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BUREAU OF AIR REGULATION



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October 14, 2005

Mr. Al Linero, P.E.
Program Administrator, Permitting South Section
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400

Re: TV Air Operation Permit Revision Application (1050231-009-AV) and Application for a Minor Modification (amendment to air construction permit PSD-FL-206).
Orange Cogeneration Facility

Dear Mr. Linero:

Northern Star Generation is in receipt of an incompleteness letter, dated October 7, 2005, with respect to the above-referenced application for permit revisions. Based on the letter, a conference call was arranged on October 14, 2005, among Tom Casio, Jonathon Holtom, Cindy Mulkey and yourself of the Department, Scott Osbourn of Golder Associates Inc. and myself, to discuss the incompleteness issues. It's our understanding that, during the ensuing discussions, all incompleteness issues were addressed to the Department's satisfaction with the exception of the startup limit issue. This letter serves to provide the additional requested information.

Northern Star had requested an alternate emission limit that would apply to startup and shutdown events at the Orange Cogen site. It was requested that the limit be in a lb/hr format and be averaged on a 4-hour rolling (i.e., moving) basis. During the discussions on October 14, 2005, it was requested that Northern Star provide additional information with respect to the definition of startup and shutdown (i.e., when does a startup event end and normal operation begin), as well as provide an example of how Northern Star intends for the requested alternate limit to be applied.

The definition of startup, as it would specifically apply to the Orange Cogen facility, would be as follows:

- **Startup Sequence Definition**—the period beginning with insertion of fuel to when the gross power output (turbine and duct burners) is equal to or greater than 38 MW.
- **Shutdown Sequence Definition**—when the order to shut down is received until the gross power output is less than or equal to 38 MW and ends when emissions cease.

An example of application of the 4-hour rolling average NO_x limits to startups, shutdowns, and normal operations is illustrated in the attached table. The table shows hourly average emission data from a typical dispatch day at Orange Cogen for one of the units. The unit was started at 0800, as indicated by the gross unit load. The first 4-hour average compliance point would occur after the completion of the 4th operating hour. This first 4-hour moving average would be compared to the startup/shutdown limit (22.1 lb/hour, no ppm requirement) since a startup was initiated during this 4-hour period. Subsequent periods would be compared to the normal operating limits (i.e., 22.1 lb/hour and 15 ppm) with the exception of the last 4-hour period,

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which contains an hour of shutdown (the 2100 hour in this example). The attached example also illustrates the reason for our request that the startup limit not include the concentration limit. The Orange plant can meet the lb/hour limit during startup but cannot meet the ppm limit.

If you should have any questions concerning this letter, please don't hesitate to contact me at (713) 580-6368. Northern Star appreciates your consideration of this additional information. Thanks in advance for your timely processing of this permit revision request.

Sincerely,

A handwritten signature in black ink that reads "David A. Kellermeyer" with a long horizontal flourish extending to the right.

David A. Kellermeyer
Vice President, EH&S

Attachment

Cc: Scott Osbourn, P.E., Golder Associates Inc.

Orange Cogeneration

Example of the Application of a 4-hour Moving Average NOx Limit, Including Startup/Shutdown

Hour	Gross Unit Load (MW)	Unadjusted NOx (ppm)	O2 (ppm)	NOx @ 15% O2 (ppm)	NOx (lb/hour)	4-hr NOx Moving Average		Applicable Limits	NOx Permit Limits	
						ppm @ 15% O2	lb/hour		ppm @ 15% O2	lb/hour
8	18.5	18.5	16.1	22.7	16.6					
9	41.4	13.7	14.9	13.5	18.4					
10	41.5	13.6	14.8	13.2	17.6					
11	41.4	13.2	14.8	12.8	17.2	15.5	17.5	SU/SD	NA	22.1
12	41.4	13.3	14.8	12.9	17.2	13.1	17.6	Normal	15	22.1
13	41.4	13.4	14.8	13.0	17.5	12.9	17.4	Normal	15	22.1
14	41.5	13.6	14.8	13.2	17.6	12.9	17.4	Normal	15	22.1
15	41.3	13.3	14.8	12.9	17.2	13.0	17.4	Normal	15	22.1
16	40.4	12.2	14.9	12.0	15.8	12.7	17.0	Normal	15	22.1
17	40.5	13.5	14.9	13.3	17.7	12.8	17.1	Normal	15	22.1
18	40.6	14.7	14.9	14.5	19.4	13.1	17.5	Normal	15	22.1
19	41.5	14.3	14.8	13.8	19.1	13.4	18.0	Normal	15	22.1
20	41.5	14.3	14.8	13.8	19.2	13.8	18.9	Normal	15	22.1
21	34.7	14.5	15.2	15.0	13.9	14.3	17.9	SU/SD	NA	22.1

Notes:

1. Startup occurred during hour 8 and shutdown during hour 21.
2. SU/SD limits applied for the 4-hour periods ending with hour 11 and hour 21 (shaded cells). Normal limits applied at all other times.