

One Energy Place  
Pensacola, Florida 32520

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OCT 08 2008

DIVISION OF AIR  
RESOURCES MANAGEMENT



Certified Mail

October 6, 2008

Mr. Joseph Kahn, Director  
Florida Department of Environmental Protection  
Division of Air Resources Management  
2600 Blair Stone Road  
Mail Station #5505  
Tallahassee, Florida 32399-2400

Dear Mr. Kahn: *Joe*

RE: CRIST ELECTRIC GENERATING PLANT  
PROPOSED CRIST FGD SO<sub>2</sub> Emissions Limit  
AIR PERMIT NO. 0330045-015-AC

*File: 0330045-023-AC*

Please find enclosed Gulf Power's submittal of relevant emissions information and hereby request FDEP to revise the Crist FGD Air Construction Permit pursuant to your letter dated September 18, 2008 regarding the need to protect the local air quality and reduce possible impacts of interstate transport of emissions.

We appreciate your efforts to work with us regarding Gulf's selection of pollution control technologies to meet new Clean Air Act quality requirements. Please call me regarding any questions regarding our submittal.

Sincerely,

*G. Dwain Waters, Q.E.P.*

G. Dwain Waters, Q.E.P.  
Special Projects and Environmental Assets Coordinator

cc: w/att: Jim Vick, Gulf Power Company  
Keith Cuevas, Gulf Power Company  
Jay Weston, Gulf Power Company  
Greg Terry, Gulf Power Company  
David Hollinger, Southern Company  
Terry Wright, Gulf Power Company  
John Dominey, Gulf Power Company  
Gary Perko, Hopping, Green & Sams  
Tom Davis, ECT, Gainesville, Florida  
Trina Vielhauer, FDEP, Tallahassee, Florida  
Rick Bradburn, FDEP Northwest District Office, Pensacola, Florida

## Plant Crist SO2 Scrubber “Full Time Operation” Emissions Limit

Gulf Power proposes the following operational limit for the Crist Flue Gas Desulfurization “scrubber” system in order to give assurance of “full time operation” to FDEP.

- **Emissions from the Crist scrubber shall be limited to a rolling 30 “FGD” operational day SO2 mass emissions limit based on permitted heat input @ 0.20 lb/mmbtu SO2 rate = 886 tons.**

### Calculation:

a) <u>Unit</u>	<u>Heat Input Limit</u>	<u>Proposed SO2 Rate</u>	
Unit 4	1096.7 mmbtu/hr		
Unit 5	1096.7 mmbtu/hr		
Unit 6	3704.8 mmbtu/hr		
Unit 7	6406.4 mmbtu/hr		
	12304.6 mmbtu/hr	x 0.20 lb/mmbtu	= 2460.92 lbs/hr
b)	2460.9 lb/hr Mass SO2 x 24 hrs/day = 59062.08 lbs/day		
c)	59062.08 lb/day Mass SO2/2000 lb/ton x 30 days =		<b><u>885.9 tons/30days</u></b>

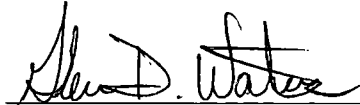
- **A FGD “scrubber” operational day is defined as a minimum of 18 hours per day.**
  - **30 operational day mass limit includes short term maintenance periods.**
  - **30 operational day mass limit excludes startup, shutdown and planned normal & periodic maintenance periods.\***
  - **Excess Emissions from startup and shutdown is not limited but estimated at permitted rate of 96 hours per unit per year.**
- **Proposal has a 3 Tier Maintenance Plan:**
    - 1) **Short Term Maintenance.** Bypass for short term maintenance is available within the rolling 30 scrubber operational day mass SO2 emissions limit due to margin created by load demand and FGD efficiency. This margin will allow unscheduled short term maintenance to correct problems regarding limestone - gypsum management and operational problems within the FGD without triggering use of a pre-planned annual or periodic routine maintenance day. For example using a worst case scenario (SO2 at 2.4 lb/mmbtu), Crist Units 4-7 would have up to 23 hrs @ full load bypass for short term maintenance of the FGD system without exceeding the 30 day SO2 mass emissions limit. Other possible combinations: Units 4+5+6 @ full load would have 47 hrs; Units 4+5 @ full load would have 127 hrs; Unit 6 @ full load would have 75 hrs; Unit 7 @ full load would have 43 hrs. This option would not require FDEP pre-notification. All emissions during a short term maintenance bypass will be included in determining compliance to the 30 operational day limit.
    - 2) **Annual Routine Maintenance.\*** Bypass for annual routine maintenance of the scrubber of 360 hrs is allowed/yr. This option is similar to the current Unit 7 SCR provision where only notification is required to the Department. Annual routine maintenance is permitted any time during the year. Maintenance days will be noted in the quarterly excess emissions report.
    - 3) **Periodic Pre-planned Maintenance.\*** Additional bypass maintenance periods shall be allowed for force majeure scrubber outages and periodic pre-planned scrubber maintenance upon notice to FDEP. The periodic pre-planned maintenance periods will be based on best practices and are projected to be approximately 720 hrs every 3 years. (Would replace the annual 360hr period allowed in item 2 above during the year implemented)

- **The current 2.4 lb/mmbtu SO<sub>2</sub> 24 hour standard will remain for scrubber and unit by unit bypass operations to protect ambient air quality. Bypass compliance will be determined under the alternative monitoring plan (daily fuel analysis) approved by FDEP.**
- **The scrubber stack CEM system will be used to determine compliance to the rolling 30 operational day SO<sub>2</sub> mass emissions limit. A CEM system study is proposed to review the accuracy of the flow monitor and heat input determinations of the new scrubber stack system. Gulf intends to utilize this system to determine the rolling 30 operational day SO<sub>2</sub> mass emissions limit and to replace the fuel based heat input currently used to calculate the plant wide NO<sub>x</sub> emissions limit. Gulf requests to retain the use of fuel based heat input as an option pursuant to the accuracy of the new CEM system and to its availability. The Crist scrubber CEM system will be certified under EPA Part 75 rules used for the acid rain allowance program.**
- **Gulf proposes to use Part 75 Acid Rain bypass stack protocol to account for bypass emissions outlined in the “Short Term Maintenance Plan” to calculate the 30 operational day SO<sub>2</sub> mass emissions limit. Gulf proposes to retain the use of daily fuel analyses for bypass operations as the compliance method to true up emissions if an exceedance is indicated of the 30 operational day average.**

**CRIST SO<sub>2</sub> SCRUBBER EMISSIONS LIMIT  
CERTIFICATION BY OWNER/AUTHORIZED  
REPRESENTATIVE**

**“I, the undersigned, am the owner/authorized representative, as defined in Air Construction Permit Application 1366-1 (Crist FGD-SCR Project) for the Title V source for which this request is being submitted. I hereby certify, based on information and belief formed that the statements made and data contained in this request are true, accurate and complete.”**

**Owner/Authorized Representative Official Signature:**



**Glenn D. Waters**  
Special Projects and Environmental Assets Coordinator

10/06/08  
**Date:**

**GULF POWER COMPANY  
PLANT CRIST**

**PROPOSED FLUE GAS DESULFURIZATION  
SULFUR DIOXIDE EMISSION LIMITS**

**Professional Engineer Certification**

*Professional Engineer Statement:*

*I, the undersigned, hereby certify, except as particularly noted herein\*, that:*

*(1) To the best of my knowledge, the information presented in the Gulf Power Company submittal to the Department of Environmental Protection regarding proposed flue gas desulfurization (FGD) sulfur dioxide (SO<sub>2</sub>) emission limits for Plant Crist are true, accurate, and complete based on my review of material provided by Gulf Power Company engineering and environmental staff; and*

*(2) To the best of my knowledge, any emission estimates reported or relied on in this submittal are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of air pollutants not regulated for an emissions unit, based solely upon the materials, information and calculations provided with this certification.*

*Signature*

*Date*

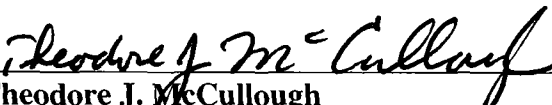
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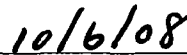
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**Theodore J. McCullough**  
Vice-President, Power Generation

  
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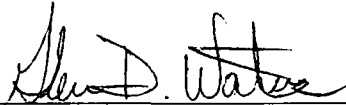


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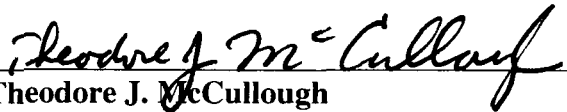
*(seal)*

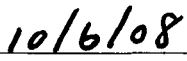
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