



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

MAY 26 1993

MEMORANDUM

SUBJECT: Calculation of Rule Effectiveness for Emissions Inventories

FROM: *for* John S. Seitz, Director *Seitz*  
Office of Air Quality Planning and Standards (MD-10)

TO: Director, Air, Pesticides and Toxics  
Management Division, Regions I and IV  
Director, Air and Waste Management Division,  
Region II  
Director, Air, Radiation and Toxics Division,  
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Region V  
Director, Air, Pesticides and Toxics Division,  
Region VI  
Director, Air and Toxics Division,  
Regions VII, VIII, and X

There has been some confusion about acceptable methods for determining rule effectiveness (RE) for 1990 base year emissions inventories and the necessary requirements for receiving emission reduction credits in 1996 for RE improvements. This memorandum clarifies the criteria that should be applied by the Regions when reviewing a State's method for assessing RE. In addition, it explains the requirement for taking credit for RE improvements in State 15 percent plans.

Review of Alternative RE Methods

In November 1992, the Environmental Protection Agency (EPA) published "Guidelines For Estimating and Applying Rule Effectiveness For Ozone/CO State Implementation Plan Base Year Inventories" (EPA-452/R-92-010). In this document, three methods for estimating RE were identified as acceptable strategies:

1. 80 Percent Default - uses an across-the-board RE presumption of 80 percent for all sources.
2. Questionnaire Approach - uses an EPA questionnaire to determine a category-specific RE value for both point sources and area sources.

3. Stationary Source Compliance Division (SSCD) Protocol Study - uses a study specific to a category in accordance with the procedure developed by SSCD.

In addition to these three methods, a fourth option was also made available in the addendum to the November 1992 guidance. This additional option gave States greater flexibility in designing an alternate method for estimating RE. The addendum outlined the following information that States should consider in alternative RE methods:

1. The overall capture and control efficiency generally available from the kind of capture and control equipment being assessed.

2. Any stack test/performance evaluation that was performed on the capture and control equipment.

3. The rated capture and control efficiency (from manufacturer's specifications or literature).

4. The kinds of activities that affect the determination of day-to-day performance of the capture and control equipment that are listed in the questionnaires contained in the guideline document (e.g., ease of determining compliance, type of control equipment, frequency and quality of inspections, and level of training of inspectors).

If a State develops an alternative RE method, it must not only account for the above information, but should also follow the basic requirements outlined in the guidelines. These include:

1. Following the sampling strategy outlined in section 2.4.2.3 of the guidelines and determining the appropriate sample size according to the method described in Appendix D. This means, for example, that if a State plans to use a modified version of the questionnaire, the following conditions should be met. At least 80 percent of the total pollutant-specific emissions (e.g., volatile organic compounds) from point sources should be covered by questionnaires and all categories representing 5 percent or greater of the pollutant-specific emissions from point sources should use the questionnaire. Both conditions (80 percent coverage of total point source pollutant emissions and every category representing 5 percent or more of the total point source pollutant emissions) should be met for the questionnaire approach. At least 10 point sources within a category should be sampled; all point sources should be sampled if there are 10 or fewer sources in a category (see pages 20-21 and Appendix D of the guidelines for a more detailed explanation).

2. Providing the rationale for the alternate RE method (e.g., changes to the questionnaire, including why items were added or deleted and justification of changes to the weighting scheme for individual items).

When reviewing a State's alternate method for estimating RE, EPA Regions should be assured that every attempt has been made to meet the above criteria. However, there may be circumstances, such as unavailability of resources or information, that prevent a State from meeting these sampling guidelines. Any deviations from these guidelines must be approved by the Region with concurrence from Headquarters. In determining whether to approve these deviations, the Region should recognize the intent of the above sampling criteria, namely to obtain a statistically valid sample that will result in an emission estimate that is as accurate as possible.

If, based on the documentation provided by the State, a Region is unable to assess whether the alternative methodology follows the appropriate procedures, it should require the State agency to provide additional documentation. After the Regional Office has completed its review, the Region must consult with the Office of Air Quality Planning and Standards (OAQPS). Both Region and Headquarters concurrences are needed on any alternative RE method.

An alternative RE method that has already been approved by the Regional Office is exempt from any additional requirements of this memorandum.

#### Credit for RE Improvements

Rule effectiveness improvements must reflect actual emissions reductions resulting from specific implementation program improvements. To receive emission reduction credits for RE improvements, a State agency must document the improvements. An SSCD protocol study that meets EPA's protocol requirements must be performed to confirm that reductions have been made after the implementation of the improvement program. A State that plans to take credit for RE improvements in its 15 percent rate-of-progress plan to be submitted by November 15, 1993 must therefore commit in that plan to perform this study after implementation of the RE improvement program. Note that States that have been assuming 80 percent RE for a given rule before an RE improvement goes into effect can only receive credit for the portion of emissions reductions over the 80 percent level.

The OAQPS is currently developing guidance on how to quantify RE improvements in rate-of-progress plans. Questions on these issues may be directed to Gerri Pomerantz of the Air Quality Management Division (919-541-2317).

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