, except during startup and/or shutdown or excursions, shall not exceed the following:

<b>ION TURBINE EMISSION LIMITATIONS PER TURBINE EXCLUDING STARTUP AND SHUTDOWN</b>	
<b>POLLUTANT</b>	<b>POUNDS/HOUR</b>
Carbon Monoxide (CO)	6.1 (three-hour rolling average)
Nitrogen Oxides (NOx)	5.0 (one-hour average)
PM10	4.6
Sulfur Oxides (SOx)	1.0
Volatile Organic Compounds (VOCs)	1.7

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification ~~AQ-SC6~~.

**AQ-57** If the Alstom GX100 ~~For the Siemens SGT800~~ turbines are selected for the Project, emission rates from each gas turbine and heat recovery steam generator exhaust, except during startup and/or shutdown, or excursions shall not exceed the following:

<b><del>Alstom GTX100</del> Siemens SGT800 - COMBUSTION TURBINE EMISSION LIMITATIONS PER TURBINE EXCLUDING STARTUP AND SHUTDOWN</b>	
<b>POLLUTANT</b>	<b>POUNDS/HOUR</b>
Carbon Monoxide (CO)	6.2 (three-hour rolling average)
Nitrogen Oxides (NOx)	5.1 (one-hour average)
PM10	4.7
Sulfur Oxides (SOx)	1.0
Volatile Organic Compounds (VOCs)	1.8

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification ~~AQ-SC6~~.

**AQ-58** (Deleted in response to petition filed by the City of Roseville on March 8, 2016) If the GE LM6000 turbines are selected for the Project, the daily emissions shall not exceed the following rates:

**GE LM6000 - DAILY EMISSION LIMITS**

<b>POLLUTANT</b>	<b>Two GE Turbines</b>	<b>Auxiliary Boiler</b>	<b>Cooling Tower</b>	<b>Diesel Emergency Generator</b>	<b>Diesel Fire Pump</b>
NOx	268.7	16.8	--	4.31	1.72
CO	300.8	52.8	--	0.84	0.09
VOC	83.6	7.2	--	0.16	0.05
PM10	221.6	14.4	16.3	0.14	0.03
SO <sub>2</sub>	46.0	1.92	--	0.10	0.19

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification ~~AQ-SC6~~.

**AQ-59** If the Alstom GX100 For the Siemens SGT800 turbines are selected for the Project, the daily emissions shall not exceed the following rates:

**~~Alstom GX100~~ Siemens SGT800 - FACILITY DAILY EMISSION LIMITS**

<b>POLLUTANT</b>	<b>Two Alstom Turbines</b>	<b>Auxiliary Boiler</b>	<b>Cooling Tower</b>	<b>Diesel Emergency Generator</b>	<b>Diesel Fire Pump</b>
NOx	406.0	16.8	--	4.31	1.72
CO	629.5	52.8	--	0.84	0.09
VOC	223.1	7.2	--	0.16	0.05
PM10	226.8	14.4	16.3	0.14	0.03
SO <sub>2</sub>	47.1	1.92	--	0.10	0.19

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification **AQ-SC6**.

**AQ-60** For ~~the Alstom GTX100~~ **Siemens SGT800** turbine are selected, the quarterly emissions shall not exceed the levels shown below:

**~~Alstom GTX100~~ Siemens SGT800 Gas Turbines**

<b>Pollutant</b>	<b>Quarter 1 (lbs/quarter) Two turbines</b>	<b>Quarter 2 (lbs/quarter) Two Turbines</b>	<b>Quarter 3 (lbs/quarter) Two turbines</b>	<b>Quarter 4 (lbs/quarter) Two Turbines</b>	<b>Tons/ Year Two Turbines</b>
NOx	15,399	12,965	17,496	15,422	30.64
CO	26,787	32,590	28,175	29,862	58.71
VOCs	5,791	7,306	6,630	6,848	13.29
PM0	16,300	13,692	17,789	17,569	32.67
SOx	3,385	2,843	3,694	3,648	6.78

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification **AQ-SC6**.

**AQ-61** (Deleted in response to petition filed by the City of Roseville on March 8, 2016) ~~If the GE LM6000 turbines are selected~~ are selected, the quarterly emissions shall not exceed the levels shown below:

**~~GE LM 6000 Gas Turbines~~**

<b>Pollutant</b>	<b>Quarter 1 (lbs/quarter) Two turbines</b>	<b>Quarter 2 (lbs/quarter) Two Turbines</b>	<b>Quarter 3 (lbs/quarter) Two turbines</b>	<b>Quarter 4 (lbs/quarter) Two Turbines</b>	<b>Tons/ Year Two Turbines</b>
NOx	15,399	12,965	17,496	15,422	30.64
CO	21,291	18,454	23,160	22,982	42.94
VOCs	6,006	5,038	6,555	6,473	12.04
PM10	15,968	13,425	17,410	17,199	32.00
SOx	3,316	2,788	3,615	3,571	6.65

**Verification:** ~~The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification **AQ-SC6**.~~

**AQ-62** (Deleted in response to petition filed by the City of Roseville on March 8, 2016) If the GE LM6000 turbines are selected for the Project, the total facility emissions shall not exceed the following quarterly emission rates:

**GE LM6000 – FACILITY QUARTERLY EMISSION LIMITS**

Pollutant	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Tons/year
NO <sub>x</sub>	15,546	13,412	17,646	15,572	31.09
CO	21,625	19,737	23,500	23,322	44.09
VOC	6,046	5,188	6,596	6,514	12.17
PM10	17,523	15,246	18,999	18,788	35.28
SO <sub>2</sub>	3,331	2,838	3,630	3,587	6.69

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification **AQ-SC6**.

**AQ-63** If For the Alstom GX100 Siemens SGT800 turbines are selected for the Project, the total facility emissions shall not exceed the following quarterly emission rates:

**ALSTOM GX100 Siemens SGT800 - FACILITY QUARTERLY EMISSION LIMITS**

Pollutant	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Tons/year
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
VOC	5,832	7,455	6,672	6,890	13.42
PM10	17,854	15,513	19,378	19,158	35.95
SO <sub>2</sub>	3,400	2,893	3,709	3,663	6.83

**Verification:** The Project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification **AQ-SC6**.

## REFERENCES

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- CEC 2005—(tn: 33936), Roseville Energy Park Commission Decision (03-AFC-01), April 15, 2005.
- CEC 2016—(tn: 212914), Roseville Energy Park Compliance (03-AFC-01C), August 23, 2016.
- COR 2016—City of Roseville, Roseville Energy Park (03-AFC-1C) Air Quality Conditions of Certification, March 8, 2016.
- Lurmann 2006—Brown, S. G., N. P. Hyslop, P. T. Roberts, M. C. McCarthy, and F. W. Lurmann (2006), Wintertime Vertical Variations in Particulate Matter (PM) and Precursor Concentrations in the San Joaquin Valley during the California Regional Coarse PM/Fine PM Air Quality Study, Journal of the Air & Waste Management Association, 56(9), 1267-1277, 10.1080/10473289.2006.10464583.
- Pun 2001—Pun, B.K., Y. Zhang, K. Vijayaraghavan, S.-Y. Wu, C. Seigneur and J.H. Seinfeld, 2001. Development and initial application of the model for aerosol dynamics, reaction, ionization and dissolution (MADRID), Regional Haze and Global Radiation Balance – Aerosol Measurements and Models: Closure, Reconciliation and Evaluation, 2-5 October 2001, Bend, Oregon.
- SMAQMD 2013— [http://www.airquality.org/plans/federal/pm/PM2.5/2014-02-05\\_PM25\\_PLAN.pdf](http://www.airquality.org/plans/federal/pm/PM2.5/2014-02-05_PM25_PLAN.pdf), visited August 19, 2016