TRW ENVIRONMENTAL ENGINEERING DIVISION

1423.81.JLS.034
March 10, 1981

Mr. Lawrence A. George
Bureau of Air Quality Management
Department of Environmental Regulation
Tallahassee, Florida 32301

Subject: PSD Preliminary Determination
Sebring Utilities (PSD-FL-071)

Dear Larry:

As you requested, the draft copy of the subject preliminary determination (PD) has been reviewed and the comments listed below are offered. These comments are made for your information in performance of LOE Contract Number 68-02-3515. TRW Environmental Engineering Division is not making formal comment in response to Public Notice. For this reason, comments are not expected to be a part of the public record for this application.

In general, the PD was well done with all required review elements adequately covered. Specific items are as follows:

1. Since BACT analysis for NO_x is higher than the proposed NSPS, a statement specifically stating that the proposed NSPS was not applicable should have appeared. The use of the proposed NSPS as a guide and the justification for the differences was satisfactory.

2. The calculations used to derive 819 ppm NO_x BACT limit from 650 ppm NO_x by efficiency correction should have been shown, or the 650 ppm should have been maintained as the standard (consistent with NSPS) with allowance for efficiency and O_2 corrections detailed. In addition, an efficiency determination could have been made a part of the compliance verification determination. However, it is recognized that the procedure is not required in the proposed NSPS test methods (40 CFR 60.324).

3. The SO_2 BACT analysis does not present information on the cost of low sulfur fuel alternatives. During EPA's review of the previously submitted application, Sebring was requested to provide capital cost and cost per ton of SO_2 reduced for lower sulfur content fuel oil alternatives. Based on the information submitted, in their revised application, lower sulfur fuel oil costs translate into roughly $1200 per ton of SO_2 (assuming a baseline of 2.5% sulfur oil).

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Interestingly, due to the assumed linear relationship between the cost of high and low sulfur content fuel oil, the incremental cost per ton of SO_2 reduced for successively lower sulfur content fuel oils remains roughly constant ($1200/ton SO_2). These factors weigh heavily in the BACT decision and should have been incorporated into the BACT discussion in one format or another.

Also, the origin of the estimated 16.4 percent increase in power costs for the average customer for lower sulfur fuel firing in unclear. To my knowledge, the application discusses only incremental increases in costs to the customer. Using the 16.4 percent and the $8.3 per month average customer cost increase from the application (page 5-9), the cost per kilowatt for the generating facility is 5.2 cents per kilowatt for 2.5 percent sulfur fuel firing and 6.0 cents per kilowatt for high sulfur fuel firing. These costs represent high power costs relative to the average cost of power in 1981 across the country. If the basis for the 16.4 percent increase in power costs is sound, these figures lend support to the BACT decision to permit 2.5 percent sulfur oil.

A final factor pertinent to the BACT determination for SO_2 is the relatively minor air quality impact on increment and NAAQS from the proposed facility. This could be mentioned in the BACT discussion. Had the impacts threatened the standards, the 6.0 cents per kilowatt from firing low sulfur oil could well be justified.

4. The use of monitoring significance values on page 15 and Table IV of the PD are not completely appropriate. The insignificance of the modeled concentrations vs the monitoring significance levels does exempt the source from the monitoring requirements of 40 CFR 52.21 (m), as stated. However, the exemption is not related to consideration of the existing air quality (or background air quality) in the analysis. Under current policy, the CO modeled impacts should be compared with the significance levels of 500 ug/m^3 (8-hour average) and 2000 ug/m^3 (1-hour average) published in the Preamble to the 1978 PSD regulations (43FR26398) to exempt CO from further modeling analysis requirements. In the case of NO_x, the annual impact of 2.5 ug/m^3 exceeds the significance levels of 1 ug/m^3; therefore, an estimate of existing NO_x ambient concentration should have appeared in Table IV. As stated,

the rural location of the source is pertinent and an assumed value of 20 ug/m^3 (reference 1978 monitoring guideline) would be appropriate. We concur that the NO_x NAAQS is not threatened by the proposed new source.

5. The entries of 10,000, 40,000, and 100 for CO and NO_x in the column, "Total Project Air Quality," in Table IV gives the erroneous impression that these pollutants are projected to be at the NAAQS. It is assumed that inclusion of these values in the table is a clerical error.

6. In as much as the PSD regulations apply to volatile organic compunds (VOC) rather than hydrocarbons (HC), use of the term VOC in lieu of HC would be more appropriate. Clearly, distinguishing between VOC (essentially non-methane, not ethane HC) and HC in this instance is a rhetorical consideration.

7. Annual emissions estimates are based on 8400 hours per year in Table I and II. Potential emissions are limited in this way only if enforceable permit conditions restrict hours of operation. Either the permit conditions or Table I and II should be changed.

8. The decision to waive PM compliance testing in Condition 3 is a matter of engineering judgment. The 0.1 lb/MMBTU limit based on stack test data on a similar unit is reasonable. However, when 2.5 percent sulfur fuel oil is fired in a conventional combustion device (boiler), PM emissions on the order of 0.18 lb/MMBTU would be expected (reference AP-42). With this consideration, justification of the waiver of PM compliance is in question.

If I can clarify any of the above comments or be of further service in any way, please call.

Sincerely,

Jeffrey L. Shumaker, Manager
Technology Assessment

JLS:jbt

cc: Archie Lee
Kent Williams