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May 29, 2013

Via E-Mail and Hand Delivery

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: El Segundo Power Plant Project (00-AFC-14C)
Applicant's Letter dated May 24, 2013
to South Coast Air Quality Management District

Dear Sir/Madam:

On behalf of El Segundo Power Plant Project, enclosed please find for docketing Applicant's letter dated May 24, 2013 to South Coast Air Quality Management District.

Please don't hesitate to contact me if you have any questions regarding this filing.

Very truly yours,

John A. McKinsey

JAM:dh
Enclosures

sierra research

1801 J Street
Sacramento, CA 95811
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Ann Arbor, MI
Tel: (734) 761-6666
Fax: (734) 761-6755

May 24, 2013

Kenneth L. Coats
AQ Engineer II
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

Subject: El Segundo Power Facility Modification Project – SCAQMD Permit Application

Dear Mr. Coats:

The following are responses to requests for additional clarifying information contained in May 11, 2013 emails from you to George Piantka regarding the March 2013 permit application for the proposed El Segundo Power Facility Modification Project.

Request: The process flow diagram indicates there will be new cooling towers proposed for the ESPFM.

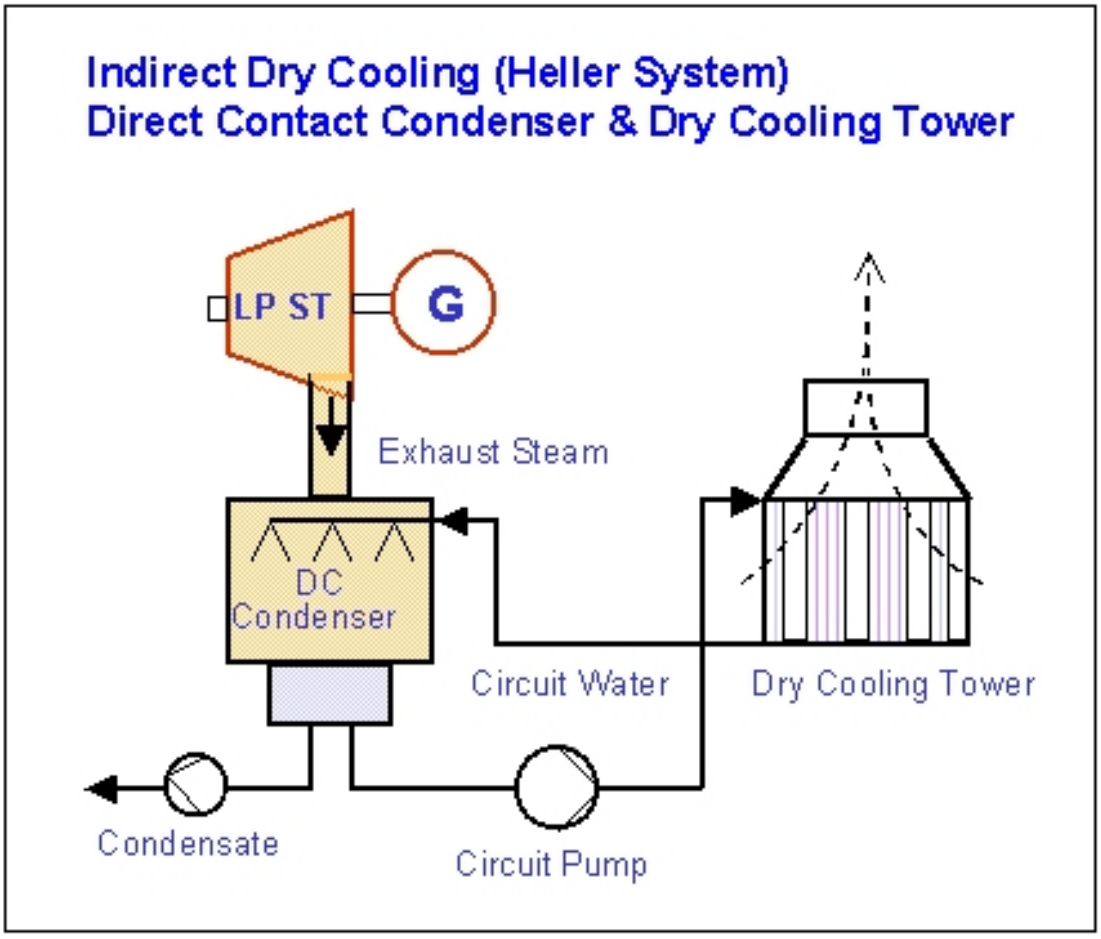
Response: The cooling structures shown on the drawing utilize dry cooling. There are no particulate emissions from the cooling system.

Cooling for the combined cycle unit will be provided by a Heller system. A Heller system is an indirect dry cooling system that uses air as a secondary cooling medium. The primary cooling medium is cooled condensate returned from the dry tower, but the condensate flows in a closed system and is never in contact with the cooling air.

Exhaust steam from the steam turbine is condensed by direct contact with cooled condensate. Water from the direct contact jet condenser is divided into two streams. One water stream, equal to the amount of condensate from the steam cycle, is pumped forward to be heated again in the HRSG. The other water stream, which is most of the water, is pumped to a dry cooling tower, where it is cooled in non-evaporative water-to-air heat exchangers. The cooled water is then returned to the condenser where it is sprayed into and mixed with the exhaust steam. The steam condenses on the surface of the droplets and collects in the hotwell.

An illustrative schematic is provided below in Figure 1.

Figure 1



Request: In the chart you sent me, could you re-compute the numbers in the "Trent 60" column at an ambient temperature of 78 degrees F?

Response: The requested information is presented in Table 1 below.

Gas Properties used in the Application analysis
LHV 929 btu/scf
HHV 1,030 btu/scf

Table 1
Heat Rates and Efficiency for Trent 60 and GE 7FA Units

			Trent 60	GE 7FA		TOTAL
2			Cold	Cold	Cold	Units 9,10,11,12
3				Peak w/ Duct	Base	
4	Ambient Temp			41	41	
5	RH	%	0.5	0.76	0.76	
6	Duct Firing		Simple Cycle	FIRED	UNFIRED	
7	CTG Gross Output (ea. unit):	MW	57	222	222	336
8	STG Gross Ouput:	MW		112	87	112
9	Total Gross Output:	MW	57	334	308	449
10	Total Net Output:	MW	55	325	300	435
11	GT Fuel Flow: (ea. unit)	MMBTU/hr-HHV	516	2,168	2,168	
12	DB Fuel Flow:	MMBTU/hr-HHV		268		
13	Total Fuel Flow:	MMBTU/hr-HHV	516	2,436	2,168	3,468
14		MMBTU/hr-LHV	465	2,197	1,955	3,127
15	Gross Heat Rate	BTU/kWh-HHV	8,985	7,301	7,038	7,732
16		BTU/kWh-LHV	8,102	6,583	6,346	6,972
17	Net Heat Rate:	BTU/kWh-HHV	9,380	7,490	7,219	7,967
18		BTU/kWh-LHV	8,458	6,754	6,510	7,184
19			Gross	Efficiency -HHV		44.1%
20				Efficiency -LHV		48.9%
21			Net	Efficiency -HHV		42.8%
22				Efficiency -LHV		47.5%

Note: All of the turbine data are from Tables B-1 and B-2, except net output data which are from Table 1-2A of the Petition to Amend.

Request: Also I would like the individual net plant heat rates for both the simple cycle (at 78 deg F) and combined cycle (at 41 deg F) systems as well as for the entire plant, both at LHV and HHV.

Response: I have added row numbers to Table 1 above for ease of reference. The table layout is otherwise identical with the one previously submitted.

The individual net unit heat rates are given in rows 17 (for HHV) and 18 (for LHV). The values in the previous table were for operation at an ambient temperature of 41 degrees F. In Table 1 above, the values are for 41 F (for the GE) and 78 F (for the Trents). The values in the final column of the current table are the sum of values for both Trents at 78 F, and the GE at 41 F.

Request: What is the base elevation of the stacks for the GE 7FA and the two RR Trent 60 gas turbines?

Response: The base elevation is 20 feet.

Previous Requests for Clarifying Information

The following information is provided in response to requests for additional clarifying information contained in the April 12, 2013 incomplete letter for the proposed El Segundo Power Facility Modification Project.

Request: Auxiliary Boiler. Please provide the name of the manufacturer and the performance warranty for the device which will show compliance with the required 9 ppmv NOx emission limit measured at 3% O_2.

Response: A letter from Cleaver Brooks on the auxiliary boiler burner make/model and emissions guarantees is attached.

Request: GE F7A Combined Cycle Gas Turbine. Please provide a performance warranty from the turbine manufacturer for which the 9.5 lb/hr $PM_{10}/PM_{2.5}$ emission rate was based on.

An email from Mike Thuillez (GE Power & Water) to Steve Rose (NRG) describing particulate emissions is attached. Please let us know if this meets the District's needs for this item.

Request for Additional Time to Prepare Responses

There are still several District requests for clarifying information for which we have not been able to complete responses. El Segundo Power requests additional time to prepare responses to those requests. The target dates for submittal of this information is shown in Table 2 below.

Table 2
Target Dates for Submittal of SCAQMD Information Requests

Date Requested	SCAQMD Information Request	Target Date for Submittal
5/11/13	Ammonia Consumption	5/31/13
5/11/13	Catalyst temperature range	5/31/13
4/12/13	Additional Impact Analysis (PSD)	5/31/13
4/12/13	Letter from catalyst vendor regarding SCR/Ox Cat emissions	6/28/13
4/12/13	Duct burner make/model	6/28/13
4/12/13	Additional information regarding GE Unit fast start tech	5/31/13
4/12/13	Schedule for retirement of Units 3 and 4	5/31/13
4/12/13	Protocol for 1-hr NO_2 Impact Analysis to Include Nearby Sources	5/31/13
4/12/13	1-hr NO_2 Impact Analysis including nearby sources	6/15/13

El Segundo Power appreciates the efforts that the District has made in its review of the ESPFM application, and will make every effort to get the requested information as quickly as possible.

Sincerely,

Tom Andrews

cc:
Craig Hoffman, CEC Project Manager
George Piantka, NRG
Ken Riesz, NRG
Steve Odabashian, NRG

6940 Cornhusker Highway
Lincoln, NE 68507
402.434.2000
cleaverbrooks.com

May 20, 2013

NRG Energy
1201 Fannin St.
Houston, TX 77002

Attention: Mr. Steve Rose, Senior Director - Development Engineering
Subject : Auxiliary Boiler Emissions - NRG's El Segundo Expansion Project

Dear Mr. Rose,

In response to your recent e-mail, we are pleased to submit the following information:

The boiler-burner system as proposed on your El Segundo Expansion Project (Proposal#04620389) incorporates our 30,000 lb/hr Cleaver-Brooks "D" Type Boiler (model# NB-100D-40) with a Natcom's ultra-low NOx burner system (model# P-36-G-24-1318) designed for a 36.2 MMBtu/hr (HHV) maximum heat release firing natural gas.

In addition, the above Cleaver-Brooks system will guarantee the following emissions rates between 25-100% MCR will not be exceeded:

- NOx: 0.0109 lbs/MMBtu, 0.4 lbs/hr
- CO: 0.0370 lbs/MMBtu, 1.3 lbs/hr
- VOC: 0.0040 lbs/MMBtu, 0.1 lbs/hr
- PM10-PM2.5: 0.0075 lbs/MMBtu, 0.3 lbs/hr

We trust this addresses your request, however please contact our office should you have any further questions or concerns.

Sincerely,

Rick Fiorenza
VP Sales, Burner Applications

cc: Aaron Fink
Jim Roberts

From: Thuillez, Mike (GE Power & Water) [mailto:mike.thuillez@ge.com]
Sent: Friday, May 17, 2013 12:59 PM
To: Rose, Steve
Subject: GE PM10 Statement

Steve,

Please find the following statement regarding PM10 from our environment engineer.

> *GE offers particulate emission (PM10) guarantee values for the 7F 5-Series (formerly 7FA.05) at a rate of 9.3 lbs/hr. This emission value represents the total particulates, including both the filterable and condensable particulate constituents. GE recommends the PM2.5 emission values be assumed to equal the PM10 emission values (i.e. assume all particulate matter are PM2.5 or smaller). Current PM10 and PM2.5 measurement methods do not have sufficient measurement accuracy or precision to offer differing guarantees based on particle size speciation.*
>
> *The particulate emission value assumes a typical fuel sulfur content of 0.25 grains of S/100 SCF of fuel. If fuel sulfur exceeds these values the particulate emission value would need to be adjusted to reflect the sulfur contribution to the measured particulate value. This value represents emissions from the Gas Turbine only, any particulate contribution from the duct burners are due to sulfate formation by the SCR must be combined with the gas turbine emission value.*

Let me know if this will work.

Regards,

Mike Thuillez
Account Director
Thermal Sales

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