

RECEIVED

OCT 18 2005

BUREAU OF AIR REGULATION



2929 Allen Parkway, Suite 2200  
Houston, TX 77019  
Telephone: 713-580-6300  
Facsimile: 713-580-6320

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 (1050217-002-AV) and Application for a Minor Modification (amendment to air construction permit PSD-FL-187).  
**Mulberry Cogeneration Facility**

Dear Mr. Linero:

Northern Star Generation has submitted applications for permit revisions for both the Orange Cogen and the Mulberry Cogen facilities. The issues and requested revisions for both facilities are virtually identical, except for the heat input increase requested for Mulberry Cogen. Northern Star received an incompleteness letter, dated October 7, 2005, with respect to the Orange Cogen request 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 for the Mulberry Cogen permit application..

Northern Star had requested an alternate emission limit that would apply to startup and shutdown events at the Mulberry 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 Mulberry 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 60 MW.
- **Shutdown Sequence Definition**—when the order to shut down is received until the gross power output is less than or equal to 60 MW and ends when emissions cease.

An example of application of the 4-hour rolling average NO<sub>x</sub> 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 Mulberry Cogen. The unit was started at 0900, as indicated by the gross unit load. The first 4-hour average compliance point would occur after the completion of the 4<sup>th</sup> operating hour. This first 4-hour moving average would be compared to the

Mr. Linero  
October 14, 2005  
Page 2

startup/shutdown limit (52.7 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., 52.7 lb/hour and 15 ppm) with the exception of the last 4-hour period, 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 Mulberry 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". The signature is written in a cursive style with a long horizontal flourish extending to the right.

David Kellermeyer  
Vice President, EH&S

Attachment

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

## Mulberry 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
9	32	35.3	16.2	44.3	64.2					
10	67	6.3	15.2	6.5	20.0					
11	66	6.1	15.2	6.3	19.1					
12	66	6.0	15.2	6.2	19.2	15.8	30.6	SU/SD	NA	52.7
13	66	6.0	15.2	6.2	19.0	6.3	19.3	Normal	15	52.7
14	66	6.1	15.2	6.3	19.0	6.3	19.1	Normal	15	52.7
15	66	6.1	15.2	6.3	19.0	6.3	19.1	Normal	15	52.7
16	66	6.2	15.2	6.4	19.9	6.3	19.3	Normal	15	52.7
17	67	6.0	15.2	6.2	19.1	6.3	19.3	Normal	15	52.7
18	68	5.6	15.2	5.8	17.7	6.2	18.9	Normal	15	52.7
19	68	5.4	15.2	5.6	17.7	6.0	18.6	Normal	15	52.7
20	68	5.4	15.2	5.6	17.7	5.8	18.1	Normal	15	52.7
21	28	16.2	15.6	18.0	7.9	8.8	15.3	SU/SD	NA	52.7

**Notes:**

1. Startup occurred during hour 9 and shutdown during hour 21.
2. SU/SD limits applied for the 4-hour periods ending with hour 12 and hour 21 (shaded cells). Normal limits applied at all other times.