

**Staff consideration of applicant requested revision to AQ-SC11**

The applicant has requested that “interim Tier 4” rather than Tier 4 Engines be required under part “2)” of staff’s recommended condition **AQ-SC11**. This would provide the applicant flexibility in the case that the engine is procured prior to the availability of engines that meet Tier 4 NOx emission requirements. The specific date of the engine procurement is currently unknown. Staff has determined the following regarding this request:

- 1) The interim Tier 4 NOx emission standards required under CARB regulations are currently just as stringent as the full Tier 4 emission limits for engines the size proposed for the emergency engines (Generator sets >900 hp)<sup>1</sup>. However, the ARB is proposing to revise the emission standard regulations for standby emergency engines that would eliminate them from Tier 4 emission standard requirements<sup>2</sup>. This revision would align the California regulations with the Federal New Source Performance Standards for diesel engines.
- 2) Staff’s review of the large engine manufacturer (Caterpillar, Cummins, etc) websites indicates that they will not meet Tier 4 emission standards anytime soon for very large (>900 hp) engines, without the use of an add-on control device<sup>3</sup>.
- 3) The initial applicant performed air dispersion modeling results appear to indicate that the Project Alternatives would likely cause an exceedance of the federal 1-hour NO<sub>2</sub> standard, due to the large emergency engine being closer to the southern fence line<sup>4</sup>, without imposing a more stringent emission limitation than currently proposed or some other enforceable engine limitation.

Given the current state and rate of progress of diesel engine technology, and the ongoing ARB regulatory action, staff agrees with the applicant that some flexibility from Tier 4 engine emission limit requirements is reasonable and likely necessary. Staff believes that a peak hourly NOx emission reduction of 40 percent<sup>5</sup> or more from the emergency engines would ensure that the project would not cause exceedances of the federal and state 1-hour NO<sub>2</sub> standards.

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<sup>1</sup> See §93115.6 (a)(3) and Table 1 of <http://arb.ca.gov/regact/2010/atcm2010/atcmappa.pdf> and §2423 (b)(1)(B) and Table 1b of <http://www.arb.ca.gov/regact/offrdcie/froal.pdf>.

<sup>2</sup> The proposed regulation order can be found here: <http://arb.ca.gov/regact/2010/atcm2010/atcmappa.pdf>

<sup>3</sup> The specific add-on control device that could control NOx to Tier 4 levels is Selective Catalytic Reduction (SCR), which is expensive and less effective on standby emergency engines that do not have steady-state operations.

<sup>4</sup> The modeling results indicate that the location of peak project impact 1-hour NO<sub>2</sub> concentrations occur on the project site fence line to the south southeast of the emergency generator engine locations.

<sup>5</sup> This staff determination is based on a review of the modeling results that considered the reduction in the distance to the southern fence line (the current maximum exposed receptor vector), the topography of the site which increases to the south but decreases to the east, and the emergency generator engine’s contribution to the total determined federal and state 1-hour NO<sub>2</sub> project impacts.

Staff is proposing the following revisions to **AQ-SC11** to provide engine flexibility and to reduce maximum hourly emergency generator engine NOx emissions by at least 40 percent to ensure compliance with ambient air quality standards.

### **Staff Condition for Project Alternatives**

**AQ-SC11** The project owner shall use one of the following four options to assure~~confirm~~ that the operation of the emergency engines will not cause an exceedance of the state or federal 1-hour NO<sub>2</sub> ambient air quality standards ~~by either of the following methods:~~

- 1) The project owner~~applicant shall~~will provide an air dispersion modeling analysis that demonstrates to staff's satisfaction that the currently proposed or officially revised worst-case operating emissions would not have the potential to cause exceedances of the state or federal 1-hour NO<sub>2</sub> ambient air quality standards, or
- 2) The project owner~~applicant shall~~will procure emergency generator engines that meet ARB Tier 4 standards for NOx emissions (0.5 grams per break horsepower), or-
- 3) In the event that Tier 4 engines are not available at the time of engine purchase, the project owner shall; a) provide documentation from engine manufacturers that Tier 4 engines are not available; and b) procure emergency engines that have a NOx emissions guarantee of no more than 2.6 grams per break horsepower, or
- 4) The project owner shall agree to limit the emergency generator engine testing duration to no more than 30 minutes per event and a testing frequency limited to the minimum required by engine manufacturer.

In no event shall the project owner propose the use of an emergency engine that does not meet the most strict applicable federal or state engine emission limit regulation without a signed waiver from U.S. EPA or ARB as appropriate. The project owner shall justify the date of engine purchase.

**Verification:** The project owner shall provide to the CPM the air dispersion modeling analysis, if performed, that demonstrates compliance with Part 1) of this condition at least 30 days prior to purchasing the emergency engine generators for this project, or shall provide documentation to the CPM at least 5 days prior to purchasing the engine generators that demonstrates how they would comply with Part 2), or Part 3), or Part 4) of this condition.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
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**APPLICATION FOR CERTIFICATION  
FOR THE PALEN SOLAR POWER  
PLANT PROJECT**

**Docket No. 09-AFC-7**

**PROOF OF SERVICE  
(Revised 8/27/10)**

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DECLARATION OF SERVICE

I, Sabrina Savala, declare that on September 28, 2010, I served and filed copies of the attached Following RSA Workshop Revised AQ-SC11, dated September 28, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [\[http://www.energy.ca.gov/sitingcases/solar\\_millennium\\_palen\]](http://www.energy.ca.gov/sitingcases/solar_millennium_palen)

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

*(Check all that Apply)*

FOR SERVICE TO ALL OTHER PARTIES:

- sent electronically to all email addresses on the Proof of Service list;
- by personal delivery;
- by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

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- sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

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- depositing in the mail an original and 12 paper copies, as follows:

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 09-AFC-7  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
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I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original Signed in Dockets  
Sabrina Savala