
**EMISSION MEASUREMENT CENTER
GUIDELINE DOCUMENT**

MEMORANDUM

SUBJECT: Revised Capture Efficiency Guidance for Control of Volatile Organic Compound Emissions

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

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

In a memorandum dated March 20, 1992, I announced that the Office of Air Quality Planning and Standards (OAQPS) was undertaking a study to find less expensive alternatives to our current temporary total enclosure (TTE) methods for determining capture efficiency (CE) performance of volatile organic compound (VOC) emission control systems. I also announced that during the period of this study the Environmental Protection Agency (EPA) was instituting a limited moratorium suspending temporarily certain CE testing and related enforcement activities.

The purpose of this memorandum is three-fold: (1) to release the attached technical document entitled "Guidelines for Determining Capture Efficiency" which presents details of the EPA approved test methods for determining CE; (2) to provide you with revised guidance on implementing these CE test methods; and (3) to announce the end of the CE moratorium and to provide you with guidance on moratorium closure.

Background

As you know, the measurement of CE is critical to determining the effectiveness of VOC emission control systems. Our current TTE test methods are the products of an extended investigation by EPA over 7 years in response to the need

identified a number of years ago by the EPA Regional Offices (RO's) as being essential to compliance determination efforts.

We received a number of comments from industry, States, RO's, and others expressing concern about the cost of using our recommended gas-gas and liquid-gas methods that specify a TTE to measure CE. In light of the President's instructions to review Federal regulations for ways to minimize their cost to industry, OAQPS in March 1992 embarked on a 12-month study to develop and review possible alternatives and the effect that their approval would have on programs to assure volatile organic compound emissions reductions. Clearly, when the study began, we did not know of less costly methods with measurement capabilities equivalent to those methods using the TTE.

To ensure that all aspects of the issue were considered, the study was a cooperative effort involving all the divisions in OAQPS. I would also like to thank the Can Manufacturers Institute (CMI) for their participation in the study. The comparison field test CMI conducted not only demonstrated that the TTE methods are the most precise procedures available for determining CE but also provided useful data in the development of the approved alternative CE protocols.

The CE study and moratorium were extended beyond our originally planned 12 months to utilize the additional data from the CMI field test and more detailed analyses of CE protocol options. Our CE study was completed in early November of this year.

Guidelines for Determining Capture Efficiency Document

The attached document, "Guidelines for Determining Capture Efficiency," provides the technical details of the EPA approved CE test methods, including the data quality objective (DQO) and lower confidence limit (LCL) test methods recently developed during OAQPS's CE study. Appendix A contains a complete description of the TTE test methods, incorporating several minor revisions, such as reduced length of test runs, to the TTE test methods provided in earlier documents. Any future reference citations regarding EPA's TTE test methods should be made to Appendix A of this document.

This guideline document presents the TTE methods as EPA's recommended procedures. As indicated from our earlier investigation leading to the development of the TTE methods and confirmed by the CMI field study, the TTE methods are the most precise procedures for measuring CE.

Nevertheless, to provide flexibility and to reduce costs, EPA has developed two alternative methods, DQO and LCL, for determining CE which do not require a TTE. Moreover, these alternatives offer additional flexibility in that they do not require specific testing procedures for measuring process parameters and for liquid and gas analyses; but only specify a limited set of guidelines on the data quality. The DQO and LCL methods are sets of approval criteria which, when met by the data obtained with any given protocol of process parameter measurement procedures, may be used to determine VOC capture system compliance with a CE standard.

To add further flexibility, the guideline document also describes an aggregate sampling method where the building may be used as an enclosure for testing and for multiple lines which share a common VOC control device such as an incinerator or adsorber system.

Implementation of Capture Efficiency Guidance

In accordance with the technical guidance provided in the attached document "Guidelines for Determining Capture Efficiency" and the policy guidance set forth here, the EPA recommends the use of these TTE and alternative test methods to the States and local agencies for determining CE.

For the purpose of CE testing to determine compliance with VOC Reasonably Available Control Technology (RACT) requirements, any of the CE testing methods described in the attached document are acceptable to EPA. Such testing includes initial compliance certification, enforcement actions where noncompliance is suspected, and periodic testing as may be required pursuant to EPA's enhanced monitoring rules. The LCL should not be used, however, for enforcement purposes to confirm noncompliance; sufficient test runs should be run to meet the DQO protocol.

To allow the use of the aggregate sampling method for CE compliance determinations, the State should provide in its SIP that aggregate sampling requires a site-specific SIP or FIP revision to establish a federally enforceable CE RACT for the building. The building RACT should provide VOC emission reductions equivalent to the reductions obtained when all the VOC emission sources within the building are meeting their individual RACT. In testing multiple lines connected to a common control device as a group, the CE determined for the group should comply with the highest (most stringent) CE RACT of any individual line in the group.

In those situations where CE testing is done to determine emission reductions for the purpose of establishing emission credits for offsets, shutdowns, and trading, the LCL method is not appropriate for these applications. Sources who have used the LCL method for CE compliance determinations, however, may use their same testing procedures and perform sufficient test runs to meet the requirements of the DQO method.

States that have already adopted the TTE test methods into their SIPs and want to allow the use of any or all of these alternative methods should revise their SIPs accordingly.

For those States which did not adopt CE test methods and/or compliance regulations in their SIPs, they should submit to EPA as soon as possible SIPs with complete CE rules in accordance with the 1990 Clean Air Act Amendments (CAAA).

With regard to FIPS, I am requesting that Regional Offices make the necessary revisions as soon as possible to the FIPS in their regions to allow the use of CE test methods described in the attached technical guidance and to make the FIPS consistent with the CE policy set forth here.

The EPA wishes to expedite making this CE guidance available to the State and local agencies, industry, and the public. I am therefore requesting that Regional Offices distribute copies of this memorandum and its attachment to the appropriate contacts in the State and local agency offices within their regions. This CE guidance is also being made available on EPA's TTN bulletin board.

Capture Efficiency Moratorium Closure

With the CE study now completed, I am announcing the end of the CE moratorium which has been in effect since March 20, 1992. The effective date for termination of the moratorium is February 15, 1995.

I am asking the Regional Offices to notify the appropriate authorities in the State and local agency offices within their regions that the CE moratorium is ending and to inform those authorities of those actions they need to take to resume CE compliance determinations suspended by the moratorium.

If you have any questions concerning the guidance document please contact Candace Sorrell at (919) 541-1064. All policy and implementation questions should be directed to Bob Stallings at (919) 541-7649.

Attachment

cc: Air Programs Branch Chief, Regions I-X
Air Compliance Chief, Regions I-X
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