Attachment 3

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

July 24, 1992

NOTE TO AIR BRANCH CHIEFS

On June 24 I sent you the first set of questions and answers (Q's & A's) for lead implementation plans. Unfortunately, the second page of the Q's & A's was inadvertently left out of the package. I apologize for any inconvenience this may have caused you. In order to avoid any further confusion, I am resending the memorandum and entire attachment that went out in June.

Joe Paisie

Attachment

cc: John Calcagni, AQMD
Eric Ginsburg, AQMD
Gwen Jacobs, AQMD
Laura McKelvey, AQMD
Rich Ossias, OGC
Laurie Ostrand, AQMD
Vickie Patton, OGC
Joe Tikvart, TSD
Lydia Wegman, OAQPS
Dean Wilson, TSD
Lead Contacts, Regions I-X
Regional Meteorologists, Regions I-X

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

June 24, 1992

MEMORANDUM

SUBJECT: Questions and Answers (Q's & A's) for Lead

FROM: Joseph W. Paisie, Acting Chief
SO_2/Particulate Matter Programs Branch (MD-15)

TO: Chief, Air Branch
Regions I-X

Attached, you will find the first set of Q's & A's for lead implementation plans. The responses, which were developed with the lead contacts, have been reviewed both in this office and the Office of General Counsel. As more questions arise, we will be following this set with other sets of lead Q's & A's.

The Q's & A's serve as a supplement to the staff work product for lead which has been incorporated into the General Preamble for Title I of the 1990 Clean Air Act Amendments (CAAA) [see 57 FR 13498 and 18070, April 16 and 28, 1992, respectively]. In any instance where there may appear to be a discrepancy between the Q's & A's and the General Preamble, the General Preamble remains the more authoritative policy, and the Q&A's should be read in ways that support that document.

The SO_2/Particulate Matter Programs Branch will be producing a general Q's & A's notebook with responses to questions concerning implementation of the CAAA. The goal is to have a resource that is specific enough to address individual concerns, but universal enough to be informative for all of the people who will be implementing the CAAA. If you have any suggestions regarding this process, please contact Gwen Jacobs at (919) 541-5295. Questions may be faxed to Gwen at (919) 541-5489 or mailed to OAQPS (Mail Drop 15). Thank you for your support of this project.

Attachment

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QUESTIONS AND ANSWERS

FOR

LEAD

The EPA's responses to questions regarding implementation of the lead national ambient air quality standards (NAAQS) under the Clean Air Act as amended November 15, 1990 (Pub. L. No. 101-549, 104 stat. 2399) (CAA) are discussed in this document. See generally 42 U.S.C. §§ 7401 et seq. The answers set forth here do not establish or affect legal rights or obligations. They do not establish a binding norm and are not finally determinative of the issues addressed. Agency decisions in any particular case will be made by applying the applicable law and regulations to the specific facts of that case. In any proceeding in which the policies described in this document may be applied (e.g., rulemaking actions on lead SIP's), the Agency will thoroughly consider the policy's applicability to the facts, the underlying validity of the policy, and whether changes should be made in the policy based on submissions made by any person.

Developed by
SO_2/Particulate Programs Branch
Office of Air Quality Planning and Standards

June 1992

Lead Q's & A's

Note: with respect to the following Q's & A's, the Clean Air Act Amendments of 1990 included a General Savings Clause which provides that regulations (or guidance, etc.) in effect before enactment of the Amendments shall remain in effect after enactment (see section 193 of the amended Act). However, the Savings Clause also provides that such regulations (or guidance, etc.) shall remain in effect "except to the extent otherwise provided under this Act, inconsistent with the provision of this Act, or revised by the Administrator." Unless otherwise indicated, the regulations (or guidance, etc.) cited below remain in effect consistent with section 193 of the Clean Air Act.

Q: 1. Is it necessary to calculate a design value for lead SIP's? The July 1983 document entitled "Draft Updated Information on Approval and Promulgation of Lead Implementation Plans" indicates that determination of the design value for lead SIP's is only required when the demonstration is based on a "rollback" model and is not applicable if air dispersion modeling is used to demonstrate attainment.

A: Forty CFR Part 51.117(c)(2) requires that lead SIP's employ dispersion modeling for demonstrating attainment in areas in the vicinity of the lead point sources listed in 40 CFR 51.117(a). Determination of the design value is inherent in the application of dispersion modeling to demonstrate attainment. Procedures for calculating the design value with dispersion models are contained in the Guideline of Air Quality Models (Revised) (GAQM) (Section 8.2.1.1, Design Concentrations for SO_2, Particulate Matter, Lead, and NO_2).

Q: 2. How is the design value to be calculated--through modeling or ambient monitoring?

A: Again, see Section 8.2.1.1 of the GAQM which describes how to determine the design concentration (design value) for a lead air quality analysis. An air quality analysis is necessary to determine if the source will cause a violation of the NAAQS [and, it follows, to determine whether attainment is demonstrated in the area. See section 192(a)]. Note that Table 9.1 of the GAQM describes the model emissions input data needed to model point sources. In such an analysis, the background concentration is added to the estimated impact of the source, as determined by dispersion modeling, to get the design concentration. For lead, the highest estimated design concentration based on an individual calendar quarter averaging period should be used. The modeled design concentration is then used as a starting point to determine emission limits needed to attain the standards and to be included in the demonstration.

Theoretically, if the measured air quality values are higher than modeled values at the same receptors, and the Agency is certain that the modeling was done correctly (i.e., appropriate model, proper inputs), measured data should be used to determine baseline air quality. That is, the model estimates for the design value should not be used if the monitored data indicate an ambient problem that will not be corrected by a SIP based solely on modeling. However, the State should consult with EPA before making this decision.

Q: 3. What emission inventories are necessary for the upcoming lead nonattainment area SIP's? Besides the base year emission inventory (which is based upon actual emissions), are other inventories necessary? What are they to be based upon (allowable emissions before or after control, include growth, etc.)?

A. For lead SIP's, two types of emission inventories should be submitted--a base year inventory and modeling inventories. The SIP base year inventory must be based on actual emissions [see sections 110(p) and 172(c)(3) of the Act]. The timeframe of the base year inventory, generally, should be representative of the period of record on which the decision to designate an area as nonattainment [pursuant to sections 107(d)(3) or (d)(5)] or call for a SIP revision [pursuant to section 110(k)(5)] was based. The modeling inventories must be based on allowable rather than actual emissions [see section 110(a)(2)(K) of the Act]. The primary role of the modeling inventories will be for use in the design value calculation and the attainment demonstration. An attainment demonstration which provides a projection of allowable emissions to the year following full implementation of the SIP is required. This is necessary to ensure that the attainment demonstration is based on enforceable emission limits and control measures [see section 110(a)(2)(A) and 172(c)(6) of the Act].

Regions and States should refer to Table 9-1 of the GAQM to determine model emission input data requirements. This table specifies under emission limit: maximum allowable or federally enforceable permit limit; under operating level: actual or design capacity (whichever is greater), or federally enforceable permit condition; and under operating factor: actual operating factor averaged over most recent 2 years. The impact of growth on emissions should also be considered in all modeling analyses covering existing sources.

For further emission inventory guidance beyond the above discussion, the Regions and States should refer to the lead emission inventory document which is expected to be issued July 1992 in draft form.

Q: 4. What type of dispersion modeling demonstrations are necessary for the upcoming lead nonattainment area SIP's? We understand that a base year modeling demonstration, using the base year emission inventory, is used to compare model predictions to actual, base year ambient data for the purpose of model validation. What should be done next? Should the States then rerun the base year model after applying controls [e.g., reasonably available control measures (RACM) which include reasonably available control technology (RACT)] to adjust the base year inventory, to determine the level of control needed before growth is accounted for? Then should the States account for growth occurring up to the attainment year, by rerunning the model using a post-control, post-growth emission inventory? If the NAAQS are exceeded in this last scenario, should the model then be rerun with additional control strategies until the NAAQS are no longer exceeded?

A: Base year modeling should be run using the emission inventories discussed above, i.e., base year (actual) and modeling (allowable for determining design concentration). The model (using the modeling inventory) should be rerun with reduced emissions, for example, assuming the implementation of RACM (including RACT), until attainment is demonstrated.

The model should be rerun again with the controlled emission inventory (modeling inventory with, for example, RACM and RACT) and any emission increases expected to occur as a result of growth. If attainment is reached, no further modeling is needed. However, if attainment is not demonstrated with this model run (e.g., considering growth), more emissions reductions should be achieved and the model rerun again until attainment is demonstrated.

For SIP's submitted in response to nonattainment designations, determining the necessary control measures should be consistent with EPA's interpretation of RACM (including RACT). For further information see the "General Preamble," 57 FR 13540-44, 13550, and 13560-61, April 16, 1992, which discusses the determination of RACM/RACT for lead and PM-10.

Finally, note that background concentrations must be added to the modeled results as discussed in the GAQM.

Q: 5. What level constitutes an adequate attainment demonstration? For example, for one complete modeled attainment year, must no quarter exceed 1.5 $\mu g/m^3$ of lead? What if one quarter shows a projected value of exactly 1.5 $\mu g/m^3$ or 1.45 $\mu g/m^3$?

A. The attainment demonstration must show that the lead standard of 1.5 $\mu g/m^3$ maximum arithmetic mean averaged over a calendar quarter will not be exceeded (see 40 CFR 50.12). Modeled results should not be rounded off. Therefore, if the modeled result is 1.51 $\mu g/m^3$, the standard is exceeded. Conversely, if the result is 1.49 $\mu g/m^3$, the standard is not exceeded. It is <u>extremely</u> unlikely that a model will give a result of exactly 1.50 $\mu g/m^3$ but, if that did happen, it would equal, not exceed, the standard so the source would be in attainment.