

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Hamilton S. Oven, Jr, Power Plant Siting Section  
THRU: Clair Fancy, BAQM  
FROM: Bob King *BK BK BK*  
DATE: April 20, 1982  
SUBJ: Gainesville Deerhaven #2

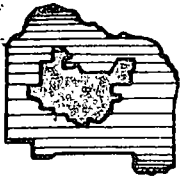
We feel that the following proposed equation for modification to the conditions of subject unit is generally acceptable if the term  $\frac{\text{BTU}}{\text{LB. OF COAL}}$  represents a lower heating value per pound of coal.

$$\% \text{ max. allowable sulfur content} = 6.3 \times 10^{-5} \times \frac{\text{BTU}}{\text{lb. of coal}}$$

If the term  $\frac{\text{BTU}}{\text{lb. of coal}}$  means a higher heating value per pound of coal, the Bureau suggests that the percent max. allowable sulfur content of coal consumed be limited as follows:

$$\% \text{ max. allowable sulfur content} = 6.1 \times 10^{-5} \times \frac{\text{BTU (HHV)}}{\text{lb. of coal}}$$

The reason of using  $6.1 \times 10^{-5}$  in the above calculation is due to the variety of heating value in the coal. The difference between higher and lower heating value is about 3 percent.



# Gainesville Regional Utilities

Post Office Box 490 • Gainesville, Florida 32602

April 7, 1982

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DIV. ENVIRONMENTAL  
PERMITTING

Mr. Hamilton S. Oven  
Administrator  
Power Plant Siting Section  
Twin Towers Office Building  
2600 Blair Stone Rd.  
Tallahassee, Florida 32301

Dear Mr. Oven:

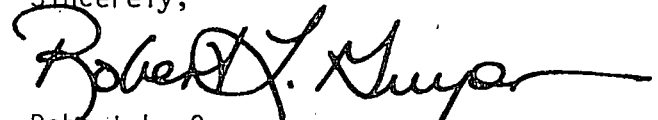
As we have discussed, GRU will probably change coal suppliers. Because of our review of numerous other suppliers of "compliance type" coal, a resolution to the requested ammendment to the conditions of certification for Deerhaven Unit 2 to permit "compliance coal" grows increasingly more important to us. The ability to use "compliance coal" allows us greater flexibility in supplier selection.

To keep you abreast of these developments I have attached a memo from Mr. Don Hambrick, Director of GRU Fuels Management, regarding some potential suppliers and considerations of coal purchase.

I shall continue to inform you of developments as to the change of coal suppliers. I hope that your office will soon be sending a notice of intent to the parties to amend the Conditions of Certification for Unit 2 to allow "compliance coal."

Please do not hesitate to call me should you have any questions or concerns.

Sincerely,

  
Robert L. Guyer  
Electric Systems Environmental  
Coordinator

RLG/pb

Gainesville  
Regional  
Utilities

INTER-OFFICE COMMUNICATION

To: Route List  
From: Don Hambrick  
Subject: Potential Reduction in Fuel Costs by Using  
Coal Suppliers Other Than Island Creek

Date: April 11, 1982

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DIV. ENVIRONMENTAL  
PERMITTING

The quality and cost of the three trains of coal we received from three separate suppliers and an Island Creek train shipped in the same period are shown below:

Supplier	Ash	BTU	Sulfur	\$/Ton			\$/mBTU
				FOB Mine	Freight	Deliv. Total	
Island Crk.	8.8	12594	0.74	42.52	22.11	\$64.63	2.57 +.11 \$2.68
Industrial Fuels	6.0	13168	0.70	37.50	20.15	57.65	2.19
South-East	8.5	12644	0.70	31.50	21.39	52.89	2.09
Bethlehem Steel	5.6	12989	0.55	40.95	20.15	61.10	2.35

A more detailed analysis on the coal quality and chemistry of the coals is attached.

The BTU, ash, sulfur, and price were better on all three coals than the Island Creek coal. The size and percent fines on the Bethlehem Steel type coal will have to be adjusted to control handling problems in wet weather.

All of the coals burned in the boiler with no problems. The performance, over time, for all the coals should be about the same because:

- A. All are high fusion type coals.
- B. The slagging factors range from 0.07 to 0.13 and the limit for a low slagging coal is 0.60.
- C. The fouling factors range from 0.03 to 0.15 and any coal with a fouling factor under 1.0 is considered low fouling.
- D. The abrasiveness factors range from 1.63 to 2.00, with anything 2.00 or less being a desirable abrasiveness factor.

April 1, 1982

Page Two

We are presently committed to Island Creek for 382,500 tons in 1982, and a minimum of 405,000 tons in 1983, and for each year thereafter until the initial term of the contract expires in 1991.

To estimate a cost comparison, I averaged the three other suppliers and added 5% to the spot price to arrive at a contract price of \$37.25 for 12,500 BTU coal, F.O.B. the mine. We would use our own train to move the coal and the freight would be about \$18.00/ton, since the Kentucky coal mines are about 400 miles closer. The total delivered cost would be \$55.25/ton plus .11¢/MBTU for the cost of using our train.

Island Creek, at \$2.68/MBTU, is \$0.36¢/MBTU higher than our alternatives at \$2.32/MBTU. Using these numbers the savings, in present dollars, in 1983 would be about \$9.00 per ton or \$3,645,000 per year by using other suppliers. Using the same numbers, the savings, in present dollars, over the 8 remaining years of the initial period of the contract would be \$29,160,000.

The two main reasons the Island Creek Agreement was entered into in 1978 were:

1. Island Creek was recognized as a reputable, knowledgeable, and financially stable company that would be in existence for the 35 years of the Agreement.
2. Island Creek was willing to commit the Holden 22 reserves to Gainesville for 35 years for all the estimated coal requirements of Deerhaven 2.

These two main considerations were voided when Occidental Petroleum formed Enoxy Coal, Inc., in partnership with ENI of Italy and placed the Holden 22 mine and reserves in the new Company.

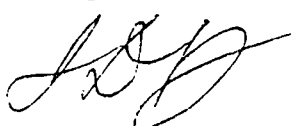
There are also problems in certain articles in the Agreement that cannot be administered as originally intended.

Island Creek has asked us to assign our Agreement to Enoxy Coal, Inc. In consideration of that request and all the above, I have prepared an Assignment Agreement that assigns our Coal Agreement to Enoxy Coal, Inc., and in effect terminates the Agreement at the end of 1982.

I have sent the Assignment Agreement to Ann Carlin for her review and recommendations before we send it to Island Creek.

Please call me if you have any questions.

JDH:ka  
Attachments



cc: Ann Carlin Nancy Holloway  
~~Bob Hester~~ Mike Kurtz  
Fred Hancock Jerry Warren  
Dick Hester FC-2.2

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DIV. ENVIRONMENTAL PERMITTING

### COMPARISON OF COAL QUALITY CHARACTERISTICS

Analysis Type	Performance Design Coal	Niley Stoker Corp. Criteria	Coal Identification Number			
			Island Creek	Bethlehem Steel	Southeast Coal	Industrial (ve)s
Raw or Washed Coal Size	Nominal, ¼" All pass thru 1¼" ring		Washed 3"x0"	Washed 1½"x0"	Raw 2"x0"	Washed 3"x0"
Proximate Analysis—per ASTM D3172 on "as received" <sup>1</sup> basis, % <sup>2</sup> :	[FINES ¼" x 0"]		37%	49%	31%	26%
Volatile Matter	29	>25	34	35	34	36
Fixed Carbon	47		50	52	51	52
Ash	8		8.8	5.6	8.5	6.0
Moisture <sup>3</sup> —per ASTM D3137	16 <sup>4</sup>		6.7	7.7	6.2	6.0
Total	100					
Grindability, Hardgrove	50		47	51	49	42
Higher Heating Value on as received basis, Btu/lb.	11,000		12594	12989	12644	13168
Ultimate Analysis—per ASTM D3176 on "as received" <sup>1</sup> basis, % <sup>2</sup> :						
Moisture—per ASTM D3173	16.00 <sup>3</sup>		--	--	--	--
Carbon	60.22		76.76	79.81	75.80	79.11
Chlorine	—		0.14	0.15	0.16	0.14
Hydrogen	4.20		4.99	4.54	4.75	5.10
Nitrogen	1.01	<1.56	1.41	1.52	1.52	1.90
Oxygen	7.31		7.47	7.47	8.16	6.62
Sulfur	3.28		0.81	0.65	0.75	0.75
Ash	7.98		8.56	6.01	9.02	6.38
Total	100.00		100.14	100.15	100.16	100.00

**COMPARISON OF COAL QUALITY CHARACTERISTICS**  
Sheet 2

<u>Analysis Item</u>	<u>Performance Design Coal</u>	<u>Riley Stoker Corp. Criteria</u>	<u>Island Creek</u>	<u>Bechtel Steel</u>	<u>Southeast Coal</u>	<u>Industrial Fuels</u>
Ash Analysis, % <sup>2</sup>						
SiO <sub>2</sub>	43.11		55.08	56.09	58.98	50.05
Al <sub>2</sub> O <sub>3</sub>	17.50		33.68	30.85	29.39	30.80
P <sub>2</sub> O <sub>5</sub>			0.31	0.48	0.49	0.20
TiO <sub>2</sub>	0.84		1.55	1.91	1.72	1.37
SO <sub>3</sub>			<u>0.10</u>	<u>0.23</u>	<u>0.13</u>	<u>2.14</u>
Total Acidic	61.45		90.72	89.56	90.71	84.56
Fe <sub>2</sub> O <sub>3</sub>	20.23		4.34	5.18	5.11	8.07
CaO	7.97		0.98	1.67	1.05	1.81
MgO	1.17		0.96	0.94	0.92	1.56
Na <sub>2</sub> O	1.30		0.32	0.76	0.83	0.90
K <sub>2</sub> O	1.51		<u>2.01</u>	<u>1.84</u>	<u>1.20</u>	<u>2.42</u>
Total Basic	32.18		8.61	10.39	9.11	14.76
Other	6.37		<u>0.67</u>	<u>0.05</u>	<u>0.18</u>	<u>0.68</u>
Total	100.00		100.00	100.00	100.00	100.00
Viscosity, Poise @ 2100F		>250	OK	OK	OK	OK
Ash Fusion Temp., F	(Red)					
Initial Deformation	2100		2800° F+	2800° F+	2800° F+	2690° F+
Softening (H=W)		>2025 (Red.)	2800° F+	2800° F+	2800° F+	2700° F+
Hemispherical (H=½W)	2150		2800° F+	2800° F+	2800° F+	2700° F+
Fluid	2250		2800° F+	2800° F+	2800° F+	2700° F+

# COMPARISON OF COAL QUALITY CHARACTERISTICS

Sheet 3

Analysis Item	Performance Design Coal	Hilroy Stoker Corp. Criteria	Island Creek	Bethlehem Steel	Southeast Coal	Industrial Fuels
<b>Calculated Ash Parameters:</b>						
Base to Acid Ratio (B/A)	0.52	None Specified	0.09	0.12	0.10	0.17
B/A x S (Dry)	2.04	<2.6*	0.07	0.08	0.08	0.13
T <sub>230</sub> Poise of Ash	>2100	>2100	2900	2880	2910	2763
Ash Fusion Temperature, F H=W (Reducing Atmos.)	>2100	>2025	2800°F +	2800°F +	2800°F +	2700°F +
B/A x Na <sub>2</sub> O	0.68	<1.0**	0.03	0.09	0.08	0.15
B/A x Na <sub>2</sub> O (H <sub>2</sub> O Soluble)	<0.68	<0.7				
Na <sub>2</sub> O in Dry Coal	0.12	<0.3	0.32	0.76	0.83	0.90
% Alkali in Ash (as Na <sub>2</sub> O)	2.29	<5.0				
% Chlorine in Dry Coal	None Specified	<0.3	0.14	0.15	0.16	0.14
$\frac{\text{CaO} + \text{MgO}}{\text{Fe}_2\text{O}_3}$	0.45	<1.0	0.45	0.50	0.34	0.30
% Alkali in Dry Coal (as Na <sub>2</sub> O)	0.22	<0.5				
<u>Chlorine</u> Ash	No Chlorine Specified	<0.05	0.016	0.025	0.018	0.023
Abrasiveness <sup>h</sup> = $\frac{\text{SiO}_2}{\text{Al}_2\text{O}_3}$	2.46	None Specified	1.64	1.82	2.00	1.63

\*Slagging factor, any coal under 0.6 is considered a low slagging coal.

\*\*Fouling factor, any coal under 1.0 is considered a low fouling coal.

<sup>1</sup> "As received" - for design coal = bunker outlet, but for purchased coal = F.O.B. cars @ mine.

<sup>2</sup> % - Percent by weight.

<sup>3</sup> Moisture - all moisture in sample that can be evaporated from a 60 mesh sample @ 225F in one hr. per ASTM D3175.

<sup>4</sup> Equilibrium moisture indicated (equilibrium moisture is moisture saturated in a coal sample at 86F)

<sup>5</sup> Free (surface) moisture - extra moisture added during mine processing (washing) or due to rain on coal.

<sup>6</sup> Not known if dry or type of moisture included in the analysis.

<sup>7</sup> Compliance coal requires less than 0.6 B/mmBtu.

<sup>8</sup> Abrasiveness Index of < 2.0 is desirable.