SUMMARY OF COMMENTS AND RESPONSES ON THE DRAFT CAM TECHNICAL GUIDANCE DOCUMENT

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1.0 GENERAL AND INTRODUCTION

This document contains a summary of public comments and responses to comments received on the October 1997 working Draft CAM Technical Guidance Document. The comments are grouped according to the section of the guidance to which they pertain. Thirteen sets of comments were received. Table 1 lists commenters and their affiliations. The numbers in brackets after each comment summary indicate which commenters submitted the comment.

TABLE 1. LIST OF COMMENTERS ON CAM TECHNICAL GUIDANCE DOCUMENT

No.	Commenter	Date
1	Mr. Roger D. Randolph Missouri Department of Natural Resources PO Box 176 Jefferson City, MO 65102-0176	1/5/98
2	Dr. Norman L. Morrow Exxon Chemicals Americas PO Box 3272 Houston, TX 77253-3272	1/30/98
3	Mr. Stan Romelczyk Air Pollution Control District County of San Diego 9150 Chesapeake Dr. San Diego, CA 92123-1096	2/2/98
4	Mr. Stan Dempsey, Jr. Colorado Association of Commerce and Industry 1776 Lincoln St., Suite 1200 Denver, CO 80203-1029	2/4/98
5	Mr. Gregory A. Green Oregon Department of Environmental Quality 811 SW Sixth Avenue Portland, OR 97204-1390	2/4/98
6	Ms. Ellen M. Adamo Air Products and Chemicals, Inc. 7201 Hamilton Blvd. Allentown, PA 18195-1501	9/16/97
7	Mr. Eugene A. Praschan American Automobile Manufacturers Association 1000 Park Forty Plaza, Suite 300 Durham, NC 27713	2/4/98
8	Mr. Dan Pearson Texas Natural Resource Conservation Commission PO Box 13087 Austin, TX 78711-3087	2/4/98
9	Mr. Curt Marshall Ms. Felicia George STAPPA/ALAPCO 444 N. Capitol St., NW, Suite 307 Washington, DC 20007	2/5/98
10	Mr. Mel Palis, PE Smith Engineering 2837 East Cedar St. Ontario, CA 91761	2/5/98
11	Mr. Patrick J. Iannotta, President Enerac 1300 Shames Dr. Westbury, NY 11590	1/30/98
12	Mr. Richard Hovan Land Combustion 2525B Pearl Buck Rd. Bristol, PA 19007-6807	11/97
13	Leslie S. Ritts, Counsel to NEDA/CARP 555 Thirteenth St., NW Washington, DC 20004	2/27/98

1.1 Comment: The EPA should clearly state in the technical guidance document how they intend the guidance to be used. It should not be identified as the only way to meet the Part 64 requirements. The EPA should encourage sources and permitting authorities to work together to develop monitoring plans that streamline the process and allow maximum flexibility when addressing the Part 64 requirements. The EPA should make it clear that permitting

authorities do not have to adopt or follow this guidance and EPA should not use this guidance as the test against which operating permit CAM applications will be reviewed and approved. To ensure that the CAM technical document does not prescribe or limit agencies' abilities to develop appropriate CAM approaches, EPA should not entitle the document as "guidance" (rename to "CAM Technical Reference Document").[4,5,8,9]

Response: Clarification has been added to the introduction of the document, to the introduction to Appendix A (example CAM submittals) and to Chapter 3 (introduction to CAM illustrations). The EPA does not agree with the suggestion to rename the document to "CAM Technical Reference Document." The EPA does not believe the word "guidance" implies a prescribed method of compliance that would limit the permitting authorities' right to develop other appropriate CAM approaches. Adding clarifying language to the body of the text should be sufficient to address this concern.

1.2 Comment: Permitting authorities should be cautioned against informally adopting this guidance when considering a monitoring approach for a source that is not subject to Part 64 or specific continuous emission monitoring requirements. The commenter is concerned that many minor sources could be asked to prepare monitoring plans that are significantly more onerous than they need to be. In the absence of periodic monitoring guidance, EPA Regions may be using the CAM guidance document improperly as periodic monitoring guidance. The EPA should include a statement in the introduction of the CAM guidance which explains that the guidance and examples are not intended to be used as Title V periodic monitoring. It would also help to document the distinctions between periodic monitoring and CAM plans and the differences between the applicability of the two programs. [4,13]

Response: The applicability section of the rule and the applicability description presented in the guidance document clearly state the criteria that must be satisfied for a facility to be subject to Part 64 (CAM requirements). It is clear that the guidance is applicable to the CAM rule and therefore is intended for sources subject to Part 64. A permitting authority that chooses to use this guidance for a source not subject to Part 64 would do so knowingly and fully aware of the significance of the monitoring requirements. Furthermore, the EPA does believe that this guidance could be used as the basis for periodic monitoring for units with control devices.

1.3 Comment: The incompleteness of this document is a major concern. The EPA should provide a mechanism for updating the document on a timely basis. This mechanism should be outlined in the current document. The EPA should provide an opportunity for comment on the information that has not been available during the current comment period. [5,7,8]

Response: The EPA has a mechanism in place for updating the document on a timely basis. An outline of the method has been added to the introduction section of the document. All new information will be made available to the public for a formal review and comment period.

1.4 Comment: The EPA should make the technical information in the document more user friendly. The amount and technical nature of the information in the document make it cumbersome and difficult to use. The EPA should divide the information into separate, manageable documents. Information in Sections 1-3, 4-6, and the Appendices could be included in separate documents. [9]

Response: The EPA does not believe that dividing the document into separate documents will make the document more user friendly. Because Chapters 2 and 3 provide background information for Appendices A and B, separating this information into separate documents could cause confusion. If the appendices (CAM monitoring approach submittals and illustrations) were separated from the guidance document, they may be misconstrued as the only way to meet CAM requirements, rather than as examples of some ways that CAM requirements could be met. To make the document more user friendly footers have been added to Section 4, Appendix A, and Appendix B so that the reader may more readily locate specific parts of these sections.

2.0 CHAPTER 1

2.1 Comment: One commenter posed several questions with respect to clarifying the discussion on applicability [1]. Each of these is addressed below.

2.1a. If a major emission unit does not use a control device, is CAM not applicable?

Response: CAM applies to a pollutant specific emissions unit when it is at a major source subject to Title V and all of the following are true: (1) there is an emission limitation for the pollutant, (2) the unit uses a control device to achieve compliance with the emission limitation, and (3) the precontrol potential to emit exceeds the major source threshold. If a

major emissions unit does not use a control device, CAM is not applicable because criteria (2) above is not satisfied.

2.1b. Does CAM apply to control "measures," such as watering or enclosing the unit, that do not use a traditional control device?

Response: CAM does not apply to "pollution prevention" techniques. Control measures, such as watering or enclosing the PSEU, that do not use a traditional control device are considered passive and as a result are not covered by CAM requirements. If on the other hand, the emissions unit was enclosed **and** vented to a control device, CAM would apply.

2.1c. Do fugitive sources such as haul roads or storage piles using control measures need to be evaluated with respect to CAM?

Response: The CAM rule applies only to those emissions units that are vented to a control device. Fugitive sources which are not vented through a stack, chimney, vent, or similar opening (such as emissions from an unpaved road) to a control device are not subject to Part 64. However, if the "fugitive" emission is a result of poor capture efficiency of process emissions that are intended to be collected and routed to the control device, CAM does apply.

2.1d. Section 2.2.2.2, (4) Monitoring Frequency, indicates the frequency of monitoring should be at least four times per hour for major emission units and at least once per day for "other" units. What are the "other" units if CAM only applies to emission units which exceed the major source levels?

Response: Critical language was left out in the discussion of frequency of monitoring in Section 2.2.2.2. The distinction is that the CAM rule applies to units with a **precontrol** potential to emit that exceeds the major source threshold. Once the unit is determined to be subject to CAM, minimum frequency of monitoring is determined by evaluating potential to emit based on **postcontrol** emissions. Units that exceed the major source threshold based on **postcontrol** emission levels must collect data for at least one indicator a minimum of 4 times per hour. Other units must collect indicator data at least once per day. Section 2.2.2.2 of the guidance document has been revised accordingly.

2.1e. Would a Federally enforceable emission/production limitation as established in a preconstruction permit or in the operating permit and where the use of a control device has been used in that evaluation, trigger the unit being subject to the CAM rule? [1]

Response: Yes. A Federally enforceable emission/production limitation is an applicable requirement.

2.2 Comment: In 1.2.1.2, it would be useful to clarify that emission standards and limitations derived from NSPS and NESHAP rules which were added or revised by amendment after November 15, 1990 are included in this exemption. [2]

Response: Whether or not an emission standard or limitation derived from NSPS or NESHAP rules which were added or revised by amendment after November 15, 1990 are exempt from CAM will depend upon the nature of the amendment and whether the amendment included monitoring requirements which satisfy CAM. A list of exempted NSPS and NESHAP regulations is being prepared.

2.3 Comment: In the last sentence of the first paragraph of 1.2.1.2, it should be clarified that Part 64 would not apply if the nonexempt standard were no longer the applicable requirement because of streamlining of duplicative requirements under Title V. [2]

Response: The EPA's White Paper No. 2 for improved implementation of the Part 70 operating permits program states that a source may propose in its application to streamline multiple applicable requirements into a single set of permit terms and conditions. The overall objective is to develop a set of permit terms and conditions that assure compliance with all applicable requirements for an emissions point or group of emissions points to eliminate redundant requirements. Multiple emission limits may be streamlined into one emission limit that is at least as stringent as the most stringent limit applicable. Streamlined monitoring, recordkeeping, and reporting requirements generally are those associated with the most stringent emission limit, but must assure compliance to the same extent as any subsumed monitoring. Streamlining is not a way to eliminate an applicable requirement, but a way to provide one set of permit terms to ensure compliance with all applicable requirements. Therefore, a PSEU subject to a nonexempt standard that has been subsumed is still subject to Part 64 if it meets the other CAM applicability criteria. The monitoring selected for the streamlined permit terms and conditions must comply with CAM requirements, as a minimum.

2.4 Comment: In 1.2.3, the third sentence should be revised by deleting "to determine if any additional information is required." Under Part 70, additional information can and will be requested after the completeness determination. The current language suggests that a permit

application cannot be declared complete if additional information will be needed or that a request for additional information reverses the completeness determination. For the same reason, the next to last sentence of this paragraph should be revised to "Once the CAM submittal is determined to be acceptable...." [2]

Response: The recommended wording changes were made.

2.5 Comment: In 1.2.4, the CAM requirement to maintain spare parts is mentioned. Many facilities no longer maintain their own spare parts inventories, but have the parts maintained by local vendors, with no significant impact on immediate availability. It would be useful for EPA to comment in the guidance document on whether such an arrangement meets the requirements of § 64.7(b)(2). [2]

Response: The EPA agrees that such an arrangement may be acceptable. A sentence was added to Section 1.2.4 to indicate sources may also make arrangements with local vendors that maintain spare parts inventories.

2.6 Comment: In the second paragraph of 1.2.4, the second sentence lists alternate recordkeeping systems. However, critical language is left out, suggesting that only the listed media may be used. We recommend revising this sentence as follows: "As an alternative to paper records, § 64.9(b)(2) allows owners and operators of affected units to maintain records on alternate media, such as microfilm, computer files, ..." [2]

Response: The EPA agrees with the commenter. The appropriate changes have been made.

2.7 Comment: The last sentence of the third paragraph of 1.2.4 should be revised by reversing the order of the phrases. The current language suggests that the monitoring plan, and presumably monitoring actions, be changed before approval of the permit modification. Such action would be illegal. If a Title V revision is necessary to implement a corrective action, QIP, or other CAM change, the source must submit the proposed permit revision and complete the permit revision process, including public hearings, etc., since monitoring revisions are significant revisions under Title V, before implementing the change. It is worth noting that this delay could result in many additional excursions before the change can be implemented, so this should be a consideration in setting QIP triggers. The discussion of QIP triggers should address repeat excursions that occur during the delay imposed by the Title V revision process. The QIP's

should not be triggered because of failure to implement corrective action findings which are under Title V review. [2]

Response: Minor revisions to the text were made to clarify this process. The changes would not be implemented until they have been approved by the permitting authority. It is true that this delay could result in additional excursions before the change can be implemented. However, the EPA believes that the decision of whether a QIP is triggered by these additional excursions, or these excursions are simply reported as such, is up to the permitting authority.

2.8 Comment: The guidance document should be expanded to clarify the criteria for a monitoring method to qualify as a CCDM. Many facilities are currently required to obtain fuel supplier certifications, employ leak detection and repair programs, and perform stack testing and process parameter monitoring under State permit programs. It is unclear whether these current monitoring methods qualify as CCDM's. [6]

Response: This comment seems to be based on a previous version of the rule and guidance document that included sources that did not use a control device. The commenter states that examples of CCDM's listed in the guidance document included fuel supplier certification, leak detection and repair programs, and stack testing and process parameter monitoring. Since the rule was revised to apply only to emission units that use control devices these examples of CCDM's were deleted and the table only lists CEMS as examples of CCDM's that would pertain to the rule. For a monitoring method to be considered a CCDM the method must be specified by the applicable standard or an applicable permit condition, the method must be used to determine compliance with the applicable emission limitation or standard on a continuous basis, and the method must provide data either in units of the standard or in units that are correlated directly with the compliance limit.

3.0 CHAPTER 2

3.1 Comment: Chapter 2 and Appendix A do not provide a clearly defined set of acceptance criteria on which to base an individual CAM plan. More complicated NO_x and VOC examples are needed to better define acceptance criteria for a CAM plan. The proposed CAM plan approach selection process appears complicated and does not provide a ready set of criteria for CAM plan development useful to both facilities and permitting authorities. The lack of such

criteria may lead to inconsistent approaches and limit the attempt to achieve this Title V program goal. [3]

Response: The intent of the guidance document is not to develop a prescriptive example for each and every pollutant, control device, and source type combination to be used as acceptance criteria on which to base individual monitoring approach submittals. Essentially, the acceptance criterion is simply to meet the general and performance criteria stipulated in the rule. The determination of whether a source has met these criteria is made by the permitting authority on a case-by-case basis. The selection process description and worksheet provided in the guidance document are to assist industry in evaluating their options in developing appropriate monitoring approaches for proposal to the permitting authority. This selection process was not intended to be used by permitting agencies to evaluate proposed monitoring plans. The EPA does not expect the approaches to monitoring to be completely consistent from facility to facility because the selected approach will depend on factors specific to each individual facility. To address concerns regarding guidance for permitting authorities in evaluating proposed monitoring approaches for meeting minimum CAM criteria, the EPA intends to develop a worksheet for permit reviewers. This worksheet will be made available for EPA workgroup and public review on the EPA's TTN prior to inclusion in the guidance document.

3.2 Comment: The QIP is a new mechanism for ongoing compliance - there should be examples in the guidance document. [3]

Response: The guidance document currently includes one example of a QIP for a fabric filter. This example is not based on an actual facility. The EPA understands that the QIP is a new mechanism and that additional examples would be helpful. However, EPA believes these examples should be based on actual case studies, and information is currently not available to develop actual examples.

3.3 Comment: The CAM rule requires that high emitting units collect four or more values per hour. The guidance document suggests there is some flexibility in deviating from this requirement. This appears warranted for steady state processes/control devices. The origin of the requirement for large units collecting at least four values per hour should be stated in the guidance document. If it is not clearly stated in the guidance document that the requirement for collecting four or more values per hour was derived from CEM requirements it will be difficult

for an alternative record collection plan to be adopted. The guidance document (2-11 and Appendix B) should state that the permitting authority may allow less frequent monitoring than four times per hour for large units if appropriate. [3,8]

Response: The requirement for collecting four or more data points per hour was derived from CEM requirements (i.e., part 60 general provisions requiring continuous monitoring systems to complete one cycle of operation for each successive 15-minute period). Furthermore, this frequency of measurement is adequate to monitor performance of add-on control devices. Instrumental systems for measuring operating parameters make it possible for the owner or operator to record data at these intervals for many parameters. Section 3.3.1.2 of the guidance document discusses the fact that a permitting authority may approve a reduced data collection frequency, if appropriate, based upon information presented by the owner/operator concerning the data collection mechanisms available for a particular parameter. Section 2.2.2.2(4) has been revised to indicate that less frequent monitoring may be approved by the permitting authority, if appropriate. Appendix B has not been revised since Appendix B refers to Section 3.3.1.2 (Chapter 3 is an introduction to Appendix B).

Note that it is EPA's intention that approval of less frequent monitoring is appropriate where frequent monitoring is not feasible because of the available data collection mechanisms for the parameter. It is not EPA's intention that permitting authorities should approve less frequent monitoring simply because the process or control device is a "steady state" operation. Whether a control device or process is steady state will affect the averaging period selected for the parameter. Nonetheless, for facilities monitoring multiple parameters on a control device, it might be appropriate to approve a reduced frequency of measurement for some of the parameters monitored while monitoring at least one of the parameters four times per hour. For example, for a venturi scrubber, the pressure drop could be measured four times per hour while the solids content of the scrubber liquor might be measured once per day. Similarly, for a baghouse, the pressure drop might be measured four times per hour while the visible emissions might be observed once per day.

3.4 Comment: Section 64.3(d)(2) states that CEMS that satisfy § 60.13 and 40 CFR 60 Appendix B monitoring requirements are deemed to satisfy the CAM performance criteria. Section 60.13 states that "if the CEMS is used to demonstrate compliance with emission limits

on a continuous basis, Appendix F . . . is applicable." Section 64.3(d)(2) only requires Appendix B, so this means that the QA/QC program in Appendix F is not required for CEMS used for CAM. However, because the CEMS is measuring concentrations of pollutants for compliance purposes, the more rigorous Appendix F QA/QC program should be followed for CAM. [3]

Response: The EPA does not agree with this commenter. If the CEMS is being used to demonstrate continuous compliance with the emission standard (i.e, the CEMS is the compliance method), then the CEMS would be a continuous compliance determination method (CCDM) as defined by the CAM rule and the PSEU would be exempt from CAM. Under the CAM rule, CEMS are used to indicate control device performance and provide a reasonable assurance of continued compliance with the applicable emission limitations. The quality assurance requirements of the rule are based on the minimum degree of ongoing checks that are necessary to ensure that the data is reliable for purposes of indicating whether the unit continues to remain in compliance and whether corrective action is necessary to restore the control device to normal operating conditions. The quality assurance requirements of Part 64 are not intended to be as intensive as the quality assurance provisions required for monitors that are used as a continuous compliance determination method (Appendix F to Subpart 60). The EPA believes that with respect to CEMS used for CAM, the general requirements for assuring ongoing data quality that are contained in 40 CFR 60.13 and the performance specifications in Appendix B of Part 60 provide adequate quality control checks.

3.5 Comment: From the discussion in the guidance document, it appears that a separate CAM plan is required for each pollutant specific emissions unit. In the illustrations, the primary pollutant is highlighted, along with other pollutants controlled by the device. For sources that have more than one PSEU controlled by the same device, we believe that a single plan should suffice for all pollutants of concern. This will assist the facility in complying by consolidating requirements and reducing repetitive paperwork. [6]

Response: The EPA agrees with this commenter. The guidance document has been revised to clarify that for sources with more than one PSEU controlled by the same device, the facility owner or operator may submit a single monitoring approach submittal (CAM plan) for the control device that identifies the PSEU's affected and any process or associated capture

device conditions that must be maintained or monitored to comply with the CAM general criteria. Similarly, if a single PSEU is controlled by more than one control device that are similar in design and operation, the owner or operator may submit a monitoring approach submittal (CAM plan) that applies to all the control devices. The monitoring approach submittal (CAM plan) must identify the affected control devices and any process or associated capture device conditions that must be maintained or monitored to comply with the general monitoring criteria.

3.6 Comment: An example of the heavy emphasis on stack testing is the hierarchical statement in Section 2.3.2, Selection of Indicator Ranges, pages 2-25 and 2-26, "parameter data collected during performance testing are key in establishing indicator ranges that represent good operating conditions." Although the document continues with "other relevant information, such as engineering assessments," etc., the strong preference statement establishes the tone and direction in actual practice. We have already experienced problems with one region who requires that all testing be performed at maximum capacity, which does not leave room for actual operating ranges that are, in most cases, somewhere below maximum capacity. It does not appear reasonable to provide guidance that could require the use of parameter data based on performing stack testing over varying capacity levels. A CAM indicator is supposed to represent a reasonable range beyond which there could be a problem requiring further investigation. It is recommended that the referenced hierarchy be de-emphasized to the point of providing equal weight to the other referenced methods using historical data, engineering assessments, etc. [7]

Response: The CAM rule emphasizes parameter data collected during performance testing as key to establishing a baseline for indicator ranges. The EPA understands concerns raised by industry about the permitting authority's practice of requiring performance testing at maximum conditions, which could result in indicator ranges that are not representative of normal operating conditions. However, the EPA has attempted to stress that other information such as historical monitoring data and engineering assessments can be used in combination with parameter data collected during performance testing to establish indicator ranges that are representative of normal operating conditions. As long as changes are not made to the control device settings used during normal operation (e.g., changes in incinerator temperature set points), the results of performance tests can be used in combination with historical monitoring data collected during periods of normal operation and engineering assessments to establish

indicator ranges indicative of normal operation. The commenter is referred to the example Monitoring Approach Submittal (CAM Plan) A.1a in Appendix A of the guidance document, which attempts to make this point.

This example monitoring approach submittal is for an incinerator used to control VOC emissions from coating operations. Per State requirements, the performance test was conducted while the coating line was operated near the maximum production rate (higher VOC loadings to challenge the incinerator). During the performance test the incinerator temperature was near 1700°F, even though the minimum temperature set point for the incinerator was 1500°F. Historical data indicate that during normal operation the incinerator operates at 1500°F. The higher temperatures during the performance test are due to higher VOC loading to the device and are not the result of a change in operation of the incinerator (e.g., changing the burner set point). In establishing an appropriate indicator range, the facility considered historical monitoring data and published literature on incinerator control efficiency as a function of temperature in addition to the results of the performance test. The historical data indicate that normal loading to the incinerator will result in chamber temperatures of 1500°F. According to the published literature, a thermal incinerator is expected to achieve 95 percent or greater destruction efficiency at 1500°F. The performance test confirms acceptable performance of the incinerator, although during the test the incinerator temperature was generally nearer 1700°F than 1500°F. Requiring the higher temperature would provide a very high assurance that the DRE will be achieved because the DRE was demonstrated by emissions testing at this temperature. However, given that the higher temperature was a result of intentionally challenging the incinerator with higher loadings to measure its performance, that normal coater operation more typically results incinerator temperatures in the 1500°F range, and that engineering principles and published literature suggest 1500°F achieves the desired DRE, the higher incinerator operating temperature was not selected as the indicator range. The indicator range selected is an incinerator temperature "greater than 1500°F at all times." The example CAM monitoring submittal concludes that maintaining a temperature of 1500°F provides a reasonable assurance of compliance, which is the goal of CAM.

Note that this approach for establishing an indicator range (combination of test data, historical data, and engineering principles) could not be used in lieu of a monitoring requirement

of an applicable regulation that specifically stipulates how the reporting requirement for the control device operating parameter is established based upon the results of the performance test. For example, NSPS subpart WW -- Standards of Performance for the Beverage Can Surface Coating Industry states that the owner/operator shall report "each 3-hr period when cans are processed, during which the average temperature of the device [incinerator] was more than 28°C below the average temperature of the device during the most recent performance test." A separate CAM indicator range could be established in addition to the level established in the regulation, if desired (e.g., historical data might support an excursion being defined as an average temperature of more than 20°C below the average temperature of the device during the most recent performance test).

3.7 Comment: In anticipation of the completion of AAMA's automotive spray booth adsorber protocol, it is recommended that an "incomplete" or "Other CAM Plans in Development" section be added to show that other approaches are being developed. Also, many plant boilers and various smaller parts painting areas will require CAM plans. Many or most of these areas have not been addressed in the current draft, particularly with regard to any unique aspects that may be present. Forcing a CAM approach on all industries, based on the study of only one industry, may be inappropriate and unreasonable. More examples of CAM approaches must be offered and EPA should indicate that it intends to provide additional examples of more reasonable approaches in the near future. [7]

Response: The EPA intends to include additional example CAM plans as data become available. Because the CAM plans are based on actual facility data, the number of CAM plans is limited by the number of facilities from which data were obtained via State agency files or via voluntary submittal from industry. The guidance document is a "living" document in that it will be updated as new information becomes available. These updates will be posted on EPA's Internet site.

3.8 Comment: The language on page 2-16 (". . . so that excursions from the operating ranges can be addressed prior to potential exceedances") and page 2-25 ("Monitoring allows the owner or operator to identify problems with the operation and/or maintenance of the control device before an emissions unit fails to comply") seems to imply that the indicator range must be set below the exceedance level. This is inconsistent with the guidance document's statement on

page 2-12 that if the emissions are being monitored directly using CEMS that the indicator range will be the emission limitation. The guidance document should be revised to clarify that indicator ranges both at or below the exceedance level are appropriate. [8]

Response: If the monitoring approach is based on monitoring control device operating parameters (as opposed to direct monitoring of emissions with a CEMS), the specific control performance indicator level at which an emissions exceedance would occur is not precisely known. The indicator range is established at a level that will ensure the control device continues to operate properly. An excursion from this indicator level indicates a change in control device performance. If the monitoring approach uses CEMS to measure emissions, establishing an indicator range generally is not required because the level at which an exceedance of the emission standard occurs is monitored. Note, however, that an owner or operator could establish an indicator range below the exceedance level, if desired. The statement on page 2-25 was revised.

3.9 Comment: This commenter submitted proposed quality assurance requirements for CAM systems which address calibration, preventive maintenance, accuracy audits, and reporting.[12]

Response: The proposed quality assurance requirements submitted by the commenter establish specific requirements and criteria that would apply to all CEMS, PEMS, and parameter monitoring systems used to comply with CAM. Because of the diversity of the types of systems that will be used to comply with the rule, EPA does not believe it is appropriate to establish such a universal requirement. The appropriate QA/QC will depend upon the device type, application, and accuracy necessary for the specific application. CAM requires the owner/operator to submit general information identifying the key QA/QC practices that will be used for the specific application to assure that the necessary data quality is maintained.

3.10 Comment: In 2.2.2.2, paragraph 1c, an accuracy of ±4°F is specified for a Type K thermocouple, but Table 4.2-2 gives the accuracy of Type K thermocouples as ±4°F or ±0.75 percent. Thus, at temperatures above 5334°F [534°F sic], a Type K thermocouple would not meet the specified range of ±4°F. This example and all the other thermocouple examples throughout the document should be revised to reflect the complete specifications in Table 4.2-2 or thermocouple accuracy specifications should be dropped. There really is no reason to have

this specification, since you can only buy thermocouples with the standard specifications or better. In addition, the table does not make clear that where both a degree and percent tolerance are given, the larger value applies. As a result, there are many places in the document where thermocouple accuracy is given as an example and only a number of degrees is used to specify the accuracy. [2]

Response: The specific example cited is an example of the types of information to be included in a CAM monitoring approach submittal for a specific case. The intention was not to specify the accuracy tolerance of a Type K thermocouple in general terms. As the commenter states, all thermocouples sold will meet the minimum criteria. The intent was to provide a specific example of the type of information that might be provided to address the Part 64 criterion for a specific case; a thermocouple used to measure thermal incinerator combustion chamber temperature. However, as indicated by the commenter, as an example it is incorrect, since one would not expect (nor need) a thermocouple to be accurate to 4°F at the typical temperatures at which incinerators operate. The example has been revised.

However, the ". . . many places in the document where thermocouple accuracy is given as an example and only a number of degrees is used to specify accuracy" is intentional; at least in cases where a value is stated as the acceptance criterion for a specific case (e.g., in an example CAM submittal). For example, in the case identified above (thermal incinerator) where the temperature being measured is typically 1500°F, an accuracy of ±15°F might be specified for the calibration check acceptance criteria (even though the design specification for the thermocouple sensor is 11°F [0.75 percent of the measured value]. In the guidance document, where an accuracy acceptance criterion is presented for a specific case (in example CAM submittals), number of degrees may be used to specify that accuracy with respect to the measurement being made; this approach seemed to be more straightforward for specific examples. Nonetheless, the acceptance criteria also can be presented as a percent of the calibration value or a combination of degrees or percent, as suggested by the commenter. Where the accuracy tolerance of a thermocouple is cited in general terms (Chapter 4 tables), both number of degrees and percentage of measurement are given to specify the tolerance. The information in Table 4.2-2 has been corrected to indicate that where both values are given, the larger value applies.

4.0 CHAPTER 3

4.1 Comment: More explanation is needed on presumptively acceptable CAM in Chapter 3. This category of monitoring systems is exempted from the requirement of submitting a justification of its use in a CAM plan, yet the reasons for its exemption are not addressed thoroughly in the guidance document. The CAM rule references the guidance document for a list of presumptively acceptable equipment and monitoring systems, but the document does not appear to contain such a list. The guidance document should clarify that the permitting authority may develop presumptively acceptable CAM plans consistent with the presumptively acceptable rules or guidance provided by EPA.[1,8]

Response: The intention is to provide a list of regulations that include monitoring that meets all of the general and performance criteria of Part 64. If the monitoring requirements of a regulation meet all the criteria of Part 64, then the monitoring is "presumptively acceptable" for use by a facility of a similar nature to that addressed by the regulation. The EPA has reviewed all of the monitoring requirements of the Part 60 and Part 61 regulations and evaluated the requirements against the Part 64 criteria. Although many of the regulations require monitoring approaches that are acceptable for CAM, most of the regulations do not have speciations for all of the Part 64 criteria. For example, the regulation may indicate the parameter to be monitored but does not specify how to establish the indicator range or does not specify general QA/QC procedures for the monitoring system. Consequently, these regulations are not "presumptively acceptable" because some of the required elements are missing; these elements must be addressed in a monitoring submittal.

Section 3 has been revised to more clearly state the criteria used to determine if the monitoring requirements of a regulation are "presumptively acceptable." The majority of the Part 60 and Part 61 regulations were found to be missing some element of the Part 64 criteria and, therefore, are not listed as presumptively acceptable. A memorandum summarizing the evaluation of the Part 60 and Part 61 regulations is being prepared and will be provided for the record.

While permitting authorities may develop presumptively acceptable CAM submittals, these presumptively acceptable CAM should not be prescriptive. That is, presumptively

acceptable monitoring provided by a State should not limit or pre-empt a facility from developing other monitoring approaches and submitting this monitoring for review and approval.

4.2 Comment: The proposed monitoring illustrations in the document are helpful, however, the EPA should emphasize to the States that sources are not limited to these monitoring schemes and may use any monitoring approach, as long as supporting data can be provided to demonstrate that the monitoring plan will reasonably assure compliance as required under Part 64. [6]

Response: The EPA agrees with this commenter. Language was added to Chapter 3 (an introduction to CAM illustrations) to further clarify that the monitoring approaches presented in the illustrations are not prescriptive and owners/operators are not limited to the monitoring approaches addressed by the illustrations. Owner/operators should evaluate monitoring approaches for their specific facilities and should submit a monitoring approach that satisfies Part 64 requirements.

5.0 CHAPTER 4

5.1 Comment: Section 4 includes extremely detailed design, performance, calibration, and quality assurance specifications for a variety of instruments. The commenter is concerned that the information in Section 4 will be used by States as the standard for QA/QC and that sources will have to prove to their permitting authorities that their procedures meet this level of QA/QC at a minimum. Following manufacturer's recommendations or good engineering practice for QA/QC should be adequate to meet CAM requirements. In addition, with this level of technical description, the section will require continual updating, or it will become technically inaccurate over time. Section 4 should be eliminated, or only the reference sections retained, to eliminate these concerns. [6]

Suggestions regarding calibration frequency found on 4-17 of the document for flow monitoring indicate a calibration frequency should be set based on manufacturer's recommendations. However, the temperature and pressure transducer descriptions suggest that applicable military specifications be used as the starting point and assume that manufacturer's routinely supply this information. These descriptions also assume that manufacturers base their frequency recommendations on these specifications. We recommend a calibration frequency based on manufacturer's specifications be specified uniformly. [8]

Response: The objective of Chapter 4 is to provide reference materials for various types of sensors commonly used to measure process and/or air pollution control equipment operating parameters. This chapter is not intended to specify prescriptive QA/QC procedures that must be included in CAM monitoring approaches to comply with Part 64. Instead, the chapter focuses on describing the types of sensors commonly used and identifying basic calibration techniques. Part 64 requires QA/QC practices that are adequate to ensure the continuing validity of the data. The EPA believes that QA/QC procedures based upon manufacturers' recommendations or good engineering practices that ensure the continuing validity of the data are adequate to meet CAM requirements. Based upon manufacturer's recommendations is emphasized because, in some cases manufacturer's recommendations may involve more than is necessary to assure quality data for the specific application; in other cases, the manufacturer's recommendations may not be adequate. The introduction to Chapter 4 has been revised to clarify that Chapter 4 is intended only as a reference.

6.0 APPENDIX A - EXAMPLE MONITORING APPROACH SUBMITTALS

6.1 Comment: Of particular concern is the level of detail in the CAM plans and illustrations. If EPA's example CAM plans and illustrations become binding or prescriptive, State and local permitting authorities would be required to spend valuable resources reviewing lengthy CAM plans and incorporating the terms of those plans into Title V permits. Changes to CAM plans could require permit revisions, which would represent a significant additional burden to agencies. [9]

This level of detail is not necessary to assure compliance with the applicable requirements. We believe that the information provided in the examples is much more extensive than that required by the CAM rule or what is suggested as the appropriate level of detail by the CAM preamble. Suggestions for reducing the level of detail in the example plans are outlined below (See comments 6.2 through 6.6). [8]

Response: The examples included in Appendix A are intended as examples only, and do not prescribe a required level of detail. In some cases, more detail than might actually be necessary was included in the justification to provide the reader with sufficient background information about each PSEU. In general, the examples provide the maximum level of detail that EPA would expect to see in a submittal for a typical situation. Each permitting authority has

the right to provide additional guidance specifying the level of detail and supporting information they wish to receive (or not receive) in a monitoring submittal to support the proposed monitoring approach. Furthermore, it should be recognized that the degree of complexity of the control device application being monitored will vary; this should be taken into account regarding the level of information and documentation required.

With respect to the concern about the level of detail included in the examples resulting in unnecessary modifications to permits, the information included in Table 1 (the information to be incorporated into the permit) of each example monitoring submittal was reviewed and revised. Details related to the types of monitoring devices and recording systems (e.g., "type K" thermocouple) were deleted so that an owner/operator would not be restricted from making minor changes to their monitoring instrumentation or recording devices. However, in the examples, minimum acceptable accuracy criteria were retained in Table 1 to address the Part 64 requirement for data representativeness.

6.2 Comment:

MONITORING APPROACH JUSTIFICATION:

Background:

This information is redundant; Texas applicants are already submitting process descriptions with their Title V permit applications. These descriptions may be necessary for example purposes, but we recommend that the document be revised to clarify that if this information is included in the permit application it need not be included in the CAM plan. [8]

Response: The EPA agrees with this commenter; the background information was included in the Appendix A examples to benefit the reader. The permitting authority may or may not require this information in monitoring approach submittals. As indicated in Section 2 of the Guidance Document (Figures 2-1a and 2-1b), this information is not a required element of a monitoring submittal.

6.3 Comment:

MONITORING APPROACH JUSTIFICATION:

Rationale for Selection of Performance Indicators:

This is information of which the permitting authority is already aware. We recommend that this discussion be submitted only upon request of the permitting authority, if the

appropriateness of the proposed indicator is not readily apparent. As an alternative, EPA could develop a list of appropriate parameters for different types of control devices (or use those in the CAM illustrations). If the applicant uses an indicator on the list, no further justification would be required. [8]

Rationale for Selection of Indicator Ranges:

Many of the examples give three different justifications for a single indicator range. For example, A.1 lists expected destruction efficiency from the Air Pollution Engineering Manual, historical data, and performance test results. Any one of these should be sufficient. The guidance document may be setting a precedent for multiple justifications where they are not necessary. The EPA could clarify that the justifications are all options, but would not all need to be submitted. In addition, instead of a discussion of the performance test, the applicant could simply reference the performance test report submitted to the Agency. Also, many of the plans contain information that is not required by the rule, e.g., how the applicant will respond to excursions. [8]

Response: Again, this level of detail was included partly to give the reader the maximum amount of information about each example. However, although CAM leaves the selection of the monitoring approach up to the owner/operator, the owner/operator must submit justification that describes how the proposed monitoring satisfies the minimum requirements of Part 64. States certainly can provide additional guidance with respect to how much information they want and whether it is sufficient to simply reference emission test reports that they know are on file at the Agency.

The EPA does not feel it is appropriate to provide a simple list of "acceptable parameters" that require no justification. One concern with such a list is that if a parameter is not on the list, permitting authorities will, for all practical purposes, consider that parameter "not approved." States may instruct their sources to keep the justification very brief.

Submitting only "one justification," such as referencing a performance test and date, for the indicator range selection may be sufficient for a particular source. However, in some cases "multiple justifications" (really different parts of a single justification) might be warranted. The EPA believes that, ideally, the indicator range should use information (the baseline data) obtained during performance tests and during an extended period (3 to 6 months) of normal

operation. Consequently, the owner/operator should be given the opportunity to provide this information in the form of a justification, if they feel it is appropriate or necessary to establish their indicator range. [See comment No. 3.6 regarding the concern about establishing indicator ranges based solely on performance tests conducted at maximum operating capacity].

6.4 Comment:

PERMIT CONTENT REQUIREMENTS (Monitoring Approach Table):

The heading "Indicator Range" suggests an enforceable indicator range. The heading should be revised to "Corrective Action Indicator(s)." [2]

The examples all seem to give specific numbers for the indicator ranges. Some of the examples should include procedures, to show that CAM allows other approaches (e.g., "corrective action is triggered by a temperature X° lower than the average temperature during the last performance test"). We believe provision should always be included for revising the indicator range as a result of corrective action or QIP findings without reopening the Title V permit. Failure to consider the whole operating range or setting the indicator range too narrowly is likely to be a primary reason for excursions and a common corrective action finding. As long as a record is maintained of the basis for any indicator revision, revisions should be encouraged. [2]

Some examples should be included where the indicator range is tiered (e.g., based on capacity, firing rate, or chemical stored/processed). [2]

Response: The EPA has retained the title "Indicator Range" in order to be consistent with language in Part 64. Text has been added to each table to indicate that an excursion triggers an investigation, corrective action, and reporting. The indicator ranges used in the examples are all based on actual facilities' monitoring approaches, but setting the indicator range as suggested by the commenter also is appropriate. Section 2.3.2.2 (Approaches for Determining Indicator Range) has been revised to include the approach suggested by the commenter that specifies a baseline measurement (e.g., average temperature during the last performance test) rather than a specific numerical value. The EPA intends to include additional example monitoring approaches as information becomes available; if examples that incorporate tiered indicator ranges become available, they will be included.

6.5 Comment:

Measurement Approach:

Some of the CAM plans specify not only that a thermocouple will be used, but that a Type K thermocouple will be used. If codified in the permit, a change in the type of thermocouple will require a permit revision. We recommend specifying only that a thermocouple will be used, not the type. [2,8]

Data Representativeness:

Requiring the permit authorities to codify this level of detail (range, accuracy, sensitivity) will result in an excessive number of permit revisions. The permitting authorities should focus their resources on meaningful environmental protection rather than a permit revision due to a change with a chart recorder. The level of detail provided in the CAM plans should be consistent with the level of detail provided in the CAM illustrations. [2,8]

QA/QC Practices and Criteria:

The QA/QC procedures can be very detailed and in many cases are not suited to permit terms or conditions. Rather than trying to codify specific QA/QC procedures in the permit, the permit should specify that the permit holder will follow manufacturer's recommendations and maintain the appropriate instructions or manuals on site. This will ensure that detailed QA/QC procedures are followed, is consistent with common industry practice, and will help reduce the number of permit revisions. [8]

Monitoring Frequency and Data Collection Procedure:

If the language in Table 1 from A.9 ("voltage graphs and alarms are printed daily") were codified in a permit and the permit holder were not able to print the graph on a particular day, the permit holder would be in violation of their operating permit. Another example is A.14; any change in these detailed procedures will result in the need for a permit revision. The level of detail provided in the CAM plans should be consistent with the level of detail provided in the CAM illustrations. [8]

In some tables, the heading for D is "Monitoring Frequency and Data Collection Procedure." In others it is "Monitoring Frequency, Data Collection Procedures, and Averaging Period." We recommend all three items have separate boxes. Averaging time should be clearly

specified and monitoring frequency should be separated from recordkeeping frequency and clearly defined. [2]

Response: In general, EPA agrees with the commenter regarding not providing a level of detail in the permit that would require unnecessary permit revisions. Some of the details on monitoring devices and recording devices (e.g., range, standard tolerance) were removed from Table 1 in each of the examples. However, EPA does believe it is appropriate to specify a minimum accuracy criterion and the key QA/QC procedure(s) and their frequency to be used to ensure representative data. This is consistent with the requirements in Part 64.

Although calibration procedures should be based upon manufacturer's recommendations, simply stating in the permit that "manufacturer's recommendations will be followed" may not be the best approach idea, even though it is frequently used. In some cases the recommended procedures may be impractical or unnecessarily stringent for the application; in other cases they may not be adequate. The EPA believes that identifying the general approach to be used for QA/QC checks is a good alternative to simply stating "manufacturer's recommendations will be followed." (Also see comment No. 6.7.)

6.6 Comment: It should be made clearer what "operating time" means in the data availability examples. Does it include process or control device startup and shutdown periods? Malfunction periods? Data availability should be added to each of the other examples and at least in a few cases the amount of data needed to have a valid hour be addressed. [2]

Response: In the example monitoring submittals where data availability was addressed, the explanation of data availability has been revised for clarification. Because data availability is not a requirement for the monitoring approach submittal, EPA does not intend to add any additional examples at this time. Furthermore, because CAM does not require a specific minimum data availability (e.g., 90 percent), EPA believes that it is not necessary to stipulate a specific procedure for calculating data availability in the guidance document. Because data availability will be incorporated into permits on a case by case basis, the flexibility exists to address specific data availability calculation procedures on a case by case basis, if necessary.

In general, the amount of time that monitoring data are available includes all periods when the process is operating and valid monitoring data are being recorded. Data availability is calculated based on the total process operating time and the amount of time that monitoring data

are available. If the process is operating then monitoring data should be recorded. Even though excursions or exceedances during startup, shutdown, or malfunctions of the process may not be violations of the emission limit, the monitoring system should be operating and recording during these periods of process operation just as during "normal" process operation, and excursions must be reported. "Process operating time" should not include startup or shutdown of the control device (prior to or after the process has been started or shut down) but would include malfunction periods of the control device while the process is operating. The monitoring system should still be operating during control device malfunctions. (Some facilities monitor their control devices around the clock, but the process actually operates only a few hours of the day; in this instance, only those hours when the process is operating and valid monitoring data are collected would be included in determining the amount of time that monitoring data are available.) The time during which monitoring system malfunctions occur, or the monitoring system is out of service and no data are recorded, is not included in determining the period of time for which monitoring data are available.

6.7 Comment: In all discussions of QA/QC procedures and all examples and illustrations, the current language specifies following manufacturer's specifications. This needs to be replaced with a requirement to "calibrate, maintain, and operate using procedures that take into account manufacturer's specifications." Manufacturer's procedures are not always available. In some cases they can't be followed for safety reasons. They may be overly conservative or require regular preventive replacement of parts (unnecessary where instrumentation expertise is available). This requirement may also prevent the use of additional or more frequent QA/QC procedures and adjustment of the QA/QC procedures based on the corrective action requirements of the rule. Thus, a source which changes its procedures as a result of corrective action may be in violation of the requirement to follow manufacturer's specifications and unable to certify compliance under Title V. [2]

Response: The EPA agrees with this commenter. The intention was to base QA/QC on manufacturer's instructions and to specify the key QA/QC checks and acceptance criteria in the example monitoring approach submittals. The language in the illustrations has been changed per the commenter's suggestion.

6.8 Comment: In most of the examples and illustrations, where digital data systems are mentioned it is generally implied that such systems are continuously recording the measured parameter. The wording in these cases should be revised to clarify that while the sensor signal is continuously sent to the data system, the signal level is measured less often (e.g., at least once per minute) and the data are recorded on some less frequent basis (e.g., once per hour). Digital systems do not make and maintain records of every measurement made by a sensor. A typical record retention is hourly averages. [2]

Response: Where needed, the examples have been reworded to clarify the data monitoring, recording, and averaging frequencies.

6.9 Comment: In example A.1b, an O_2 data availability is given, but an O_2 analyzer is not mentioned elsewhere in the example. [2]

Response: The O_2 data availability was removed from example A.1b.

6.10 Comment: One specific example that appears to be missing is a CAM approach for VOC capture systems, including total enclosures and partial enclosures. [5]

Response: Agreed. The EPA is currently gathering information and hopes to prepare an example CAM approach for VOC capture systems. Any information the commenter is able to provide is welcome.

6.11 Comment: The incomplete example A.5 is of concern to AAMA. This single outlined example for carbon adsorption would lead most anyone to its key monitoring requirement: continuously monitor inlet and outlet VOC concentration. The AAMA is continuing to work on a reasonable alternative monitoring approach for automotive painting operations. This single example in the document is based on alternating carbon canisters, which is early adsorber technology. More sophisticated adsorber systems, involving revolving wheels incorporating impregnated surfaces with carbon and other medium, are more the norm today. Newer systems require newer approaches for monitoring. [7]

Response: The EPA agrees that examples using other monitoring approaches (e.g., break through threshold monitors, monitoring of process and regeneration cycle parameters) should be provided and is actively seeking information for case studies. At this time, EPA has received data only from the facility whose approach is outlined in example A.5. The EPA would appreciate any data AAMA can provide.

6.12 Comment: In example CAM plan A.1, "periodic inspection and tuning of burner" is listed as the measurement approach. The term periodic is too vague for a permit term describing the required monitoring frequency. Permit terms need concrete requirements that are enforceable. Replace "periodic" with a specified frequency. [8]

Response: Requirements for annual inspection and maintenance of the burner and daily visual inspection of the burner flame pattern have been incorporated into example A.1a.

6.13 Comment: The majority of the CAM plans contain information regarding a QIP. The requirement to include QIP thresholds in the permit is left to the permitting authority. The EPA should clarify that QIP thresholds be submitted upon request by the permitting authority, not with the initial CAM submittal. [8]

Response: The commenter is correct; a QIP threshold does not need to be submitted with the monitoring approach submittal. The permitting authority may choose whether or not to have the source propose a QIP threshold in their monitoring approach submittal. Although the QIP thresholds were retained in some of the examples, a note was added to Appendix A to indicate that QIP thresholds are not required with the submittal.

6.14 Example 1a:

Comment: The proper installation and placement of the thermocouples are critical to the accurate indication of chamber temperature. The commenter gave factors affecting the chamber temperature reading and recommended inspection, preventive maintenance, and burner maintenance requirements. [10]

Response: A work practice indicator for an annual inspection and maintenance of the burner was incorporated into example A.1a. In addition, a daily visual inspection of the burner flame pattern was added to confirm the presence of a blue flame (rather than an orange-yellow flame) during this daily inspection.

6.15 Comment: This commenter submitted a parametric NO_x emissions monitoring protocol developed for oil- and gas-fired turbines. It incorporates a concept the commenter refers to as "sequential parametric refinement." [11]

Response: The EPA will review this protocol and consider it for inclusion in the next draft of the guidance document.

7.0 APPENDIX B - ILLUSTRATIONS

7.1 Comment: In illustrations 16a, b, and c, under 2.6, "outlet VOC concentration" should be changed to "outlet VOC concentration or destruction efficiency," since in many cases the requirement is to achieve a particular percent destruction, rather than to achieve less than a particular outlet concentration. [2]

Response: The EPA agrees with this commenter. The appropriate changes have been made.

7.2 Comment: In illustration 19, it should be clarified that it is the presence of either a flare flame or pilot flame that is being monitored. As written it appears that monitoring of the flare flame, rather than the pilot's, is required. [*Suggested alternate language was included in an alternate flare illustration submitted by the commenter*.] Under item 2.6, we recommend deleting the requirement for a visible emissions observation during the emissions test, because such a reading is not needed to set the indicator range. Under 3.1, it is stated that for large emission units, four data points each hour is required. It needs to be clarified how this would be done for a visible emissions requirement, or that the four data points per hour requirement applies only to the pilot flame monitor. If the four data points per hour requirement applies to flare visible emissions, the illustration is not applicable to large units. [2]

The commenter submitted an illustration for flares where the presence of the flame is monitored by traditional methods and visible emissions are monitored using a video camera. [2]

Response: The EPA agrees with this commenter. The parameter monitored is the presence of a pilot flame, not the flare flame. The requirement for a visible emissions observation during the emissions test is not needed to set the indicator range. The four data points per hour requirement applies to the pilot flame monitoring. However, because EPA has indicated that the monitoring required by 60.18 (presence of pilot flame) is presumptively acceptable for flares meeting the requirements of 60.18, EPA has decided to remove the illustrations for flares from the guidance document to avoid confusion (see comment No. 7.3).

The example illustration submitted by the commenter is a good illustration of a monitoring approach; however, as noted above, EPA has decided to remove flare illustrations from the document. Therefore, this new illustration was not included in the revised document.

7.3 Comment: The example on page B.7-2 is more rigorous than § 60.18, which is presumptively acceptable. Section 60.18 does not include a specified frequency for determining visible emissions. The example specifies daily visible emissions checks. Setting the precedent for case-by-case CAM to be more stringent than presumptively acceptable will result in inconsistencies in the implementation of the rule. CAM plans for flares should be based on § 60.18. [8]

Response: The illustrations in Appendix B are intended as examples of methods that might be used to satisfy Part 64. Identifying presumptively acceptable monitoring for a PSEU is not intended to establish limitations on the owner or operator's right to propose a different approach that satisfies Part 64 requirements. Identifying monitoring as presumptively acceptable is intended to eliminate the requirement for a facility to justify the use of the presumptively acceptable monitoring (except to show it applies to the specific case). The owner/operator may have a reason for not choosing to use or for exceeding the presumptively acceptable monitoring (i.e., to achieve a higher level of confidence with respect to maintaining compliance). Furthermore, identifying monitoring as presumptively acceptable does not prohibit a permitting authority from requiring additional or more stringent monitoring. Presumptively acceptable monitoring is not prescriptive. Including examples of monitoring that exceed presumptively acceptable is not inconsistent with the intent of Appendix B to provide information on different monitoring approaches for consideration. Nonetheless, to avoid confusion, EPA has removed the flare illustrations from Appendix B, as suggested by the commenter.

7.4 Comment: Over the past 15 years, the EPA has come to accept that materials combusted in the flame zone of large boilers and process heaters and/or which are introduced as or with the primary fuel for the device will be combusted adequately to meet the destruction requirements in the air rules. Thus, all the newer rules, including MACT rules which are presumptively acceptable under CAM, exempt from monitoring and performance test requirements boilers and process heaters over 44 MW where the regulated material is introduced into the flame zone, and boilers and process heaters into which the regulated material is introduced as or with the primary fuel. Some older rules where this understanding was incorporated include a requirement to record periods of operation of the combustion device, but even this monitoring requirement has been dropped in newer rules, because of the understanding

that introduction of fuel into a device that is not operating is unsafe and does not happen. We believe CAM should focus on assuring that the regulated stream is, in fact, introduced into the flame zone or as or with the primary fuel. [2]

The commenter included an example illustration for a process heater or boiler used for VOC control. [2]

Response: The example illustration submitted by the commenter will be included in a package of new illustrations and example CAM submittals to be posted on the EPA's TTN for public review and comment. The EPA will address comments received on this package and update the guidance document to include the new information, as appropriate.

7.5 Comment: The CAM illustration on page B.1-3 specifies that RM22 and RM9 can be used to measure visible emissions. However, a reading of 0 percent opacity doesn't mean there are no visible emissions. We recommend EPA clarify whether this example applies to the requirement to have no visible emissions or 0 percent opacity. [8]

Response: The CAM illustration was revised to clarify that the illustration applies to the use of either RM 9 to measure opacity of emissions or RM22-like observation techniques to measure the presence (or absence) of visible emissions. In Section 2.1 of the illustration, opacity of emissions should be listed as an indicator to be monitored as an option to visible emissions measurements.

7.6 Comment: The CAM illustration on B.7-2 requires a "trained observer using RM22." This implies that the observer needs some sort of certification to be able to perform these readings. RM22 is not a test method that requires certification. Replace "trained observer" with "observer familiar with RM22." [8]

Response: The EPA agrees with this commenter. Appropriate changes were made to the illustration.

7.7 Comment: Illustration 11a. The monitoring of the temperature provides evidence that the temperature conditions are met for conversion of CO to CO_2, but it is not an indication of whether CO is generated by the burner system itself, particularly when operation is NOT in self-sustaining mode. CO generation may occur in the oxidizer when (1) partial combustion occurs during self-sustained operation that results in CO generation and prevents reaching the time and

temperature necessary for conversion to CO_2, and (2) the burners are not properly tuned. The commenter gave guidelines for burner system operation. [10]

Response: The EPA agrees that operation of the burner system is important to the operation of the incinerator. The EPA has included an annual inspection of the burner. While auxiliary fuel is being supplied to the burner to maintain the minimum temperature (i.e., not self-sustaining mode), generation of CO by the burner is a concern. The EPA has incorporated an annual inspection of the burner system to ensure proper operation and to minimize the generation of CO.

During self-sustaining mode, the concentration of CO in the vent gas stream is sufficient to maintain the set point temperature of the burner, and no auxiliary fuel to the incinerator is required to maintain the minimum temperature. It is not clear what the commenter means by "partial combustion" in the comment. The pollutant of interest for illustration 11a is CO (not VOC, which would combust to CO and then to CO_2). It is not clear where the "generation" of CO would be occurring if no auxiliary fuel is used and CO is the pollutant. This would be a more appropriate concern for VOC pollutant combustion during self-sustained mode. One concern for CO combustion (CO from the emission gas stream) to CO_2 during self-sustained operation is that sufficient air or oxygen may not be supplied to the device if the auxiliary air flow rate is related to or dependent on the auxiliary fuel flow rate. During self-sustained mode, no auxiliary fuel is fed and no additional air would be fed. In this instance, combustion of CO in the emission gas stream may not be complete if sufficient air is not present.

7.8 Comment: Illustration 16a. A method of confirmation that all regulated process emissions are diverted to the oxidizer must be in place. There should be a means to determine that the volumetric flow rates and/or pressure drops do not cause the oxidizer to exceed emission limits and operational ranges established during compliance testing. [10]

Response: The CAM rule requires that a facility have a bypass indicator if the system design incorporates a control device bypass. Similarly, the CAM rule requires that the monitoring shall be designed to "obtain data for one or more indicators of emission control performance for the control device, any associated capture system . . .;" consequently, although not included in this particular illustration, an indicator of capture efficiency (e.g., hood static

pressure, enclosure opening face velocity) would need to be included in a CAM submittal for which a capture system is a part of the air pollution control system design.

Regarding the need to provide monitoring parameters as a means of assuring that the volumetric air flow rates and pressure drops of the system do not cause the emission limits or operational ranges established during compliance testing to be exceeded, EPA agrees that this may be appropriate in some cases. In cases where the air flow may vary significantly with operation, or where the unit has been tested at flow rates much lower than design capacity and there is a concern about exceeding the emission limit at higher flow rate, monitoring these parameters may be appropriate. In cases where the flow system is designed to generally operate at steady state conditions, monitoring these parameters certainly would not hurt, but may not be necessary. In lieu of continuous monitoring or no monitoring of these parameters, less frequent monitoring of these parameters, e.g., once per shift, would be another option. Illustration 16b includes an indicator for inlet air flow rate as an illustration of a situation where it also is appropriate to monitor capture system performance and total volumetric airflow through the system.