Fanyie S

Lakeland - Winston Peaking Station (863) 834-6603

AC - AV Permitting Issues
July 10, 2003

AC Permit Limits:

Fuel Usage Limits:
Number 2 Fuel Oil shall not exceed 8,184,480 gal/year.
Natural Gas shall not exceed 2,240 MMcf/year (not yet connected to pipeline).

Heat Input Limits:
25 MMBtu/hr @ 100% load on oil
28 MMBtu/hr @ Peak load on oil
29 MMBtu/hr @ 100% load on gas

Hourly Limits:
43,000 engine hours/year @ 100% load on oil
17,520 engine hours/year @ Peak load on oil
89,200 engine hours/year @ 100% load on gas

Emissions Limits:
11.6 lbs NO_X/hr @ 100% load on oil
13.9 lbs NO_X/hr @ Peak load on oil
5.6 lbs NO_X/hr @ 100% load on gas
razor thin!
249.4 tpy NO_X facility cap
10 ppmvd Ammonia
VE $\leq$ 20%

Annual Compliance Demonstration Method:
[(X * 11.6 lbs/hr) + (Y * 13.9 lbs/hr) + (Z * 5.6 lbs/hr) / (2000 lbs/ton)] = Annual tons of NO_X/year.

Where:
X = Documented hours per year firing oil at 100% load
Y = Documented hours per year firing oil at peak load
Z = Documented hours per year firing natural gas at 100% load

probably AOR

After the initial testing of five units each year until completed, annual tests for NO_X shall be performed on those units that emitted more than 100 tons per year. (Based on the calculated tons, using the documented hours times the allowable emission rate????)

If included in a Title V permit, these conditions would not meet EPA's test for "practical enforceability" in the following ways:

For Gas:

[(29 MMBtu/hr) / (1,050 Btu/CF)] * 89,200 hours = 2,463.62 MMcf/year > 2,240 MMcf/year limit

(5.6 lbs/hr * 89,200 engine hrs/year) / 2,000 lbs/ton = 249.76 tpy > 249.4 tpy limit

Solution:
Reduce hours to 89,071 and heat input to 26.4 MMBtu/hr; or, reduce hours to 81,103.

For Oil:

(8,184,480 gal/year) * (132,500 Btu/gal) / (43,000 engine hrs/year) = 25.22 MMBtu/hr
Permit states heat content of #2 oil = 132,500 Btu/gal. This exceeds hourly heat input limit.

[(8,184,480 gal/year) * (138,000 Btu/gal)] / (43,000 engine hrs/year) = 26.27 MMBtu/hr
2002 AOR states heat content of oil = 138,000 Btu/gal. This exceeds hourly heat input limit.

[(25 MMBtu/hr) / (138,000 Btu/gal)] * 43,000 engine hours = 7,789,855 gal/year

Solution:
Reduce annual fuel oil allowable to 7,789,055 gal/year or insert a requirement that hourly heat input be monitored.