File

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MEMORANDUM

SUBJECT: Comments on the Air Quality Assessment for the Presidential Parkway, Atlanta, Georgia

FROM: Richard G. Rhoads, Director
Monitoring and Data Analysis Division (MD-14)

TO: Thomas W. Devine, Director
Air and Waste Management Division, Region IV

At your request my staff reviewed the air quality modeling techniques in the subject report and discussed comments with Lewis Nagler, your Regional Meteorologist, on December 5, 1983.

We identified five areas of concern:

(1) No rationale is presented for changing the dispersion modeling techniques between the Project Level CO Analysis (Section IV), where CALINE-3 was used, and the Intersection CO Analysis (Section V), where HIWAY-2 was used. The reader cannot determine whether CO estimates would be the same if the same model were used for each analysis.

(2) Page 20: First, Reference 10 is an improper citation; that guideline has not been revised since it was issued in 1978. Second, the meaning of line 18 can be misconstrued. Pasquill defines nighttime, for stability category determination using Table 4, as beginning one hour prior to sunset and extending to one hour after sunrise. His recommendation in line 18 for using D stability is for the hour preceding and following this definition of night. This would be two hours prior to sunset and two hours after sunrise. Depending on the time of local sunrise and sunset, nighttime and E stability could well occur during both morning and evening peak traffic hours in the winter. Third, we recommend that the last paragraph and reference to the 1975 guideline for evaluating indirect sources be dropped since it was superceded in 1978. While the 1978 revisions do not entirely contradict this paragraph, they specifically state that on-site measurements and analyses may also be used to determine what the worst-case stability category is, rather than using the default assumption of category D. Indeed, Table 7 on page 59 of the 1978 guideline could easily be interpreted as recommending that stability category E be used to estimate worst-case CO concentrations for this project.

(3) Table 4 on page 21 of the report could be made more complete by adding the definition of night as a footnote, i.e., from one hour prior to sunset to one hour after sunrise. This table is applicable to rural, open countryside. As indicated above, Table 7 on page 59 of the 1978 indirect source guideline addresses estimating stability category in urban areas and does not support the State's argument for only using stability category D.

(4) On pages 22 and 43 the State uses a meteorological persistence factor of 0.6 to convert one-hour CO concentrations to eight-hour averages. The 1978 indirect source guideline suggests using either 0.6 or 0.7. EPA guidance for stationary source impact analyses suggests that a value of 0.7 be used. While the State argues that using 0.6 is conservative, based on short-term monitoring results, it is not necessarily worst-case.

(5) The general conclusion in Section IX on page 63 that this is truly a worst-case analysis is open to question on several points. First, only the neutral stability category D was used in the analysis. There is no conclusive demonstration that stability category E is not applicable. Second, using a meteorological persistence factor of 0.7 is most appropriate for a worst-case analysis. Third, we question whether the minimum temperature of 35°F is a worst-case condition. Higher CO estimates are likely to result if the analysis incorporates these points.

In summary, there are several aspects of this air quality assessment about which we have technical concerns. Mr. Nagler stated his intention of pursuing the resolution of them with the State of Georgia. If you have further questions or require additional assistance, please contact me.

cc: L. Nagler
R. Smith
J. Tikvart