Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

June 9, 1994

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Jeffrey Pardue, C.E.P.
Manager, Environmental Programs
Florida Power Corporation
P. O. Box 14042
St. Petersburg, Florida 33733

Dear Mr. Pardue:

RE: Petroleum Coke Trial Burn
Crystal River Unit 1, Citrus County
Permit No. AO09-169341

The Bureau of Air Regulation received your June 3, 1994, request for the above referenced project. The changes requested in your letter will necessitate an amendment to your permit and, pursuant to Rule 17-4.050(4)(o), F.A.C., will require a $250 fee. As soon as the fee is received we will begin processing your request. If you have any questions, please call Patty Adams at (904)488-1344.

Sincerely,

Patricia G. Adams

for C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/pa

Florida Power
CORPORATION

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JUN 0 9 1994

Bureau of
Air Regulation

June 3, 1994

Mr. Clair Fancy, Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Re: Request for Approval of Petroleum Coke Trial Burn

Florida Power Corporation (FPC) requests an operation permit amendment to allow a trial burn of petroleum coke at either Crystal River Unit 1 (permit no. AO09-169341) or Unit 2 (permit no. AO09-191820). The following paragraphs discuss the proposed burn and related information, such as the type and composition of petroleum coke.

Petroleum Coke

Petroleum coke is produced by subjecting residual oil to heat and pressure for a period of 18 to 24 hours. This process produces a carbonaceous solid which possesses a high heat content, low ash content, and low volatility. An analysis of the composition of the coke is attached.

FPC proposes to test a mixture of approximately 5% sponge-type coke with the normal coal supply for Unit 1.

Trial Burn

The proposed trial will require approximately two weeks to complete. Because of the higher sulfur content of the petroleum coke, SO_2 emissions will increase from the current 1.6 to 1.7 lb./MMBtu to approximately 1.9 lb./MMBtu during the test. The SO_2 emission limit for Unit 1 is 2.1 lb./MMBtu. A copy of a representative coal analysis is attached.

Because particulate emissions from the unit are controlled with an electrostatic precipitator (ESP), FPC does not anticipate an increase during the trial burn. In addition, the ESP should help control emissions of metals, such as nickel.

Thank you for your consideration of this request. Since Crystal River Units 1 and 2 are Title V sources, it is FPC's understanding that no fee is necessary for processing. Please contact Mr. Mike Kennedy at (813) 866-4344 if you have any questions or need additional information.

Sincerely,

W. Jeffrey Pardue, C.E.P.
Manager, Environmental Programs

cc: C. Logan
B. Thomas, SW Dist.

Petroleum Coke Analysis

Sponge Petroleum Coke

Proximate analysis

	As Rec 'd	Dry Basis
Total Moisture	8.69%	XXXXX
Ash	0.26%	0.28%
Volatile Matter	11.32%	12.40%
Fixed Carbon	79.73%	87.32%
Sulfur	4.65%	5.09%
Btu/Lb	14,164	15,152
SO2 Lb/MM Btu @ 100%	6.57%	
Alk. As Sodium Oxide	0.01%	0.01%

Ultimate Analysis

	s Rec'd	Dry Basis
Total Moisture	8.69%	XXXXX
Ash	0.26%	0.28%
Hydrogen	3.84%	4.20%
Nitrogen	1.48%	1.62%
Fixed Carbon	80.97%	88.68%
Sulfur	4.65%	5.09%
Oxygen (Diff)	0.11%	0.13%

Hardgrove Grindability Index – 82

Fusion Temperature of Ash (Farenheit)

	Reducing	Oxidizing
Initial Deformation	2350	2065
Softening	2385	2085
Hemispherical	2405	2095
Fluid	2425	2125

Sponge Petroleum Coke

Mineral Ash

Mineral Analysis	Weight % Ignited Basis
Silicon Oxide	10.30%
Aluminum Oxide	2.24%
Titanium Dioxide	1.40%
Iron Oxide	6.28%
Calcium Oxide	10.04%
Magnesium Oxide	1.98%
Potassium Oxide	1.04%
Sodium Oxide	3.96%
Sulfur Trioxide	24.01%
Phosphorous Pentoxide	0.30%
Strontium Oxide	0.06%
Manganese Oxide	0.11%
Nickel Oxide	5.33%
Vanadium Pentoxide	31.25%
Undetermined	1.70%

Sieve Analysis

			Cumulative Results	
Passing	Retained	Weight	Retained	Passing
XXXXX	4" Sq.	0.00%	0.00%	100.00%
4" Sq.	3" Sq.	3.63%	3.63%	69.37%
3" Sq	2" Sq.	4.44%	8.07%	91.93%
2" Sq.	1 1/4" Sq.	4.44%	12.51%	87.49%
3/4" Sq.	3/4" Sq.	3.63%	18.96%	81.04%
1/2" Sq.	1/4" Sq.	10.08%	33.88%	66.12%
1/4" Sq.	0	66.12%	100.00%	0.00%

Coal Analysis

Crystal River Units 1 and 2

Typical Coal Analysis

Moisture	7.5%
Ash	8.9%
Sulfur	1.01%
BTU/LB	12,124

Grindability	41-45
Ash Fusion	2700 deg. F
LBS SO2/MMBtu	1.69

Ash Mineral Analysis (%)	
SIO2	52.00
AL2O3	28.10
FE2O3	8.90
MGO	1.00
CAO	2.00
K2O	2.35
NA2O	0.40
TIO2	1.25
P2O5	0.35
SO3	1.75