

INTEROFFICE MEMORANDUM

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TO: Buck Oven, Administrator  
Power Plant Siting Section  
Lou Hubener, Assistant General Counsel  
Office of General Counsel

FROM: Steve Smallwood, Chief  
Bureau of Air Quality Management

SUBJ: Certification Amendment - City of Gainesville Deerhaven  
Unit 2

The proposed amendment to the conditions of certification of the subject plant involves (1) accounting for joint variations in sulfur content and heating value of coal in demonstrating the use of compliance coal and (2) assuming 5% removal of sulfur in the bottom ash. For the most part, this is a reasonable proposal; its deficiencies are that a fuel analysis method is not specified and no averaging time is associated with the sulfur content and heating value data. (The same deficiencies, incidentally, are in the current conditions of certification).

In lieu of continuous in-stack monitoring, a restriction on fuel quality is necessary to ensure compliance with the emission limiting standard of 1.2 lb SO<sub>2</sub>/10<sup>6</sup> Btu, two-hour average. Unless the fuel quality data are derived from coal samples representing two-hour average feeds, the formula proposed by the permittee is not acceptable. A sampling and analysis technique which effectively considers the average quality of coal burned over a longer period (day, week, month, etc.) will mask the shorter-period variations in coal quality which are known to exist and could lead to excursions of the two-hour emission standard.

We recommend that this problem be discussed in detail with the permittee prior to entering into any stipulation. In recent rulemaking involving the coal conversion project at the Tampa Electric Company Gannon plant, we confronted this situation and were able to establish, on the basis of coal-sulfur variability statistics, a weekly average fuel quality restriction sufficiently stringent to ensure that shorter-term emission limits would not be violated. A similar approach may be appropriate in this case.

SS:caa

cc: G. DeMuth

State of Florida  
DEPARTMENT OF ENVIRONMENTAL REGULATION

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TO: Steve Smallwood  
Bureau Chief

FROM: Lou Hubener *LH*  
Assistant General Counsel

DATE: August 21, 1981

RE: Deerhaven Unit #2, Certification Amendment



Please review this proposed amendment and submit your comments to Buck Oven and me as soon as convenient. Thank you.

LH/bq

cc: Buck Oven



# Gainesville Regional Utilities

Post Office Box 490 • Gainesville, Florida 32602

SYSTEMS PLANNING DEPARTMENT  
(904) 374-2910

August 12, 1981

RECEIVED

AUG 19 1981

Dept. of Environmental Regulation  
Office of General Counsel

Mr. Buck Oven  
Department of Environmental Regulation  
Twin Tower Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Dear Mr. Oven:

Attached for your review and comment is a draft of the stipulation we intend to submit to the Department as a petition for modification of the Conditions of Certification for Deerhaven Unit 2, DER Case No. PA 74-04. The petition seeks to revise Condition I(A)2 which places an absolute limit of 0.73% on the sulphur content of coal burned in Unit 2 without regard to the BTU content of the coal. However, as the heating value increases the 0.73% limitation becomes increasingly more stringent than the federal and state emission standards. There exists no regulatory requirement for limiting SO<sub>2</sub> emissions in Alachua County beyond that required by NSPS and 17-2 FAC. Further, ratepayers on this system bear costs for reducing sulphur dioxide emissions beyond that required by the Department and such limitation severely restricts our ability to purchase coal at competitive prices.

While digging through the files I came across a memo to the file from Rusty Wooten, formerly Environmental Manager at this utility, about a conference call the Deerhaven Project Team had with you on March 29, 1978 for the purpose of cleaning up the language of the draft Conditions of Certification. The language in the final Conditions of Certification document reflected all the numerous points for language cleanup discussed with the team except the 0.73% S limitation. From speaking to those involved and from reading the record it appears that the failure to add "...at 12000 BTU/lb or equivalent" was a clerical error that was not noticed until much later.

As you see in the stipulation, we seek the opportunity to burn various types of compliance coal meeting the intent of the site certification document and satisfying the requirements of 17-2 FAC and NSPS. Please review the attached petition. We welcome your comments and guidance on this matter.

Respectfully,

Robert L. Guyer  
Utility Systems  
Environmental Engineer

RLG/kv  
Attachment

cc: Lou Heubner, DER

# PRELIMINARY DRAFT

SUBJECT TO CHANGE

BEFORE THE STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

In Re: )  
 )  
The City of Gainesville and )  
Gainesville-Alachua County )  
Regional Electric, Water and )  
Sewer Utilities Board, Deer- )  
haven Unit No. 2 Site Certi- )  
fication, DER Case No. PA )  
74-04. )  
 )  
Permittee. )

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## STIPULATION OF PARTIES MODIFYING CONDITIONS OF CERTIFICATION

The parties who entered appearances at and/or participated in the certification proceedings hereby STIPULATE AND AGREE as follows:

1. The signatories to this Stipulation include all of the parties to the above-mentioned certification proceedings.

2. On May 16, 1978, the Recommended Order of Division of Administrative Hearings, Case No. 75-467N, granting certification for the construction and operation of Deerhaven Unit No. 2 subject to the general and specific conditions referenced therein was approved and adopted by a vote of the Governor and Cabinet at a duly constituted Cabinet meeting of May 16, 1978.

3. For the reasons stated herein the Permittee wishes to modify Condition I.A.2. of such special conditions which provides as follows:

The permittee shall not burn a fuel containing more than 0.73% sulfur. However, the applicant may petition the Department to revise this condition by (a) demonstrating compliance with Section 17-2.04 (6)(e)1., FAC, or (b) installing a flue gas desulfurization unit that will insure compliance with the above emission limitation. The boiler shall not be operated unless this condition is complied with.

4. Section 17-2.04(6)(e)1., Florida Administrative Code has been recodified as Section 17-2.600(5) which provision contains a sulfur dioxide emission limitation standard for fossil fuel steam generators burning solid fuel. This standard is 1.2 lbs SO<sub>2</sub> per million BTU heat input (two hour average) which tracks the New Source Performance Standard (NSPS) for sulfur dioxide contained in the Clean Air Act. That is, for every million BTUs of heat input into the boiler, no more than 1.2 lbs. of sulfur dioxide may be emitted out the stack.

5. To assure compliance with 17-2 and NSPS for sulfur dioxide the Site Certification document additionally limits the allowable sulfur content of the coal to 0.73%. Such limitations are normally calculated using the following equation:

$$\frac{1.2 \text{ lb. SO}_2 \text{ out of stack}}{\text{million BTU heat input}} \quad \times \quad \frac{\text{BTU}}{\text{lb. of coal}} \quad \times$$

$$0.5 \times 100 \times 1.05 = \% \text{ allowable sulfur content of the coal (as received)}$$

WHERE:

$\frac{1.2 \text{ lb. of SO}_2}{\text{million BTU heat input}}$

This constant is the New Source Performance Standard for sulfur dioxide emissions

$\frac{\text{BTU}}{\text{lb. of coal}}$

This variable is the measured heating value of one pound of coal as received.

0.5

This constant is derived from the chemistry of the reaction of sulfur with oxygen to produce sulfur dioxide. Basically, 1 lb. of Sulfur combines with 1 lb. of Oxygen to produce 2 lbs. of SO<sub>2</sub>. Thus, the ratio of sulfur is 1/2 or 0.5.

100

This constant is to convert to percent.

1.05

This constant gives a credit for the sulfur that is trapped in the ash and not released as SO<sub>2</sub>.

The above equation may be simplified as follows:

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

The existing sulfur limitation was calculated using the above equation assuming 12,000 BTU/lb. coal but without the credit (1.05) for sulfur not leaving the stack. As such, and especially when burning coal of a BTU content higher than 12,000 BTU/lb., the limitation in the Conditions of Certification is significantly more stringent than both state and federal environmental regulations. There is no regulatory requirement for a sulfur limitation beyond what is required by NSPS or 17-2 FAC in this area. Further, this added environmental stringency results in electric rates higher than those that would otherwise be borne by Gainesville ratepayers and such limitation severely restricts the utility's ability to purchase coal at competitive prices.

6. For economic and environmental reasons, the utility wishes to supplement the coal supplies delivered under its current contract with other coal purchases.

7. The following demonstrates that compliance with the standard contained in Section 17-2.600(5) can be met using coal with a sulfur content higher than 0.73% provided the heating value (BTU per lb.) also rises. For example, a coal with a 14,000 BTU/lb. heating value can have a sulfur content of 0.88% and still meet NSPS and 17-2 FAC:

$$\frac{1.2 \text{ lb. SO}_2 \text{ out of stack}}{10^6 \text{ BTU heat input}} \times \frac{14,000 \text{ BTU}}{\text{lb. of coal}} \times 0.5 (100) 1.05 = \underline{.88\% \text{ sulfur allowable}}$$

8. The use of coal with heating values in excess of 12,000 BTU/lb. will result in less coal being burned. Among the environmental benefits expected by the utility are: a reduction in train traffic, reduced energy requirements for mining, transportation, and coal handling, minimizing ash production resulting in lower particulate emissions and ash for disposal in on-site landfills.

9. The electrostatic precipitator installed at Deerhaven Unit No. 2 is designed so as to achieve a maximum particulate emission not to exceed 0.1 lbs. per million BTU heat input when coal is used within the constituent range specified below:

- ash content 17% or less
- sulfur content in the range of 0.4% to 4.0%

In addition, the precipitator is designed to remove 99.5% (by weight) of the entering particulates from the flue gases.

10. The utility currently has a 35-year contract which provides for coal which will meet the standard of 1.2 lbs. SO<sub>2</sub> per million BTU heat input. The modification of Condition I.A.2. will permit acquisition of additional coal of a higher heating value which will also meet the standard. If the utility is able to augment purchases under its existing contract with other purchases of coal, estimated fuel cost savings in 1982 of between \$600,000 and \$1.6 million would be passed along to the customers of the utility by way of lower fuel adjustments.

11. Wherefore, the parties hereto concur that Condition I.A.2. should be and hereby is amended and modified to read as follows:

The percent maximum allowable sulfur content of coal consumed shall be limited as follows:

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

However, the Applicant may petition the Department to revise this condition by installing a flue gas desulfurization unit that will insure compliance with Section 17-2.600(5), F.A.C. The boiler shall not be operated unless this condition is complied with.

WITNESS our hands and seals this \_\_\_\_\_ day of

\_\_\_\_\_, A.D., 1981.

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Victoria J. Tschinkel, Secretary  
Department of Environmental  
Regulation  
Twin Towers  
2600 Blair Stone Road  
Tallahassee, Florida 32301

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Art Canaday, General Counsel  
Florida Public Service Commission  
101 E. Gaines Street  
Tallahassee, Florida 32304

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Witness

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Witness

\_\_\_\_\_  
Joan M. Heggen, Secretary  
Department of Veterans and  
Community Affairs  
2571 Executive Center Circle, E  
Tallahassee, Florida 32301  
(as successor in interest to  
Division of State Planning)

\_\_\_\_\_  
Witness

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Witness

\_\_\_\_\_  
I. Henry Dean, General Counsel  
Department of Natural Resources  
3900 Commonwealth Building  
Tallahassee, Florida 32303

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Witness

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Witness

\_\_\_\_\_  
Tom W. Brown, Esq.  
Suwannee River Water Management  
District  
Post Office Box 1029  
Lake City, Florida 32055

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Witness

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Witness

\_\_\_\_\_  
Helen Hood, Chairperson  
Parks and Endangered Lands  
Committee  
Florida Defenders of the  
Environment, Inc.  
622 North Main Street  
Gainesville, Florida 32604

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Witness

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Witness

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Ann Carlin, Esq.  
City of Gainesville, in its own  
right and as successor to  
Gainesville-Alachua County  
Regional Electric, Water and  
Sewer Utilities Board  
P. O. Box 490  
313 East University Avenue  
Gainesville, Florida 32601

\_\_\_\_\_  
Witness