

Koerner, Jeff

From: Waters, G. Dwain [GDWATERS@southernco.com]
Sent: Wednesday, October 29, 2008 11:04 AM
To: Bradburn, Rick
Cc: Koerner, Jeff
Subject: Smith SNCR Testing Schedule

Gulf had a Smith SNCR startup meeting yesterday to finalize the schedule and talk out construction issues. One of the items that was discussed was a change in the outage schedule for Unit 1 from January to March-April, 2009. Unit 2 is still being scheduled for December, 2008 with a short commissioning run time for contract purposes only. We had not planned on operating Unit 2 until the Unit 1 project was completed because of some of the common equipment issues and urea supply, etc. Originally, this was only a 1-2 months period, now this has been extended to 4 months to April, 2009. This was discussed in our original air construction permit comments and thus in Condition 5. Ammonia Slip. Performance Tests. It outlines: " Within 60 days after completing construction of the SNCR system and bringing Units 1 and 2 back on line...the permittee shall conduct tests...." Again, the original schedule was only 2 months between these installations and now it may be 4 or so. We just want to make sure the Department is still ok with this schedule for startup and testing of both units at the same time. Let me know your thoughts since we are in the process of revising the Smith SNCR Air Construction Permit. Thanks, Dwain

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Koerner, Jeff

From: Waters, G. Dwain [GDWATERS@southernco.com]
Sent: Friday, October 10, 2008 3:33 PM
To: Koerner, Jeff
Subject: Re: Gulf Power Smith _ request for NOx Limit

Great to have you at the helm. One quick note regarding the Smith SNCR that I received this morning. It now looks that Smith will delay the outage that was projected for Feb, 2009 until March, 2009. This is a change from my proposal which outlined Feb. Let me know if you have any questions on our proposal. Dwain

Dwain Waters, QEP

From: Koerner, Jeff
To: Waters, G. Dwain
Sent: Fri Oct 10 14:26:58 2008

Subject: Gulf Power Smith _ request for NOx Limit

Dwain,

Looks like I'm also working on this one ...

Thanks!

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
850/921-9536

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.

Full Time Operation Case

Smith 1 & 2 at .30 lb/MMBtu rate using highest heat input from Units 1, 2, 4, 5 in baseline case.

Lansing Smith Rolling Average NOx Worksheet

Using a worst case heat input for Units 1 & 2 and .30 lb/MMBtu rate a new 12 month Rolling NOx Cap = 5380 Tons or about 20% reduction from current limit.

DATE	UNIT 1 COAL			UNIT 2 COAL			UNIT 3 Oil		UNIT 4 CCCT			UNIT 5 CCCT			SMITH	12 MONTH		Available
	Highest Fuel MBTU	CEM Rate	NOx Tons	Highest Fuel MBTU	CEM Rate	NOx Tons	Fuel Gallons	Gal x AP42 NOx Tons	CEM NOxRate	High CEM Heat Input	CEM NOx Tons	CEM NOxRate	High CEM Heat Input	CEM NOx Tons		TOTAL NOx Tons	ROLLING NOx Tons	
0402	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			5.7			26.1	425.2	425.2	4876	
0502	1184912	0.30	177.7	1437678	0.30	215.7	29425.0	1.3			10.3			9.8	414.9	840.0	4460	
0602	1184912	0.30	177.7	1437678	0.30	215.7	4579.0	0.2			14.6			12.9	421.1	1261.1	4039	
0702	1184912	0.30	177.7	1437678	0.30	215.7	2570.0	0.1			16.9			13.6	423.0	1684.1	3616	
0802	1184912	0.30	177.7	1437678	0.30	215.7	4547.0	0.2			16.2			14.8	424.6	2108.6	3191	
0902	1184912	0.30	177.7	1437678	0.30	215.7	791.0	0.0			14.3			12.7	420.4	2529.0	2771	
1002	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			14.0			10.0	417.5	2946.5	2354	
1102	1184912	0.30	177.7	1437678	0.30	215.7	5921.0	0.3			18.4			11.0	423.1	3369.6	1930	
1202	1184912	0.30	177.7	1437678	0.30	215.7	1693.0	0.1			14.6			11.0	419.1	3788.7	1511	
0103	1184912	0.30	177.7	1437678	0.30	215.7	31832.0	1.6			19.3			13.7	428.0	4216.6	1083	
0203	1184912	0.30	177.7	1437678	0.30	215.7	16883.0	0.8			13.1			10.7	418.1	4834.7	666	
0303	1184912	0.30	177.7	1437678	0.30	215.7	1318.0	0.1			0.0			0.0	393.5	5028.1	272	
0403	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			11.1			10.7	415.2	5018.1	292	
0503	1184912	0.30	177.7	1437678	0.30	215.7	24454.0	1.2			6.4			5.9	406.9	5010.2	290	
0603	1184912	0.30	177.7	1437678	0.30	215.7	323.4	0.0			13.4			11.8	418.6	6007.7	292	
0703	1184912	0.30	177.7	1437678	0.30	215.7	256.0	0.0			16.8			12.4	422.6	6007.4	293	
0803	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			16.6			13.3	423.3	6006.1	294	
0903	1184912	0.30	177.7	1437678	0.30	215.7	1024.0	0.1			12.3			11.3	417.0	6002.7	297	
1003	1184912	0.30	177.7	1437678	0.30	215.7	1791.0	0.1			8.4			8.5	410.3	4996.6	304	
1103	1184912	0.30	177.7	1437678	0.30	215.7	6654.2	0.3			14.2			12.1	420.0	4992.6	307	
1203	1184912	0.30	177.7	1437678	0.30	215.7	31120.0	1.5			13.9			10.2	419.0	4992.5	308	
0104	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			18.0			12.1	423.4	4988.0	312	
0204	1184912	0.30	177.7	1437678	0.30	215.7	7422.0	0.4			17.6			13.4	424.7	4994.7	305	
0304	1184912	0.30	177.7	1437678	0.30	215.7	6782.0	0.3			10.1			7.9	411.7	5013.0	287	
0404	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			14.1			17.3	424.8	6022.6	277	
0504	1184912	0.30	177.7	1437678	0.30	215.7	6674.0	0.3			13.2			12.3	419.2	5034.9	265	
0604	1184912	0.30	177.7	1437678	0.30	215.7	3690.0	0.2			14.5			13.9	422.0	5038.3	262	
0704	1184912	0.30	177.7	1437678	0.30	215.7	7351.0	0.4			16.3			15.4	425.5	5041.1	269	
0804	1184912	0.30	177.7	1437678	0.30	215.7	8893.0	0.4			18.9			16.9	429.6	5047.4	263	
0904	1184912	0.30	177.7	1437678	0.30	215.7	53684.0	2.6			13.0			12.3	421.3	5051.7	248	
1004	1184912	0.30	177.7	1437678	0.30	215.7	9885.0	0.5			17.0			16.0	426.9	5068.3	232	
1104	1184912	0.30	177.7	1437678	0.30	215.7	11862.0	0.6			1.5			15.8	411.3	5059.5	240	
1204	1184912	0.30	177.7	1437678	0.30	215.7	10543.0	0.6			11.9			14.3	420.7	5060.6	239	
0105	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.035	1008243.0	17.6	0.043	1008243.0	21.7	432.1	5069.9	230	
0205	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.034	1008243.0	17.1	0.039	1008243.0	19.7	430.3	5075.4	225	
0305	1184912	0.30	177.7	1437678	0.30	215.7	4613.0	0.2	0.029	1008243.0	14.6	0.036	1008243.0	18.1	426.4	5090.1	210	
0405	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.046	1008243.0	23.2	0.048	1008243.0	24.2	440.8	5106.0	194	
0505	1184912	0.30	177.7	1437678	0.30	215.7	6458.0	0.3	0.052	1008243.0	28.2	0.048	1008243.0	24.2	444.1	5131.0	169	
0605	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.043	1008243.0	21.7	0.045	1008243.0	22.7	437.8	5146.7	163	
0705	1184912	0.30	177.7	1437678	0.30	215.7	10603.0	0.5	0.036	1008243.0	18.1	0.036	1008243.0	18.1	430.2	5151.6	149	
0805	1184912	0.30	177.7	1437678	0.30	215.7	10544.0	0.6	0.038	1008243.0	18.1	0.037	1008243.0	18.7	430.7	5162.6	147	
0905	1184912	0.30	177.7	1437678	0.30	215.7	33649.0	1.7	0.043	1008243.0	24.7	0.049	1008243.0	24.7	444.4	5176.7	124	
1005	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.054	1008243.0	27.2	0.057	1008243.0	28.7	449.5	5198.3	102	
1105	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.038	1008243.0	19.2	0.043	1008243.0	21.7	434.5	5221.6	78	
1205	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.035	1008243.0	17.6	0.052	1008243.0	26.2	437.5	5239.0	61	
0106	1184912	0.30	177.7	1437678	0.30	215.7	6472.0	0.3	0.063	1008243.0	31.8	0.064	1008243.0	32.3	457.7	5264.0	36	
0206	1184912	0.30	177.7	1437678	0.30	215.7	9684.0	0.5	0.037	1008243.0	18.7	0.050	1008243.0	25.2	437.7	5271.4	29	
0306	1184912	0.30	177.7	1437678	0.30	215.7	5930.0	0.3	0.040	1008243.0	20.2	0.046	1008243.0	23.2	437.0	5282.0	18	
0406	1184912	0.30	177.7	1437678	0.30	215.7	7249.0	0.4	0.044	1008243.0	22.2	0.044	1008243.0	22.2	438.1	5279.4	21	
0506	1184912	0.30	177.7	1437678	0.30	215.7	9596.0	0.5	0.048	1008243.0	24.2	0.049	1008243.0	24.7	442.8	5278.0	22	
0606	1184912	0.30	177.7	1437678	0.30	215.7	6973.0	0.3	0.048	1008243.0	24.2	0.046	1008243.0	23.2	441.1	5281.4	19	
0706	1184912	0.30	177.7	1437678	0.30	215.7	1683.0	0.1	0.042	1008243.0	21.2	0.044	1008243.0	22.2	436.8	5288.0	12	
0806	1184912	0.30	177.7	1437678	0.30	215.7	3964.0	0.2	0.030	1008243.0	15.1	0.031	1008243.0	15.6	424.3	5281.8	18	
0906	1184912	0.30	177.7	1437678	0.30	215.7	3295.0	0.2	0.041	1008243.0	20.7	0.039	1008243.0	19.7	433.9	5271.1	29	
1006	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.036	1008243.0	18.1	0.032	1008243.0	16.1	427.7	5249.2	51	
1106	1184912	0.30	177.7	1437678	0.30	215.7	3295.0	0.2	0.038	1008243.0	19.2	0.037	1008243.0	18.7	431.4	5246.1	54	
1206	1184912	0.30	177.7	1437678	0.30	215.7	1977.0	0.1	0.036	1008243.0	18.1	0.037	1008243.0	18.7	430.3	5238.8	61	
0107	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.036	1008243.0	18.1	0.034	1008243.0	17.1	428.7	5209.8	90	
0207	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.030	1008243.0	15.1	0.026	1008243.0	13.1	421.9	5194.0	106	
0307	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.033	1008243.0	16.6	0.035	1008243.0	17.6	427.8	5184.7	115	
0407	1184912	0.30	177.7	1437678	0.30	215.7	1318.0	0.1	0.034	1008243.0	17.1	0.028	1008243.0	14.1	424.7	5171.3	129	
0507	1184912	0.30	177.7	1437678	0.30	215.7	15816.0	0.8	0.054	1008243.0	27.2	0.053	1008243.0	31.8	453.1	5181.7	118	
0607	1184912	0.30	177.7	1437678	0.30	215.7	7249.0	0.4	0.047	1008243.0	23.7	0.051	1008243.0	25.7	443.1	5183.7	116	
0707	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.045	1008243.0	22.7	0.050	1008243.0	25.2	441.6	5188.6	112	
0807	1184912	0.30	177.7	1437678	0.30	215.7	1446.0	0.1	0.042	1008243.0	21.2	0.046	1008243.0	23.2	437.8	5202.0	98	
0907	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.051	1008243.0	25.7	0.056	1008243.0	28.2	447.5	5215.6	84	
1007	1184912	0.30	177.7	1437678	0.30	215.7	821.0	0.0	0.050	1008243.0	25.2	0.055	1008243.0	27.7	446.4	5234.3	66	
1107	1184912	0.30	177.7	1437678	0.30	215.7	457.0	0.0	0.048	1008243.0	24.2	0.048	1008243.0	24.4				

0408	1184912	0.30	177.7	1437678	0.30	216.7	0	0.0	0.049	1008243.0	24.7	0.045	1008243.0	22.7	440.8	5302.9	3
0508	1184912	0.30	177.7	1437678	0.30	216.7	0	0.0	0.038	1008243.0	19.2	0.041	1008243.0	20.7	433.2	5283.0	17
0608	1184912	0.30	177.7	1437678	0.30	216.7	1120	0.1	0.049	1008243.0	24.7	0.047	1008243.0	23.7	441.8	5281.7	18
0708	1184912	0.30	177.7	1437678	0.30	216.7	1977	0.1	0.049	1008243.0	24.7	0.048	1008243.0	24.2	442.4	5282.5	17

Lansing Smith Rolling Average NOx Worksheet

12 month Rolling NOx Cap = 6666 Tons

DATE	UNIT 1 COAL			UNIT 2 COAL			UNIT 3 OIL		UNIT 4 CCCT			UNIT 5 CCCT			SMITH TOTAL NOx Tons	12 MONTH		Available Margin NOx Tons
	Fuel MBTU	CEM Rate	NOx Tons	Fuel MBTU	CEM Rate	NOx Tons	Fuel Gallons	Gal x AP42 NOx Tons	CEM NOxRate	CEM Heat Input	CEM NOx Tons	CEM NOxRate	CEM Heat Input	CEM NOx Tons		ROLLING NOx Tons	NOx Tons	
04/02	127218	0.44	28.0	15497	0.26	2.0	0.0	0.0			5.7			26.1	61.8	61.8	6804	
05/02	869932	0.50	222.8	811125	0.42	170.3	26425.0	1.3			10.3			9.8	414.2	476.0	6190	
06/02	988070	0.47	232.2	228029	0.35	39.9	4679.0	0.2			14.8			12.9	299.8	776.9	6890	
07/02	1075163	0.47	253.7	729820	0.34	125.2	2570.0	0.1			15.9			13.6	408.5	1184.3	6482	
08/02	1063162	0.46	241.9	1007471	0.36	181.8	4547.0	0.2			16.2			14.8	454.9	1533.2	5027	
09/02	1066966	0.47	251.3	464883	0.37	89.7	791.0	0.0			14.3			12.7	368.0	2007.2	4669	
10/02	878829	0.48	210.9	873345	0.37	161.6	0.0	0.0			14.0			10.0	396.6	2403.7	4262	
11/02	866394	0.52	233.1	820268	0.39	179.5	5921.0	0.3			18.4			11.0	442.2	2946.0	3820	
12/02	1006555	0.51	262.8	956784	0.36	172.6	1880.0	0.1			14.6			11.0	461.1	3307.0	3359	
01/03	1024895	0.51	261.3	844	0.47	0.2	31832.0	1.6			19.3			13.7	296.1	3503.2	3063	
02/03	800361	0.49	196.1	0	0.00	0.0	16883.0	0.8			13.1			10.7	220.8	3823.9	2842	
03/03	1103197	0.49	271.4	0	0.00	0.0	1318.0	0.1			0.0			0.0	271.5	4096.4	2571	
04/03	639534	0.45	145.2	584682	0.36	105.2	0.0	0.0			11.1			10.7	272.2	4306.8	2380	
05/03	445433	0.48	106.9	997902	0.40	198.6	24454.0	1.2			6.4			5.9	320.0	4211.5	2454	
06/03	966818	0.49	236.9	1044757	0.41	214.2	323.4	0.0			11.8			11.8	478.3	4388.0	2378	
07/03	1045156	0.48	250.8	1146875	0.39	223.7	256.0	0.0			16.8			12.4	503.7	4483.2	2183	
08/03	536944	0.47	126.9	1147508	0.39	223.8	0.0	0.0			16.6			13.3	379.5	4408.0	2258	
09/03	979317	0.46	224.8	1110749	0.39	214.9	1024.0	0.1			12.3			11.3	463.3	4503.3	2163	
10/03	1049743	0.46	243.6	1006444	0.35	173.9	1791.0	0.1			8.4			8.5	434.4	4541.2	2125	
11/03	938388	0.50	232.5	1157143	0.40	232.0	6654.2	0.3			14.2			12.1	491.2	4690.1	2076	
12/03	86831	0.51	22.2	1250991	0.41	266.5	31120	1.5			13.9			10.2	304.3	4433.4	2233	
01/04	1015061	0.50	253.3	1151064	0.39	228.8	0	0.0			18.0			12.1	510.1	4647.3	2019	
02/04	1060915	0.50	266.8	1128806	0.38	218.0	7422	0.4			17.6			13.4	517.2	4943.7	1722	
03/04	1168891	0.48	282.3	1232757	0.40	244.7	6782	0.3			10.1			7.9	545.4	5217.7	1448	
04/04	937791	0.47	222.3	853466	0.37	120.2	0	0.0			14.1			17.3	373.9	5319.4	1347	
05/04	983804	0.46	227.8	1058311	0.38	203.7	6674	0.3			13.2			12.3	457.3	5456.7	1209	
06/04	978024	0.47	231.3	1102346	0.39	216.5	3690	0.2			14.5			13.9	476.4	5456.8	1210	
07/04	1001017	0.48	237.7	1155257	0.39	226.9	7351	0.4			16.3			15.4	495.7	5447.8	1218	
08/04	1072538	0.48	257.4	1262299	0.36	246.8	8893	0.4			18.9			16.9	540.4	5608.6	1067	
09/04	947554	0.49	230.7	1091738	0.40	216.2	5368.4	2.6			13.0			12.3	474.8	5620.0	1046	
10/04	1121253	0.49	274.1	1342901	0.38	256.8	9885	0.5			17.0			16.0	563.5	5748.1	917	
11/04	539107	0.49	131.8	1234558	0.41	251.3	11862	0.6			1.5			15.8	401.0	5658.9	1007	
12/04	1128202	0.49	274.2	1324886	0.42	275.5	10543	0.5			11.9			14.3	576.4	5931.0	735	
01/05	1155769	0.47	273.9	1325209	0.40	265.7	0	0.0	0.035	643120.0	11.3	0.043	660216.0	14.2	565.1	5986.0	880	
02/05	925743	0.50	229.1	675845	0.41	138.2	2636	0.1	0.034	699709.0	11.9	0.039	736342.0	14.3	393.7	5862.5	804	
03/05	1089725	0.49	260.5	0	0.00	0.0	4613	0.2	0.029	960127.0	13.9	0.036	962601.0	17.1	291.8	5608.0	1057	
04/05	1068900	0.48	266.5	25778	0.27	3.6	0	0.0	0.048	374509.0	8.6	0.048	669618.0	16.1	284.7	5619.6	1146	
05/05	1119052	0.48	270.8	970670	0.38	184.4	6458	0.3	0.062	165768.0	4.3	0.048	674567.0	16.2	476.1	5538.4	1128	
06/05	1095747	0.48	263.0	1258921	0.40	253.1	0	0.0	0.043	739302.0	16.8	0.045	639980.0	14.4	548.9	5609.3	1058	
07/05	1128671	0.47	263.8	1295033	0.38	244.2	10903	0.5	0.036	772650.0	13.9	0.036	789442.0	13.7	536.1	5650.3	1018	
08/05	1142766	0.48	271.4	1330656	0.38	250.2	10544	0.5	0.036	853222.0	16.4	0.037	832817.0	16.4	562.9	5662.7	1003	
09/05	1075429	0.48	256.0	1264390	0.38	237.7	33848	1.7	0.049	628031.0	16.4	0.049	635413.0	16.6	526.3	5714.2	952	
10/05	820695	0.47	192.8	1410953	0.34	242.7	2636	0.1	0.064	483569.0	13.1	0.057	488977.0	13.9	487.6	5613.4	1053	
11/05	712846	0.48	169.6	1090797	0.38	205.9	5931	0.3	0.038	686587.0	13.2	0.043	664610.0	14.3	403.3	5615.7	1050	
12/05	1169321	0.46	269.5	1329367	0.38	254.6	5931	0.3	0.035	192822.0	3.4	0.052	220682.0	6.7	533.5	5672.8	1093	
01/06	1156677	0.48	277.4	1374571	0.39	268.0	6472	0.3	0.063	214339.0	6.8	0.064	292831.0	9.4	561.8	5663.6	1096	
02/06	1070897	0.47	251.7	1194056	0.38	226.9	9884	0.5	0.037	501299.0	9.3	0.050	514787.0	12.9	501.2	5677.1	989	
03/06	1177337	0.46	270.8	1437678	0.36	258.8	5930	0.3	0.040	413039.0	8.3	0.046	444044.0	10.2	548.3	5933.7	732	
4/06	1132825	0.44	251.6	1157246	0.35	203.1	7249	0.4	0.044	488891.0	10.8	0.044	374305.0	8.2	473.9	6122.9	643	
5/06	979511	0.45	220.4	1225255	0.39	238.9	8686	0.5	0.048	627839.0	16.1	0.049	604878.0	14.8	489.7	6136.5	528	
6/06	1145670	0.47	269.2	1313875	0.40	262.8	6973	0.3	0.048	638581.0	16.3	0.046	656442.0	16.1	562.8	6152.4	614	
7/06	1112655	0.49	269.8	1292237	0.40	257.2	1583	0.1	0.042	828714.0	17.4	0.044	791365.0	17.4	561.9	6178.2	488	
8/06	1164454	0.46	266.7	1367578	0.38	257.1	3654	0.2	0.030	1008243.0	16.1	0.031	932287.0	14.5	563.5	6178.9	487	
9/06	732573	0.47	171.4	866383	0.38	165.4	3285	0.2	0.041	769969.0	16.8	0.039	790428.0	16.4	368.2	6020.8	645	
10/06	1078083	0.43	230.8	585484	0.33	96.6	0	0.0	0.036	890746.0	16.0	0.032	926286.0	14.8	358.3	5916.4	750	
11/06	992211	0.45	224.7	1302907	0.37	240.4	3295	0.2	0.038	599978.0	11.4	0.037	635888.0	11.8	488.4	6091.6	664	
12/06	1078044	0.46	247.9	1246839	0.35	217.6	1977	0.1	0.036	622425.0	9.4	0.037	624421.0	9.7	484.7	5952.8	713	
01/07	1028044	0.48	248.3	1159111	0.37	211.6	0	0.0	0.036	713412.0	12.8	0.034	707421.0	12.0	484.7	5876.6	790	
02/07	948513	0.46	217.7	1130625	0.37	208.6	5931	0.3	0.030	870045.0	13.1	0.026	899769.0	11.7	451.3	5825.8	840	
03/07	301058	0.46	68.9	1111360	0.37	206.2	2636	0.1	0.033	925644.0	16.3	0.035	878083.0	15.4	305.9	5683.3	1083	
04/07	0	0.00	0.0	702563	0.40	141.2	1318	0.1	0.034	677508.0	11.6	0.028	643263.0	7.6	160.4	6269.9	1396	
05/07	740719	0.46	170.4	1320901	0.40	265.5	15816	0.8	0.054	593141.0	16.0	0.063	245360.0	7.7	460.4	6240.5	1426	
06/07	1098806	0.51	277.4	1273195	0.40	256.9	7249	0.4	0.047	779926.0	18.3	0.051	750585.0	19.1	571.2	6248.9	1417	
07/07	676170	0.50	168.0	1384288	0.38	264.4	5931	0.3	0.045	809056.0	18.2	0.050	789606.0	19.7	470.7	6157.7	1608	
08/07	1049449	0.49	259.2	1331363	0.38	253.6	1446	0.1	0.045	932084.0	19.6	0.045	865569.0	19.9	562.4	6156.6	1609	
09/07	980046	0.50	245.0	1201518	0.37	222.3	2636	0.1	0.051	673882.0	17.2	0.056	622264.0	17.4	502.0	6290.4	1376	
10/07	1071871	0.50	267.4	1321813	0.38	248.5	821	0.0	0.050	728722.0	18.2	0.055	708687.0	19.5	563.7	6485.8	1180	
11/07	984401	0.51	249.1	1210173	0.38	228.8	457	0.0	0.048	696900.0	16.7	0.048	664913.0	16.1	510.7	6508.0	1158	
12/07	1106377	0.48	266.1	1369891	0.36	248.0	5857	0.3	0.052	452402.0	11.8	0.051	504956.0	12.9	639.0	5662.2	1104	
01/0																		

0408	680554	0.44	160.7	1219364.86	0.33	202.4	0	0.0	0.049	647197.0	16.9	0.045	749399.0	16.9	385.9	6061.8	604
0508	1037713	0.47	243.9	365707	0.35	64.0	0	0.0	0.038	826678.0	16.7	0.041	672235.0	13.8	337.3	6838.7	727
0608	1034701	0.49	264.5	1058481	0.39	208.0	1120	0.1	0.049	702673.0	17.2	0.047	683191.0	16.1	495.9	6863.4	893
0708	1062608	0.50	263.6	1265199	0.41	256.8	1977	0.1	0.049	836757.0	20.6	0.048	816629.0	19.6	560.6	6963.4	713

Full Time Operation Case

Smith 1 & 2 at .30 lb/mmBtu rate using highest heat input from Units 1, 2, 4, 5 in baseline case.

Lansing Smith Rolling Average NOx Worksheet

Using a worst case heat input for Units 1 & 2 and .30 lb/mmBtu rate a new 12 month Rolling NOx Cap = 6300 Tons or about 20% reduction from current limit.

DATE	UNIT 1 COAL			UNIT 2 COAL			UNIT 3 OIL		UNIT 4 CCCT			UNIT 5 CCCT			SMITH	12 MONTH		Available
	Month/yr	Highest Fuel MBTU	CEM Rate	NOx Tons	Highest Fuel MBTU	CEM Rate	NOx Tons	Fuel Gallons	Gal x AP42 NOx Tons	CEM NOxRate	High CEM Heat Input	CEM NOx Tons	CEM NOxRate	High CEM Heat Input		CEM NOx Tons	TOTAL NOx Tons	
04/02	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			6.7				26.1	425.2	425.2	4875
05/02	1184912	0.30	177.7	1437678	0.30	215.7	28425.0	1.3			10.3				9.8	414.8	840.0	4480
06/02	1184912	0.30	177.7	1437678	0.30	215.7	4679.0	0.2			14.6				12.9	421.1	1261.1	4039
07/02	1184912	0.30	177.7	1437678	0.30	215.7	2570.0	0.1			15.9				13.6	423.0	1684.1	3516
08/02	1184912	0.30	177.7	1437678	0.30	215.7	4547.0	0.2			18.4				14.8	424.6	2108.6	3191
09/02	1184912	0.30	177.7	1437678	0.30	215.7	791.0	0.0			16.2				12.7	420.4	2529.0	2771
10/02	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			14.0				10.0	417.5	2946.5	2354
11/02	1184912	0.30	177.7	1437678	0.30	215.7	5921.0	0.3			18.4				11.0	423.1	3369.6	1930
12/02	1184912	0.30	177.7	1437678	0.30	215.7	1693.0	0.1			14.6				11.0	419.1	3788.7	1511
01/03	1184912	0.30	177.7	1437678	0.30	215.7	31832.0	1.6			19.3				13.7	428.0	4218.6	1083
02/03	1184912	0.30	177.7	1437678	0.30	215.7	16883.0	0.8			18.1				10.7	418.1	4634.7	665
03/03	1184912	0.30	177.7	1437678	0.30	215.7	1318.0	0.1			0.0				0.0	393.5	5028.1	131
04/03	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			11.1				10.7	415.2	5618.1	282
05/03	1184912	0.30	177.7	1437678	0.30	215.7	24454.0	1.2			6.4				5.9	406.9	5010.2	290
06/03	1184912	0.30	177.7	1437678	0.30	215.7	323.4	0.0			13.4				11.8	418.6	5007.7	292
07/03	1184912	0.30	177.7	1437678	0.30	215.7	256.0	0.0			16.8				12.4	422.6	5007.4	293
08/03	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			16.6				13.3	423.3	5006.1	294
09/03	1184912	0.30	177.7	1437678	0.30	215.7	1024.0	0.1			12.3				11.3	417.0	5002.7	297
10/03	1184912	0.30	177.7	1437678	0.30	215.7	1791.0	0.1			8.4				8.5	410.3	4995.6	304
11/03	1184912	0.30	177.7	1437678	0.30	215.7	6654.2	0.3			14.2				12.1	420.0	4992.6	307
12/03	1184912	0.30	177.7	1437678	0.30	215.7	31120.0	1.5			13.9				10.2	419.0	4892.5	308
01/04	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			18.0				12.1	423.4	4988.0	312
02/04	1184912	0.30	177.7	1437678	0.30	215.7	7422.0	0.4			17.6				13.4	424.7	4994.7	305
03/04	1184912	0.30	177.7	1437678	0.30	215.7	6782.0	0.3			10.1				7.9	411.7	5613.0	287
04/04	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0			14.1				17.3	424.8	6022.6	277
05/04	1184912	0.30	177.7	1437678	0.30	215.7	6674.0	0.3			13.2				12.3	419.2	6034.9	265
06/04	1184912	0.30	177.7	1437678	0.30	215.7	3690.0	0.2			14.5				13.9	422.0	6038.3	262
07/04	1184912	0.30	177.7	1437678	0.30	215.7	7351.0	0.4			16.3				16.4	425.6	6041.1	259
08/04	1184912	0.30	177.7	1437678	0.30	215.7	8893.0	0.4			18.9				16.9	429.6	6047.4	263
09/04	1184912	0.30	177.7	1437678	0.30	215.7	53684.0	2.6			13.0				12.3	421.3	6051.7	249
10/04	1184912	0.30	177.7	1437678	0.30	215.7	9685.0	0.5			17.0				16.0	426.9	6068.3	232
11/04	1184912	0.30	177.7	1437678	0.30	215.7	11862.0	0.6			1.5				16.8	411.3	6059.5	240
12/04	1184912	0.30	177.7	1437678	0.30	215.7	10543.0	0.5			11.9				14.3	420.1	6060.6	239
01/05	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.035	1008243.0	17.6	0.043	1008243.0		21.7	432.7	6069.9	230
02/05	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.034	1008243.0	17.1	0.039	1008243.0		19.7	430.3	6075.4	225
03/05	1184912	0.30	177.7	1437678	0.30	215.7	4813.0	0.2	0.029	1008243.0	14.6	0.036	1008243.0		18.1	426.4	6090.1	210
04/05	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.046	1008243.0	23.2	0.048	1008243.0		24.2	440.8	6106.0	194
05/05	1184912	0.30	177.7	1437678	0.30	215.7	6468.0	0.3	0.052	1008243.0	26.2	0.048	1008243.0		24.2	444.1	6131.0	169
06/05	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.043	1008243.0	21.7	0.045	1008243.0		22.7	437.8	6146.7	163
07/05	1184912	0.30	177.7	1437678	0.30	215.7	10933.0	0.5	0.036	1008243.0	18.1	0.036	1008243.0		18.1	430.2	6151.5	149
08/05	1184912	0.30	177.7	1437678	0.30	215.7	10544.0	0.5	0.036	1008243.0	18.1	0.037	1008243.0		18.7	430.7	6152.9	147
09/05	1184912	0.30	177.7	1437678	0.30	215.7	33649.0	1.7	0.049	1008243.0	24.7	0.049	1008243.0		24.7	444.4	6175.7	124
10/05	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.064	1008243.0	27.2	0.057	1008243.0		28.7	449.5	6198.3	102
11/05	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.038	1008243.0	19.2	0.043	1008243.0		21.7	434.5	6221.5	78
12/05	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.035	1008243.0	17.6	0.052	1008243.0		26.2	437.5	6239.0	61
01/06	1184912	0.30	177.7	1437678	0.30	215.7	6472.0	0.3	0.063	1008243.0	31.8	0.064	1008243.0		32.3	457.7	6264.0	35
02/06	1184912	0.30	177.7	1437678	0.30	215.7	8684.0	0.5	0.037	1008243.0	18.7	0.050	1008243.0		25.2	437.7	6271.4	29
03/06	1184912	0.30	177.7	1437678	0.30	215.7	5930.0	0.3	0.040	1008243.0	20.2	0.046	1008243.0		23.2	437.0	6282.0	18
04/06	1184912	0.30	177.7	1437678	0.30	215.7	7249.0	0.4	0.044	1008243.0	22.2	0.044	1008243.0		22.2	438.1	6279.4	21
05/06	1184912	0.30	177.7	1437678	0.30	215.7	9595.0	0.5	0.048	1008243.0	24.2	0.049	1008243.0		24.7	442.9	6278.0	22
06/06	1184912	0.30	177.7	1437678	0.30	215.7	6973.0	0.3	0.048	1008243.0	24.2	0.046	1008243.0		23.2	441.1	6281.4	19
07/06	1184912	0.30	177.7	1437678	0.30	215.7	1683.0	0.1	0.042	1008243.0	21.2	0.044	1008243.0		22.2	436.8	6288.0	12
08/06	1184912	0.30	177.7	1437678	0.30	215.7	3654.0	0.2	0.030	1008243.0	16.1	0.031	1008243.0		15.6	424.3	6281.8	18
09/06	1184912	0.30	177.7	1437678	0.30	215.7	3295.0	0.2	0.041	1008243.0	20.7	0.039	1008243.0		19.7	433.9	6271.1	29
10/06	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.038	1008243.0	18.1	0.032	1008243.0		16.1	427.7	6249.2	61
11/06	1184912	0.30	177.7	1437678	0.30	215.7	3295.0	0.2	0.038	1008243.0	19.2	0.037	1008243.0		18.7	431.4	6246.1	54
12/06	1184912	0.30	177.7	1437678	0.30	215.7	1977.0	0.1	0.036	1008243.0	18.1	0.037	1008243.0		18.7	430.3	6238.8	61
01/07	1184912	0.30	177.7	1437678	0.30	215.7	0.0	0.0	0.038	1008243.0	18.1	0.034	1008243.0		17.1	428.7	6209.8	90
02/07	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.030	1008243.0	16.1	0.026	1008243.0		13.1	421.9	6194.0	106
03/07	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.033	1008243.0	16.6	0.035	1008243.0		17.6	427.8	6184.7	115
04/07	1184912	0.30	177.7	1437678	0.30	215.7	1318.0	0.1	0.034	1008243.0	17.1	0.028	1008243.0		14.1	424.7	6171.3	129
05/07	1184912	0.30	177.7	1437678	0.30	215.7	15816.0	0.8	0.054	1008243.0	27.2	0.063	1008243.0		31.8	453.1	6181.7	118
06/07	1184912	0.30	177.7	1437678	0.30	215.7	7249.0	0.4	0.047	1008243.0	23.7	0.051	1008243.0		25.7	443.1	6183.7	118
07/07	1184912	0.30	177.7	1437678	0.30	215.7	5931.0	0.3	0.045	1008243.0	22.7	0.050	1008243.0		25.2	441.6	6188.5	112
08/07	1184912	0.30	177.7	1437678	0.30	215.7	1446.0	0.1	0.042	1008243.0	21.2	0.042	1008243.0		23.2	437.8	6202.0	98
09/07	1184912	0.30	177.7	1437678	0.30	215.7	2636.0	0.1	0.051	1008243.0	25.7	0.056	1008243.0		28.2	447.5	6215.6	84

0408	1184912	0.30	177.7	1437676	0.30	216.7	0	0.0	0.049	1008243.0	24.7	0.045	1008243.0	22.7	440.8	5302.9	-3
0508	1184912	0.30	177.7	1437676	0.30	216.7	0	0.0	0.038	1008243.0	19.2	0.041	1008243.0	20.7	433.2	6283.0	17
0608	1184912	0.30	177.7	1437676	0.30	216.7	1120	0.1	0.049	1008243.0	24.7	0.047	1008243.0	23.7	441.8	6281.7	18
0708	1184912	0.30	177.7	1437676	0.30	216.7	1977	0.1	0.049	1008243.0	24.7	0.048	1008243.0	24.2	442.4	6282.5	17

Lansing Smith Rolling Average NOx Worksheet

12 month Rolling NOx Cap = 6666 Tons

DATE	UNIT 1 COAL			UNIT 2 COAL			UNIT 3 COI		UNIT 4 CCCT			UNIT 5 CCCT			SMITH	12 MONTH		Available
Month/yr	Fuel MBTU	CEM Rate	NOx Tons	Fuel MBTU	CEM Rate	NOx Tons	Fuel Gallons	Gal x AP42 NOx Tons	CEM NOxRate	CEM Heat Input	CEM NOx Tons	CEM NOxRate	CEM Heat Input	CEM NOx Tons	TOTAL NOx Tons	ROLLING NOx Tons	Margin NOx Tons	NOx Tons
04/02	127218	0.44	28.0	15497	0.26	2.0	0.0	0.0			6.7			26.1	61.8	61.8	6804	6804
05/02	869832	0.50	222.6	811125	0.42	170.3	26425.0	1.3			10.3			9.8	414.2	476.0	6190	6190
06/02	988070	0.47	232.2	228029	0.36	39.9	4679.0	0.2			14.8			12.9	299.8	776.9	6890	6890
07/02	1075163	0.47	263.7	729920	0.34	125.2	2570.0	0.1			16.9			13.6	408.5	1184.3	6482	6482
08/02	1063162	0.46	241.9	1007471	0.36	181.8	4547.0	0.2			16.2			14.8	454.9	1639.2	6027	6027
09/02	1066966	0.47	261.3	484883	0.37	89.7	791.0	0.0			14.3			12.7	368.0	2007.2	4669	4669
10/02	878829	0.48	210.9	873345	0.37	161.6	0.0	0.0			14.0			10.0	396.6	2403.7	4262	4262
11/02	896394	0.52	233.1	920268	0.39	179.6	5921.0	0.3			11.0			11.0	442.2	2948.0	3820	3820
12/02	1030655	0.51	262.8	956784	0.36	172.6	1680.0	0.1			14.6			11.0	461.1	3307.0	3369	3369
01/03	1024895	0.51	261.3	844	0.47	0.2	31832.0	1.6			19.3			13.7	296.1	3603.2	3063	3063
02/03	800361	0.49	196.1	0	0.00	0.0	16883.0	0.8			13.1			10.7	220.8	3823.9	2842	2842
03/03	1103197	0.49	271.4	0	0.00	0.0	1318.0	0.1			0.0			0.0	271.5	4056.4	2671	2671
04/03	639534	0.45	145.2	584892	0.36	106.2	0.0	0.0			11.1			10.7	272.2	4306.8	2360	2360
05/03	445433	0.48	106.9	997902	0.40	199.6	24454.0	1.2			6.4			5.9	320.0	4211.5	2464	2464
06/03	986818	0.49	236.9	1044757	0.41	214.2	323.4	0.0			13.4			11.8	476.3	4388.0	2278	2278
07/03	1045156	0.48	260.8	1146975	0.38	223.7	256.0	0.0			16.8			12.4	503.7	4483.2	2183	2183
08/03	535944	0.47	125.9	1147508	0.39	223.8	0.0	0.0			16.6			13.3	379.6	4408.0	2268	2268
09/03	979317	0.46	224.8	1110749	0.39	214.9	1024.0	0.1			12.3			11.3	463.3	4503.3	2163	2163
10/03	1049743	0.46	243.6	1005444	0.35	173.9	1791.0	0.1			8.4			8.5	434.4	4541.2	2125	2125
11/03	939388	0.50	232.6	1157143	0.40	232.0	6854.2	0.3			14.2			12.1	491.2	4680.1	2076	2076
12/03	86831	0.51	22.2	1250991	0.41	266.6	31120	1.6			13.9			10.2	304.3	4433.4	2233	2233
01/04	1015051	0.50	263.3	1151064	0.39	226.8	0	0.0			18.0			12.1	510.1	4647.3	2019	2019
02/04	1050915	0.50	266.8	1128806	0.39	219.0	7422	0.4			17.6			13.4	517.2	4843.7	1722	1722
03/04	1166891	0.48	282.3	1232757	0.40	244.7	6782	0.3			10.1			7.9	545.4	5217.7	1448	1448
04/04	937791	0.47	222.3	853466	0.37	120.2	0	0.0			14.1			17.3	373.9	5119.4	1347	1347
05/04	983804	0.46	227.8	1058311	0.39	203.7	6674	0.3			13.2			12.3	457.3	5456.7	1209	1209
06/04	978024	0.47	231.3	1102346	0.39	216.6	3890	0.2			14.6			13.9	476.4	5456.8	1210	1210
07/04	1001017	0.48	247.7	1155257	0.39	225.9	7361	0.4			16.3			15.4	496.7	5447.9	1219	1219
08/04	1072538	0.48	267.4	1262299	0.39	246.8	8893	0.4			18.9			16.9	540.4	5608.6	1067	1067
09/04	947554	0.49	230.7	1091738	0.40	218.2	53884	2.6			13.0			12.3	474.8	5620.0	1046	1046
10/04	1121253	0.49	274.1	1342901	0.38	266.8	9886	0.5			17.0			16.0	563.5	5749.1	917	917
11/04	539107	0.49	131.8	1234658	0.41	261.3	11882	0.6			1.5			15.8	401.0	5658.9	1007	1007
12/04	1128202	0.49	274.2	1324896	0.42	278.5	10543	0.6			11.9			14.3	576.4	5931.0	736	736
01/05	1156789	0.47	273.9	1325209	0.40	266.7	0	0.0	0.036	643120.0	11.3	0.043	960216.0	14.2	665.1	5986.0	680	680
02/05	925743	0.50	229.1	675645	0.41	138.2	2636	0.1	0.034	699709.0	11.9	0.039	736342.0	14.3	393.7	5862.5	804	804
03/05	1089725	0.49	260.6	0	0.00	0.0	4613	0.2	0.029	960127.0	13.9	0.036	962601.0	17.1	291.8	5608.9	1067	1067
04/05	1088900	0.48	256.6	25778	0.27	3.6	0	0.0	0.046	374509.0	8.6	0.048	689918.0	16.1	284.7	5619.6	1146	1146
05/05	1119052	0.48	270.8	970670	0.38	184.4	6450	0.3	0.052	165788.0	4.3	0.048	674567.0	16.2	476.1	5638.4	1128	1128
06/05	1085747	0.48	263.0	1258921	0.40	263.7	0	0.0	0.043	736302.0	16.8	0.045	639980.0	14.4	548.9	5609.9	1066	1066
07/05	1128671	0.47	263.8	1295633	0.38	244.2	10903	0.5	0.036	772560.0	13.9	0.036	789442.0	13.7	536.1	5650.3	1016	1016
08/05	1142766	0.48	271.4	1330656	0.38	250.2	10544	0.5	0.036	853222.0	15.4	0.037	832817.0	15.4	562.9	5662.7	1003	1003
09/05	1075429	0.48	266.0	1264390	0.38	237.7	33649	1.7	0.049	628031.0	15.4	0.049	636413.0	16.6	528.3	5714.2	962	962
10/05	920595	0.47	192.8	1410953	0.34	242.7	2636	0.1	0.064	483569.0	13.1	0.067	488977.0	13.9	462.6	5613.4	1063	1063
11/05	712646	0.48	169.8	1080797	0.38	205.9	5831	0.3	0.038	696687.0	13.2	0.043	664610.0	14.3	403.3	5615.7	1060	1060
12/05	1168321	0.46	269.6	1329367	0.38	264.6	5931	0.3	0.035	192822.0	3.4	0.062	220682.0	5.7	533.5	5672.8	1093	1093
01/06	1156677	0.48	277.4	1374571	0.39	268.0	6472	0.3	0.063	214359.0	6.8	0.064	29231.0	9.4	561.8	5679.6	1096	1096
02/06	1070897	0.47	261.7	1194058	0.38	226.9	9884	0.5	0.037	501299.0	9.3	0.050	514787.0	12.9	501.2	5677.1	989	989
03/06	1177337	0.46	270.8	1437678	0.36	258.8	5930	0.3	0.040	413038.0	8.3	0.046	444044.0	10.2	548.3	5833.7	792	792
4/06	1132825	0.44	251.6	1157246	0.36	203.1	7249	0.4	0.044	488891.0	10.8	0.044	374306.0	8.2	472.9	6122.9	643	643
5/06	979511	0.45	220.4	1225256	0.39	238.9	9696	0.6	0.048	627839.0	15.1	0.049	604878.0	14.8	489.7	6136.5	629	629
6/06	1145670	0.47	269.2	1313875	0.40	262.8	6973	0.3	0.048	638581.0	15.3	0.046	656442.0	16.1	562.8	6152.4	614	614
7/06	1112655	0.49	269.8	1292237	0.40	267.2	1883	0.1	0.042	828714.0	17.4	0.044	791365.0	17.4	561.9	6178.2	488	488
8/06	1184454	0.46	266.7	1367578	0.38	257.1	3954	0.2	0.030	1098243.0	16.1	0.031	932287.0	14.5	553.5	6178.9	487	487
9/06	732573	0.47	171.4	668083	0.38	166.4	3295	0.2	0.041	769969.0	15.8	0.039	790429.0	15.4	368.2	6020.8	846	846
10/06	1076063	0.45	230.8	585484	0.33	96.8	0	0.0	0.036	890746.0	16.0	0.032	928286.0	14.8	368.3	5916.4	760	760
11/06	992211	0.45	224.7	1302907	0.37	240.4	3296	0.2	0.038	639878.0	11.4	0.037	636888.0	11.8	488.4	6091.6	664	664
12/06	1078040	0.48	247.9	1246939	0.36	217.6	1977	0.1	0.036	522426.0	9.4	0.037	524421.0	9.7	484.7	5862.8	713	713
01/07	1028044	0.48	248.3	1159111	0.37	211.6	0	0.0	0.036	713412.0	12.8	0.034	707421.0	12.0	484.7	5876.6	790	790
02/07	946513	0.46	217.7	1130625	0.37	208.6	5931	0.3	0.030	870046.0	13.1	0.026	899769.0	11.7	451.3	5826.8	840	840
03/07	301058	0.46	68.9	1111360	0.37	206.2	2636	0.1	0.033	926644.0	15.3	0.036	878063.0	15.4	305.9	5683.3	1083	1083
04/07	0	0.00	0.0	702563	0.40	141.2	1318	0.1	0.034	677508.0	11.6	0.028	643263.0	7.6	160.4	5269.8	1396	1396
05/07	740719	0.46	170.4	1320901	0.40	266.6	15816	0.8	0.064	631141.0	16.0	0.063	246360.0	7.7	460.4	6240.6	1426	1426
06/07	1088806	0.51	277.4	1273195	0.40	266.9	7249	0.4	0.047	779926.0	18.3	0.061	750585.0	19.1	671.2	6248.9	1417	1417
07/07	878170	0.50	168.0	1384288	0.38	264.4	5931	0.3	0.046	809056.0	18.2	0.050	789605.0	19.7	470.7	6157.7	1508	1508
08/07	1049449	0.49	259.2	1331393	0.38	253.6	1446	0.1	0.042	932684.0	19.6	0.046	865669.0	19.9	552.4	6156.0	1609	1609
09/07	980046	0.50	245.0	1201518	0.37	222.3	2636	0.1	0.051	673882.0	17.2	0.056	622264.0	17.4	502.0	6280.4	1376	1376
10/07																		

04/08	680554	0.44	150.7	1219364.86	0.33	202.4	0	0.0	0.048	647197.0	15.9	0.045	749399.0	16.9	385.9	6061.8	604
05/08	1037713	0.47	243.9	365707	0.35	64.0	0	0.0	0.038	826678.0	15.7	0.041	672235.0	13.8	337.3	5338.7	727
06/08	1034701	0.49	254.5	1058481	0.39	208.0	1120	0.1	0.049	702673.0	17.2	0.047	683191.0	16.1	495.9	5863.4	803
07/08	1062808	0.50	263.6	1265199	0.41	256.8	1977	0.1	0.048	836767.0	20.6	0.048	816629.0	19.6	560.6	5863.4	713

Unit	Annual NOx Emissions, Tons/Year				
	2003	2004	2005	2006	2007
1	2312	2888	2944	2973	2444
2	1844	2708	2261	2704	2760
3	5	4	5	4	5
4	146	180	138	164	182
5	99	171	174	162	188
Totals	4406	5951	5522	6007	5579

2-year average

5178.5 5736.5 5764.5 5793

Reductions @ 5300 TPY

-20.3% 10.9% 4.0% 11.8% 5.0%

Note: Annual emissions are from the Annual Operating Reports.

- 5,793 <--- Represents the highest 2-year average (2006-2007)
- 1,159 <--- 20% reduction from the highest 2-year average
- 4,634 <--- Estimated NOx emissions cap

Unit	Annual NOx Emissions, Tons/Year				
	2003	2004	2005	2006	2007
1	2312	2888	2944	2973	2444
2	1844	2708	2261	2704	2760
Totals	4156	5596	5205	5677	5204

2-year average 4876 5400.5 5441 5440.5

Reductions @ 5300 TPY -27.5% 5.3% -1.8% 6.6% -1.8%

Note: Annual emissions are from the Annual Operating Reports.

5,441 <--- Represents the highest 2-year average (2005-2006)

1,088 <--- 20% reduction from the highest 2-year average

4,353 <--- Estimated NOx emissions cap

Unit	Annual NOx Emissions, Tons/Year				
	2003	2004	2005	2006	2007
1	2521	3085	3168	3048	2771
2	2030	2964	2416	2908	2970
4	130	150	115	125	153
5	98	137	143	125	150
Totals	4779	6336	5842	6206	6044

2-year average 5557.5 6089 6024 6125

Reductions @ 5300 TPY **-10.9%** **16.4%** **9.3%** **14.6%** **12.3%**

Note: Annual emissions are from EPA's Acid Rain database.

- 6,125 <--- Represents the highest 2-year average (2006-2007)
- 1,225 <--- 20% reduction from the highest 2-year average
- 4,900 <--- Estimated NOx emissions cap

Unit	Annual NOx Emissions, Tons/Year				
	2003	2004	2005	2006	2007
1	2521	3085	3168	3048	2771
2	2030	2964	2416	2908	2970
Totals	4551	6049	5584	5956	5741

2-year average 5300 5816.5 5770 5848.5

Reductions @ 5300 TPY -16.5% 12.4% 5.1% 11.0% 7.7%

Note: Annual emissions are from EPA's Acid Rain database.

5,817 <--- Represents the highest 2-year average (2006-2007)

1,163 <--- 20% reduction from the highest 2-year average

4,654 <--- Estimated NOx emissions cap



Unit Level Emissions Quick Report

October 28, 2008

Your query will return data for 1 facilities and 4 units.

You specified: Year(s): 2007,2006,2005,2004,2003 Program(s): ARP Facility: Lansing Smith Generating Plant

State	Facility Name	Facility ID (ORISPL)	Unit ID	Associated Stacks	Year	Program (s)	Operating Time	# of Months Reported	SO ₂ Tons	Avg. NO _x Rate (lb/mmBtu)	NO _x Tons	CO ₂ Tons	Heat Input (mmBtu)
FL	Lansing Smith Generating Plant	643	1		2003	ARP	6,981	12	6,671.1	0.48	2,520.8	1,076,523.6	10,493,288
FL	Lansing Smith Generating Plant	643	1		2004	ARP	8,336	12	9,709.3	0.48	3,085.0	1,320,156.7	12,866,997
FL	Lansing Smith Generating Plant	643	1		2005	ARP	8,163	12	9,754.4	0.48	3,167.5	1,366,168.6	13,315,560
FL	Lansing Smith Generating Plant	643	1		2006	ARP	8,329	12	6,765.0	0.46	3,048.3	1,367,426.8	13,327,789
FL	Lansing Smith Generating Plant	643	1		2007	ARP	7,022	12	6,386.7	0.49	2,771.2	1,160,661.2	11,314,219
FL	Lansing Smith Generating Plant	643	2		2003	ARP	6,195	12	7,498.5	0.39	2,030.2	1,082,758.4	10,554,145
FL	Lansing Smith Generating Plant	643	2		2004	ARP	8,367	12	11,404.0	0.39	2,964.3	1,557,869.8	15,185,196
FL	Lansing Smith Generating Plant	643	2		2005	ARP	6,695	12	8,758.8	0.38	2,416.1	1,316,398.2	12,830,353
FL	Lansing Smith Generating Plant	643	2		2006	ARP	7,937	12	7,843.3	0.37	2,908.0	1,607,317.8	15,665,819
FL	Lansing Smith Generating Plant	643	2		2007	ARP	8,291	12	8,813.9	0.38	2,969.5	1,617,124.5	15,761,391
FL	Lansing Smith Generating Plant	643	4		2003	ARP	5,097	12	5.9	0.04	130.4	414,016.0	6,966,663
FL	Lansing Smith Generating Plant	643	4		2004	ARP	6,000	12	7.5	0.04	149.7	522,944.3	8,799,429
FL	Lansing Smith Generating Plant	643	4		2005	ARP	5,113	12	0.4	0.04	114.5	427,050.1	7,185,905

FL	Lansing Smith Generating Plant	643	4		2006	ARP	5,176	12	0.8	0.04	125.3	445,943.8	7,503,979
FL	Lansing Smith Generating Plant	643	4		2007	ARP	6,162	12	0.8	0.04	152.7	522,680.4	8,795,157
FL	Lansing Smith Generating Plant	643	5		2003	ARP	4,940	12	5.6	0.04	97.8	392,327.1	6,601,762
FL	Lansing Smith Generating Plant	643	5		2004	ARP	6,023	12	7.4	0.04	137.3	516,287.9	8,687,409
FL	Lansing Smith Generating Plant	643	5		2005	ARP	5,748	12	0.4	0.04	142.7	472,773.8	7,955,287
FL	Lansing Smith Generating Plant	643	5		2006	ARP	5,339	12	0.7	0.04	125.4	445,003.2	7,488,059
FL	Lansing Smith Generating Plant	643	5		2007	ARP	5,914	12	0.8	0.04	149.9	485,514.8	8,169,610
Total									83,635.3		29,206.7	18,116,946.8	209,468,017

Koerner, Jeff

From: Waters, G. Dwain [GDWATERS@southernco.com]
Sent: Monday, November 03, 2008 2:44 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: RE: Gulf Power Smith Plant - NOx Limit

If I understand this email correctly, FDEP is suggesting a 4803 NOx Ton 12 month rolling average for Units 1 + 2. If this is correct, **we are good to go**. Also, please insert a stack heat input study similar to the language in the Crist draft in case our new stack system at Smith has greater error than we expect. We are hopeful that the new system will work. We hope to have the new system on line later this month. There is not a guarantee from Spectrum that it will be better than the unit by unit duct system. I've looked at the high CEM data for a rolling 12 month average and the CEM system was ~ 6% higher than our fuel based heat input number for the same period. Dwain

G. Dwain Waters, Q.E.P.
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gdwaters@southernco.com

From: Koerner, Jeff [mailto:Jeff.Koerner@dep.state.fl.us]
Sent: Monday, November 03, 2008 12:02 PM
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Subject: Gulf Power Smith Plant - NOx Limit

Dwain,

I'm attaching a summary report compiled from the EPA Acid Rain database.

<<Gulf Power Smith Acid Rain Data, 2003-2007.pdf>>

Based on Acid Rain data for the last 5 years, the report shows that the highest 2-year average of annual NOx emissions was 5849 TPY in 2006-2007. (The average annual heat input rates for this period were for 12,321,004 MMBtu/year Unit 1 and 15,713,605 MMBtu/year for Unit 2.)

It is my understanding that Unit 1 is being design for a 50% reduction and Unit 2 is being design for a 30% reduction. The controlled NOx emissions target for each unit is 0.30 lb/MMBtu. For the 2006 - 2007 period, EPA's Acid Rain data indicates an annual NOx emissions average of 0.49 lb/MMBtu for Unit 1 and 0.38 lb/MMBtu for Unit 2. Therefore, the SNCR systems would need to reduce NOx emissions by 39% for Unit 1 and 21% for Unit 2 to achieve the target goal.

1. Using the annual average heat input rate for the highest 2-year emissions from EPA's Acid Rain database (2006-2007) and assuming operation at the target NOx emissions rates, annual emissions with full SNCR operation are estimated to be:

1/13/2009

Unit 1: (12,321,004 MMBtu/year) (0.30 lb NOx/MMBtu) (ton/2000 lb) = 1848 TPY of NOx

Unit 2: (15,713,605 MMBtu/year) (0.30 lb NOx/MMBtu) (ton/2000 lb) = 2357 TPY of NOx

Total = 4205 TPY of NOx

So, the expected operations (by design) will reduce overall NOx emissions by 28%.

2. Using the annual average heat input rate for the highest 2-year emissions from EPA's Acid Rain database (2006-2007) and assuming operation at 20% below the actual annual average NOx emissions rates in 2006-2007, annual emissions are estimated to be:

Unit 1: (12,321,004 MMBtu/year) (0.49 lb NOx/MMBtu) (1 - 0.20) (ton/2000 lb) = 2415 TPY of NOx

Unit 2: (15,713,605 MMBtu/year) (0.38 lb NOx/MMBtu) (1 - 0.20) (ton/2000 lb) = 2388 TPY of NOx

Total = 4803 TPY of NOx

So, a proposed rolling NOx limit of 4800 tons/12 months would represent an 18% reduction from past actual emissions (2006-2007). This would be easy to monitor and report since there is a common stack for these units. The proposed limit is based on data reported to the Acid Rain database and compliance would be determined based on this data as well.

Please review and let me know what you think.

Thanks.

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
850/921-9536

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Koerner, Jeff

From: Koerner, Jeff
Sent: Monday, November 03, 2008 1:02 PM
To: 'Waters, G. Dwain'
Cc: Vielhauer, Trina
Subject: Gulf Power Smith Plant - NOx Limit

Attachments: Gulf Power Smith Acid Rain Data, 2003-2007.pdf

Dwain,

I'm attaching a summary report compiled from the EPA Acid Rain database.



Gulf Power Smith
Acid Rain Dat...

Based on Acid Rain data for the last 5 years, the report shows that the highest 2-year average of annual NOx emissions was 5849 TPY in 2006-2007. (The average annual heat input rates for this period were for 12,321,004 MMBtu/year Unit 1 and 15,713,605 MMBtu/year for Unit 2.)

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Jeff Koerner, BAR - New Source Review Section

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From: Waters, G. Dwain [GDWATERS@southernco.com]
Sent: Monday, November 03, 2008 2:44 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
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1/13/2009

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Sent: Wednesday, November 05, 2008 1:07 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: Re: Gulf Power Smith Plant - NOx Limit

We are good to go on the number but in case there's a problem with the certification of the new stack system we need options regarding its accuracy reporting heat input. The vendor originally stated no guarantee of this system. We may have to stay in the duct if it fails.

Dwain Waters, QEP

From: Koerner, Jeff
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Sent: Wed Nov 05 11:37:00 2008
Subject: RE: Gulf Power Smith Plant - NOx Limit

Dwain,

I think you just have to make it work.

You've indicated that you want it to work and you want to report one set of numbers.

Now is the time.

Thanks!

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
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From: Waters, G. Dwain [mailto:GDWATERS@southernco.com]
Sent: Wednesday, November 05, 2008 11:53 AM
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1/13/2009

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Sent: Thursday, November 06, 2008 3:17 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: Re: Gulf Power Smith Plant - NOx Limit

We are good to go with the 4700 limit. Please let me see your final draft. Thanks, Dwain

 Dwain Waters, QEP

From: Koerner, Jeff
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Sent: Thu Nov 06 12:43:17 2008
Subject: RE: Gulf Power Smith Plant - NOx Limit

Dwain,

According to Permit No. 0050014-011-AC, the maximum heat input rates are 1944.8 MMBtu/hour (17,036,448 MMBtu/year) for Unit 1 and 2246.2 MMBtu/hour (19,676,712 MMBtu/year) for Unit 2.

For 2006 and 2007, the capacity factor for each unit based on the actual heat input rate was:

	2006	2007
Unit 1	78%	66%
Unit 2	80%	80%

An 80% capacity factor is fairly high, so there shouldn't have any problems. Even so, if you operate at the target NOx level of 0.30 lb/MMBtu and a capacity factor of 85% for each unit, the annual emissions would be:

Units 1 and 2: $(17,036,448 \text{ MMBtu/year} + 19,676,712 \text{ MMBtu/year}) (0.85) (0.30 \text{ lb NOx/MMBtu}) (\text{ton}/2000 \text{ lb}) = 4680 \text{ tons/year of NOx}$

This is still below the proposed NOx cap of 4700 tons/12 months.

Let me know what you think.

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To: Koerner, Jeff
Subject: RE: Gulf 301 records: Gulf Power Smith Plant - NOx Limit

I believe there is an issue on your September 30, 2009 date because of some NPDES permit issues on the ammonia slip per our Gulf Power Water group. We are committed to operating the Units during the 2009 Ozone season. We had proposed to shutdown on September 30, 2009 to evaluate the water related issues and comply with the 12 month rolling NOx average beginning January 1, 2010. We can't make a commitment on the Oct-Dec, 2009 until the NDPEs issues are resolved. Sorry. Dwain

G. Dwain Waters, Q.E.P.
Special Projects and Environmental Assets Coordinator
Gulf Power Company
One Energy Place
Pensacola, Florida 32520-0328
Phone: (850) 444-6527
Cell: (850) 336-6527
Fax: (850) 444-6217
gdwaters@southernco.com

From: Koerner, Jeff [mailto:Jeff.Koerner@dep.state.fl.us]
Sent: Monday, November 10, 2008 1:00 PM
To: Waters, G. Dwain
Subject: RE: Gulf 301 records: Gulf Power Smith Plant - NOx Limit

Dwain,

The AC permit expires on December 31, 2009.

According to your latest update, Unit 2 will be complete before the end of 2008 and Unit 1 by the end of April of 2009.

Trina and I came up with the following "effective date" for the new NOx emissions cap:

Effective Date: Within 60 days of completing both SNCR systems, but no later than September 30, 2009, the permittee shall begin collecting CEMS data to demonstrate compliance with the new NOx emissions

cap.

Let me know what you think.

Thanks.

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection

1/13/2009

850/921-9536

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Koerner, Jeff

From: Waters, G. Dwain [GDWATERS@southernco.com]
Sent: Monday, November 17, 2008 3:56 PM
To: Koerner, Jeff
Subject: Re: Gulf 301 records: Gulf Power Smith Plant - NOx Limit

I think we can work through the monitor issue. For example if it goes bad at the new stack location we can always go back to the duct location under EPA rules. Please note that we haven't gotten Jonathan to by off yet on the new stack location. What we expected as a letter from FDEP like what we did at Scholz change out and update Title V on the next revision. If I understand correctly from Kevin White, Jonathan doesn't want to do it this way again. I don't know the latest on this? Will this be a problem in this draft. We have updated EPA and plan on using the new location asap. Testing this week I think.

Dwain Waters, QEP

From: Koerner, Jeff
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Sent: Mon Nov 17 13:54:42 2008
Subject: RE: Gulf 301 records: Gulf Power Smith Plant - NOx Limit

Dwain,

Trina was not able to go on the plant site visit today.

We will likely change the effective date to Jan. 1, 2010.

We will not change the requirement to use the data from the acid rain monitor since this was the basis for the cap.

I should be able to get the draft out soon.

Thanks!

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
850/921-9536

From: Waters, G. Dwain [mailto:GDWATERS@southernco.com]
Sent: Monday, November 17, 2008 2:43 PM
To: Koerner, Jeff
Subject: Re: Gulf 301 records: Gulf Power Smith Plant - NOx Limit

I think we only have 2 issues. 1. The issue on the NDPES item and operation between Sept 30 and Dec 30 in 2009. I hope Trina somewhat resolves today in her visit. 2. An option on the flow monitor if the new stack certification goes badly or if the heat input is way overestimated. We are good with the 4700 tons.

Dwain Waters, QEP

From: Koerner, Jeff
To: Waters, G. Dwain
Sent: Mon Nov 17 13:33:31 2008

1/13/2009

Subject: RE: Gulf 301 records: Gulf Power Smith Plant - NOx Limit

Any other comments on the "pre-draft"?

Jeff

From: Waters, G. Dwain [mailto:GDWATERS@southernco.com]
Sent: Monday, November 10, 2008 4:21 PM
To: Koerner, Jeff
Subject: RE: Gulf 301 records: Gulf Power Smith Plant - NOx Limit

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1/13/2009

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Koerner, Jeff

From: Waters, G. Dwain [GDWATERS@southernco.com]
Sent: Monday, November 10, 2008 8:38 AM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: Gulf 301 records: Gulf Power Smith Plant - NOx Limit
Importance: High

I'm back in the office and below are the official NOx numbers for Smith from our 301 records (final acid rain report for 2006 & 2007):

	NOx Rate	MMBTU	NOx Tons
Smith 1	.461	13327789	3072
Smith 2	.374	15665819	2929
2006 Total			6001
Smith 1	.489	11314219	2766
Smith 2	.380	15761392	2994
2007 Total			5760
Average			5881
20% Reduction			4701

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From: Koerner, Jeff [mailto:Jeff.Koerner@dep.state.fl.us]
Sent: Wednesday, November 05, 2008 10:41 AM
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Subject: RE: Gulf Power Smith Plant - NOx Limit

Dwain,

Actually, the number that we would propose would be based on the Acid Rain "TPY" totals for 2006-2007:

Unit	2006	2007
1	3048	2771
2	2908	2970
Total	5956	5741

Since I'm pulling these from an EPA summary report, please verify that these numbers represent the ones you reported.

The 2-year average is 5849 TPY. A 20% reduction would result in annual emissions of 4679 TPY.

So, for a good round number we would propose a NOx cap on Units 1 and 2 of **4700 tons/12 month rolling total** based on the Acid Rain CEMS data reported to EPA.

I'm assuming that you reported your heat input rate to EPA's Acid Rain database for 2006 and 2007 **using the CEMS data**. Please verify. So, we should be using the heat input rate based on the Acid Rain data for the proposed limit as well. In that case, we don't need the stack heat input study for this project. We need to compare apples to apples, right?

Thanks!

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
850/921-9536

From: Waters, G. Dwain [mailto:GDWATERS@southernco.com]
Sent: Monday, November 03, 2008 2:44 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: RE: Gulf Power Smith Plant - NOx Limit

If I understand this email correctly, FDEP is suggesting a 4803 NOx Ton 12 month rolling average for Units 1 + 2. If this is correct, **we are good to go**. Also, please insert a stack heat input study similar to the language in the Crist draft in case our new stack system at Smith has greater error than we expect. We are hopeful that the new system will work. We hope to have the new system on line later this month. There is not a guarantee from Spectrum that it will be better than the unit by unit duct system. I've looked at the high CEM data for a rolling 12 month average and the CEM system was ~ 6% higher than our fuel based heat input number for the same period. Dwain

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gdwaters@southernco.com

From: Koerner, Jeff [mailto:Jeff.Koerner@dep.state.fl.us]
Sent: Monday, November 03, 2008 12:02 PM
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Subject: Gulf Power Smith Plant - NOx Limit

Dwain,

1/13/2009

I'm attaching a summary report compiled from the EPA Acid Rain database.

<<Gulf Power Smith Acid Rain Data, 2003-2007.pdf>>

Based on Acid Rain data for the last 5 years, the report shows that the highest 2-year average of annual NOx emissions was 5849 TPY in 2006-2007. (The average annual heat input rates for this period were for 12,321,004 MMBtu/year Unit 1 and 15,713,605 MMBtu/year for Unit 2.)

It is my understanding that Unit 1 is being design for a 50% reduction and Unit 2 is being design for a 30% reduction. The controlled NOx emissions target for each unit is 0.30 lb/MMBtu. For the 2006 - 2007 period, EPA's Acid Rain data indicates an annual NOx emissions average of 0.49 lb/MMBtu for Unit 1 and 0.38 lb/MMBtu for Unit 2. Therefore, the SNCR systems would need to reduce NOx emissions by 39% for Unit 1 and 21% for Unit 2 to achieve the target goal.

1. Using the annual average heat input rate for the highest 2-year emissions from EPA's Acid Rain database (2006-2007) and assuming operation at the target NOx emissions rates, annual emissions with full SNCR operation are estimated to be:

Unit 1: (12,321,004 MMBtu/year) (0.30 lb NOx/MMBtu) (ton/2000 lb) = 1848 TPY of NOx

Unit 2: (15,713,605 MMBtu/year) (0.30 lb NOx/MMBtu) (ton/2000 lb) = 2357 TPY of NOx

Total = 4205 TPY of NOx

So, the expected operations (by design) will reduce overall NOx emissions by 28%.

2. Using the annual average heat input rate for the highest 2-year emissions from EPA's Acid Rain database (2006-2007) and assuming operation at 20% below the actual annual average NOx emissions rates in 2006-2007, annual emissions are estimated to be:

Unit 1: (12,321,004 MMBtu/year) (0.49 lb NOx/MMBtu) (1 - 0.20) (ton/2000 lb) = 2415 TPY of NOx

Unit 2: (15,713,605 MMBtu/year) (0.38 lb NOx/MMBtu) (1 - 0.20) (ton/2000 lb) = 2388 TPY of NOx

Total = 4803 TPY of NOx

So, a proposed rolling NOx limit of 4800 tons/12 months would represent an 18% reduction from past actual emissions (2006-2007). This would be easy to monitor and report since there is a common stack for these units. The proposed limit is based on data reported to the Acid Rain database and compliance would be determined based on this data as well.

Please review and let me know what you think.

Thanks.

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
850/921-9536

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Koerner, Jeff

From: Waters, G. Dwain [GDWATERS@southernco.com]
Sent: Friday, November 07, 2008 3:16 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: Re: Gulf Power Smith Plant - NOx Limit

I've been out of the office since Tuesday. In Tampa airport now and can't confirm your numbers but believe that as long as the cap is 4700, we should be ok since I know my company believes this number is achievable. I have the authority to approve it. If lower, I will have to further review and sale it upward. I believe a lower number will be a problem with my management. My earlier number crunching was in this range, thus I wouldn't expect a problem with 4700.. On Crist, Did you get my email requesting a word version of the Crist public notice? I have a busy schedule next week and a word version will speed up my proofing efforts with the newspaper. They make errors when having to retype and they can't use a pdf file. Thanks, Dwain

Dwain Waters, QEP

From: Koerner, Jeff
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Sent: Fri Nov 07 13:58:02 2008
Subject: RE: Gulf Power Smith Plant - NOx Limit

Dwain,

So, you verify that the following NOx totals represent what you reported to EPA and they were based on the heat input rate from the Acid Rain monitors?

Unit	2006	2007
1	3048	2771
2	2908	2970
Total	5956	5741

I'm working on "pre-draft permit" for your review and may be able to send it this afternoon once I hear back from you and Trina.

Thanks!

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
850/921-9536

From: Waters, G. Dwain [mailto:GDWATERS@southernco.com]
Sent: Thursday, November 06, 2008 3:17 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: Re: Gulf Power Smith Plant - NOx Limit

We are good to go with the 4700 limit. Please let me see your final draft. Thanks, Dwain

Dwain Waters, QEP

1/13/2009

From: Koerner, Jeff
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Sent: Thu Nov 06 12:43:17 2008
Subject: RE: Gulf Power Smith Plant - NOx Limit

Dwain,

According to Permit No. 0050014-011-AC, the maximum heat input rates are 1944.8 MMBtu/hour (17,036,448 MMBtu/year) for Unit 1 and 2246.2 MMBtu/hour (19,676,712 MMBtu/year) for Unit 2.

For 2006 and 2007, the capacity factor for each unit based on the actual heat input rate was:

	2006	2007
Unit 1	78%	66%
Unit 2	80%	80%

An 80% capacity factor is fairly high, so there shouldn't have any problems. Even so, if you operate at the target NOx level of 0.30 lb/MMBtu and a capacity factor of 85% for each unit, the annual emissions would be:

Units 1 and 2: $(17,036,448 \text{ MMBtu/year} + 19,676,712 \text{ MMBtu/year}) (0.85) (0.30 \text{ lb NOx/MMBtu}) (\text{ton}/2000 \text{ lb}) = 4680$
 tons/year of NOx

This is still below the proposed NOx cap of 4700 tons/12 months.

Let me know what you think.

Thanks!

Jeff Koerner, BAR - New Source Review Section
 Florida Department of Environmental Protection
 850/921-9536

From: Waters, G. Dwain [mailto:GDWATERS@southernco.com]
Sent: Wednesday, November 05, 2008 11:53 AM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: Re: Gulf Power Smith Plant - NOx Limit

I think we can live with the 4700, 4800 is better? As a for the study, we're not sure how accurate the new stack flow monitor will be? If it turns out to overestimate greater than 6 percent we lose margin from your baseline. In 2006 the overestimation was 6 percent. It's not uncommon for these systems to be 15 percent. I've seen 20 percent on our system many times and they pass Ratas. That's why we're so consumed with this. In addition, establishing a cap somewhat limits future growth from demand so any growth has to be offset in the rate side of the equation.

 Dwain Waters, QEP

From: Koerner, Jeff
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Sent: Wed Nov 05 10:40:46 2008
Subject: RE: Gulf Power Smith Plant - NOx Limit

1/13/2009

Dwain,

Actually, the number that we would propose would be based on the Acid Rain "TPY" totals for 2006-2007:

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1	3048	2771
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Since I'm pulling these from an EPA summary report, please verify that these numbers represent the ones you reported.

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So, for a good round number we would propose a NOx cap on Units 1 and 2 of **4700 tons/12 month rolling total** based on the Acid Rain CEMS data reported to EPA.

I'm assuming that you reported your heat input rate to EPA's Acid Rain database for 2006 and 2007 **using the CEMS data**. Please verify. So, we should be using the heat input rate based on the Acid Rain data for the proposed limit as well. In that case, we don't need the stack heat input study for this project. We need to compare apples to apples, right?

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From: Waters, G. Dwain [mailto:GDWATERS@southernco.com]
Sent: Monday, November 03, 2008 2:44 PM
To: Koerner, Jeff
Cc: Vielhauer, Trina
Subject: RE: Gulf Power Smith Plant - NOx Limit

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Koerner, Jeff

From: Koerner, Jeff
Sent: Monday, November 10, 2008 11:14 AM
To: 'Waters, G. Dwain'
Cc: Vielhauer, Trina
Subject: Gulf Power Smith Plant - Proposed NOx Limit

Attachments: 0050014-016-AC - Draft Permit.doc

Dwain,

Thanks for verifying the numbers. Attached is a pre-draft of the modification for your review. This is for discussion purposes only. Trina will be reviewing as well.

I used strikethrough to deleted words. Additions are double underlined.

Thanks!

Jeff Koerner, BAR - New Source Review Section
Florida Department of Environmental Protection
850/921-9536



0050014-016-AC -
Draft Permit....

From: Waters, G. Dwain [<mailto:GDWATERS@southernco.com>]
Sent: Monday, November 10, 2008 8:38 AM
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Subject: Gulf 301 records: Gulf Power Smith Plant - NOx Limit
Importance: High

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Gulf Power Company
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From: Koerner, Jeff [mailto:Jeff.Koerner@dep.state.fl.us]
Sent: Monday, November 03, 2008 12:02 PM
To: Waters, G. Dwain
Cc: Vielhauer, Trina
Subject: Gulf Power Smith Plant - NOx Limit

Dwain,

I'm attaching a summary report compiled from the EPA Acid Rain database.

<<Gulf Power Smith Acid Rain Data, 2003-2007.pdf>>

Based on Acid Rain data for the last 5 years, the report shows that the highest 2-year average of annual NOx emissions was 5849 TPY in 2006-2007. (The average annual heat input rates for this period were for 12,321,004 MMBtu/year Unit 1 and 15,713,605 MMBtu/year for Unit 2.)

It is my understanding that Unit 1 is being design for a 50% reduction and Unit 2 is being design for a 30% reduction. The controlled NOx emissions target for each unit is 0.30 lb/MMBtu. For the 2006 - 2007 period, EPA's Acid Rain data indicates an annual NOx emissions average of 0.49 lb/MMBtu for Unit 1 and 0.38 lb/MMBtu for Unit 2. Therefore, the SNCR systems would need to reduce NOx emissions by 39% for Unit 1 and 21% for Unit 2 to achieve the target goal.

1. Using the annual average heat input rate for the highest 2-year emissions from EPA's Acid Rain database (2006-2007) and assuming operation at the target NOx emissions rates, annual emissions with full SNCR operation are estimated to be:

Unit 1: (12,321,004 MMBtu/year) (0.30 lb NOx/MMBtu) (ton/2000 lb) = 1848 TPY of NOx

Unit 2: (15,713,605 MMBtu/year) (0.30 lb NOx/MMBtu) (ton/2000 lb) = 2357 TPY of NOx

Total = 4205 TPY of NOx

So, the expected operations (by design) will reduce overall NOx emissions by 28%.

2. Using the annual average heat input rate for the highest 2-year emissions from EPA's Acid Rain database (2006-2007) and assuming operation at 20% below the actual annual average NOx emissions rates in 2006-2007, annual emissions are estimated to be:

Unit 1: (12,321,004 MMBtu/year) (0.49 lb NOx/MMBtu) (1 - 0.20) (ton/2000 lb) = 2415 TPY of NOx

Unit 2: (15,713,605 MMBtu/year) (0.38 lb NOx/MMBtu) (1 - 0.20) (ton/2000 lb) = 2388 TPY of NOx

Total = 4803 TPY of NOx

So, a proposed rolling NOx limit of 4800 tons/12 months would represent an 18% reduction from past actual emissions (2006-2007). This would be easy to monitor and report since there is a common stack for these units. The proposed limit is based on data reported to the Acid Rain database and compliance would be determined based on this data as well.

Please review and let me know what you think.

Thanks.

Jeff Koerner, BAR - New Source Review Section
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