



**Florida
Power**
CORPORATION

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Division of Air
Resources Management

February 7, 1992

Mr. C. H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. Thomas Rogers

Dear Mr. Fancy:

Re: Osceola County- A.P.
Florida Power Corporation (FPC)
Intercession City
AC49-203114; PSD-FL-180

At the request of the Florida Department of Environmental Regulation, Florida Power Corporation (FPC) has asked KBN Engineering and Applied Sciences, Inc. (KBN) to perform an additional air impact analysis to address the prevention of significant deterioration (PSD) Class I increment consumption of sulfur dioxide (SO₂) concentrations at the Chassahowitzka National Wilderness Area (NWA). This correspondence supplements information presented by FPC on January 22, 1992. The air impact analysis was modified to include the PSD increment consuming sources at the Orlando Utilities Commission (OUC) Stanton Energy Center.

This analysis included modeling with the Industrial Source Complex Short-Term (ISCST) model using the SO₂ emission rates and stack and operating parameters for OUC as provided to Bob McCann of KBN by Messrs. Thomas Rogers and Cleve Holladay of FDER. The data used in the modeling are as follows:

Table 1. Maximum Predicted SO2 Concentrations for Comparison to PSD Class I Increments

Averaging Period	Maximum Concentration (µg/m)	Receptor Location (UTM)		Period				
		East (km)	North (km)	Julian Day	Hour Ending	Year		
>> Including Agrico Source << <i>kua</i>								
3-Hour*	19.3	341.1	3183.4	107	21	1982	<i>19.25 / 19.45</i>	
	18.0	342.0	3174.0	251	21	1983	<i>17.98 / 18.28</i>	
	19.3	343.7	3178.3	140	24	1984	<i>19.41 / 19.59</i>	
	18.1	342.4	3180.6	242	3	1985	<i>18.12</i>	
	18.7	<i>18.73</i>	341.1	3183.4	298	21	1986	<i>18.63 / 18.73</i>
24-Hour*	4.88	<i>4.936</i>	343.7	3178.3	92	24	1982	
	4.92	<i>4.963</i>	342.0	3174.0	104	24	1983	
	4.74	<i>4.768</i>	342.0	3174.0	144	24	1984	
	4.53	<i>4.552</i>	341.1	3183.4	241	24	1985	
	4.91	<i>4.995</i>	342.0	3174.0	343	24	1986	
Annual	0.38	343.7	3178.3	-	-	1982		
	0.24	331.5	3183.4	-	-	1983		
	0.45	342.0	3174.0	-	-	1984		
	0.28	340.3	3165.7	-	-	1985		
	0.35	342.0	3174.0	-	-	1986		
>> Excluding Agrico Source <<								
3-Hour*	19.3	341.1	3183.4	107	21	1982	<i>19.25 / 19.44</i>	
	18.0	342.0	3174.0	251	21	1983	<i>17.97 / 18.20</i>	
	19.3	343.7	3178.3	140	24	1984	<i>19.41 / 19.59</i>	
	18.1	342.4	3180.6	242	3	1985	<i>18.12</i>	
	18.7	341.1	3183.4	298	21	1986	<i>18.63 / 18.73</i>	
24-Hour*	4.86	<i>4.936</i>	343.7	3178.3	92	24	1982	
	4.90	<i>4.941</i>	342.0	3174.0	104	24	1983	
	4.74	<i>4.768</i>	342.0	3174.0	144	24	1984	
	4.53	<i>4.552</i>	341.1	3183.4	241	24	1985	
	4.79	<i>4.84</i>	340.7	3171.9	252	24	1986	
Annual	0.35	343.7	3178.3	-	-	1982		
	0.22	331.5	3183.4	-	-	1983		
	0.43	342.0	3174.0	-	-	1984		
	0.26	340.3	3165.7	-	-	1985		
	0.33	342.0	3174.0	-	-	1986		

Note: Modeling includes OUC Stanton Energy Center. Unit 1 modeled at 0.2 lb SO2/MMBtu or 105.4 g/s. Unit 2 modeled at 359.0 g/s, 3-hour average; and 242.4 g/s, 24-hour and annual averages.

- = Not applicable.
 µg/m = micrograms per cubic meter.
 km = kilometers.

* Highest, second-highest concentrations predicted for this averaging period.

TPA
 86-21.9

kua

19.41 331.5, 3183.4 116,7

<u>Parameter</u>	<u>Unit 1</u>	<u>Unit 2</u>
UTM Coordinate, km		
East	483.5	483.5
North	3150.6	3150.6
Stack height, m	167.6	167.6
Stack diameter, m	5.8	5.8
Exit gas temperature, K	325.7	324.2
Exit gas velocity, m/s	21.6	23.5
SO ₂ Emission rate, g/s		459.0
3-hour	105.4	359.0
24-hour	105.4	242.4
Annual	105.4	172.8

0.85 lb/MMBTU
 4286 MMBTU/hr
 0.67
 0.25
 429
 214
 643

The emission rates for Unit 1 are based on recent stack test data obtained by Mr. Rogers. These stack test data have shown an SO₂ emission rate of 0.2 lb/million British thermal units (MMBTU) at a maximum heat input rate of 4,183 MMBTU/hour. Because Unit 2 has not yet been constructed or operated, the emission rates are based on maximum allowable rates as stipulated in the conditions of certification.

Presented in Table 1 is a summary of the maximum SO₂ concentrations predicted at the Chassahowitzka NWA, as well as standards for PSD Class I increments. It should be noted that OUC Unit 2 was modeled with the 3-hour emission rate to predict the 3-hour average impacts and the 24-hour emission rate to predict the 24-hour and annual average impacts. As shown in Table 1, the maximum concentrations are predicted to comply with the PSD Class I increments with the ISCST model.

Enclosed are the paper and disk copies of the ISCST model runs. It is FPC's understanding that conditions necessary for deeming our application complete, as outlined in FDER's letter of October 31, 1991, have now been satisfied. If you have any question concerning this analysis or our application, please call either Scott Osbourn of FPC at (813) 866-5158 or Bob McCann of KBN at (904) 331-9000 at your earliest convenience.

Sincerely,

W. W. Vierday
 W. W. Vierday, Manager
 Environmental Programs - Licensing

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Hardee Co. 89-25
 734.4 lb/hr/CT
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Enclosures

cc: K. F. Kosky (KBN)

277.6 g/s⁻¹