

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA**

**Application for Certification  
of the Lodi Generating Station**

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**Docket No. 08-AFC-10**

**Comments of Robert Sarvey  
on the Preliminary Determination  
of Compliance**

**May 14, 2008**

<b>DOCKET</b>	
<b>08-AFC-10</b>	
DATE	<u>MAY 14 2009</u>
RECD.	<u>MAY 14 2009</u>

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Dear Mr. Warner,

Thank you for the opportunity to comment on the PDOC for the Lodi Energy Center Project Number N-1083490. We respectfully submit the following comments on the PDOC for the Lodi Project. We hope these comments serve to improve the current proposal.

### Interpollutant Trade

The PDOC proposes to offset the projects PM 2.5 emissions on a pound for pound basis with SOx offsets. Proposed interpollutant trading ratios are required to be scientifically justified with a site specific air quality analysis, as required by Rule 2201, Section 4.13.3. The PDOC attempts to establish an interpollutant<sup>1</sup> ratio based on modeling analyses performed in the southern region of San Joaquin Valley over 100 miles away.

The EPA has finalized its regulations to implement the New Source Review (NSR) program for fine particulate matter on July 15, 2008. Their recommended ratio of SOx offsets to PM 2.5 offsets is 40 tons of SOx for each ton of PM 2.5. The FDOC should explain how the district is complying with the new EPA regulations for PM 2.5 since EPA has not yet approved the Districts PM 2.5 attainment plan. Has the EPA approved this interpollutant ratio? It would appear on the face that the project is required to use the EPA recommended ratio in absence of site specific modeling. The PDOC is proposing a ratio that is 40 times less stringent than EPA has recommended. Considering the San Joaquin Valley has the worst PM 2.5 levels in the country the District should seriously reconsider this interpollutant offset ratio.

In addition the PDOC allows the applicant to surrender 8,287 pounds of SO<sub>2</sub> emission reductions credits for a potential 48,617 pounds of SO<sub>2</sub> emissions from the project. The new EPA rules on PM 2.5 require a pound for pound offset ratio for PM 2.5 precursors.<sup>2</sup> If the districts assumption that one pound of SOx offsets

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<sup>1</sup> <sup>1</sup> “We have determined a nationwide preferred ratio of 40 to 1 (SO<sub>2</sub> tons for PM<sub>2.5</sub> tons) or 1 to 40 (PM<sub>2.5</sub> tons for SO<sub>2</sub>) for trades between these pollutants. We recognize there is spatial variability here between urban and regionally located sources of these pollutants that can be addressed through a local demonstration to determine an area-specific relationship, as appropriate.” [http://www.epa.gov/fedrgstr/EPA-AIR/2008/May/Day-16/a10768.pdf\\_page\\_28338](http://www.epa.gov/fedrgstr/EPA-AIR/2008/May/Day-16/a10768.pdf_page_28338)

<sup>2</sup> “As discussed previously, the Act requires that a source obtain offsets for emissions increases that occur in a nonattainment area. As with PM<sub>2.5</sub> direct emissions, the minimum offset ratio permitted under subpart 1 of the Act is at least 1:1. Based on these requirements of the Act, we are finalizing our proposal that an offset ratio of at least 1:1 applies where a source seeks to offset an increase in emissions of a PM<sub>2.5</sub> precursor with creditable reductions of the same precursor. This offset ratio applies for all pollutants that have been designated as PM<sub>2.5</sub> precursors in a particular nonattainment area.” [http://www.epa.gov/fedrgstr/EPA-AIR/2008/May/Day-16/a10768.pdf\\_page\\_28338](http://www.epa.gov/fedrgstr/EPA-AIR/2008/May/Day-16/a10768.pdf_page_28338)

1 pound of PM 2.5 as allowed in the interpollutant trade the district is allowing 40,330 pounds of SOx to remain unmitigated creating 40,330 pounds of PM 2.5 in violation of CEQA.

### CO BACT

BACT for CO is listed as 3ppm over three hours on page 10 of the PDOC. The District should consider a lower emission rate for this project. Several Projects have achieved lower CO emissions rates in conjunction with a 2ppm NOx limit. One is the Salt River Project in Arizona, which meets a 2ppm NOx limit and a 2ppm CO limit that has been verified by source testing.<sup>3</sup> The Las Vegas Cogeneration facility has a 2ppm NOx limit and a 2ppm CO limit.<sup>4</sup> Both of these projects meet the Districts achieved in practice BACT level. The GWF Tracy Project also located in San Joaquin county (Project # N-1083212 has proposed a BACT limit of 2ppm over 3 hours utilizing a GE Frame 7 unit identical to the one proposed for this project. Based on available information, the district should choose a 2ppm CO limit for this project to comply with BACT.

### Ammonia Emissions

The PDOC allows an ammonia slip of 10 ppm. The District should consider a lower ammonia slip level. One power plant in the Districts BACT clearinghouse the Blackstone ANP Project has achieved an ammonia slip limit as low as 2ppm. The District has just issued a PDOC for the Tracy Peaker Plant project number N-1083132 and the ammonia slip limit is 5 ppm for a project which also utilizes a GE Frame 7. The 5 ppm ammonia limit in combination with a 2 ppm NO limit has already been required for the following CEC licensed facilities: Malburg-Vernon (01-AFC-25), El Segundo (00-AFC-14), Inland Empire (01-AFC-17), Magnolia (01-AFC-6), Morro Bay (00-AFC-12), Palomar (01-AFC-24), and Tesla (01-AFC-21).

In the alternative the District could perform a site specific analysis that demonstrates that no particulate matter will be formed locally or district wide due to the ammonia slip emissions and require mitigation if the analysis demonstrates that there is significant secondary particulate matter formation from the ammonia emissions from the LGS. The district must also consider the transport of the ammonia emissions to regions that may not be ammonia rich outside of the San Joaquin Valley.

A second potential environmental impact that may result from the use of SCR involves ammonia transportation and storage. The proposed facility will utilize anhydrous ammonia for SCR ammonia injection, which will be transported to the facility and stored onsite in tanks. The transportation and storage of ammonia presents a risk of an ammonia release in the event of a major accident. The project, if allowed to use SCR, can eliminate the impact from transportation

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<sup>3</sup> <http://cfpub1.epa.gov/rblc/cfm/ProcDetl.cfm?facnum=25662&procnum=102130>

<sup>4</sup> <http://cfpub1.epa.gov/rblc/cfm/ProcDetl.cfm?facnum=26002&Procnum=103714>

accidents by utilizing a technology called NOxOUT ULTRA®. There are dozens of systems in service, one in Southern California at UC Irvine. Most of the UC campuses have decided not to risk bringing ammonia tankers through campus or having to offload or store ammonia. NOxOUT ULTRA is being specified for new units at UCSD, University of Texas and Harvard. The NOxOUT ULTRA system requires a tank for the urea. The urea is usually in a 50 to 32 % solution. Urea has no vapor pressure and no smell. If it spills, the evaporated water will leave behind a pile of crystal salts. There are no hazards to labeling or training required for the operator and absolutely no risk to adjacent facilities or neighbors. Like aqueous and anhydrous ammonia, NOxOUT ULTRA needs controls to manage the input from the power plant indicating how much reagent the SCR requires. Like aqueous ammonia, the system requires an air blower and heater to heat the air. The heated air goes to a decomposition chamber instead of a vaporizer. In the decomposition chamber, the urea solution is added. The water in the urea solution is vaporized and the additional heat required will then decompose the urea to ammonia. The gas/carrier air is then swept to the AIG and to the SCR. If the urea pump is stopped and air is left in service, the chamber is swept clear of ammonia in less than seven seconds. So in an emergency, there is very little, if any, ammonia exposure. Other than the seven seconds between the chamber and the AIG, the only exposure is the harmless urea.

### Alternative Siting Analysis

The alternatives analysis presented in the PDOC is inadequate. It includes only two alternatives which are equally suitable but are rejected only due to the fact that the current proposal cannot utilize the existing infrastructure at the alternative locations. The analysis fails to discuss the air quality implications of the proposed project and the existing LM-5000 in comparison to the alternative sites.

The alternatives analysis fails to discuss the use of renewable technologies as an alternative to the proposed project. Renewable technologies are dismissed as not meeting the applicant's objectives. The analysis does not consider whether renewable projects are a feasible replacement for the LGS or whether other alternatives would help the State's meet its RPS objectives. The FDOC should include a complete alternatives analysis for the public to review.

The analysis fails to discuss the LGS location in a 100 year flood plain and whether the alternative sites are also located in a flood plain. The alternatives analysis does not discuss dry cooling which would lower the project PM-10 emissions from the cooling tower and eliminate significant amounts of HAP's. The analysis does not discuss the need to run a natural gas line under an airport runway to service the project where the alternative sites do not have this constraint.

The alternative analysis selects anhydrous ammonia based solely on the projects ability to use a shared tank with the current facility. The FDOC should

provide a transportation analysis that justifies the use of anhydrous ammonia for the project. The alternatives analysis fails to discuss the impacts of the use of ammonia for SCR such as the secondary particulate formation and greenhouse gas implications. The alternatives analysis states that urea has not been demonstrated as practical with SCR. There are many power plants using SCR that utilize urea based systems.

The alternative analysis dismisses the use of EMx for NOx control stating, "The CEC recently summarized in the EPA's opinion (Colusa Generating Station Final Staff Assessment) " that EMx is no more effective for reducing air quality impacts than selective catalytic reduction (or "SCR", which is what is proposed for CGS), and it also found EMx to be significantly more expensive and arguably less reliable, particularly for larger facilities." Therefore, EM was not considered for the LEC project. To dismiss the technology for not being cost effective an economic analysis must be performed for the FDOC. EMx™ has been successfully demonstrated as reliable on several small combustion turbine projects up to 45 megawatts, and the manufacturer has claimed that it can be effectively scaled up and made available for utility-scale turbines. Based on this information, it would not be appropriate to eliminate EMx™ as a technically feasible control technology. EMx also substantially lowers emissions of VOC's, CO, and utilizes no ammonia.

### Greenhouse Gas Emissions

The FDOC should include a BACT analysis for greenhouse gas emissions. Different equipment or operating scenarios could reduce greenhouse gases.

### CEQA Considerations

As a responsible agency the District supplies a determination of compliance to the lead agency for CEQA review. Unfortunately many portions of the DOC are not under the jurisdiction of the California Energy Commission and the CEC normally defers to the Districts determinations. Logically the responsible agency is also responsible for CEQA review in its DOC. Recently the District has utilized its own CEQA review and in some cases has required a mitigation fee be paid for programs which fund local NOx reductions. Almost all of the LGS's ERC's are located over 100 miles away. In particular the 90% of the NOx ERC's allocated to the project are located well over 100 miles away. In similar circumstances the District has required mitigation payments to offset the limited efficacy of these distant ERC's

Normally the District assesses the quantity of NOx emissions which in the case of the LGS is 71.33 tons, plus the emissions of the existing LM-5000 which are 20.5 tons per year. (It is not stated in the PDOC whether these existing emission have

ever been offset. Have the emissions from the existing project been offset?) The district then applies a ratio normally 66.2% for ERC's surrendered which have occurred on this side of the Altamont Pass which in this case would amount to 60.8 tons leaving a balance of 31.03 tons left to be mitigated. The most recent agreement used a value of \$51,373 per ton of NOx reduced. Therefore the LGS should be required to make a payment of \$1,605,399 to the District to fund NOx reduction programs to provide CEQA mitigation in the San Joaquin County area.

### Public Notice Requirements

In the past the District has assumed that its public notice requirements are met merely by posting an advertisement in a local newspaper. Federal PSD requirements are much more stringent. 40 C.F.R. § 124.10 directs the District to proactively assemble a "mailing list" of persons to whom PSD notices should be sent. The mailing list must be developed by: Including those who request in writing to be on the List, soliciting persons for "area lists" from participants in past permit proceedings in that area, and notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as Regional and State funded newsletters, environmental bulletins, or State law journals. The District should re notice this permit and adhere to the public notice requirements that are required under Federal and State Law.

The District should also consider establishing a permit application notice section on their website which would enable the public to examine proposed permits in their area. It is unreasonable to expect in the electronic age that the majority of the public would read the entire newspaper selected by the District for the notification when many people no longer subscribe to newspapers. The District's website would provide a cost effective way for those interested in air quality issues to stay abreast of developments in their community. Currently the BAAQMD has a permit application public notice section on their website which helps those member of the public who wish to participate remain informed.<sup>5</sup>

### ERC's

Please identify the original emission reduction site and date, and the method of reduction, for the ERCs that would be used to offset this project. Please describe whether District compliance with Rule 2201, Section 7 would require any of the offsets to be subject to discounting. Please also confirm whether the offsets identified for the project are representative of real and surplus reductions, taking into account possible discounting under Rule 2201.

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<sup>5</sup> [http://www.baaqmd.gov/pmt/public\\_notices/](http://www.baaqmd.gov/pmt/public_notices/)

