

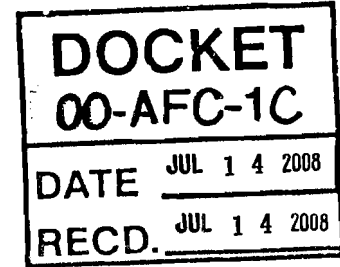
## CALIFORNIA ENERGY COMMISSION

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SACRAMENTO, CA 95814-5512  
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July 14, 2008

Mr. Jack P. Broadbent  
Executive Officer/APCO  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109

**Gateway Generating Station (GGS) BAAQMD Application 17182**

Dear Mr. Broadbent,

The Gateway Generating Station is a 530 megawatt (MW) combined cycle power plant consisting of two General Electric (GE) frame 7FA gas turbines, a steam turbine, and other associated equipment. The facility was licensed in 2001 and is now under construction. On January 16, 2008, Pacific Gas and Electric Company (PG&E) filed a petition to amend the project design and several conditions of certifications of its recently acquired permit for the GGS. We are providing comments on the District's proposed Amended Authority to Construct and draft Prevention of Significant Deterioration (PSD) permit.

Among the requested revisions to numerous District and Energy Commission conditions of certification, PG&E requested approval to increase the facility ammonia "slip" emissions to 10 parts per million (ppm), and add a special exemption for a limited number of hours of excursions of turbine NOx emissions during turbine transients. My staff has discussed the following comments with Mr. Brian Lusher of your staff, and we are providing a summary of the items discussed.

1. Ammonia "slip" emission increases: While the District has approved the change in project ammonia slip from 5 ppm to 10 ppm, Energy Commission staff do not agree for the following reasons:
  - a. The project was licensed at 5 ppm ammonia slip: The issue was analyzed and discussed, and the Commission Decision recommended that the project should be licensed at 5 ppm ammonia slip. Many operating projects with the same equipment have consistently met both the 2 ppm NOx and the 5 ppm ammonia slip on an on-going basis<sup>1</sup>.
  - b. Ammonia monitoring: The project is not being equipped with continuous emission monitoring equipment for ammonia emissions.
  - c. Ammonium sulfates emission increases have not been addressed: Ammonia can transform in the atmosphere to form both sulfate and nitrate particles, both are

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<sup>1</sup> Moss Landing (99-AFC-4), Mountainview (00-AFC-2), Sunrise (98-AFC-4), Elk Hills (99-AFC-1), Cosumnes (01-AFC-19).

PM10/PM2.5. PG&E believes that "*...formation of ammonium nitrate (PM10/PM2.5) in the Bay Area air basin is limited by the formation of nitric acid ...*" If this conclusion is valid, only the nitrate portion of ammonia emission increases has been addressed. The project is classified as a major source under the District and the Federal New Source Review programs; its pre-modification's PM10/PM2.5 emission impact is  $5 \mu\text{g}/\text{m}^3$ . Ammonium sulfate emission increases [from the increase of ammonia emissions] would contribute to the area ambient particulate matter concentration; therefore, they should be addressed and mitigated.

- d. Ammonium nitrate emission increases have not been addressed: As mentioned above, PG&E believes that the project site area is nitric acid controlled, thus increases of ammonia emissions are not causing increase of ammonium nitrate particulate matter. Staff has obtained and reviewed the District's Office Memorandum<sup>2</sup> regarding ammonium nitrate formation in the Bay Area and does not agree with the applicant's opinion that the project area is where "*...ammonium nitrate...is limited by the formation of nitric acid...*" The District memorandum outlines two objectives. One, whether the Bay Area is ammonia limited<sup>3</sup>; and two, to what extent reducing NOx emissions would reduce ammonium nitrate. Among the findings presented in this memorandum, the District staff believes that "*... San Jose and Livermore are not ammonia limited*" during wintertime high particulate matter conditions; rather, these two areas are nitric acid limited. Other findings stated in the memorandum include recognition that the District analyses do not provide solid "*...footing to do planning or to provide guidelines to industry for such tradeoffs [between NOx and ammonium nitrate].*" Thus, the District memorandum is very specific to say that San Jose and Livermore, not the entire Bay Area air basin or the project location, are nitric acid limited, and that no guidelines have been formed to address the ammonia induced PM10/PM2.5 problem. This project is located in the Antioch area of eastern Contra Costa County, which is outside of the area where the District has made the determination; therefore, the applicant's contention that the increase in ammonia emissions from this facility would not cause any increase in PM10/PM2.5 emission impacts is not supported by the District memorandum.

2. Excursion language: The applicant has requested that excursion language be added to address potential upsets in the NOx control system performance during plant load transients. Staff needs clarification on what constitutes a transient event. The only reason given for the need for this language is that there are operational conditions that are beyond the operator's control that could exceed the normal steady state emission limits. The applicant has not provided any circumstances, compelling

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<sup>2</sup> Appendix A: "A First Look at NOx/Ammonium Nitrate Tradeoffs" dated September 8, 1997.

<sup>3</sup> An ammonia limited area means an area where a reduction of ammonia emissions would cause a linear decrease of ammonium nitrate emissions, otherwise it would be an area where ammonium nitrate formation is much less dependent on whether new ammonia emissions. In this case, this area (i.e., eastern Contra Costa County is being defined as "ammonia-neutral" or "ammonia-rich" area.

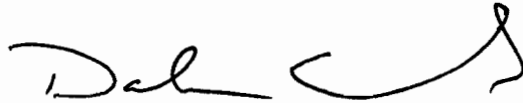
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compelling evidence, operational scenarios or actual operational data to substantiate this claim. We believe that the applicant must provide the evidence as to what specific circumstances are "beyond the operator's control" and the emissions data that substantiates the requested NOx emission concentrations as high as 30 ppm.

Additionally, project excursions of NOx emissions up to 30 ppm could cause the turbines to operate in violation of District Regulation 9, Rule 9, which restricts gas turbines NOx emissions to no more than 9 ppm.

Thank you for the opportunity to provide comments on this preliminary approval of the GGS amendment request. If you have questions or concerns about our comments, please contact Tuan Ngo of our staff at (916) 654-3852.

Sincerely,

A handwritten signature in black ink, appearing to read "Dale Edwards", with a stylized flourish at the end.

Dale Edwards, Manager  
Environmental Protection Office  
Energy Facilities Siting Division