

## CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET  
SACRAMENTO, CA 95814-5512

**DATE:** April 22, 2008  
**TO:** Interested Parties  
**FROM:** Ron Yasny, Compliance Project Manager

<b>DOCKET</b>	
01-AFC-19C	
<b>DATE</b>	APR 22 2008
<b>RECD.</b>	APR 21 2008

**SUBJECT: PETITION TO AMEND THE PROJECT DESCRIPTION AND OPERATING PARAMETERS FOR THE COOLING TOWER AT THE SACRAMENTO MUNICIPAL UTILITY DISTRICT FINANCING AUTHORITY'S COSUMNES POWER PLANT (01-AFC-19C)**

On November 7, 2007, Sacramento Municipal Utility District Financing Authority (SFA) filed a petition with the California Energy Commission requesting to modify the Cosumnes Power Plant (CPP). Staff prepared an analysis of this proposed change, and a copy is enclosed for your information and review.

The 500-megawatt project was certified by the Energy Commission on September 9, 2003, and Phase 1 began commercial operation on February 21, 2006. The CPP is located 25 miles southeast of the City of Sacramento, in Sacramento County.

SFA requests modification to the Project Description and Air Quality Conditions of Certification relating to total dissolved solids (TDS) and particulate matter (PM10) emissions for the existing cooling tower at the CPP. Regarding the project description, the cooling tower constructed as part of Phase 1 differs from the cooling tower described in the Commission Decision. The proposed nine-cell cooling tower with one cell used as reserve was changed to a larger eight-cell cooling tower with no cell in reserve. This resulted in changes to the overall dimensions and water and air flow rates of the cooling tower. In addition, the SFA seeks Commission approval of changes to Conditions of Certification AQ-18, AQ-19 and AQ-24, relating to permitted emissions levels for TDS and PM10. The Sacramento Metropolitan Air Quality Management District (District) approved the TDS and PM10 changes on May 1, 2007.

Energy Commission staff reviewed the petition and assessed the impacts of this proposal on environmental quality, public health and safety, and proposes revisions to existing conditions of certification as follows:

- AQ-18 Change allowable daily emission levels for PM10
- AQ-19 Change allowable quarterly and yearly emission levels for PM10
- AQ-24 Change allowable emission levels for TDS for any consecutive three-hour period.

With respect to the cooling tower changes altering staff's original visible plume and noise conclusions, staff also reviewed plume models and noise studies completed in March and December 2006 as well as February and May 2007. It is staff's opinion that the change in plumes is less than significant. Noise mitigation per the Commission's conditions of certification was completed and the results verified during these studies. With the noise mitigation measures and the implementation of revised air quality

conditions, the project will remain in compliance with applicable laws, ordinances, regulations, and standards and that the proposed modifications will not result in a significant adverse direct or cumulative impact to the environment (Title 20, California Code of Regulations, Section 1769).

The amendment petition and staff's analysis has been posted on the Energy Commission's web page at <http://www.energy.ca.gov/sitingcases/smud/compliance/index.html>. The Energy Commission's Order (if approved) will also be posted on the web page. Energy Commission staff intends to recommend approval of the petition at the June 4, 2008 Business Meeting of the Energy Commission. If you have comments on this proposed modification, please submit them to me at the address below prior to May 08, 2008

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Comments may be submitted by fax to (916) 654-3882, or by e-mail to [ryasny@energy.state.ca.us](mailto:ryasny@energy.state.ca.us). If you have any questions, please contact me at (916) 651-1227.

Enclosure

**COSUMNES POWER PLANT (01-AFC-19C)**  
**PETITION TO AMEND THE PROJECT DESCRIPTION AND OPERATING**  
**PARAMETERS FOR THE COOLING TOWER**  
**Air Quality Staff Analysis**  
**Prepared by: Tuan Ngo**  
**April 18, 2008**

**INTRODUCTION**

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On November 07, 2007, the Sacramento Municipal Utility District Financing Authority filed a request to amend Conditions of Certification **AQ-18, 19** and **24** to increase particulate matter less than 10 microns in diameter emission limits of the cooling tower and the Cosumnes Power Plant.

**LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)**

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**Air Quality Table 1** summarizes the applicable LORS for the facility.

**AIR QUALITY Table 1**  
**Laws, Ordinances, Regulations, and Standards**

<i>Applicable LORS</i>	<i>Description</i>
<b>Federal</b>	New Source Review : Best Available Control Technology (BACT) and Offset requirements
	Title V: Federal permit
	New Source Performance Standard: 75 parts per million (ppm) Nitrogen Oxides (NOx) and 150 ppm Sulfur Oxides (SOx) @15 percent oxygen (O <sub>2</sub> ).
<b>State</b>	California Health and Safety Code: Permitting of source needs to be consistent with approved Clean Air Plan
<b>Local</b>	New Source Review: BACT and offsets
	Acid Rain: Requires continuous emission monitoring system
	Particulate Matter and Visible Emissions: Emissions shall not be darker than Ringelmann No. 1 for a continuous three-minutes, and no more than 0.15 grains PM per standard dry cubic foot.

**STAFF ANALYSIS**

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Staff's objectives in completing the air quality analysis for this amendment request are (1) to identify whether there is a potential for a significant air quality impact; and (2) to assure that appropriate mitigation measures have been applied to avoid or mitigate the identified potential air quality impacts.

In 2003, Cosumnes Power Plant (CPP) was licensed with two natural gas-fired General Electric model 7241FA combustion turbines, two unfired heat recovery steam generators , one steam turbine, one nine-cell cooling tower, and various support equipment. The original cooling tower design specifications included eight active cells



## PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

**AQ-18.** Emissions of NO<sub>x</sub>, CO, ROC, SO<sub>x</sub>, and PM<sub>10</sub> from Phase 1 of the CPP facility including start-ups and shut-downs shall not exceed the following limits.

Pollutant	Maximum Allowable Emissions (lbs./day)			
	CTG #1	CTG #2	Cooling Tower	Total
NO <sub>x</sub>	523.7	523.7	NA	1,047.4
CO	3,051.7	3,051.7	NA	6,103.3
ROC	117.3	117.3	NA	234.6
SO <sub>x</sub>	31.4	31.4	NA	62.9
PM <sub>10</sub>	216.0	216.0	<del>3.6</del> <b>7.4</b>	<del>435.6</del> <b>439.4</b>

**Verification:** As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

**AQ-19.** Emissions of NO<sub>x</sub>, CO, ROC, SO<sub>x</sub>, and PM<sub>10</sub> from Phase 1 of the CPP facility including start-ups and shut-downs shall not exceed the following limits.

Pollutant	Maximum allowable emissions				
	Qtr 1 (lbs./quarter)	Qtr 2 (lbs./quarter)	Qtr 3 (lbs./quarter)	Qtr 4 (lbs./quarter)	Total (lbs./year)
NO <sub>x</sub>	62,021	62,643	63,265	63,265	251,194
CO	147,929	148,687	149,444	149,444	595,505504
ROC	14,807	14,958	15,110	15,110	59,986
SO <sub>x</sub>	5,405	5,465	5,525	5,525	21,922
PM <sub>10</sub>	<del>39204</del> <b>39,550</b>	<del>39640</del> <b>39,989</b>	<del>40075</del> <b>40,428</b>	<del>40075</del> <b>40,428</b>	<del>158984</del> <b>160,395</b>

**Verification:** As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

**AQ-24.** The total dissolved solids content of the circulating cooling water shall not exceed ~~470~~ **800** ppmw, averaged over any consecutive three-hour period.

**Verification:** The project owner shall sample and test the cooling tower water at least once per day to verify compliance with this TDS limit. In addition, the project owner shall include information on the date, time, and duration of any violation of this permit condition in the quarterly and annual reports.