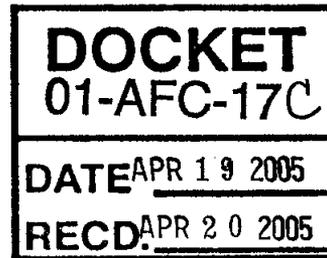




**sierra
research**

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April 19, 2005



Mr. Li Chen
Air Quality Engineer
South Coast AQMD
21865 E. Copley Drive
Diamond Bar, CA 91765

Subject: Permit Application for the Inland Empire Energy Center project
(Facility ID 129816)

Dear Mr. Chen:

On behalf of Inland Empire Energy Center, we are pleased to provide the following responses to questions raised in the District's April 13, 2005 email to Sierra Research.

Question 1: John has found a listing in the District's BACT database which has a lower NO_x and CO limits. This is a Babcock & Wilcox boiler fitted with SCR and CO catalyst. The NO_x limit is 5 ppmv and the CO limit is also 5 ppmv. This was added to the District's BACT database on March 12, 2004. Considering this, please explain how you plan with comply with the new limits?

Response 1: The BACT determination cited by the District is for one of the AES Huntington Beach units. The AES unit in question is a 2,088 MMBtu/hr field-erected electric utility boiler. This boiler is much larger than the 157 MMBtu/hr industrial packaged boiler proposed for IECC. In addition to the size difference, there is a fundamental difference in the combustion chambers between the two boilers, with the AES unit equipped with multiple burners and separate air registers compared to the IECC boiler, which will be equipped with a single burner. As shown in Table 1, none of the most recent/stringent commercial/industrial boilers listed in the District's BACT clearinghouse show combined BACT levels lower than the levels proposed for the IECC boiler (i.e., 7 ppmv @ 3% O₂ for NO_x, 50 ppmv @ 3% O₂ for CO). In addition, the SCAQMD BACT determination for the AES Huntington Beach unit acknowledges that the boiler is having problems complying with the 1-hr NO_x limit of 5 ppmv @ 3% O₂ and that this problem is expected to get worse as the SCR system ages. Consequently, we do not believe that it is appropriate for the District to use the AES Huntington Beach BACT determination for the proposed IECC boiler, and we continue to believe the proposed IECC boiler complies with the District's BACT requirements for commercial/industrial boilers.

Facility	Date of BACT Determination	Boiler Rating (MMBtu/hr)	NOx Limit (ppmv @ 3% O ₂)	CO Limit (ppmv @ 3% O ₂)
Los Angeles County Internatn'l Services (applic. 405470)	5/19/2004	39.0	9	25
Fullerton College (applic. 413617)	7/11/2003	10.0	12	50
LACorr Packaging (applic. 366569)	4/15/2003	21.0	7	50
Cosmetic Laboratories (applic. 385770)	11/22/2002	21.5	9	100

Question 2: We have reviewed Mike's response of March 29, 2005. We agree the Miratech filter CBS64/2700 filter may be considered comparable to the CleanAir's Permit filter. However, we need to know whether the emission control levels, i.e., CO of 90%, PM10 of 90% and VOC of 70% are certified by CARB or other APCDs. Please provide more details about this filter so we can determine if it is in compliance with BACT.

Response 2: We reviewed the CARB and EPA Diesel engine control technology verification websites and could not find a verification for the Miratech oxidizing particulate trap proposed for the IEEC standby generator engines. The particulate, CO, and VOC control levels discussed in our March 29, 2005 letter to the District were based on the vendor-supplied specification sheet for the proposed Miratech control system (see Attachment 5 of the March 29, 2005 letter). If the District determines that it is essential for a particulate trap to be verified by CARB and/or EPA for it to be considered BACT for a stationary Diesel engine, we would be willing to propose the use of a CleanAir Systems PERMIT[®] oxidizing particulate trap for the IEEC standby generator engines since it is the only Level III Diesel PM trap currently verified by CARB for stationary Diesel engine applications.

Question 3: We are made aware of CEC's concerns about the startup emission factors. Please keep us informed whether you plan to modify the emissions factors. If so I would need to revise the evaluation.

Response 3: There has been no modification of gas turbine startup emission factors associated with the CEC review process. The only issue raised by the CEC thus far was regarding a clarification that both gas turbines could start up simultaneously. As requested by the CEC staff, a revised modeling analysis was performed using source-group OLM rather than individual OLM to analyze 1-hr NO₂ impacts during gas turbine startups. As shown in Table 2, the maximum ambient 1-hr average NO₂ impacts

Gas Turbine Operating Mode	NOx Emission Rate (lbs/hr per GT)	Maximum 1-Hr NO ₂ Impact Using Individual OLM (µg/m ³)	Maximum 1-Hr NO ₂ Impact Using Source-Group OLM (µg/m ³)
Gas Turbine Startups			
One GT in startup	275	293.4	186.1
Second GT in startup	275		
Gas Turbine Commissioning			
One GT in commissioning	587	194.4	188.1
Second GT in baseload	18.83		

decreased as a result of using the source-group OLM approach. A revised analysis was performed using the source-group OLM approach with both gas turbines simultaneously undergoing cold starts at a NOx emission rate of 408 lbs/hr per gas turbine. As shown in Table 3, this analysis shows that no ambient air quality standards are exceeded at a NOx emission rate of 408 lbs/hr per gas turbine. While a worst-case single gas turbine startup NOx emission rate of 408 lbs/hr was analyzed in the February 2, 2005 permit application submitted to the District, for simultaneous gas turbine startups a NOx emission rate of 275 lbs/hr per gas turbine (550 lbs/hr combined for both gas turbines) was analyzed in the February 2, 2005 permit application package. The higher allowable worst-case hourly NOx emissions rate during simultaneous gas turbine startups does not impact the daily or annual emission calculations included in the February 2, 2005 permit application package, since the total NOx emissions per gas turbine startup remain unchanged by the revised analysis. The electronic modeling files for this revised modeling analysis are included in an enclosed compact disk.

Gas Turbine Operating Mode	NOx Emission Rate (lbs/hr per GT)	Maximum 1-Hr NO ₂ Impact Using Source-Group OLM (ug/m3)	Background 1-Hr NO ₂ (ug/m3)	Total Impact (ug/m3)	State Standard (ug/m3)
One GT in startup	408	197.5	171	369	470
Second GT in startup	408				

Question 4: We are not clear whether IEEC has purchased any PM₁₀ or SO_x ERCs.

Response 4: In Attachment 4, Table 26 of the February 2, 2005 permit application package submitted to the District, we show the ERCs acquired thus far for the IEEC project. As shown in this table, no PM₁₀ ERCs have been acquired for the project. In addition, 14 lbs/day of SO_x ERCs (ERC certification number AQ005311) have been acquired for the project. The supporting calculation included with Table 26 shows how the 14 lbs/day of SO_x ERCs were accounted for in determining the remaining SO_x credits needed for the project.

If you have any questions or need further information, please don't hesitate to contact me.

Sincerely,


Gary Rubenstein
Senior Partner

Enclosure (modeling CD)

cc (w/o enclosure):

John Yee, SCAQMD
Pang Mueller, SCAQMD
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Connie Bruins, CEC
CEC Dockets Office, Docket #01-AFC-17