FEB 03 2005

Metcalf Energy Center

Steve Munro
Compliance Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

January 28, 2005

Re: Metcalf Energy Center (99-AFC-3C), Amendment to Air Compliance Conditions
Additional Responses to Data Request Items

Dear Mr. Munro:

This letter responds to a request from Will Walters to provide additional information on several items related to a January 5, 2005 Data Request from the California Energy Commission. Metcalf Energy Center, LLC provided an initial response to the Data Request on January 17, 2005. Mr. Walters requested additional information based on his review of MEC's January 17, 2005 submittal.

Mr. Walters requested the additional information during a January 24, 2005 phone conversation. The following lists the Data Request items and the additional information that he requested. MEC's responses follow each request in italics.

Data Request 1 – Please provide data to justify the request to increase the carbon monoxide (CO) emission limit to 5,000 lb/hr.

Response: Attachment 1 presents Cold Start emissions data from the Hermiston Power Partnership (HPP) project in Oregon. MEC is presenting these data since HPP utilizes the same type of turbines installed at MEC. These data show that for approximately 90 minutes, HPP has CO emissions that exceed the current MEC permit limit of 2,514 lb/hr. During the second hour of the Cold Start, the average CO emissions were 4,553 lb/hr. This is justification for requesting the increase to 5,000 lb/hr.

Data Request 7 - Please provide the Siemens/Westinghouse proprietary guidance document entitled "Tuning of the Dry Low NOx Combustor System" or provide a contact person for Siemens/Westinghouse.

Response: MEC requests that the CEC contact Rich Lew at the Air District to verify the combustor-tuning procedures described by MEC.

Data Request 13 – Same request and response as Data Request 7.

Data Request 16 – Are the Start-up Emissions data from the Sutter Energy Center (Table 1) for routine start-ups or Cold Start-ups? What are the durations for these emission rates?

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Response: Table 1 presents Cold Start-ups data for February 27, June 14, and September 20, 2004. The data for December 18, 2004 is for a routine start-up. Table 1 includes the durations at these emission rates.

Data Request 19 – What are the durations for the emission rates for the Shutdown Emissions Data (Table 2) from the Sutter Energy Center? Why is MEC requesting an increase from 18 lb/hr to 80 lb/hr for NOx emissions when the Sutter Energy Center data show shutdown emissions do not exceed 26 lb/hr?

Response: Table 2, Sutter Energy Center – Shutdown Emissions Data, has been revised and includes the durations at these emission rates. The 80 lb/hr request was made so that the MEC permit limits are consistent with permit limits issued by the CEC for other plants in the San Francisco Bay Area.

Data Request 20 - Please provide data to justify the request to increase the Cold Start-ups Emissions period from three hours to six hours.

Response: The data in Table 1 show the start-ups at the Sutter Energy Center on February 27, 2004 and June 14, 2004 required approximately five hours to complete. This is justification to increase the MEC Cold Start-up Emissions period from three to six hours.

If you have any questions, please contact me at 408 361-4805.

Sincerely,

Mark Smolley

Mark Smolley
Compliance Manager

Attachment: Attachment 1 – Hermiston Power Partnership – Emissions Data
Table 1 – SEC – Start-up Emissions Data, Revised 01/26/05
Table 2 – SEC – Shutdown Emissions Data, Revised 01/26/05

cc: Barbara McBride, Calpine
Bob McCaffrey, Calpine
Jeff Harris, Ellison Schneider & Harris

Attachment 1
Hermiston Power Partnership - Emissions Data

CeDAR 1-Minute Data Unit #1
HERMISTON POWER PARTNERSHIP
Data for 7/12/2004 2:00 AM thru 7/12/2004 6:00 AM

Date	Time	Raw NOx	NOx pmm @ 15%	NOx lb/hr 1-min	CO ppm	CO ppm @ 15%	CO lb/hr 1-min	O2%	CT Heat Input	CT Megawatts
12-Jul	2:00	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:01	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:02	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:03	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:04	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:05	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:06	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:07	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:08	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:09	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:10	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:11	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:12	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:13	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:14	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:15	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:16	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:17	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:18	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:19	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline	Offline
12-Jul	2:20	1.84	5.74	3.66	287.35	897.02	348.54	19.01	173.7	0
12-Jul	2:21	4	8.11	7.11	950.48	1927.09	1028.72	17.99	238.6	0
12-Jul	2:22	5.25	10.57	10.69	1112.57	2240.33	1376.93	17.97	274.7	0
12-Jul	2:23	6.43	13.22	16.89	1150.58	2365.3	1839.73	18.03	347.6	0
12-Jul	2:24	7.61	15.75	22.92	1139.97	2359.94	2090.08	18.05	395.8	0
12-Jul	2:25	8.76	18.52	29.67	1143.13	2417.37	2356.8	18.11	435.7	0
12-Jul	2:26	9.94	20.58	35.79	1171.1	2424.38	2567.79	18.05	473.4	0
12-Jul	2:27	11.61	25.46	48.15	1139.92	2500.2	2877.64	18.21	514.4	0
12-Jul	2:28	11.68	28.83	55.49	871.92	2152.44	2521.36	18.51	523.5	0
12-Jul	2:29	13.17	31.85	61.44	847	2048.07	2404.24	18.46	524.6	0.8
12-Jul	2:30	14.28	34.25	66	864.63	2073.71	2432.45	18.44	524.2	1
12-Jul	2:31	14.89	35.57	68.26	869.08	2075.94	2426.02	18.43	522.3	1
12-Jul	2:32	15.18	36.41	71.82	866.02	2077.04	2494.54	18.44	536.7	3.4
12-Jul	2:33	15.92	36.83	72.12	903.63	2090.75	2491.77	18.35	532.6	3.8
12-Jul	2:34	16.28	37.52	74.07	934.92	2154.7	2589.75	18.34	537.2	3.9
12-Jul	2:35	16.05	37.28	73.49	925.75	2150.37	2581.09	18.36	536.4	3.7
12-Jul	2:36	16.05	37.14	73.74	924.77	2139.66	2586.44	18.35	540.2	4
12-Jul	2:37	16.13	37.32	73.33	929.18	2149.87	2571.12	18.35	534.5	4.4
12-Jul	2:38	16.15	37.37	73.9	931.4	2155	2593.59	18.35	537.9	4.3
12-Jul	2:39	16.15	37.37	74.33	934.73	2162.71	2617.73	18.35	541	4.4
12-Jul	2:40	16.16	37.39	74.17	936.88	2167.68	2618.32	18.35	539.8	4.4
12-Jul	2:41	16.15	37.37	73.71	938.27	2170.9	2605.76	18.35	536.4	4.3
12-Jul	2:42	16.17	37.41	73.39	941.38	2178.1	2601.4	18.35	533.8	4.4
12-Jul	2:43	16.15	37.37	72.76	946.35	2189.59	2594.52	18.35	529.6	4.5

12-Jul	2:44	16.16	37.39	72.86	952.92	2204.8	2616.06	18.35	530.3	4.4
12-Jul	2:45	16.17	37.41	73.08	959.47	2219.95	2640.16	18.35	531.5	4.4
12-Jul	2:46	16.14	37.34	73.39	965.58	2234.09	2671.87	18.35	534.5	4.9
12-Jul	2:47	16.28	37.23	73.96	983.32	2248.68	2718.2	18.32	540.2	6.3
12-Jul	2:48	16.89	37.75	77.19	1028.42	2298.36	2860.03	18.26	556.1	7.7
12-Jul	2:49	17.57	38.25	79.85	1086.72	2365.92	3006.51	18.19	567.9	9.4
12-Jul	2:50	18.29	38.82	82.79	1151.22	2443.24	3171.49	18.12	580.1	11.3
12-Jul	2:51	19.18	39.57	85.72	1227.22	2531.68	3339.75	18.04	589.6	13.2
12-Jul	2:52	20.09	40.04	88.63	1311.12	2613.38	3520.7	17.94	602.1	15.3
12-Jul	2:53	21.09	40.93	92.45	1403.32	2723.55	3743.49	17.86	614.3	17
12-Jul	2:54	22.05	41.43	94.99	1502.38	2822.94	3939.72	17.76	623.7	18.3
12-Jul	2:55	22.62	41.84	96.23	1574.9	2912.82	4077.91	17.71	625.7	18.8
12-Jul	2:56	22.74	41.67	96.95	1615.92	2960.85	4192.68	17.68	632.9	19.2
12-Jul	2:57	22.86	41.63	96.89	1645.17	2995.83	4244.98	17.66	633.3	19.5
12-Jul	2:58	22.79	41.37	94.7	1665.08	3022.76	4210.95	17.65	622.6	19.8
12-Jul	2:59	22.86	41.37	97.02	1678.53	3037.83	4335.88	17.64	637.9	19.7
Total/Average		**15.39**	**33.23**	**67.09**	**1085.31**	**2322.62**	**2762.67**	**18.19**	**520.18**	**6.54**
		NOx ppm	**NOxppm @15%**	**NOx lbs**	**CO ppm**	**CO ppm @15%**	**CO lbs**	**%O2**	**mmBTU**	**MW**
12-Jul	3:00	22.82	41.17	94.9	1687.85	3045.36	4271.11	17.63	626.8	19.9
12-Jul	3:01	22.72	40.99	95.33	1693.32	3055.23	4324.23	17.63	632.5	19.8
12-Jul	3:02	22.65	40.74	95.79	1695.55	3049.92	4363.6	17.62	639.4	20
12-Jul	3:03	22.56	40.58	94.88	1704.03	3065.18	4361.49	17.62	635.9	20.8
12-Jul	3:04	22.77	40.46	96.15	1748.52	3107.31	4495.63	17.58	646.6	21
12-Jul	3:05	22.79	40.26	95.64	1778.43	3141.54	4542.27	17.56	646.2	21.9
12-Jul	3:06	22.88	39.94	95.19	1811.75	3162.52	4588.61	17.52	648.4	22.1
12-Jul	3:07	22.95	39.83	96.04	1843.08	3198.29	4694.8	17.5	656	22.3
12-Jul	3:08	22.96	39.73	95.06	1859.17	3216.75	4686.46	17.49	651.1	22.6
12-Jul	3:09	22.98	39.76	94.76	1869.97	3235.43	4692.14	17.49	648.1	22.8
12-Jul	3:10	22.95	39.59	95.41	1877.38	3238.76	4751.94	17.48	655.7	22.7
12-Jul	3:11	22.88	39.47	95.15	1881.58	3246	4762.57	17.48	655.7	22.7
12-Jul	3:12	22.84	39.4	94.89	1884.53	3251.09	4767.06	17.48	655.3	22.8
12-Jul	3:13	22.86	39.44	94.75	1886.13	3253.85	4757.68	17.48	653.5	22.9
12-Jul	3:14	22.89	39.49	95.15	1886.52	3254.52	4772.1	17.48	655.3	22.8
12-Jul	3:15	22.83	39.39	94.61	1887.85	3256.82	4761.24	17.48	653.4	22.8
12-Jul	3:16	22.75	39.25	93.96	1887.83	3256.78	4744.8	17.48	651.1	22.8
12-Jul	3:17	22.78	39.41	95.57	1886.57	3264.15	4816.97	17.49	659.5	22.7
12-Jul	3:18	22.77	39.4	94.07	1887.23	3265.3	4746.68	17.49	649.7	22.8
12-Jul	3:19	22.79	39.43	95.06	1886.9	3264.72	4792.29	17.49	656	22.8
12-Jul	3:20	22.84	39.52	94.83	1887.12	3265.11	4768.15	17.49	652.7	22.9
12-Jul	3:21	22.95	39.71	95.62	1887.97	3266.58	4786.8	17.49	654.9	22.8
12-Jul	3:22	23.1	39.97	95.42	1889.48	3269.19	4751.58	17.49	649.6	22.8
12-Jul	3:23	23.17	40.09	96.82	1888.57	3267.61	4802.55	17.49	656.9	22.7
12-Jul	3:24	22.47	38.99	93.69	1887.08	3274.64	4790.32	17.5	653.8	22.9
12-Jul	3:25	17.07	29.62	71.07	1883.6	3268.6	4773.24	17.5	652.7	22.7
12-Jul	3:26	14.93	25.91	61.81	1880.43	3263.1	4740.5	17.5	649.3	22.7
12-Jul	3:27	13.56	23.53	56.59	1879.03	3260.67	4772.92	17.5	654.2	22.8
12-Jul	3:28	12.45	21.6	51.73	1877	3257.15	4748.31	17.5	651.5	22.7
12-Jul	3:29	11.57	20.08	47.77	1874.4	3252.64	4711.13	17.5	647.3	22.8
12-Jul	3:30	10.8	18.69	44.63	1874.1	3242.58	4712.93	17.49	649.6	22.8

12-Jul	3:31	10.12	17.51	42.1	1874.1	3242.58	4743.44	17.49	653.8	22.7
12-Jul	3:32	9.56	16.54	39.71	1872.1	3239.12	4733.14	17.49	653.1	22.7
12-Jul	3:33	9.06	15.68	37.62	1870.67	3236.64	4729.55	17.49	653.1	22.8
12-Jul	3:34	8.56	14.85	35.72	1867.12	3240	4742.63	17.5	654.2	22.8
12-Jul	3:35	8.37	14.48	34.66	1865.77	3228.17	4706.03	17.49	651.5	22.9
12-Jul	3:36	7.99	13.87	33.5	1866	3238.06	4759.14	17.5	656.9	23.5
12-Jul	3:37	7.71	13.22	32.25	1897.57	3254.55	4832.67	17.46	663.6	24.9
12-Jul	3:38	7.49	12.55	29.84	1963.78	3291.56	4767.51	17.38	647.3	25.9
12-Jul	3:39	7.28	12.03	29.85	2016	3331.77	5035.21	17.33	675.4	26.5
12-Jul	3:40	7.05	11.49	28.79	2064.97	3365.56	5138.1	17.28	682.3	27.5
12-Jul	3:41	6.8	10.93	28.11	2119.53	3407.42	5331.77	17.23	699.3	28.9
12-Jul	3:42	6.61	10.4	26.96	2188.42	3443.11	5438.22	17.15	705.9	30.2
12-Jul	3:43	6.38	9.88	25.52	2241.17	3470.58	5460.06	17.09	703.1	31.1
12-Jul	3:44	6.12	9.35	24.5	2273.25	3474.66	5537.5	17.04	712.2	32.6
12-Jul	3:45	5.89	8.8	23.46	2305.93	3444.3	5598.23	16.95	726.4	34.6
12-Jul	3:46	5.62	8.17	22.03	2321.6	3373.75	5543.15	16.84	734.3	36.5
12-Jul	3:47	5.27	7.46	20.47	2305.93	3262.59	5454.87	16.73	747.2	38.6
12-Jul	3:48	4.86	6.68	18.59	2247	3090.28	5224.9	16.61	755.6	40.6
12-Jul	3:49	4.41	5.91	16.55	2152.42	2886.2	4926.25	16.5	762.8	42.5
12-Jul	3:50	3.98	5.2	14.72	2038.17	2660.44	4588.5	16.38	770.8	44.5
12-Jul	3:51	3.56	4.54	13	1897.37	2417.82	4211.16	16.27	778.4	46.6
12-Jul	3:52	3.11	3.86	11.2	1728.78	2147.33	3789.28	16.15	788.7	48.5
12-Jul	3:53	2.72	3.3	9.65	1544.98	1871.74	3339.5	16.03	797.4	50.1
12-Jul	3:54	2.38	2.83	8.37	1356.18	1609.95	2898.26	15.93	804.6	51
12-Jul	3:55	2.16	2.54	7.49	1255.28	1475.33	2659.66	15.88	805.7	51.4
12-Jul	3:56	2.05	2.4	7.12	1209.65	1416.06	2563.87	15.86	809.2	51.5
12-Jul	3:57	1.98	2.31	6.86	1184.93	1381.64	2495.54	15.84	807.2	51.5
12-Jul	3:58	1.94	2.26	6.7	1170.6	1362.24	2461.76	15.83	807.6	51.7
12-Jul	3:59	1.92	2.23	6.6	1163.17	1353.59	2438.01	15.83	805	51.7
Total/Average		**13.54**	**23.11**	**55.90**	**1851.92**	**2998.91**	**4553.33**	**17.16**	**687.69**	**29.13**
		NOx ppm	**NOxppm @15%**	**NOx lbs**	**CO ppm**	**CO ppm @15%**	**CO lbs**	**%O2**	**mmBTU**	**MW**
12-Jul	4:00	1.94	2.26	6.66	1170.13	1361.69	2445.71	15.83	802.7	51.8
12-Jul	4:01	1.97	2.29	6.75	1161.27	1351.38	2430.66	15.83	803.8	51.8
12-Jul	4:02	2.03	2.36	7.01	1165.2	1355.95	2445.7	15.83	806.1	51.8
12-Jul	4:03	2.06	2.39	7.08	1172.75	1362.05	2453.23	15.82	805	52.1
12-Jul	4:04	2.17	2.52	7.46	1160.57	1345.26	2441.25	15.81	811	53.1
12-Jul	4:05	2.31	2.63	7.98	1027.35	1170.15	2153.49	15.72	822.5	54.4
12-Jul	4:06	2.5	2.8	8.5	925.6	1036.25	1913.25	15.63	825.2	54.4
12-Jul	4:07	2.67	2.99	9.06	954.22	1070.32	1971.55	15.64	823.2	54.4
12-Jul	4:08	2.86	3.2	9.78	944.77	1057.71	1961.93	15.63	829	55.5
12-Jul	4:09	3.34	3.7	11.35	831.68	920.62	1718.37	15.57	834.2	56.5
12-Jul	4:10	4.16	4.55	13.99	709.32	776.44	1455.32	15.51	837.7	57
12-Jul	4:11	5.02	5.47	16.91	656.37	715.82	1347.15	15.49	841.1	57.3
12-Jul	4:12	5.83	6.32	19.82	624.57	677.38	1295.03	15.46	854.4	58.2
12-Jul	4:13	7.49	8.01	25.13	520.23	556.04	1063.44	15.38	854.7	59.7
12-Jul	4:14	10	10.5	33.65	389.32	408.72	797.3	15.28	871.8	61.3
12-Jul	4:15	12.54	12.89	41.98	260.45	267.71	530.47	15.16	885.6	62.9
12-Jul	4:16	12.39	12.31	40.82	143.42	142.45	287.79	14.96	903	64.5
12-Jul	4:17	4.9	4.69	15.79	54.3	51.92	106.7	14.73	918.2	66.4

12-Jul	4:18	1.82	1.71	5.88	32.35	30.39	63.47	14.62	933.4	67.6
12-Jul	4:19	1.54	1.43	4.97	18.02	16.74	35.18	14.55	938	68.3
12-Jul	4:20	1.95	1.8	6.21	16.85	15.53	32.72	14.5	940.3	68.8
12-Jul	4:21	2.38	2.18	7.6	14.5	13.3	28.3	14.47	949.7	69.6
12-Jul	4:22	2.82	2.57	9.11	11.32	10.32	22.16	14.43	959.2	71
12-Jul	4:23	3.25	2.96	10.58	9.6	8.74	19.02	14.42	970.6	72.6
12-Jul	4:24	3.49	3.17	11.48	8.47	7.7	16.88	14.41	981.3	73.5
12-Jul	4:25	3.73	3.4	12.2	7.92	7.21	15.72	14.42	976.4	73.4
12-Jul	4:26	3.87	3.54	12.63	8.32	7.61	16.52	14.45	971.7	72.6
12-Jul	4:27	3.99	3.67	12.99	10.02	9.22	19.82	14.49	961.9	70.8
12-Jul	4:28	4.13	3.83	13.25	12.8	11.86	24.9	14.53	939.4	68.8
12-Jul	4:29	4.01	3.76	12.68	20.67	19.39	39.88	14.61	918.9	66.2
12-Jul	4:30	3.65	3.48	11.53	94.07	89.81	181.03	14.72	901.1	63.6
12-Jul	4:31	3.62	3.52	11.28	65.67	63.83	124.82	14.83	874.1	60.7
12-Jul	4:32	5.22	5.22	16.28	139.37	139.37	264.39	15	847.9	58.4
12-Jul	4:33	8.29	8.52	26.14	257.52	264.7	494.58	15.16	835	55.9
12-Jul	4:34	9.82	10.42	31.28	404.32	429.04	784.09	15.34	816.8	53.2
12-Jul	4:35	7.13	7.82	23.22	683.52	749.59	1357.15	15.52	809.2	51.9
12-Jul	4:36	3.77	4.2	12.42	905.15	1009.53	1809.69	15.61	801.2	50.9
12-Jul	4:37	2.29	2.58	7.53	1051.05	1185.7	2102.39	15.67	792.5	50.4
12-Jul	4:38	2.01	2.28	6.71	1148.9	1303.56	2330.28	15.7	798.9	50.1
12-Jul	4:39	2.27	2.59	7.55	1218.45	1387.81	2467.82	15.72	794.7	49.9
12-Jul	4:40	2.74	3.13	9.1	1253.75	1430.78	2533.36	15.73	791.3	49.8
12-Jul	4:41	3.12	3.56	10.39	1269.8	1449.1	2571.79	15.73	793.2	49.8
12-Jul	4:42	3.48	3.97	11.58	1283.87	1465.15	2599.25	15.73	792.9	49.8
12-Jul	4:43	3.85	4.4	12.82	1294.6	1480.26	2620.96	15.74	791.3	49.8
12-Jul	4:44	4.09	4.68	13.58	1303.22	1490.12	2631.95	15.74	789.4	49.8
12-Jul	4:45	4.3	4.92	14.3	1301.18	1487.78	2629.21	15.74	789.8	49.8
12-Jul	4:46	4.56	5.22	15.33	1300.18	1489.53	2661.35	15.75	798.5	49.8
12-Jul	4:47	4.72	5.4	15.8	1294.48	1480.12	2642.12	15.74	797.8	49.8
12-Jul	4:48	4.88	5.58	16.3	1282.55	1466.48	2609.04	15.74	795.1	49.8
12-Jul	4:49	4.94	5.65	16.4	1272.77	1455.3	2566.78	15.74	788.3	49.9
12-Jul	4:50	5.16	5.9	17.26	1268.1	1449.96	2580.95	15.74	795.5	51
12-Jul	4:51	5.46	6.16	18.27	1140.58	1286.7	2327.55	15.67	808.5	53.5
12-Jul	4:52	6.28	6.9	21.4	839.73	922.61	1739.49	15.53	842.6	56.6
12-Jul	4:53	7.91	8.42	26.6	531.5	566.04	1086.91	15.36	858.2	59.9
12-Jul	4:54	10.5	10.81	35.26	274.93	283.09	562.56	15.17	888.2	63.1
12-Jul	4:55	10.26	10.12	34.07	123.67	122.02	250.05	14.92	916	66.4
12-Jul	4:56	3.13	2.95	10.22	32.57	30.65	64.89	14.63	945.9	69.5
12-Jul	4:57	2.83	2.59	9.16	14.77	13.51	29.13	14.45	964.6	71.4
12-Jul	4:58	4.32	3.9	13.91	8.97	8.09	17.61	14.36	972.9	72.8
12-Jul	4:59	4.85	4.38	15.85	7.53	6.79	14.97	14.36	984.7	75.1
Total/Average		**4.54**	**4.75**	**15.01**	**618.49**	**696.55**	**1263.48**	**15.23**	**862.44**	**59.15**
		NOx ppm	**NOxppm @15%**	**NOx lbs**	**CO ppm**	**CO ppm @15%**	**CO lbs**	**%O2**	**mmBTU**	**MW**
12-Jul	5:00	4.76	4.28	15.86	6.32	5.68	12.83	14.34	1010.1	78.2
12-Jul	5:01	4.68	4.2	16.08	4.93	4.42	10.34	14.32	1044.4	81.9
12-Jul	5:02	4.46	3.97	15.59	4.12	3.67	8.76	14.28	1067.9	85.3
12-Jul	5:03	4.26	3.77	15.16	3.98	3.52	8.61	14.23	1090.3	88.8
12-Jul	5:04	4.22	3.72	15.29	4.37	3.85	9.6	14.2	1115.8	92.4

12-Jul	5:05	4.45	3.88	16.48	3.95	3.45	8.87	14.14	1152.3	95.8
12-Jul	5:06	4.56	3.96	17.05	3.68	3.19	8.35	14.1	1175.8	99.6
12-Jul	5:07	4.68	4.02	18	3.15	2.71	7.42	14.03	1216	104.3
12-Jul	5:08	4.66	3.97	18.27	2.57	2.19	6.13	13.97	1251.4	108.1
12-Jul	5:09	4.54	3.84	18.12	2.1	1.78	5.14	13.92	1285.2	112.2
12-Jul	5:10	4.86	4.08	19.6	1.73	1.45	4.18	13.87	1306.4	114.9
12-Jul	5:11	5.1	4.27	20.59	1.6	1.34	3.94	13.85	1311.8	114.9
12-Jul	5:12	5.33	4.47	21.26	1.48	1.24	3.63	13.86	1296.2	113.7
12-Jul	5:13	5.55	4.66	22.2	1.48	1.24	3.64	13.87	1298.4	113.7
12-Jul	5:14	5.86	4.9	23.56	1.42	1.19	3.53	13.85	1309.1	115.4
12-Jul	5:15	6.04	5.05	24.77	1.38	1.15	3.46	13.84	1331.9	117.9
12-Jul	5:16	6.12	5.09	25.45	1.37	1.14	3.54	13.81	1360.8	121.1
12-Jul	5:17	6.15	5.1	25.89	1.47	1.22	3.74	13.78	1384.7	124.6
12-Jul	5:18	6.01	4.96	25.8	1.27	1.05	3.26	13.75	1417.7	128
12-Jul	5:19	6.13	5.04	26.66	1.4	1.15	3.75	13.72	1441.3	131.2
12-Jul	5:20	6.45	5.28	28.49	1.53	1.25	4.11	13.69	1468.7	134.8
12-Jul	5:21	6.78	5.53	30.65	1.42	1.16	3.93	13.67	1509.7	138.9
12-Jul	5:22	7.05	5.72	32.42	1.32	1.07	3.71	13.63	1543.9	143
12-Jul	5:23	6.86	5.54	31.94	1.35	1.09	3.76	13.59	1565.5	146
12-Jul	5:24	6.47	5.23	30.44	1.22	0.99	3.49	13.6	1585.2	147.8
12-Jul	5:25	6.1	4.94	28.86	1.02	0.83	2.87	13.61	1594.5	148.8
12-Jul	5:26	5.93	4.8	28.04	1.13	0.91	3.19	13.61	1593.2	149.2
12-Jul	5:27	5.84	4.73	27.89	0.93	0.75	2.72	13.61	1602.8	149.5
12-Jul	5:28	5.86	4.74	27.89	0.78	0.63	2.24	13.61	1602.8	150
12-Jul	5:29	5.83	4.72	27.98	0.93	0.75	2.75	13.61	1617.2	151.9
12-Jul	5:30	5.69	4.63	27.85	1.02	0.83	3.11	13.65	1638.1	154.6
12-Jul	5:31	5.55	4.52	27.68	0.78	0.64	2.33	13.66	1667.3	157.8
12-Jul	5:32	5.58	4.55	28.31	0.77	0.63	2.37	13.66	1695.5	161
12-Jul	5:33	5.56	4.56	28.89	1.02	0.84	3.27	13.71	1719.4	164.2
12-Jul	5:34	5.33	4.39	28.03	1.12	0.92	3.66	13.74	1740.7	166
12-Jul	5:35	5.41	4.45	28.75	1	0.82	3.16	13.73	1752.8	167.3
12-Jul	5:36	5.46	4.49	29.03	0.98	0.81	3.17	13.73	1759.3	168
12-Jul	5:37	5.58	4.59	29.8	0.77	0.63	2.47	13.72	1763.1	168.5
12-Jul	5:38	5.61	4.6	29.83	1.13	0.93	3.71	13.71	1765.3	168.7
12-Jul	5:39	5.6	4.6	29.91	1.02	0.84	3.36	13.71	1769.9	169
12-Jul	5:40	5.52	4.52	29.41	0.78	0.64	2.48	13.7	1771.8	169.2
12-Jul	5:41	5.47	4.49	29.2	0.87	0.71	2.83	13.71	1769.9	169.3
12-Jul	5:42	5.47	4.49	29.24	1.18	0.97	3.9	13.71	1772.2	169.4
12-Jul	5:43	5.37	4.41	28.79	0.7	0.57	2.31	13.71	1777.1	169.4
12-Jul	5:44	5.34	4.39	28.5	0.75	0.62	2.48	13.72	1769.9	169.5
12-Jul	5:45	5.24	4.31	28.08	0.77	0.63	2.49	13.72	1777.1	169.6
12-Jul	5:46	5.26	4.33	28.25	0.83	0.68	2.67	13.73	1776.7	169.7
12-Jul	5:47	5.25	4.32	28.35	1	0.82	3.21	13.73	1782.8	170.6
12-Jul	5:48	5.13	4.25	28.16	0.92	0.76	3.07	13.77	1805.2	172.3
12-Jul	5:49	4.94	4.11	27.33	0.95	0.79	3.26	13.8	1810.2	173.2
12-Jul	5:50	4.93	4.11	27.4	0.9	0.75	3.08	13.83	1814.4	173.4
12-Jul	5:51	4.99	4.16	27.89	0.8	0.67	2.73	13.82	1822.7	174
12-Jul	5:52	5.09	4.25	28.45	0.9	0.75	3.1	13.84	1823.5	174.2
12-Jul	5:53	5.19	4.33	28.99	0.75	0.63	2.55	13.82	1823.5	174.2
12-Jul	5:54	5.2	4.34	29.28	0.75	0.63	2.56	13.83	1830	174.4

12-Jul	5:55	5.23	4.36	29.26	0.72	0.6	2.38	13.83	1828.8	174.5
12-Jul	5:56	5.12	4.27	28.65	0.77	0.64	2.55	13.83	1824.6	174.6
12-Jul	5:57	5.08	4.23	28.46	0.72	0.6	2.37	13.82	1824.3	174.3
12-Jul	5:58	5.11	4.26	28.77	0.67	0.56	2.2	13.82	1832.2	174.6
12-Jul	5:59	5.09	4.25	28.53	0.75	0.63	2.56	13.83	1829.1	174.7
12-Jul	6:00	5.09	4.25	28.48	0.57	0.48	2.01	13.83	1825.7	174.6
Total/Average		**5.42**	**4.50**	**26.13**	**1.43**	**1.21**	**3.83**	**13.80**	**1578.40**	**146.48**
		NOx ppm	**NOxppm @15%**	**NOx lbs**	**CO ppm**	**CO ppm @15%**	**CO lbs**	**%O2**	**mmBTU**	**MW**

164.14 lbs NOx
total for entire period

8583.32 lbs CO
total for entire period

Table 1 - Sutter Energy Center
Start-up Emissions Data

Nox emission rates during Start up

Plant	Turbine	Date	Duration in Minutes	MEC permit Limit lb/hr	Emission rate lb/hr
Sutter	Unit 1	2/27/2004	54	80	117.4
Sutter	Unit 1	2/27/2004	60	80	116.6
Sutter	Unit 1	2/27/2004	60	80	116.5
Sutter	Unit 1	2/27/2004	60	80	113
Sutter	Unit 1	2/27/2004	60	80	116.5
Sutter	Unit 1	6/14/2004	57	80	94.3
Sutter	Unit 1	6/14/2004	60	80	106.5
Sutter	Unit 1	6/14/2004	60	80	90.6
Sutter	Unit 2	6/14/2004	60	80	104.9
Sutter	Unit 2	6/14/2004	60	80	106
Sutter	Unit 2	6/14/2004	60	80	104.7
Sutter	Unit 2	6/14/2004	60	80	104.5
Sutter	Unit 2	6/14/2004	54	80	103
Sutter	Unit 2	9/20/2004	58	80	111.5
Sutter	Unit 2	12/18/2004	51	80	104.1

CO emission rates during Start up

Plant		Date	Duration in Minutes	MEC permit Limit lb/hr	Emission rate lb/hr
Sutter	Unit 1	2/27/2004	19	902	1211.5
Sutter	Unit 1	6/14/2004	13	902	1451.4

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Table 2 - Sutter Energy Center
Shutdown Emissions Data

Nox emission rates during Shutdown

Plant	Turbine	Date	Duration in Minutes	MEC permit Limit lb/hr	Emission rate lb/hr
	Unit 1	6/29/2004		18	26
Sutter	Unit 2	7/1/2004	26	18	23.9
Sutter	Unit 2	7/2/2004	27	18	25.3
		7/3/2004		18	24.8
Sutter	Unit 2	8/10/2004	25	18	25.6
	Unit 2	8/22/2004		18	25.6
	Unit 1	9/30/2004		18	21.8
Sutter	Unit 2	10/1/2004	17	18	19.5
Sutter	Unit 1	12/17/2004	25	18	24.7

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