



Compliance Assurance Monitoring (CAM) 40 CFR Part 64 CAM Plan Instructions

Introduction

EPA responded to a statutory mandate in the Clean Air Act Amendments of 1990 by promulgating new regulations to implement compliance assurance monitoring (CAM) for major stationary sources of air pollution required to obtain Part 70 federal operating permits. This regulation appears in 40 CFR Part 64 – Compliance Assurance Monitoring. CAM establishes criteria that define what monitoring of existing emission control devices, and associated recordkeeping and reporting requirements, are necessary to provide reasonable assurance of compliance with applicable emission limits and standards.

EPA promulgated 40 CFR Part 64 in 1997. As allowed by the regulation, CAM Plans were included in the subsequent Part 70 Permit Reissuance applications, as applicable. CAM requirements were first included in VCAPCD Part 70 permits in 2003.

This document provides a general discussion and summary of federal CAM requirements and applicability. This summary should not be used independently of Part 64 for understanding CAM requirements. Other more specific or detailed information may apply. Please refer to Part 64 for more detailed information. Also, if you believe your facility is subject to CAM requirements, you are encouraged to review EPA's CAM technical guidance documents available on EPA's website (www.epa.gov/emc/emc-compliance-assurance-monitoring).

CAM Applicability

Part 64's CAM requirements apply to any pollutant specific emission unit (PSEU) at a major source that is required to obtain a Part 70 permit if the unit satisfies all of the following criteria:

- The unit is subject to an emission limitation or standard for an applicable regulated air pollutant
- The unit uses a control device to achieve compliance with any such emission limitation or standard
- The unit has a pre-control device potential to emit (uncontrolled emissions) of the applicable regulated air pollutant equal to or greater than the amount required for a source to be classified as a major source. Currently, Ventura County's Nonattainment Classification is "Serious;" resulting in ROC and NO_x major source thresholds of 50 tons per year. For Ventura County, the major source thresholds are:

50 tons per year of ROC, or
50 tons per year of NO_x, or
100 tons per year of PM₁₀, or

100 tons per year of SO_x, or
100 tons per year of CO

A PSEU refers to an emission unit treated separately for each regulated air pollutant. In determining the pre-control device potential to emit from a PSEU, limits on hours of operation, throughput, or fuel consumption may be used provided that the limit is contained in a Part 70 permit condition.

CAM Exemptions

Part 64 contains a number of exemptions that Part 70 permit holders should review. Notable examples of emission limitations or standards explicitly exempt from CAM requirements include:

- Ones proposed by EPA after November 15, 1990, including NSPS and MACT standards.
- Ones for which a Part 70 permit already specifies a continuous compliance determination method, as defined in 40 CFR Part 64.1.
Emission units and control devices equipped with continuous emission monitors (CEM systems) required by Ventura County APCD Rule 59, Rule 74.23, or Rule 103 are exempt from CAM under the continuous compliance determination method exemption.
- An emission cap that meets the requirements specified in 40 CFR Part 70.4(b)12.
- Acid Rain Program requirements of Title IV.

Definition of Control Device

CAM requirements apply only if a control device is used to meet an applicable emission limitation or standard. 40 CFR Part 64.1 defines “control device” as:

Equipment, other than inherent process equipment, that is used to destroy or remove air pollutant(s) prior to discharge to the atmosphere. The types of equipment that may commonly be used as control devices include, but are not limited to, fabric filters, mechanical collectors, electrostatic precipitators, afterburners, thermal or catalytic incinerators, adsorption devices (such as carbon beds), condensers, scrubbers (such as wet collection and gas absorption devices), selective catalytic or non-catalytic reduction systems, flue gas recirculation systems, spray dryers, spray towers, mist eliminators, acid plants, sulfur recovery plants, injection systems (such as water, steam, ammonia, sorbent, or limestone injection), and combustion devices independent of the particular process being at an emission unit (e.g. the destruction of emission achieved by venting process streams to flares, boilers, or process heaters). For purposes of this part, a control device does not include passive control measures that act to prevent pollutant from forming, such as the use of seals, lids, or roofs to prevent the release of pollutants, use of low-polluting fuel or feed stocks, or the use of combustion or other process design features or characteristics. If an applicable requirement establishes that particular equipment which otherwise meets this definition of a control device does not constitute a control device as applied to a particular pollutant-specific emission unit, then that definition shall be binding for purposes of this part.

Based on the above definition, a number of control devices potentially subject to CAM requirements currently operate at Part 70 permit facilities in Ventura County. These include:

- Catalytic converters on rich burn natural gas engines for the control of NO_x
- Water injection system and selective catalytic reduction (SCR) systems on gas turbines
- Flue gas recirculation (FGR) systems on boilers, steam generators, and process heaters
- Carbon adsorption systems
- Baghouses

There are a number of air pollution control strategies in operation at Part 70 permit facilities in Ventura County that do not fit the above definition of control device and are not subject to CAM. These include:

- Low NO_x burners (without FGR) on boilers, steam generators, and process heaters
- Lean burn technology on natural gas fired engines
- Floating roof tanks
- Low sulfur fuels
- Low vapor pressure and low ROC content requirements
- Vapor recovery systems on storage tanks that comply with Rule 71.1.B.1.a by directing all vapors to a fuel gas system, a sales gas system, or to a flare; as there is not an associated emission limitation
- Vapor recovery and disposal systems on glycol dehydrators that comply with Rule 71.5.B.1 by directing all vapors to a fuel gas system, a sales gas system, or to a flare, incinerator, thermal oxidizer, or reboiler; as there is not an associated emission limitation

CAM Submittal Requirements

An initial Part 70 Permit application or a Part 70 Permit Modification application that includes the initial permitting of an emissions unit or units that require CAM must include the required information pursuant to 40 CFR Part 64.4 (Submittal Requirements). Listed below is a general summary of what information must be submitted. This information is commonly known as a “CAM Plan.” Please refer to 40 CFR Part 64.4 for a more detailed explanation.

Pursuant to 40 CFR Part 64.4, for each PSEU subject to CAM, a permit application shall include:

- Monitoring that satisfies the design requirements in 40 CFR Part 64.3. This includes the indicators of emission control device performance to be monitored along with an appropriate range for the indicator such that operation within the range provides a reasonable assurance of ongoing compliance with the emission limitation or standard.
- A justification for the proposed elements of the monitoring.
- Control device operating parameter data obtained during a compliance or performance test conducted under the conditions specified by an applicable requirement (see 40 CFR Part 64.4(c)(1)). This data is required to help justify any of the elements of monitoring proposed (such as ranges for indicators of compliance) in the application. As an example, consider a boiler equipped with flue gas recirculation (FGR) and subject to CAM; a source test would be

necessary in establishing the monitoring approach for indicators of compliance such as fuel flow rates, boiler exhaust oxygen concentration and/or FGR damper position.

- If existing data from unit specific compliance performance testing is not available, Part 70 permit applicants must submit:
 - A test plan and schedule for obtaining such data in accordance with 40 CFR Part 64.4(e), or
 - Compliance indicator ranges that rely on engineering assessments and other data as specified in 40 CFR Part 64.4(d)(2)

What is Monitoring?

A definition for the term “monitoring” is provided in 40 CFR Part 64.1. In general, “monitoring” means any form of collecting data on a routine basis to determine or otherwise assess compliance with emission limitations or standards. Specified forms of monitoring include recordkeeping, recurring compliance source tests, continuous emissions monitoring systems (CEMS), continuous opacity monitoring systems (COMS), or other parametric monitoring procedures, including predictive emission monitoring systems (PEMS), emission calculation procedures, visible emission observations, or any other form of measuring, recording, or verifying on a routine basis emissions, process parameters, capture system parameters, control device parameters or other factors relevant to assessing compliance with emission limitations or standards.

As detailed in 40 CFR Part 64.3 (Monitoring Design Criteria), Part 70 permit applicants must design the monitoring and data acquisition to meet certain performance criteria including:

- Data must be representative of the emissions or parameters being monitored.
- Verification procedures must be implemented to confirm the operational status of monitoring prior to the date which monitoring must legally begin.
- Quality assurance and control practices must be implemented to ensure the validity of all data.
- The monitoring must have specifications for (1) the frequency of conducting the monitoring, (2) the data collection procedures (e.g., computerized data acquisition, alarm sensors, etc.), and (3) if applicable, the period over which discrete data points will be averaged for the purpose of determining the occurrence of an exceedance or excursion.
- The Part 70 permit applicant must design the period over which data are obtained. This interval must be consistent with the period over which a change in control device performance that would require action by the owners or operators to return operation with normal ranges or designated conditions is likely to be observed. In addition, for emission units subject to CAM that have potential to emit (with the control device installed) of equal to or greater than 100% of the amount required for a source to be classified as a major source, Part 70 permit applicants must collect four or more data points equally spaced over each hour and average the values over the applicable averaging period. For other emission units, the frequency of data collection may be less than the above, but the monitoring must include some data collection (not necessarily data showing compliance with an emission limitation or standard) at least once per 24-hour period.

Note: Part 70 permit applicants are encouraged to review 40 CFR Part 64.3 for further information on this subject.

Approval of Monitoring Submittal

Pursuant to 40 CFR Part 64.6, the District will approve or disapprove the CAM Plan submitted by the Part 70 applicant as part of the permit processing. Approved monitoring may be conditioned to require additional data on the indicators to be monitored to confirm the ability of the monitoring to provide data that are sufficient to satisfy the requirements of Part 64 and to confirm the appropriateness of an indicator range or designated conditions proposed to satisfy 40 CFR Part 64.3.

Once the monitoring is approved, the Part 70 permit will generally specify the following:

- An approved monitoring approach.
- The means by which the owner or operator will define an exceedance or excursion for the purpose of responding to and reporting exceedances or excursions.
 - An exceedance is defined as: *a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with an averaging period specified for averaging the results of the monitoring.*
 - An excursion is defined as: *a departure from an indicator range established for monitoring under this part, consistent with any averaging period specified for averaging the results of the monitoring.*
- A requirement specifying the permit holder's obligation to conduct the monitoring.
- If appropriate, a minimum data availability requirement for valid data collection for each averaging period.
- Reporting and recordkeeping requirements (40 CFR Part 64.9)

If the District disapproves the proposed monitoring, the Part 70 permit shall include:

- Monitoring that satisfies the requirements of 40 CFR Part 70.6(a)(3)(i)(B), and
- A compliance schedule for the source owner to submit monitoring that satisfies Part 64 within 180 days from the date of issuance of the permit.

Operation of Approved Monitoring

If a source is subject to CAM, then the Part 70 permit holder shall:

- Commence monitoring upon issuance of the initial or revised Part 70 permit or by a later date specified in the permit.
- Properly maintain the monitoring.
- Keep the monitoring in operation at all times the emissions unit is operating, except for monitoring malfunctions, repairs and required quality assurance and control activities.

- Restore operation of the emissions units, including the control device, as expeditiously as practical in accordance with good air pollution practices, upon detecting an excursion or exceedance.
- Notify the District and submit a proposed revision to the Part 70 operating permit if:
 - The owner identifies a failure to achieve compliance with an applicable standard for which the approved monitoring did not provide an indication of exceedance while providing valid data, or
 - The results of compliance or performance testing document a need to modify the existing indicator ranges.

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