

13.7.17.2

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee	
To: _____	Loctn.: _____
To: _____	Loctn.: _____
To: _____	Loctn.: _____
From: _____	Date: _____

TO: Doug Dutton

FROM: J. P. Subramani

DATE: March 14, 1978

SUBJECT: Combustion Gas Turbines

RE: Your memo of February 20,  
a copy attached on 4-50MW FPL proposed Turbines.

Gas turbines may use oil, natural or manufactured gas as fuel, among others. If they burn natural gas they probably would not be governed by the PSD rule since it expressly provides for control of SO<sub>2</sub> and particulate and natural gas emits little of either.

If distillate oil is burned or any other fuel emitting particulate or SO<sub>2</sub>, they would be governed by the PSD rule.

If the projected emissions increase SO<sub>2</sub> or particulate ambient concentrations above baseline then BACT must be applied (17-2.02(4)(b)6.a.) as determined per the BACT rule. In this case BACT is applicable whether or not an Emission Limiting Standard (17-2) applies (for SO<sub>2</sub> and particulate).

If concentrations are not predicted to occur above the baseline then the question remains, is BACT otherwise required?

The answer: 17-2.02(38) "Major emitting facility or facility" does the source have the potential to emit 100 tons per year of any (one) air pollutant, and is it one of the 28 categories?

For a 50 MW combustion turbine:

- a. More than 100 tons potential - yes.
- b. In the 28 categories - no.

Therefore, under these conditions BACT does not apply.

Under the same definition, 17-2.02(38), does the source have potential to emit more than 250 tons/yr. of any pollutant?

Answer: yes.

Doug Dutton  
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One 50 MW combustion turbine burning distillate fuel at a fuel rate of 0.450 MW (less than a FFSG at about .660 MW) will emit, @  $.1\#/10^6$  BTU input, about 315 tons/yr. particulate, will emit @ 0.5% S/oil, about 1750 tons SO<sub>2</sub>/yr.

Note: You may hear the argument that the turbine generators are only 17 peaking units and may not operate but 5-10% of the time. In response to that, note that the definition includes the phrase "potential to emit".

At full load the 3 hr. or 24 hr. rate is 1750 tons/yr. etc. and would then have the potential to violate the short term ambient standards.

JPS/jr  
cc: Districts  
Air Engineers