

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

April 3, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Gregory M. Nelson
Director – Environmental Affairs
Tampa Electric Company
6499 U.S. Highway 41 North
Apollo Beach, Florida 33572

Re: Combustion of Polk Power Gasifier residual material at
Big Bend Power Station

Dear Mr. Nelson:

The Department is in receipt of the your application to allow the combustion of the subject material at the Big Bend Power Station. The Department finds that the analysis and submittals are incomplete. In order to continue processing your application, the Department will need the additional information below. Should your response to any of these items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. A preliminary review by the Department for PM and SO₂ is attached and concludes that the project has the potential to exceed each of the above PSD significance levels. Please provide a BACT analysis for each pollutant.
2. Unlike pollutants such as SO₂ and PM, a PSD Determination for NO_x, CO and VOC cannot practically be made without combustion data. Accordingly, should you wish to proceed with this project certain testing protocols will need to be developed.
3. An ultimate analysis (including metals) of the typical coal fuel combusted at Big Bend, as well as subject gasifier residual material should be provided.

We are awaiting comments from the EPA and the National Park Service. We will forward them to you when received and they will comprise part of this completeness review.

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Please note that per Rule 62-4.055(1): "The applicant shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department."

If you have any questions, please call me or Michael P. Halpin, P.E. at 850/921-9519.

Sincerely,

A.A. Linero, P.E. Administrator
New Source Review Section

cc: Jerry Kissel, DEP-SWD
Jerry Campbell, HCEPC
Tom Davis, ECT
Patrick Shell, TEC
MPS

"More Protection, Less Process"

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The following PM emissions were reported to the Department for Big Bend Units 1-4 for years 1995 through 1999:

Year	PM - TPY
1999	2935
1998	3002
1997	2946
1996	2047
1995	3046

The following Coal throughputs were obtained from AOR and verified via FERC Form 1. Heat Content obtained from FERC Form 1, ash contents obtained via AOR:

Year	Coal-TPY	Ash - TPY	Ht Content	Ash Cont.
1999	4054949	358728.26	11318	8.85
1998	4506087	384856.65	11234	8.54
1997	4789730	383178.4	11275	8.00
1996	5135419	376941.16	11402	7.34
1995	4891221	396801.35	11636	8.11

Based upon the above data, the following facility capture efficiency is calculated (assumes that all ash other than what exit stacks is captured at facility):

Year	capture %
1999	99.18%
1998	99.22%
1997	99.23%
1996	99.46%
1995	99.23%

The following calculation is to determine the incremental ash which the facility will need to handle as a result of the 200 TPD of gasifier residuals-ash cont. = **45.40%**

fuel TPD	fuel TPY	incremental ash - TPY
200	73000	33142

The following calculation is to determine the decremental ash which the facility will not need to handle as a result of combusting the 200 TPD of gasifier residuals instead of the equivalent (heat basis) amount of coal (1998 ht content, 1999 ash):

coal amount offset by combusting coal resid TPD	TPY	decremental ash amt. by combusting coal resid ash -TPY	Heat Value of gasifier residual MMBtu
54	19752	1747	3040

The following is an estimate of the annual PM facility emissions increase as a result of combusting the gasifier residual material (assumes 1996 efficiency):

net additional ash handled - TPY	facility ash capture eff.	net additional ash emitted to atmosphere 170 TPY
31395	99.46%	

The following SO2 emissions were reported to the Department for Big Bend Units 1-4 for years 1995 through 1999:

Year	SO2 - TPY
1999	95522
1998	107334
1997	102470
1996	89121
1995	87322

The following Coal throughputs were obtained from AOR and verified via FERC Form 1. Heat Content obtained from FERC Form 1, %S contents obtained via AOR:

Year	Coal-TPY	SO2 - TPY	Ht Content	%S Cont.
1999	4054949	193859.64	11318	2.39
1998	4506087	213030.16	11234	2.36
1997	4789730	210748.12	11275	2.20
1996	5135419	224098.51	11402	2.18
1995	4891221	196936.5	11636	2.01

Based upon the above data, the following facility capture efficiency is calculated (assumes that all SO2 other than what exit stacks is captured at facility):

Year	capture %
1999	50.73%
1998	49.62%
1997	51.38%
1996	60.23%
1995	55.66%

The following calculation is to determine the incremental SO2 which the facility will need to handle as a result of the 200 TPD of gasifier residuals - %S content = 1.20%

fuel TPD	fuel TPY	incremental SO2 - TPY
200	73000	1752

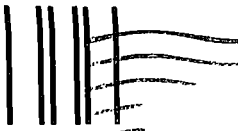
The following calculation is to determine the decremental SO2 which the facility will not need to handle as a result of combusting the 200 TPD of gasifier residuals instead of the equivalent (heat basis) amount of coal (1998 ht content, 1999 %S):

coal amount offset by combusting coal resid	TPD	TPY	decremental SO2 amt. by combusting coal resid	SO2 -TPY	Heat Value of gasifier residual	MMBtu
	54	19752		944		3040

The following is an estimate of the annual SO2 facility emissions increase as a result of combusting the gasifier residual material (assumes 1996 efficiency):

net additional SO2 handled - TPY	facility SO2 capture eff.	net additional SO2 emitted to atmosphere
808	60.23%	321 TPY

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Mr. Gregory M. Nelson, Director
 Environmental Affairs
 Tampa Electric Company
 6499 US Highway 41 North
 Apollo Beach, FL 33572

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PS Form 3811, July 1999

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