



Martin Costello, P.E.
New Source Review Section
Department Of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Farzie Shelton
ENVIRONMENTAL COORDINATOR, Ch E.

RECEIVED

January 21, 1998

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**BUREAU OF
AIR REGULATION**

**Re: Charles Larsen memorial Power Plant
Unit 8 - Combine Cycle Gas Turbine
Amendment to Permit Nos: PSDFL-166/AC53-190437**

1050003-005-AC

Dear Mr Costello:

We are in receipt of your communication in referenced to the above and the following are our response to your questions:

1. Q. The graph included with the letter did not indicate whether all the CEMS data were used or whether certain periods were excluded from the 30 day rolling averages.

A.. No valid analyzer data was excluded.

2. Q. There is no indication of whether the actual oxygen concentrations were used to correct the No_x data or whether constants were substituted during periods when oxygen concentrations were high.

A.. Actual oxygen concentrations were used to correct No_x. Therefore no constants were used. No_x was corrected to 15% O₂ by using this formula: No_x ppm * ((20.9-15)/(20.9- O₂))

3. Q. It is not clear how an operating day was defined for these 30 day rolling averages, i.e., were only days consisting of 24 hours of continuous operation included in the calculations, or, if only 30 minutes of operation in a day were logged, was this considered an operating day for purposes of the 30 day rolling average.

A. An "operating day" was considered any day that the unit was in operation not restricted to any limited time period i.e. 24-hours operation.

4. Q During some startups No_x emissions exceeded 25ppm while other startups occurred without exceeding 25 ppm. Please explain

A. Operation of any boiler during Start up period is a very unstable condition. Additionally, startup can take place with different operating conditions i.e. cold startups, warm startups, and hot startups. In each case the fuel air mixture will react slightly differently until the Unit heats up to operating temperatures. In our operational procedures we try to minimize these affects as much as possible. Please also note that, for all gas turbines, water injection for No_x control can not be utilized until the unit achieve certain load as water injection on lower load causes equipment damage. Unit No. 8 water injection does not commence at loads below 25 MW of generation.

In respect to the earlier data, we would like to bring to your attention that this unit has an automatic absolute humidity monitor which adjust the water injection rate taking into consideration the humidity in the inlet air. Please also note that the performance test demonstrating compliance with the NSPS

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Standards was performed with this control equipment in place. However, we had been experiencing malfunction with this control equipment (causing excessive water injection) during the periods indicated by low No_x emission. This control equipment has now been repaired.

We hope the information contained in this letter would satisfy the Department's requirements.

If you should have any questions, please do not hesitate to contact me.

Sincerely



Farzie Shelton
Manager of Permitting & Compliance
Production

cc: M. Costello, BAR