


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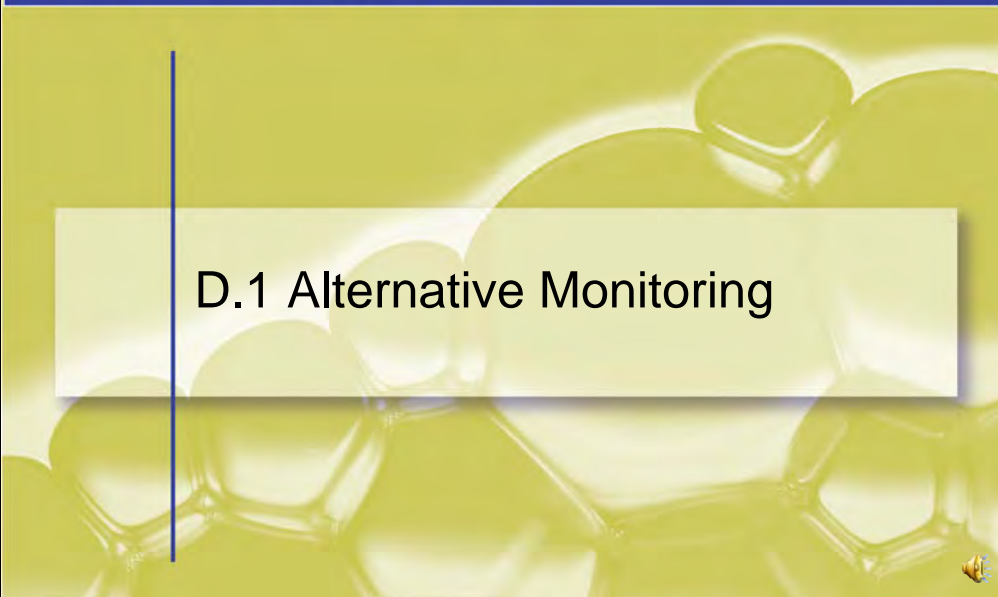
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
Dallas, Texas November 3-7, 2008

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D.1 Alternative Monitoring



This module will discuss alternative monitoring approaches under Subpart EEE.

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Presentation Overview

- Alternative Monitoring
 - Purpose
 - Regulatory requirements
 - How processed
 - Examples
- Alternative Testing



The topic will include a discussion of both alternative monitoring and alternative testing.

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**Purpose of Alternative Monitoring Provisions –
40 CFR § 63.1209(g)**

- Provide facilities with option to justify alternative methods for documenting compliance other than this in regulations
- Provides a formal submittal and approval process to assure proper oversight
- If approved, the alternative monitoring techniques that are approved, replace applicable limits stated in regulations



The purpose of these provisions is to provide facilities with options to justify alternative compliance approaches that are not directly incorporated into the regulations. These approaches need to be formally submitted by the facility and approved by the agency.

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Significance of Different Alternative Monitoring Requests

- Minor – those that have no reduction in stringency of monitoring
 - Typically site specific, handled by state or local agency
- Intermediate – proven technology but application could reduce monitoring stringency
 - Can still be site specific, may be handled either at local, state or regional level
- Major – unproven technology or novel application that could potentially reduce monitoring stringency
 - May be site specific, but also may have broader application. These are typically handled at regional level

Source: EPA Guidance: “How to Review and Issue Clean Air Act Applicability Determinations and Alternative Monitoring”, EPA 305-B-99-0045. February 1999.



EPA has issued guidance that categorizes alternative monitoring requests into three different levels as summarized on this slide. The level of the request dictates whether the state or EPA region can approve such requests. Examples of the levels can be found in the EPA guidance.

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General Regulatory Process

- 40 CFR § 63.1209(g)
 - For CEMs – 63.1209(a)(5) and 63.8(f) apply
 - Requests for unproven methods must be made under 63.8(f)
- Submit request along with CPT Plan
 - Possible that as CPT Plan review proceeds, this issue can arise
- Agency required to issue notice of decision within 90 days of original submittal or within 60 days for additional submittal
 - Decision must be based on whether equivalent or better compliance assurance



In general AMA requests should be submitted along with the CPT Plan, however, it may not be apparent that a monitoring approach is actually an AMA at the time of CPT Plan submittal. The agency must then issue a notice of decision within certain time frames discussed on this slide.

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Content of Request under Subpart EEE

- Justification of alternative
- Detailed description of
 - parameters to be monitored
 - Monitoring approach
 - Average period and calculations
- Documentation that it is equivalent or better that is technically or economically practicable



AMA requests under Subpart EEE must contain the information summarized on this slide and show how it is equivalent or better than what is provided in the regulations.

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**Alternative Monitoring Requests under the General Provisions –
40 CFR § 63.8(f)**

- Installation of a CMS specified by a relevant standard would not provide accurate measurements
- When the affected source is infrequently operated
- CEMS that require additional measurements to correct for stack moisture conditions
- Installing CMS when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements;
- Converting pollutant concentration measurements to units of the relevant standard
- Performing daily checks of zero (low-level) and high-level drift that do not involve use of high-level gases or test cells;
- Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified by any relevant standard;
- Alternative CMS that adequately demonstrate the measurements of opacity
- Alternative monitoring requirements when the effluent from a single affected source or the combined effluent from two or more affected sources is released to the atmosphere through more than one point.
- Alternative to the relative accuracy testing for CEMS



AMA requests under the General Provisions can consider broader issues for both CMS and CEM operations.

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
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Examples of Alternative Monitoring Requests

- OPL calculations – RCRA permit or other historical practices may make use of different calculation techniques
- If source operates in more than one mode, use average from previous operation in a mode as start of averages when resuming that mode, instead of starting over



There are a number of examples of AMA requests that have been approved. The next several slides provides some examples of approved AMA requests. Approval of an AMA is source specific only. Note that approval of an AMA is source specific only and is not allowable on other units.

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Examples of Alternative Monitoring Requests

- Combustion zone pressure monitoring using cameras to detect fugitives combined with a couple second delay
- Alternative maximum temperature on inlet to dry APC
- Alternative location for CEMs – e.g., where two adjacent sources share common stack and breech is not conducive to good sampling



These are additional AMA requests dealing with combustion zone pressure monitoring, setting and alternative maximum temperature limit based on CPT results and for location of the CEMs probe where a common stack is used for two sources.

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More Examples of Alternative Monitoring

- Powdered Activated Carbon feed system use of high and low pressure AWFCOs vs pressure drop
- ESP or IWS secondary voltage – some units are automatically controlled, others can be run in manual
- A time period of one minute allowed as an alternative interpretation of instantaneous




AMA requests address specific elements of APC equipment, such as:

Powdered Activated Carbon feed system use of high and low pressure AWFCOs vs pressure drop;

ESP or IWS secondary voltage – some units are automatically controlled, others can be run in manual; and

A time period of one minute allowed as an alternative interpretation of instantaneous

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
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More Examples of Alternative Monitoring

- Dry scrubber sorbent feed – correlated to calculated loading, use of HCl monitor
- Baghouse leak detection system
- Baghouse pressure drop vs minimum and maximum pressures
- For carbon bed performance, pull slip stream, conduct breakthrough testing



These AMAs also address different approaches to establishing OPLs for air pollution control equipment.

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More Examples of Alternative Monitoring

- Alternative OPLs for single pass scrubbers
 - Minimum L/G ratio
 - Waiver on caustic



Additional examples include alternative OPLs for single pass scrubbers for parameters such as:

Minimum L/G ratio and
Waiver on caustic usage.

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Alternative Testing Procedures Regulatory Provisions

- 40 CFR § 63.1208 – Test Methods have several options included
 - Use of M23 vs M 0023A for Dioxin/furan analysis
 - Use of methods 320 or 321 or ASTM D 6735-01 in lieu of 26/26A
 - Method 5 or 5I
- § 63.1208(b)(5)(ii) provides specific alternative requirements for following the HBCA provisions of § 63.1215
- § 63.1208(b)(7) provides that other applicable SW-846 methods may be used



Another of Subpart EEE under this topic is the provision for utilizing alternative testing procedures. This is addressed in 40 CFR § 63.1208 and there are specific alternatives for sampling for D/Fs, HCl and PM. In addition, this section of Subpart EEE also allows for the use of other applicable SW-846 methods, as well.

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
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Requesting Method 23

- Facility requests, typically through CPT Plan
- Agency can consider whether
 - Historical testing were substantially below standard
 - Any previous 0023A analyses show low levels in the front half
 - Flue gas with high carbon content solids might be a concern for biasing results low and not be able see the separate recoveries



When requesting approval for the use of Method 23 in lieu of Method 0023 A, section 1208 provides several criteria for this. The main difference in the two methods is whether data is reported as separate front half and back results or whether the results are reported as combined FH/BH. In analyzing the fractions separately, additional QA/QC analyses that is performed with this approach can indicate whether there are any matrix issues affecting the results.

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
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HCl/Cl₂ Test Method Alternatives

- The rule provides several options
 - EPA M 26/26A - this an impinger train that is often combined with M 5 for Particulate Matter)
 - EPA 320 or 321 – portable FTIR
 - ASTM D-6735 – similar to M26/26A but uses a probe heated to 350 ° F vs 250 ° F
 - Used when high levels of ammonium chloride exist in stack gas (i.e., from calcining operations)



There are a couple of different options for measurement of acid gases. Two of these methods are impinger trains with an option to sample isokinetically or non-isokinetically. The primary differences in these methods are discussed on the slide. The other option is an FTIR method, which only tests for HCl, therefore if this method is followed, some other provision for measuring Cl₂ will need to be included in the test program.

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HCl/Cl₂ Test Method Alternative Requirements

- When complying with the risk based limits under § 63.1215
 - If source is a cement kiln w/ dry acid scrubber
 - Use M 320 or ASTM D 6735 for HCl and caustic impingers from M 26/26A for Cl₂
 - Or if source is an incinerator, boiler or LWAK, same as previous if
 - Bromine/chlorine ratio in feedstream is > 5%, or
 - Sulfur/chlorine ratio in feedstream is > 50%



When complying with the health base compliance alternative for HCl/Cl₂ under 1215, there are certain requirements for testing that must be met.

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Use of Method 5 vs 5I

- M 5I was developed as an improvement over M 5 when particulate matter levels were low
 - Several mg catches
- Primarily used for certifying PM CEMs
- Not extensively used for HWC MACT compliance as M5 is adequately sensitive to show compliance with standards
 - Can extend sampling time if needed
 - Can incorporate provision of EPA M Alt-005 which incorporates use of a teflon™ liner in FH rinse beaker which is weighed in lieu of beaker itself



Subpart EEE also provides an alternative for PM measurement through the use of Method 5i versus Method 5. M 5i requires the use of two PM sampling trains run in parallel that uses a lighter weight filter assembly and requires for stringent agreement between the two trains. Theoretically, 5i can measure lower PM emissions as a result, but generally its primary use is as a certification method for PM CEMs. Generally, Method 5 is used for PM measurement of HWC sources as it sufficiently sensitive. If PM emissions are expected to be very low, sampling times can be extended or the provisions of EPA Method Alt-005 can be used which incorporates a teflon™ liner in the FH rinse beaker that can be removed and weighed instead of the whole beaker.

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Alternative Test Method Provisions in Subpart A – 40 CFR § 63.7(f)

- Facility cannot substitute an alternative test method
 - Considered to be “intermediate” or “major” in nature until approved
- Facility must notify agency at least 60 days prior to intent to use method
- EPA Method 301 must be used to validate alternative method



Should the HWC wish to use an alternative test method other than those just described, this cannot be done without agency approval and to justify this, EPA Method 301 must be used.