

Robert Sarvey  
 501 W. Grantline Rd  
 Tracy, Ca. 95376  
 209 835-7162

**Comments on the proposed authority to construct for the Gateway Generating Station Application number 17182**

Dear Mr. Lusher,

Thank you for the opportunity to comment on the proposed ATC and draft PSD Permit for the Gateway generating station. The project was certified by the CEC in May of 2001 and the CEQA equivalent documents that the district relies on in its permitting process are now over seven years old. The project has processed over six amendments since its approval. The project as proposed violates the California NO<sub>2</sub> Standard, does not meet current requirements for Best Available Control Technology (BACT), and lacks a cumulative air quality impact analysis.

California NO<sub>2</sub> Standard

The engineering evaluation for permit number 17182 provides no air quality impact modeling information for NO<sub>2</sub>, PM-10, and SO<sub>2</sub>. The only information is from the original permit for the Gateway Project, application 1000. In application 1000 the District performed a PSD analysis for the projects impacts for NO<sub>2</sub>. These results are presented below.

TABLE E-6  
 California and national ambient air quality standards and ambient air quality levels from the proposed (µg/m<sup>3</sup>)

Pollutant	Averaging Time	Maximum Background	Maximum Project impact	Maximum Project impact plus maximum background	California Standards	National Standards
NO <sub>2</sub>	1-hour	164	225	389	470	---

[http://www.baaqmd.gov/pmt/public\\_notices/1999\\_2001/1000/A0018\\_nsr\\_1000\\_pdoc\\_append\\_e\\_102300.pdf](http://www.baaqmd.gov/pmt/public_notices/1999_2001/1000/A0018_nsr_1000_pdoc_append_e_102300.pdf) E-5

On February 19, 2008 the office of administrative law approved the new State NO<sub>2</sub> standard of 338 µg/m<sup>3</sup> which goes into effect on March 20, 2008.

<http://www.arb.ca.gov/research/aaqs/no2-rs/no2-rs.htm> The project's NO<sub>2</sub> impact of 225 µg/m<sup>3</sup>

combined with background of 164 ug/m<sup>3</sup> exceeds the newly established California NO<sub>2</sub> standard of 338 ug/m<sup>3</sup>. According to modeling from application 1000 the project violates the new California NO<sub>2</sub> standard and BAAQMD regulation 1-301 public nuisance provisions. There may be other modeling that demonstrates compliance with the new NO<sub>2</sub> standard but it is not presented in application 17182. The public cannot effectively evaluate the project without complete information. This information should be included in a revised permit and re-circulated to the public for a 30 day comment period. Any significant differences between the modeling results in application 1000 and the revised permit should independently evaluated by the district and fully explained in the second version of the revised ATC so the public can properly determine the projects effects on the environment.

### Start Up Emissions

Start up emission for NO<sub>x</sub> are increased from 452 pounds per start in the original application number 1000 to 600 pounds per start up in permit 17182. There is no discussion of this increase in startup emissions and no modeling for the 1 hour NO<sub>2</sub> impacts in application 17182. The only evidence in the permit of this NO<sub>2</sub> emissions increase is in condition 21 and no evaluation of the impacts from the increased cold start emissions are included in the evaluation. The permit also allows excursions to 3ppm for NO<sub>x</sub> during startup and shutdown and no modeling analysis is presented in permit 1000 or permit 17182 for that 1 hour NO<sub>2</sub> impact.

The district also fails to provide a BACT determination for start up and shut down emissions in the permit. The emissions for start up represent the highest emissions from the project. There are hardware and software modifications to the project that can shorten startup and shutdown events and optimize emission control systems. Start up and shutdown emissions from the facility can be reduced significantly with design changes to the heat recovery steam generator (HRSG) units. With the use of once through HRSG (Benson Boiler) startup time for each turbine/HRSG units can be reduced from the proposed 300 minutes to about 50 minutes or less , resulting in a significant reduction in start up emissions. In addition to reducing the facilities NO<sub>x</sub> emission liabilities the use of the Fast Start technology at the G111GS Project would result in cost savings from less fossil fuel use to create steam that is vented during start-ups. According to one manufacturer the cost for the design changes is not significantly higher than the cost of the standard off the shelf HRSG.

The 600 MW combined cycle Palomar Project in Escondido has installed a proprietary control system, OpFlex from General electric, and injects ammonia earlier to shorten start-up times and reduce start-up emissions at the facility. Preliminary non optimized results from their March 7, 2007, Petition for Variance 4703 Extension indicated they have reduce NO<sub>x</sub> emissions form 120 lbs to 28 lbs for or warm start-up events. The Palomar project utilizes the same turbines as the GGS the GE Frame 7 turbines.

If design or process control changes to reduce the facility's start up and shutdown emissions are implemented, the GGS daily emissions also can be reduced. These design changes represent BACT for the proposed GGS.

### CO BACT

The projects proposed CO limit does not comply with Best Available Control Requirements for CO. Two recent energy projects the Magnolia and the Malburg Energy facilities have been permitted at 2 ppm for CO. The SCAQMD has determined that 2 ppm for CO is BACT through the permitting of the Magnolia Power Project. <http://www.aqmd.gov/bact/386305Magnolia.doc> This represents the current BACT limit for combined cycle projects like the GGS.

### Ammonia Emissions

The amended authority to construct allows an increase in ammonia slip from 5ppm to 10 ppm. Current BACT for ammonia slip for large combustion turbines is 5ppm. The 5ppm ammonia slip in combination with a 2ppm NOx limit has already been required for the following CEC licensed facilities: Malburg Vernon (10-AFC-25), El Segundo (00-AFC-14), Inland Empire (01-AFC-17), Magnolia (01-AFC-6), Morro Bay (00AFC-12), Palomar (01-AFC-24), Tesla (01-AFC-21), and Russell City 01-AFC-7). Moreover, the U.S. EPA, ARB, CEC Commission Staff, the South Coast Air Quality Management District and the San Luis Obispo Air District believe that the scientific evidence shows that ammonia slip from a project like GGS does contribute to secondary PM formation.

In the original decision on the Gateway Generating Station 00-AFC-1, the CEC on page 10 of the decision states:

“The project's ammonia emissions have a potential to contribute to the ammonium nitrate emissions, which may worsen the violation of the PM10 standard. Assuming a 30 percent NOx to nitrate conversion rate and a linear extrapolation of the project's PM10 modeling results, the NOx to nitrate impact from the project can be at a maximum 2  $\mu$ g/m<sup>3</sup>. Because the area is nonattainment for the state 24-hr PM10 standard, the ammonium nitrate contribution, although small, is significant without providing emission reductions as offsets.”

[http://www.energy.ca.gov/sitingcases/contracosta/documents/2001-05-30\\_CONT\\_RACOSTA.PDF](http://www.energy.ca.gov/sitingcases/contracosta/documents/2001-05-30_CONT_RACOSTA.PDF)

On page 13 of the engineering evaluation for application number 17182 it states with regard to particulate matter formation:

“The ammonia emissions resulting from the use of SCR may have another environmental impact through its potential to form secondary particulate matter

such as ammonium nitrate. Because of the complex nature of the chemical reactions and dynamics involved in the formation of secondary particulates, it is difficult to estimate the amount of secondary particulate matter that will be formed from the emission of a given amount of ammonia. However, it is the opinion of the Research and Modeling section of the BAAQMD Planning Division that the formation of ammonium nitrate in the Bay Area air basin is limited by the formation of nitric acid and not driven by the amount of ammonia in the atmosphere. Therefore, ammonia emissions from the proposed SCR system are not expected to contribute significantly to the formation of secondary particulate matter within the BAAQMD. **The potential impact on the formation of secondary particulate matter in the SJVAPCD is not known.**

It is well established in two Energy Commission licensing cases, the Tesla Power Project 01-AFC-21 and the East Altamont Energy Center 01-AFC-04 that 70% of emissions in the Contra Costa area transport to the Tracy area. Permit 17182 clearly states that the BAAQMD has not evaluated the impact of ammonia emissions on the SJVAPCD and as such should limit the ammonia emissions from the GGS to the lowest limit possible or else conduct a study to determine the effect of excess ammonia slip on the Tracy area and the SJVAPCD. When evaluating the potential significant effects of the secondary PM emissions from the ammonia slip, it is necessary to determine if any additional amount of PM emissions will be significant in light of the serious nature of the existing PM10 and PM2.5 problem in the SJVAPCD air basin. (*CEQA Guidelines, Cal. Code Regs., tit. 14, § 15064(b); Kings County Farm Bureau, 221 Cal.App.3d 687, 718*) Under state law, the secondary PM emissions must not prevent or interfere with the attainment or maintenance of the State's PM10 and PM2.5 Air Quality Standard. (*Health and Saf. Code § 42301(a)*)

Application 17182 states on page 13 "A second potential environmental impact that may result from the use of SCR involves the storage and transport of ammonia. Although ammonia is toxic if swallowed or inhaled and can irritate or burn the skin, eyes, nose, or throat, it is a commonly used material that is typically handled safely and without incident. The GGS will utilize aqueous ammonia in a 19% (by weight) solution."

**The GGS will also store transport and utilize up to 35,000 pounds of anhydrous ammonia.** In 2004 the Blythe project experienced a leak in its ammonia system that shut down I-10 for over 4 hours. Fortunately there were no fatalities. The District needs to carefully evaluate the permits use of anhydrous ammonia and do a cumulative impact analysis of ammonia handling and transportation in this dense cluster of power plants.

### Cumulative Air Quality Impacts

There are a significant number of projects within six miles of the Gateway Generating station. Los Medanos, PG&E Pittsburg, Delta Energy Center, Bio Energy, Contra Costa Units 7, 9,10, plus several GWF Power Plants are located

near the proposed GGS. In addition another 930 megawatt plant is being processed by the CEC and the BAAQMD. This new plant the Marsh landing Project is adjacent to the GGS. The amended ATC must address the ambient air quality impacts and the health risks of this large conglomeration of power plants surrounding the GGS.