CITY OF TALLAHASSEE

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February 21, 1997

CERTIFIED MAIL P 230 286 993

Mr. John C. Brown, Jr., P.E.
Air Permitting and Standards Administrator
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Additional Information Regarding Initial Title V Permit Application
File No.: 0730003-001-AV
Arvah B. Hopkins Generating Station, Leon County

Dear Mr. Brown:

On November 25, 1996, the City of Tallahassee (the City) received a letter, dated November 18, 1996, from your office indicating that the Title V Permit Application for the Arvah B. Hopkins Generating Station was received in a timely manner (June 14, 1996) and has been deemed complete. The November 18, 1996 letter also requests additional information regarding the referenced permit application. This letter is submitted as a response to the information requested.

In response to the first item noted in your November 18, 1996, letter requesting additional information, the City of Tallahassee has reviewed the fugitive VOC emissions section submitted in the Arvah B. Hopkins Generating Station Title V Permit Application and has determined that the fugitive VOC emissions section is correct as originally submitted. Although the fugitive VOC emissions section appears to be a duplication of the fugitive VOC emissions section in the Sam O. Purdom Generating Station permit application, there are some minor differences. One example of the differences includes the absence of barge unloading under the general emissions unit information section of the Arvah B. Hopkins application.

The second item noted in your November 18, 1996, letter requests that the City provide manufacturers rated steam output for boiler number 2 in the emissions unit description section. Attached is a revised emission unit description that includes the nominal steam flow for boiler number 2. The correction is highlighted with underscoring. The attached revised emission unit description replaces the emission unit description included in the original application.

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While correcting the emission unit description section, the City of Tallahassee also noted an error in units applied to a Site Certification limit reference. The sulfur dioxide emission limit in the Site Certification is 1.4 lb/mmBtu rather than the 1.4 mmBtu/hr limit depicted in the ninth line of the emission unit description for boiler number 2. This correction is highlighted with underscoring in the attached revised emission unit description.

If you have any questions regarding the information contained in this letter, please feel free to contact me at (904)891-5535.

Sincerely,

R. E. McGarrah
Superintendent, Production
Responsible Official

REM/kb

Attachments

cc: Kevin Wailes, COT
Gordon King, COT
Marty Black, COT
Jennette Curtis, COT

FOSTER WHEELER ENVIRONMENTAL CORPORATION
CALCULATION SHEET - MATHCAD 5.0+

By: D. Hackel
Date: 08/19/94

Ck'd By: D. Graziani, P.E.
Date: 08/26/94

Rv'd: 02/19/97

Client: City of Tallahassee
OFS No: 1000.4015.0027

Sheet No.: 1 of 2
Calc. No.: 960425DH04

Emission Unit Description:
The emissions unit is a Babcock & Wilcox steam generator designated Boiler No. 2. The unit is currently operating under Conditions of Certification (PA74-03D) issued by the FDEP. Construction of the unit pre-dated the PSD regulations but is still considered as an increment consuming unit. The unit is capable of firing residual fuel oil, on-spec used oil, natural gas, any of the lighter fuel oils (i.e., fuel oil Nos. 5, 4, ..)or any combination of these fuels. The maximum heat input rate required to meet maximum production of the boiler is 2500 mmBtu/hr. This heat input rate applies to the firing of natural gas and any mixture of natural gas with other fuels. The maximum heat input rate when firing 100% fuel oil is 2325 mmBtu/hr based on SO2 AAQS and PSD modeling analyses completed by the City of Tallahassee in August, 1992 that correspond with the 1.4 lb/mmBtu SO2 limit indicated in the Site Certification. The unit is currently rated for a nominal 238 MW and 1,619,000 lb/hr steam. The modified conditions of certification allow continuous operation with restrictions on PM (0.1 lb/mmBtu), and SO2 (1.4 lb/mmBtu). The federally enforceable emission limitations established through the SIP are the same for PM but different for SO2 which is set at 1.87 lbs/mmBtu, and include VE limits (20% & excess emissions), and a nitrogen oxide emission limitation (0.3 lb/mmBtu).

References:
No. 1 - Conditions of Certification PA74-03D
No. 2 -FDEP Rules 62-210.700(1), 62-296.405(1)(a),(b),(c),1h(d)3

Operating Parameters

Annual Hours Of Operation (hrs/yr) AHOP := 8760

Maximum Heat Input Rate - Nat.Gas (& mixtures) (mmBtu/hr) (lower heating value) MHR1 := 2500

Maximum Heat Input Rate - Fuel Oil (mmBtu/hr) (lower heating value) MHR2 := 2325

Fuel Oil Heat Content (Btu/Gal) FOHC := 150000

Fuel Oil Sulfur Content (%wt) FOSC := 1.4

Natural Gas Heat Content (Btu/CF) NGHC := 1000

Calculated Fuel Oil Usage Rate (kgal/hr)

$$FOUR := MHR2 \cdot \frac{10^6}{FOHC \cdot 1000} \qquad FOUR = 15.5$$

Calculated Natural Gas Usage Rate (mmCF/hr)

$$NGUR := MHR1 \cdot \frac{10^6}{NGHC \cdot 10^6} \qquad NGUR = 2.5$$

FOSTER WHEELER ENVIRONMENTAL CORPORATION
CALCULATION SHEET - MATHCAD 5.0+

By: D. Hackel
Date: 08/19/94

Client: City of Tallahassee
OFS No: 1000.4015.0027

Ck'd By: D. Graziani, P.E.
Date: 08/26/94

Sheet No.: 2 of 2
Calc. No.: 960425DH04

Rv'd: 04/25/96

Emission Estimates

The following emission estimates are provided as required by Rules 62-213.420(3)(c)1, 2, 3 and 4, FAC. The emission estimates are based on allowable emission limitations as specified by Rule or permit condition. The emission estimates provide hourly rates (lbs/hr) denoted with a "H" and annual emission rates (tons/year) denoted with an "A". Allowable emission rates are expressed in units of lb/mmBtu and designated ER (eg., ERSO2 = 1.4 lb/mmBtu).

Emission Estimates - Segment No. 1 (Natural Gas Firing)

Nitroge Oxides (NOX) - (Reference No. 2)

$ERNOX := 0.3$

$HNOX := MHR1 \cdot ERNOX$ $\quad HNOX = 750$

$ANOX := HNOX \cdot \frac{AHOP}{2000}$ $\quad ANOX = 3.29 \cdot 10^3$

Emission Estimates - Segment No. 2 (Fuel Oil Firing)

Particulate Matter (PM) - (References No. 1)

$ERPM := 0.1$

$HPM := MHR2 \cdot ERPM$ $\quad HPM = 232.5$

$APM := HPM \cdot \frac{AHOP}{2000}$ $\quad APM = 1.02 \cdot 10^3$

Sulfur Dioxide (SO2) - Existing Operating Permit (Reference No. 1)

$ERSO2 := 1.4$

$HSO2 := ERSO2 \cdot MHR2$ $\quad HSO2 = 3.3 \cdot 10^3$

$ASO2 := HSO2 \cdot \frac{AHOP}{2000}$ $\quad ASO2 = 1.43 \cdot 10^4$