DOCKETED

Docket Number:	07-AFC-06C
Project Title:	Carlsbad Energy Center - Compliance
TN #:	203812
Document Title:	Carlsbad Energy Center Project Emissions Baseline Calculations for the Existing Boiler Units Submitted to SDAPCD
Description:	Previously Submitted by Sierra Research To San Diego Air Pollution Control District under prior Docket 07-AFC-6 regarding the revised emissions baseline calculations for existing boiler Units 1, 2, and 3 at the Encina Power Station
Filer:	Kerry Siekmann
Organization:	Terramar Association & Self
Submitter Role:	Intervenor
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April 17, 2008

VIA EMAIL AND HAND DELIVERY

Mr. Michael Monasmith
Siting Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Carlsbad Energy Center Project (07-AFC-6)
Emissions Baseline Calculations for the Existing Boiler Units Submitted to San Diego Air Pollution Control District

Dear Mr. Monasmith:

On behalf of Carlsbad Energy Center LLC, please find enclosed the requisite number of copies for docketing Sierra Research's letter to the San Diego Air Pollution Control District regarding the revised emissions baseline calculations for the existing boiler Units 1, 2, and 3 at the Encina Power Station.

Should you have any question or concerns, please do not hesitate to contact me directly at the number above.

Respectfully submitted,

Stoel Rives LLP

Kimberly Hellwig
Paralegal

KJH:kjh
Enclosure
cc: See Proof of Service (Rev. 03/19/2008; electronic service only)

April 17, 2008

sierra research

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Dr. Steve Moore
Engineering Group
San Diego Air Pollution Control District
10124 Old Grove Road
San Diego, CA 92131

Subject: Application for Authority To Construct for the Proposed Carlsbad Energy Center Project

Dear Dr. Moore:

On behalf of Carlsbad Energy Center LLC, we are pleased to submit the enclosed revised emissions baseline calculations for the existing boiler Units 1, 2, and 3 at the Encina Power Station. The emission baseline for these units was revised to be a 5-year average for the period from 2002 to 2006 based on discussions during the most recent California Energy Commission public workshop for the proposed Carlsbad Energy Center Project (CECP) which was held on March 26, 2008. In addition, the revised baseline emissions were adjusted to reflect SDAPCD Rule 69 NOx emissions limits during the baseline period when the existing units were not equipped with SCR systems. The SCR systems on the existing Units 1, 2, and 3 were installed on July 1, 2003, May 1, 2003, and February 28, 2003, respectively. Consequently, it was necessary to correct the NOx emissions during all of 2002 for the three existing units. For 2003, the existing units were not operated prior to the SCR installation dates so there was no need to perform a Rule 69 adjustment for 2003. The detailed revised emission baseline calculations are enclosed for your review.

If you have any questions regarding this application package, please contact me at (916) 444-6666.

Sincerely,

Tom Andrews
Senior Engineer

Enclosure

cc: Tim Hemig, Carlsbad Energy Center LLC
George L. Piantka, Carlsbad Energy Center LLC
John McKinsey, Stoel
Will Walters, CEC
Michael Monasmith, CEC
CEC Dockets Office (07-AFC-6)

Table 5.1B-12 (Revised 4/15/08)
Actual Annual Emissions For Units 1, 2, and 3*
Encina Power Station

Total Emissions in tons/year						
		Reported Emissions				
Years	Units	NOx	CO	VOC	PM	SOx
2002	1	11.3	138.6	4.5	9.6	0.5
	2	14.5	174.6	5.8	13.2	8.4
	3	14.6	181.3	5.9	12.6	0.6
2003	1	12.1	57.0	3.8	7.5	4.5
	2	14.0	70.6	4.7	8.3	3.1
	3	20.1	100.4	6.7	12.2	4.9
2004	1	12.5	82.4	5.4	9.9	0.6
	2	15.9	105.2	6.9	14.9	0.8
	3	24.8	163.4	10.7	19.3	1.2
2005	1	10.8	73.6	4.9	9.6	0.6
	2	11.7	79.9	5.3	11.9	0.7
	3	12.7	87.6	5.8	11.7	0.7
2006	1	3.4	12.2	1.6	3.2	0.2
	2	6.7	68.9	3.0	6.9	1.1
	3	8.1	28.9	3.7	7.5	1.4

Notes:
* Based on SDAPCD annual inventory reports for the Encina Power Station with the exception of NOx emissions during 2002 which have been Rule 69 corrected.

Table 5.1B-13 (Revised 4/15/08)
5-Year Average Baseline Emissions For Units 1, 2, and 3
Encina Power Station

Total Emissions in tons/year						
		Reported Emissions				
Years	Units	NOx	CO	VOC	PM	SOx
5-Year Lookback 5-Year Average	1	10.0	72.8	4.0	8.0	1.3
	2	12.6	99.8	5.1	11.0	2.8
	3	16.1	112.3	6.6	12.7	1.8
Total =		38.6	284.9	15.7	31.6	5.8

2006 Operating Year

Emission Factors (lbs./million ft3 for gas & lbs./ 1000 gal. for oil) - Annual Inventory Report												
	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel
CO	41.7		126	5	43.4	5	36.7	5	21.5	5	30.6	10.6
NOx	11.6		11.6	32	11.6	32	11.6	32	11.6	32	116	33.4
PM10	10.8		12.4	10	11.1	10	10.4	10	8.88	10	6.73	1.6
ROG	5.5		5.5	0.93	5.5	0.93	5.5	0.93	5.5	0.93	2.14	0.06
SOx	0.6		0.6	71	0.6	71	0.6	71	0.6	71	0.6	7.1
TOG	11		11	1.04	11	1.04	11	1.04	11	1.04	11.2	0.56
TSP	10.8		12.4	10	11.1	10	10.4	10	8.88	10	6.73	1.67

Encina Fuel 2006						
Fuel Types	Boiler #1	Boiler #2	Boiler #3	Boiler #4	Boiler #5	Gas Turbine
Residual Oil (gallons)	0	20412	27636	73500	54600	
Nat. Gas (million ft3)	583.5	1093.3	1326.9	5894.9	6294.7	16.9
Diesel (gallons)						509.8
Gasoline? (gallons)						
Fuel Sulfur Content (Wt. %)		.25 (Oil)	.25 (Oil)	.25 (Oil)	.25 (Oil)	.05 (Diesel)

Emission Amounts 2006 (calculated)												
(tons)	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel
CO	12.1660	0.0000	68.8779	0.0510	28.7937	0.0691	108.1714	0.1838	67.6680	0.1365	0.2586	0.0027
NOx	3.3843	0.0000	6.3411	0.3266	7.6960	0.4422	34.1904	1.1760	36.5093	0.8736	0.9802	0.0085
PM10	3.1509	0.0000	6.7785	0.1021	7.3643	0.1382	30.6535	0.3675	27.9485	0.2730	0.0569	0.0004
ROG	1.6046	0.0000	3.0066	0.0095	3.6490	0.0129	16.2110	0.0342	17.3104	0.0254	0.0181	0.0000
SOx	0.1751	0.0000	0.3280	0.7246	0.3981	0.9811	1.7685	2.6093	1.8884	1.9383	0.0051	0.0018
TOG	3.2093	0.0000	6.0132	0.0106	7.2980	0.0144	32.4220	0.0382	34.6209	0.0284	0.0946	0.0001
TSP	3.1509	0.0000	6.7785	0.1021	7.3643	0.1382	30.6535	0.3675	27.9485	0.2730	0.0569	0.0004

2005 Operating Year

Emission Amounts 2005 - Annual Inventory Report												
(tons)	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel	Total
CO	73.5	0.1	79.8	0.1	87.5	0.1	384.1		268.7		0.1		894
NOx	10.2	0.6	11.1	0.6	12.1	0.6	53.2		37.2		0.5		126.1
PM10	9.5	0.1	11.8	0.1	11.6	0.1	47.7		28.4		0.1		109.4
ROG	4.8	0.1	5.2	0.1	5.7	0.1	25.1		17.6		0.1		58.8
SOx	0.5	0.1	0.6	0.1	0.6	0.1	2.7		1.9		0.1		6.7
TOG	9.6	0.1	10.5	0.1	11.5	0.1	50.3		35.2		0.1		117.5
TSP	9.5	0.1	11.8	0.1	11.6	0.1	47.7		28.4		0.1		109.4

Emission Factors (lbs./million ft3 for gas & lbs./ 1000 gal. for oil) - Annual Inventory Report												
	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel
CO	84	5	84	5	84	5	84		84		30.6	
NOx	11.6	67	11.6	67	11.6	67	11.6		11.6		119	
PM10	10.8	7	12.4	7	11.1	7	10.4		8.88		6.73	
ROG	5.5	0.76	5.5	0.76	5.5	0.76	5.5		5.5		2.14	
SOx	0.6	7	0.6	7	0.6	7	0.6		0.6		0.6	
TOG	11	1.04	11	1.04	11	1.04	11		11		11.2	
TSP	10.8	7	12.4	7	11.1	7	10.4		8.88		6.73	

Encina Fuel 2005						
Fuel Types	Boiler #1	Boiler #2	Boiler #3	Boiler #4	Boiler #5	Gas Turbine
Residual Oil (gallons)	19320	19320	18060			
Nat. Gas (million ft3)	1750.42	1900.231	2083.49	9144.569	6397.681	8.9213
Diesel (gallons)						
Gasoline? (gallons)						
Fuel Sulfur Content (Wt. %)	0.25	0.25	0.25			

2004 Operating Year

Emission Amounts 2004 - Annual Inventory Report												
(tons)	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel	Total
CO	82.4		105.2		163.4		570.9		533.8		0.8	0.1	1456.6
NOx	12.5		15.9		24.8		86.5		80.9		3.1	0.4	224.1
PM10	9.9		14.9		19.3		70.5		54		0.2	0.1	168.9
ROG	5.4		6.9		10.7		37.4		35		0.1	0.1	95.6
SOx	0.6		0.8		1.2		4.1		3.8		0.1	0.1	10.7
TOG	10.8		13.8		21.4		74.8		69.9		0.3	0.1	191.1
TSP	9.9		14.9		19.3		70.5		54		0.2	0.1	168.9

Emission Factors (lbs./million ft3 for gas & lbs./ 1000 gal. for oil) - Annual Inventory Report												
	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel
CO	84		84		84		84		84		30.6	10.6
NOx	12.7		12.7		12.7		12.7		12.7		123	27.5
PM10	10.1		11.9		9.93		10.4		8.49		6.73	1.6
ROG	5.5		5.5		5.5		5.5		5.5		2.14	0.06
SOx	0.6		0.6		0.6		0.6		0.6		0.6	7.1
TOG	11		11		11		11		11		11.2	0.56
TSP	10.1		11.9		9.93		10.4		8.49		6.73	1.67

Encina Fuel 2004						
Fuel Types	Boiler #1	Boiler #2	Boiler #3	Boiler #4	Boiler #5	Gas Turbine
Residual Oil (gallons)						
Nat. Gas (million ft3)	1962.6472	2504.1734	3890.6812	13593.06	12710.5447	49.8023
Diesel (gallons)						28152
Gasoline? (gallons)						
Fuel Sulfur Content (Wt. %)						0.05

2003 Operating Year

Emission Amounts 2003 - Annual Inventory Report												
(tons)	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel	Total
CO	56.7	0.3	70.4	0.2	100.1	0.3	416.6		481		0.6	0.1	1126.3
NOx	10.3	1.8	12.8	1.2	18.2	1.9	75.7		87.4		2.3	0.1	211.7
PM10	6.9	0.6	7.9	0.4	11.6	0.6	53.5		46.7		0.1	0.1	128.4
ROG	3.7	0.1	4.6	0.1	6.6	0.1	27.3		31.5		0.1	0.1	74.2
SOx	0.4	4.1	0.5	2.6	0.7	4.2	3		3.4		0.1	0.1	19.1
TOG	7.4	0.1	9.2	0.1	13.1	0.1	54.6		63		0.2	0.1	147.9
TSP	6.9	0.6	7.9	0.4	11.6	0.6	53.5		46.7		0.1	0.1	128.4

Emission Factors (lbs./million ft3 for gas & lbs./ 1000 gal. for oil) - Annual Inventory Report												
	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel
CO	84	5	84	5	84	5	84		84		30.6	10.6
NOx	15.3	32	15.3	32	15.3	32	15.3		15.3		126	27.5
PM10	10.3	10	9.44	10	9.75	10	10.8		8.16		6.73	1.6
ROG	5.5	0.93	5.5	0.93	5.5	0.93	5.5		5.5		2.14	0.06
SOx	0.6	71	0.6	71	0.6	71	0.6		0.6		0.6	7.1
TOG	11	1.04	11	1.04	11	1.04	11		11		11.2	56
TSP	10.3	10	9.44	10	9.75	10	10.8		8.16		6.73	1.67

Encina Fuel 2003						
Fuel Types	Boiler #1	Boiler #2	Boiler #3	Boiler #4	Boiler #5	Gas Turbine
Residual Oil (gallons)	115290	74466	117600			
Nat. Gas (million ft3)	1349.623	1675.005	2383.753	9919.283	11452.104	36.0149
Diesel (gallons)						410
Gasoline? (gallons)						
Fuel Sulfur Content (Wt. %)	0.25	0.25	0.25			0.05

2002 Operating Year

Emission Amounts 2002 - Annual Inventory Report												
(tons)	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel	Total
CO	138.6		174.1	0.5	181.3		802.7	1.8	920.5	1.6	0.3	0.1	2221.5
NOx	11.3		14.0	0.6	14.6		90.1	11.8	103.3	10.4	1.1	0.4	257.5
PM10	9.6		12.1	1.1	12.6		55.6	2.6	63.7	2.3	0.1	0.1	159.8
ROG	4.5		5.7	0.1	5.9		26.1	0.3	30	0.2	0.1	0.1	73
SOx	0.5		0.6	7.8	0.6		2.8	2.6	3.3	2.3	0.1	0.1	20.7
TOG	9		11.3	0.1	11.8		52.2	0.4	59.9	0.3	0.1	0.1	145.2
TSP	9.6		12.7	1.1	12.6		55.6	2.6	63.7	2.3	0.1	0.1	160.4

Emission Factors (lbs./million ft3 for gas & lbs./ 1000 gal. for oil) - Annual Inventory Report												
	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil	#4 Nat. Gas	#4 Res. Oil	#5 Nat. Gas	#5 Res. Oil	GT Nat. Gas	GT Diesel
CO	169		169	5	169		169	5	169	5	30.6	10.6
NOx	19		19	32	19		19	32	19	32	112	33.4
NOx*	0.15		0.15	0.4	0.15							
PM10	11.7		11.7	10	11.7		11.7	7	11.7	7	6.73	1.6
ROG	5.5		5.5	0.93	5.5		5.5	0.76	5.5	0.76	2.14	0.06
SOx	0.6		0.6	71	0.6		0.6	7	0.6	7	0.6	7.1
TOG	11		11	1.04	11		11	1.04	11	1.04	11.2	56
TSP	11.7		11.7	10	11.7		11.7	7	11.7	7	6.73	1.67

* SDAPCD Rule 69 NOx emission limit for natural gas and oil used in terms of lbs/MW-hr.

Encina Fuel 2002						
Fuel Types	Boiler #1	Boiler #2	Boiler #3	Boiler #4	Boiler #5	Gas Turbine
Residual Oil (gallons)		218991		734633.3	650229.75	
Nat. Gas (million ft3)	1639.999	2060.796	2145.807	9499.978	10893.144	18.954
Diesel (gallons)						21420
Gasoline? (gallons)						
Fuel Sulfur Content (Wt. %)		0.25		0.25	0.25	0.05

Rule 69 Corrected NOx Emission Amounts 2002 (calculated)						
(tons)	#1 Nat. Gas	#1 Res. Oil	#2 Nat. Gas	#2 Res. Oil	#3 Nat. Gas	#3 Res. Oil
NOx	11.2603		13.9636	0.5825	14.6116	

Information Needed to Convert from Rule 69 NOx Emission Factor based on lbs/MW-hr to lbs/MMBtu			
2004 Operating Data	Boiler #1	Boiler #2	Boiler #3
MW-hr Generation	179675	226236	353242
MMBtu	1,999,937	2,551,753	3,964,604
MW-hr/MMBtu	0.0898402	0.0886600	0.0890990

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

Application for Certification for the

CARLSBAD ENERGY CENTER PROJECT

Docket No. 07-AFC-6
PROOF OF SERVICE
(As of 03/19/2008)

DECLARATION OF SERVICE

I, Elizabeth Hecox, declare that on April 18, 2008, I deposited in the United States mail at Sacramento, California with first-class postage thereon fully paid and addressed to those identified below ***OR*** transmitted via electronic mail consistent with the requirements of the California Code of Regulations, Title 20, sections 1209, 1209.5, and 1210 the following documents:

CARLSBAD ENERGY CENTER PROJECT (07-AFC-6) EMISSIONS BASELINE CALCULATIONS FOR THE EXISTING BOILER UNITS SUBMITTED TO SAN DIEGO AIR POLLUTION CONTROL DISTRICT

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-6
1516 Ninth Street, MS-14
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I declare under penalty of perjury that the foregoing is true and correct.

Elizabeth Hecox