1 JUL 1988

Mr. John Elston
Assistant Director
Bureau of Air Quality
Management & Surveillance
State of New Jersey Department of
Environmental Protection
401 East State Street, CN 027
Trenton, New Jersey 08625

Dear Mr. Elston:

I am writing with regard to Joseph Laznow's April 14, 1988 submission of a draft carbon monoxide modeling protocol. My staff has reviewed the draft protocol and also has had frequent follow-up discussions with your technical staff. In addition, the principle features of this modeling work, as described in Ray Werner's March 8, 1988 memo to Mr. Laznow, were sent to EPA's Source Receptor Analysis Branch for review and comment. Attached is an April 12, 1988 memo from Joseph Tikvart with the response of this group.

Overall, our comments on the proposed protocol are as follows:

- The modeling techniques are consistent with current EPA guidance.

- The techniques described in the protocol are conservative and predicted concentrations will generally represent worst case concentrations.

- The protocol, while it describes the procedures to be followed, lacks detail. In response to your staff's request for guidance in this area, I have attached suggested input parameters to be used. Your staff should review these and discuss them, if necessary, with my staff.

- The need for assessing critical intersections in the candidate areas for redesignation was reiterated in Mr. Tikvarts' April 12, 1988 memo. This test, which is a criterion for evaluating redesignations, was alluded to by Ray Werner in prior discussions. As we discussed, we believe you have some flexibility in determining how best to implement this guiding principle.

- There is a need to address maintenance of the National Ambient Air Quality Standards. This was discussed in our meetings and is also raised in Mr. Tikvart's memo.

We have already sent forward a level-of-effort contract request based on your draft protocol in order that we can be in a position to begin work immediately when you submit a final protocol.

As we have previously discussed, EPA will likely revise the way it calculates carbon monoxide emissions for modeling purposes. The net effect of this will probably be to lower emission estimates. In this regard, you may wish to perform some preliminary screenings, mostly to determine whether or not you wish to go ahead with the modeling as described in the protocol. The emission estimation techniques contained in the modeling protocol are based on the existing, more conservative methods and have a greater likelihood of predicting violations.

If the modeling described in the protocol would show violations, you may wish to wait until new emission calculation techniques are proposed, which hopefully will be by this fall. If you don't wish to wait, you could proceed by developing techniques based on the attached copy of the workplan that EPA will use to develop these revised modeling procedures and a proposed set of procedures developed by EPA, which is also attached. While there is some risk that these techniques may be changed and details added before they are finalized, my staff believe that they represent an improvement over the present techniques contained in the guidelines. Consequently, we would be prepared to defend any analyses using the revised technique.

At this point you should decide how you wish to proceed in this matter. Please let me know of your decision.

Sincerely yours,

Wiliam S. Baker, Chief
Air Programs Branch

Attachment

cc: Tom Braverman, OAQPS

bcc: J. Filippelli, AWM-AP
J. Walsh AWM-AP

Steve #3 item #50

REGION II COMMENTS ON MODELING PROTOCOL

SUGGESTED INPUTS

Meteorology

- The worst case meteorology to be used in a 1 m/s wind with D stability in urban areas and E stability in rural areas.
- The minimum wind roadway angles should be 5° with 5° wind increments for each modeled intersection.

Receptor Sites

- Modeled receptors should be placed typically on sidewalks at the four corners of the intersection or at the roadway right-of-way limit if no sidewalk exists. To remain outside the Caline 3 mixing zone, the modeled receptors should be at least 3 meters from the roadway edges.
- Sensitive receptors should also be considered at each site. Examples of these may be found in Volume 9.

Emissions

- A 50/50 split between the two light truck classes (LDGT1 and LDGT2) and a 50/50/split between the gasoline and diesel powered heavy trucks (HDG and HDD) may be assumed.
- Hot/cold operating percentages used in the 1982 SIP modeling may be assumed unless more recent data is available.
- The Mobile 3 idle emission rates should be used. The idle emission factors represent conditions at 0% hot starts, 0% cold starts and 75°F.
- The EPA emission factor model (Mobile 3) calculates idle emission rates separately from other exhaust emissions. IDLE emission rates must be calculated from Mobile 3 by setting IDLFLG equal to 2, not by running the model at 0 mph.
- To determine Mobile 3 emission rates for December 31, 1987, set CY equal to 1988.
- The idle emission factors for given operating conditions and temperature should be adjusted by the same ratio used to adjust the 5 mph emission factors for the 1984 calendar year.
- Mobile 3 cannot model the New Jersey anti-tampering program exactly, so the folowing approximation is recommended.

  Start Year (January 1): 1986
  First Model Year Covered: 1982
  Vehicle Covered: LDGV, LDGT1, LDGT2
  Program Type: Annual, Inspect I/M Areas Only, Catalyst

Modeling Projections

° Modeled projections of future CO concentrations are needed to ensure maintenance of National Ambient Ait Quality Standards. EPA's proposed Post-87 policy requires 10 years.

Background

° Area-specific background is to be determined by following the guidance contained in Section V of Volume 1 of the Hot Spot Guidelines.

Ambient Temperature

° For areas to be redesignated:

Borough of Freehold
City of Perth Amboy
City of Burlington
City of Camden
City of Trenton

° The minimum average monthly temperature during winter is between 25 and 30°. Therefore, the rcommended ambient temperature for the modeling is 25°F. Twenty degrees may also be used.