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DATE	<u>DEC 21 2009</u>
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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 Draft Final Determination
of Compliance
December 21, 2009

12-21-09

DATE

Robert Sarvey

Robert Sarvey
501 W. Grantline Rd.
Tracy, Ca. 95376

Dear Mr. Warner,

Thank you for the opportunity to comment on the Draft FDOC for the Lodi Energy Center Project Number N-1083490. We respectfully submit the following comments on the Draft FDOC for the Lodi Project.

Public Notice

In our previous comments we asked that the district improve its public notification procedure. In the districts response it was indicated that the district is developing a website to address the public's need for information that is not readily available. We appreciate the districts efforts in establishing this permitting website but we are sorry to inform you that the district still fails in its basic public notice requirements. We provided comments on the previous permit but we have received no notification that a draft FDOC had been issued. We would expect that the district would notify us of this draft permit particularly since we have been extremely active participants in the district permitting process. The district issued a Draft Final Determination of compliance on November 17, 2009 and to date we have received no notice or response to our comments from the district. Instead we found the draft permit on the CEC website which was posted on November 30, 2009. We discovered the public notice on December 7, 2009 in a random visit to the CEC website. We are now requesting that the district provide the public with proper notice and an additional 30 days to provide our comments.

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 ratio based on modeling analyses performed in the southern region of San Joaquin Valley over 100 miles away. Recent interpollutant trades in the northern portion of the air district have required a much higher SOx to PM-10 ratio. The East Altamont Energy Center was required to use a 3:1 ratio for Sox to PM-10.¹ The SJVUAPCD imposed a 2.2:1 ratio for Sox to PM-10 in the Tracy Peaker Plant FDOC condition AQ-63.² On the other side of the hill CEC staff recommended and the CEC approved a 5.3 :1 Sox to PM10 ratio for the Russell

¹http://www.energy.ca.gov/sitingcases/eastaltamont/documents/2002-10-02_FSA.PDF page 5.1-35

²http://www.energy.ca.gov/sitingcases/tracypeaker/documents/2001-12-28_STAFF_ASSESSMENT.PDF page 5-78

City Energy Center.³ CEC staff's analysis was based on actual measurements in San Pablo, San Francisco, and Concord. Those measurements concluded that the correct ratio's were 7:84:1 in San Pablo, 5.73:1 in San Francisco, and 2.29:1 in Concord. All of these locations are closer to the LEC than the Southern San Joaquin Valley is.

The underlying methodology to determine the appropriate ratios for inter-pollutant offsets has not been approved by EPA as required by District Rule 2201. The burden in seeking approval for inter-pollutant offsets rests with LEC and the district to demonstrate that the proposed inter-pollutant offsets will ensure a net benefit to air quality levels in the area of the proposed project. It is important to note that modeling is a critical component of an interpollutant offset analysis, and subsequent models are evaluated on a case-by-case basis. Any approach for inter-pollutant offsets, therefore, must be carefully considered by the agencies in the context of a thorough and descriptive protocol. EPA must concur with the assumptions and methodology before such ratios may be used in this project. **Even though a proposed methodology has been presented in a District attainment plan, it should not be inferred that the methodology has been automatically approved for use in this project without EPA approval.** The district excuses its lack of EPA concurrence on the interpollutant ratio in its response to comments by stating that, "we will not be holding up our obligations under power plant licensing processes, or other permitting, in the meantime." This is not a rational or logical excuse as the districts responsibility is to the residents of the district and not the power plant owner or the CEC permit deadlines.

BACT for PM 2.5/PM-10

The projects potential to emit PM 2.5/ PM -10 calculated on page 11 of the FDOC indicates that the project will be allowed to emit as much as 9 pounds per hour per turbine for the LEC. The district fails to provide a numerical BACT limit for this project. The majority of air districts in California now provide a numerical limit for PM 2.5 emissions. In the recent Russell City Permit evaluation which is quoted by the district in its determination of startup and shutdown emissions (FDOC Appendix J page 5) BAAQMD concluded after an extensive review of source tests at other facilities that BACT for this class of equipment is 7.5 pounds per hour:

The Air District has concluded that a lower limit of 7.5 lb/hr would be achievable by this equipment based on a review of additional source testing data from a number of similar combined-cycle facilities. These 73 source tests showed average particulate emissions of 4.58 lb/hr, with a high of 10.65 lb/hr.⁹⁸ The Air District believes that some of the higher test results may be attributed to anomalies in the testing and analytical methods, the influence of which may be mitigated by application of more rigorous quality assurance/quality control ("QA/QC") by the testing contractor or analytical laboratory. The Air District has therefore concluded that it would not be appropriate to establish a compliance margin that would accommodate these high test results. Instead, the Air District is discounting the highest 5% of the test results (4 of the 73), and proposing a permit limit based on the remaining 95%. This

³ <http://www.energy.ca.gov/2007publications/CEC-700-2007-005/CEC-700-2007-005-FSA.PDF> 4.1-70

approach yields a proposed permit limit of 7.5 lb/hr. The Air District has also reviewed available permits for other similar facilities and has not found any lower permit limits. The Air District is therefore proposing a revised PM₁₀/PM_{2.5} limit for each gas turbine/heat recovery boiler train of 7.5 lb/hr, or 0.00335 lb/MMBTU of natural gas fired, as the BACT limit for the sources. The Air District is also revising its proposed conditions for the daily and annual particulate matter limits accordingly.⁴

The San Joaquin Valley has the worst particulate matter problem in the nation so the district should make every attempt to adopt the strictest BACT limits possible for particulate matter. As this determination has been made in the BAAQMD where air quality is much better than San Joaquin Valley the district should require a lower numerical BACT determination to aid in cleaning up the filthiest air in the nation.

BACT for cooling tower

NCPA has proposed to use high efficiency drift eliminators to reduce drift, which is fine mist of water droplets entrained in the warm air leaving the cooling tower. Drift is proposed to be less than or equal to 0.0005 percent of the circulating water flow with the use of high efficiency drift eliminators. The district in its top down BACT analysis in Appendix E page viii has listed cellular type drift eliminators as BACT but provided no limitation on drift. The permit should specify that .00005% is the drift limit.

Additionally the project's particulate matter emissions from the cooling tower are affected by the total dissolved solids in the reclaimed water that the LEC proposes to use. The district should analyze the reclaimed water and provide a numerical limit on the total dissolved solids in the reclaimed water to further limit particulate matter emissions. This is a common practice in recent power plant cases such as the Russell City Energy Center:

“The Air District also conducted a similar review of the BACT limits for particulate matter emissions from the cooling tower. As noted in the initial Statement of Basis, the cooling tower can contribute to particulate matter emissions through solids dissolved in the water used in the cooling system, which can be emitted in the water vapor exhausted through the cooling tower. The Air District concluded that imposing a direct numerical limitation on emissions of PM from the cooling tower was infeasible, and instead proposed to limit the Total Dissolved Solids (“TDS”) in the cooling water to 8,000 parts per million by weight (along with a requirement to equip the cooling tower with high-efficiency drift eliminators guaranteed to achieve less than 0.0005 percent drift). (See Statement of Basis at p. 78 & proposed Condition No. 44.)

The Air District has conducted a further analysis of TDS data from the source of the proposed facility's cooling water, the City of Hayward's Waste Water Treatment Plant, which is adjacent to the proposed facility. Based on this analysis, the Air District has

⁴ http://www.baaqmd.gov/~media/Files/Engineering/Public%20Notices/2009/15487/B3161_nsr_15487_fsb_080309.ashx page 51
Bay Area Air Quality Management District Application Number 15487 August 3, 2009

concluded that the facility should be able to keep the TDS of the cooling water at 6200 ppm or below. The Air District is therefore revising the proposed BACT limit for TDS from 8000 ppm to 6200 ppm.⁵

Ammonia Emissions

The PDOC allows an ammonia slip of 10 ppm. The District should consider a lower ammonia slip level. 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 combined cycle project. The 5 ppm ammonia limit in combination with a 2 ppm NOx 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). It has been demonstrated in practice that a 5 ppm ammonia slip can be achieved while also attaining a 2ppm NOx limit. There is no need for a trade off between the ammonia slip and the NOx emissions.

The district has not performed any analysis of secondary particulate formation in the Northern San Joaquin Valley. The BAAQMD is now reconsidering their position about the significance of ammonia emissions from power plants. In attachment 1 the following discussion on secondary ammonia slip in the BAAQMD was had with PG&E and Sierra Research:

*“ Brian Lusher indicated that the CEC staff was pressuring the BAAQMD staff on the proposal to raise the ammonia slip limit to 10 ppm. He had reviewed the District's studies on the contribution of ammonia to secondary particulate. **Although previous District statements were that ammonia did not contribute to secondary particulate in the BAAQMD, some staff members were now reevaluating that position. He noted that many recent projects had accepted 5 ppm ammonia slip limits.**”⁶*

The SJVUAPCD in its comments on the PDOC for the East Altamont Energy Center criticized the BAAQMD for not performing an analysis of the formation of secondary ammonia from ammonia slip in the Northern San Joaquin Valley.⁷ The district would be wise to consider their comments to a neighboring air district.

⁵ http://www.baaqmd.gov/~media/Files/Engineering/Public%20Notices/2009/15487/B3161_nsr_15487_fsb_080309.ashx page 51
Bay Area Air Quality Management District Application Number 15487 August 3, 2009

⁶ Attachment 1 BAQMD meeting with PG&E and Sierra Research on Gateway Project.

⁷ SJVUAPCD comments on the PDOC for the East Altamont Energy Center. SJVUAPCD 10/21 Topics Brief on Air Quality, pp. 25-26

BACT Startup and shutdown Emissions

Appendix J page 2 provides a response to EPA and energy commission and the public's comments that a 6 hour start up time is too long for this project. In response the district provided the following answer.

“Siemens turbine package uses "Flex Plant™ 30" faster startup technology. This technology package includes a modified heat recovery steam generator (HRSG) design and an auxiliary boiler. The technology allows faster heating of the HRSG and earlier startup of the steam turbine, thereby significantly reducing the startup times. However, because no Siemens Flex Plant configuration plants have yet been built or operated, no in-use operating data is yet available that can be used to accurately establish the startup times for the proposed gas turbine. Furthermore, the turbine vendor does not guarantee any startup time during different startup modes (Le. cold, warm, hot) using this technology. To overcome this issue, NCPA has proposed to reduce the originally proposed startup or shutdown time from 6.0 hours per event to 3.0 hours per event. In addition to this, the applicant has proposed to establish more realistic startup time limits for cold, warm and hot startup modes based on the actual startup data in the first 12- months following the end of the commissioning activities.”

First of all we would like to note that BACT is not determined by the particular equipment that the project owner is selecting for use. BACT is defined in the district rules as:

3.9 Best Available Control Technology (BACT): is the most stringent emission limitation or control technique of the following:

3.9.1 Achieved in practice for such category and class of source;

3.9.2 Contained in any State Implementation Plan approved by the Environmental Protection Agency for such category and class of source. A specific limitation or control technique shall not apply if the owner of the proposed emissions unit demonstrates to the satisfaction of the APCO that such a limitation or control technique is not presently achievable; or

*3.9.3 Contained in an applicable federal New Source Performance Standard;
or*

3.9.4 Any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source.

The district needs to take a closer look at startup and shutdown limits being permitted or proposed at other facilities. For example the Oakley Generating

Station is proposing a 638 MW combined cycle project that will utilize two GE Frame 7FA CTGs the same turbines originally proposed for the Lodi Energy Center. The project will use GE's 207FA Expedited Rapid Response Engineered Equipment Package (EEP) "which will limit all startup/shutdown periods to one (1) hour or less."⁸ The district must do further independent analysis to determine BACT for start up and shut downs to comply with district regulations.

PSD Permit

According to the FDOC on page 2

*"In September 2008, NCPA had filed application to obtain Prevention of Significant Deterioration (PSD) requirements from EPA Region 9. NCPA has requested to withdraw the PSD application, and decided to establish a combined CO emissions limit of 198,000 pounds per year for permits N-2697-5-0 (Siemens Gas Turbine) and N-2697-6-(36.5 MMBtu/hr Auxiliary Boiler). **NCPA's consultant states that establishing the proposed CO limit may not require them to obtain PSD permit from EPA for the proposed project.**"*

The district and the EPA are supposed to make the determination of whether a PSD permit is needed **not the applicant's consultant**. In addition we caution the applicant and the district and recommend the district consult with the EPA on the PSD permit requirements rather than rely on consultants recommendations on PSD applicability. Currently there is a project in the BAAQMD that decided it would be cheaper to construct and operate the project rather than obtain a valid PSD permit which resulted in a consent decree from USEPA.⁹ This was embarrassing and costly for the applicant and the BAAQMD. We believe that a PSD application will be necessary for CO emissions and greenhouse gas emissions. The greenhouse gas emissions will certainly need to be addressed in the Title V certificate however the district proposes to issue it.

Offset Package

Ninety percent the project's NOx offset package consists of offsets that are 100 miles away from the project site and ninety nine percent of the reductions occurred before 1993. One hundred percent of the projects VOC emission reduction credits occurred over 200 miles away and were recorded in 1979 eleven years before the Clean Air Act was enacted. Eighty five percent of the projects SOx emission reduction credits are from over 100 miles away from the project and not one ERC was created before 1992. Ninety two percent of the projects PM-10 ERC's are over 100 miles away. This is a very weak ERC package that the district should revise .

⁸ http://www.energy.ca.gov/sitingcases/contracosta/documents/applicant/afc/Volume%201/CCGS_5.1_Air%20Quality.pdf Oakley Generating Station AFC 09-AFC-4 page 5.1-25

⁹ http://www.justice.gov/enrd/ConsentDecrees/2060_r_Pacific_Gas_and_Electric_Company_CDFinal.pdf

Attachment A BAAQMD email District meeting

From: Brian Lusher
Sent: Thursday, August 07, 2008 11 :59 AM
To: Alexander Crockett
Cc: Brian Bateman; Bob Nishimura
Subject: FW: Follow up GGS Air Permit
Attachments: BAAQMD teleconference notes 080408.doc
rrr

-----Original Message-----

From: Allen, Thomas [mailto:HTAI@PGE.COM]
Sent: Wednesday, August 06, 2008 10:51 AM
To: Allen, Thomas; Royall, Steve; [Nancy L. Matthews](mailto:Nancy.L.Matthews); [Gary Rubenstein](mailto:Gary.Rubenstein); sgalati@gb-LLP.rnrn; Andrea@agrenier.mm; Maring, Jon; Royall, Steve; Espiritu, Angel 8 ; Brian Lusher; Phung, Hoc
Cc: Farabee, David R.

Subject: RE: Follow up GGS Air Permit
<BAAQMD teleconference notes 080408.doc>>

All

Here are notes from our previous meeting that Nancy prepared. Let Nancy and me know if there *are* questions or comments

Tom Allen
Project Manager
Gateway Generating Station

925-459-7201 cetl 41 5-31 7-4463

From: Allen, Thomas

Sent: Thursday, March 03, 2005 12: 17 Pt.?

To: Royal, Stwe; 'Nancy L. Matthews'; %aV Ruben!Zein!; 'Scott t Galati (sgalati@~b-CLP.cor)';

'Andrea@agrenier.m'; Mannng, Ion, Royall, Steve;

EsprhAngel 5; 'blusher@baaqmd.gm'; Phun , HOE

Cc: Farabee, David A.

Subject: Follow up GGS Air Permit

When: Wednesday, August 06, 2008 11:00 AM - 11: 3 0 AM (GHT-08:00) Pa ~ fTa~ ne(U S & Cmada).

Where: GGS Conference Call in. 866-257-0480 '4159735105'

Gateway Generating Station Teleconference Notes

August 4, 2008

Participants:

BAAQMD Alexander (Sandy) Crockett (staff attorney)

Brian Bateman (head of Permit Services)

Bob Nishimura (senior permitting engineer)

Brian Lusher (permit engineer)

Tom Allen

Steve Royall

Hoc Phung

Angel Espiritu

Teresa DeBono

Latham & Watkins David Farabee

Sierra Research Gary Rubenstein

Nancy Matthews

Meeting Notes:

I. Discussion of Environmental Appeals B o d Decision in the Russell City Energy Center licensing proceeding. Sandy Crockett provided a summary of the EAB decision on the Russell City Energy Center PSD permit amendment and the timing implications of an EAB appeal for GGS. District was taken to task by EAB for not complying with noticing requirements of 40 CFR 124 and is concerned that the notice provided for the GGS amendment might also be viewed by EAB as deficient. Sandy is concerned that the EAB plaintiff in the RCEC case would appeal the GGS permit to the EAB on the same grounds. He indicated that the RCEC plaintiff had been in contact with Bob Sarvey, who had submitted public comments on the GGS draft permit. He noted that power plant project opponents such as Sarvey appear to have discovered that the EAB appeal process is an effective means of delaying projects since an EAB appeal stays the PSD permit for 6 months or more even if EAB ultimately rejects the appeal.

2. Renoticing under Section Title 40 Part 124 requirements. Area lists of interested parties by Region. District believes (hat it may *be* preferable to renotice the amendment using a Districtwide rather than a countywide notice list, resulting in a 30-day delay for issuance of the amended PSD permit but eliminating the RCEC plaintiffs ability to appeal this issue to the EAR. Gary Rubenstein indicated that we expect the permit to be appealed to the EAB by Sarvey anyway. He stated that since the time-critical element for PG&E was the commission-related permit conditions, and since an appeal would

stay the permit whether it had any merit or not, it's not clear that any time would be saved by renoticing the draft permit. Sandy suggested that it may be easier for the EAB to dismiss the appeal without the notice issue.

3. Public Meeting; may be required under Title 40 Part 1 24. District also noted that if amendment is renoticed, comments could request a public hearing. Gary and David Farabee recommended that if the permit is renoticed, PG&E should request a public hearing so the hearing notice period could run concurrently with the comment period, avoiding additional delays.

4. AC amendment considered a non-major ~modification f PSD permit.

There was a discussion of the need for amended CO emission limits during commissioning. Gary and Steve Royall explained that the limits in the current permit are not adequate; if amendment is delayed beyond project startup, GGS may need to request variance from Hearing Board. Gary and Tom Allen indicated that GGS is exploring ways of reducing CO emissions during commissioning to comply with current limits, such as installing oxidation catalyst before first fire. **Gary noted that under EPA policy, once a facility starts up, a non-major amendment no longer requires PSD review and public notice, so if amendment issuance were to be delayed until after startup the PSD issues could be moot.** However, District would appear to be circumventing the regulatory process if it were to delay. If GGS were to withdraw permit amendment until after commissioning it would be hard for District staff to support, and the Hearing Board to grant, a variance.

5. Basis of revised annual CO limit.

Brian Lusher said he had received information from Sierra on this topic; it appeared to address his questions and he will contact Sierra directly if he had additional questions.

6. Additional discussion on fast start/rapid start technology and the possible implementation of this technology for this project. District staff believes they need to address startup BACT in response to comments. Brian Lusher noted that he had received some information from Sierra to address this. Gary noted that EPA had addressed this issue in the Colusa PSD permit; Brian will look at the information PG&E has already submitted, and may request additional information, to assist in preparing his response. There was a general discussion of the physical changes necessary to implement fast start technology - software changes alone are not adequate-- and why this is not feasible for GGS at this point in project development. Brian would like to include a warm startup time limit in the GGS permit as one way to address the BACT issue. There was a general discussion regarding the need to maintain the 900 lb hr CO limit-that the hourly limits could not be lowered. The District understands this issue.

7. NH₃ Slip/ Secondary PM

Brian Lusher indicated that the CEC staff was pressuring the BAAQMD staff on the

proposal to raise the ammonia slip limit to 10 ppm. He had reviewed the District's studies on the contribution of ammonia to secondary particulate. Although previous District statements were that ammonia did not contribute to secondary particulate in the BAAQMD, some staff members were now reevaluating that position. He noted that many recent projects had accepted 5 ppm ammonia slip limits.

Gary pointed out that the 5 ppm slip limits for recent projects were proposed or accepted for other reasons, including BACT determinations (San Luis Obispo County APCD and SCAQMD), and these reasons are not relevant to GGS. He said that the District staff had been consistent in its position regarding the contribution of ammonia slip to secondary PM in the Bay Area, and that if the District staff changed the technical conclusions regarding atmospheric chemistry, GGS would accept that determination. However, the BAAQMD staff, not *the* CEC staff, were the experts on this air quality issue.

8. Excursion Language Necessary? Justification for Excursion Language?

Brian Lusher asked for some justification for the requested excursion language in the draft permit. Gary indicated that Sierra was working on an analysis of acid rain monitoring data to address the question, and that a summary of the analysis would be provided to the District when it was completed later this week.

9. CO2 BACT

Brian Lusher said the District believes that CO2 emissions need to be addressed in permit evaluations. Gary warned against including CO2 emissions in a PSD permit evaluation because that could lead to making every project a major facility for CO2. Sandy Crockett agreed with this concern. Brian also indicated that the District was considering whether the modeling results for other non-PSD pollutants needed to be included in the public notice and engineering evaluation. Gary expressed concern that this could make it appear as if the entire PSD permit was subject to public notice, and not just the requested amendment. The District staff indicated that this was their intent, as a fallback position. Gary indicated that while PG&E could figure out a way to deal with delays related to the pending permit amendment, if there was even a slight chance that the public notice for the amendment could be construed as a renounce of the entire PSD permit, and hence an appeal could stay the effectiveness of the initial PSD permit, PG&E would withdraw the amendment request. The District staff agreed to continue to review these issues internally. A follow-up conference call was scheduled for 11 am Wednesday, August 6.