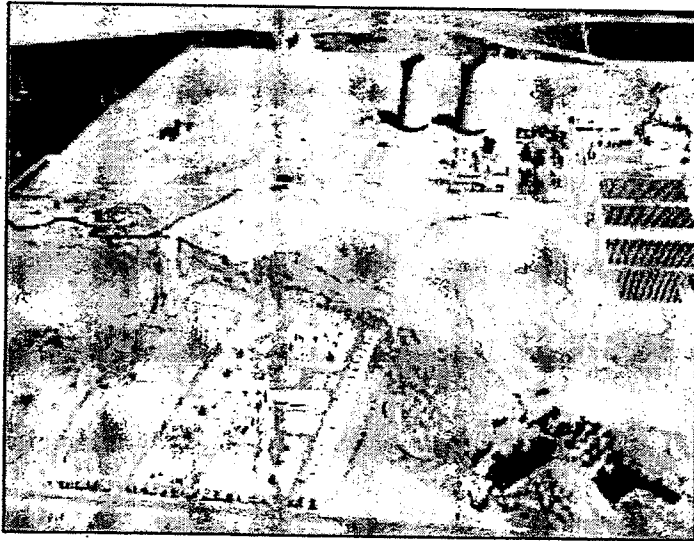Final Staff Assessment

# COSUMNES POWER PLANT PROJECT

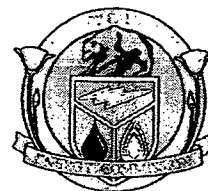## (Part 1)

Application For Certification (01-AFC-19)
Sacramento County
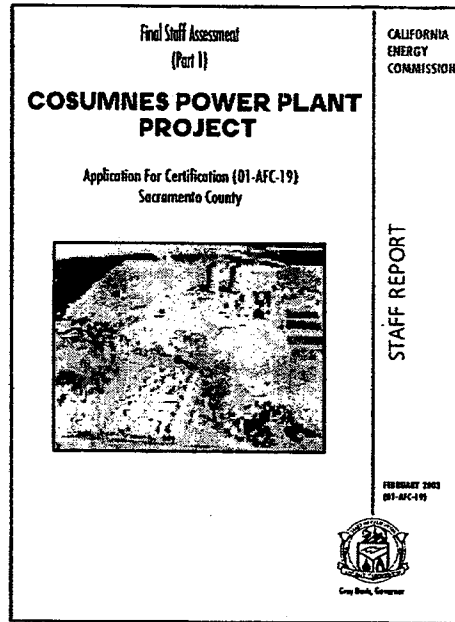
Final Staff Assessment
(Part I)

CALIFORNIA
ENERGY
COMMISSION

## COSUMNES POWER PLANT PROJECT

Application For Certification (01-AFC-19)
Sacramento County

STAFF REPORT

FEBRUARY 2003
(01-AFC-19)

Gray Davis, Governor

# CALIFORNIA
# ENERGY
# COMMISSION

## SITING OFFICE

Kristy Chew
Project Manager

Roger E. Johnson
Office Manager

## SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION

Terrence O'Brien
Deputy Director

**Air Quality Table 3**
**Project Maximum Hourly, Daily, and Annual Emissions**
**(First Phase)**

| | NO$_x$ | SO$_x$[3] | CO | VOC | PM$_{10}$ |
|---|---|---|---|---|---|
| **Maximum Hourly Emissions (lbs/hr)** | | | | | |
| Gas Turbines, Start up[1] | 93.5 | 2.9 | 926.7 | 19.3 | 18.0 |
| Gas Turbines, Steady State | 27.0 | 2.9 | 49.4 | 6.6 | 18.0 |
| Cooling Tower | | | | | 0.2 |
| Total | 93.5 | 2.9 | 926.7 | 19.3 | 18.2 |
| **Maximum Daily Emissions (lbs/day)** | | | | | |
| Gas Turbines[2] | 1,047 | 66 | 6,103 | 235 | 432 |
| Cooling Tower | | | | | 3.6 |
| Total | 1,047 | 66 | 6,103 | 235 | 436 |
| **Maximum Annual Emissions (ton/year)** | | | | | |
| Gas Turbines | 125.60 | 12.28 | 298 | 30 | 78.9 |
| Cooling Tower | | | | | 0.6 |
| Total | 125.60 | 12.28 | 365.4 | 30 | 79.5 |

Source: SMUD 2001a, Table 8.1-23 and SMAQMD, 2002b.
1 Assume one turbine at start-up and the other is in steady state operation.
2 Assume 3 hours of start up followed by 21 hours of steady state operation.
3 Assume an annual average sulfur content of 0.28 gr./100 standard cubic feet (scf) natural gas.

associated with those emissions will no longer occur. The only other expected emissions will be fugitive particulate emissions from the dismantling activities. These activities are short term and will create fugitive dust emissions levels much lower than those created during the construction of the project. Nevertheless, staff recommends that a facility closure plan be submitted to the Energy Commission Compliance Project Manager (CPM) to demonstrate compliance with applicable District Rules and Regulations during closure activities.

## AMMONIA EMISSIONS

Due to the large combustion turbines proposed to be used in this project and the need to control NO$_x$ emissions, significant amounts of ammonia will be injected into the flue gas stream as part of the SCR system. Not all of this ammonia will mix with the flue gases to reduce NO$_x$; a portion of the ammonia will pass through the SCR and would be emitted unaltered, out the stacks. These ammonia emissions are known as ammonia slip. The applicant has committed to an ammonia slip no greater than 10 ppm (SMUD 2001a, Table 8.1B-7). A 10 ppm slip is equivalent to approximately 600 pounds of ammonia emitted into the atmosphere per day (SMUD 2001a, Appendix 8.1B, Table 1B-7).