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BMACT (5D) and MATS (5U) Rule Requirements for Performance Testing and Monitoring Certification

10 June 2014
CIBO Quarterly EE Meeting
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Outline

- > Key Dates
- > Emission Limits
- > Stack Test Requirements
- > Monitoring Options

Throughout show contrasts/differences in Boiler MACT (5D) and MATS (5U)

Key Dates - Existing Sources

- > Compliance Date
 - ❖ 5D - January 31, 2016
 - ❖ 5U - April 16, 2015
- > Items Due Based on Compliance Date - Existing Sources
 - ❖ Initial compliance demonstration - within 180 days after
 - ❖ Initial tune-up - by date
 - ❖ Energy assessment - by date (5D only)
- > Notification of Intent to conduct a performance test
 - ❖ Due at least ___ days prior to scheduled test start
 - ◆ 5D - 60
 - ◆ 5U - 30
- > Notification of Compliance Status
 - ❖ Due 60 days after completion of all tests
- > Site specific monitoring plan
 - ❖ For each Continuous Monitoring System (CMS) required
 - ❖ Submit if requested 60 days prior to performance evaluation

Dates for Required Uploads to EPA

- > In general test results and compliance reports must be uploaded to EPA's Compliance and Emissions Data Reporting Interface (CEDRI)
- > Items and dates due by
 - ❖ Performance tests - 60 days after test
 - ◆ Formatted using Emissions Reporting Tool (ERT)
 - ❖ RATA - 60 days after CEMS performance evaluation
 - ◆ Formatted using ERT
 - ❖ Compliance reports required under
 - ◆ 5D - 63.7550(c)(1)..(5)
 - ◆ 5U - 63.10031(c), (d) plus notification of compliance status

Emission Limits and Basis

Solid Fuel Existing

> 5D - CO, PM, HCl, Hg

- ❖ CO - 30-day CEMS or stack test
- ❖ PM - stack test
- ❖ HCl - stack test
- ❖ Hg - stack test

> 5U - PM, HCl, Hg

- ❖ PM - stack test
- ❖ HCl - stack test or SO₂ CEMS limit if scrubbed
- ❖ Hg - stack test

Stack Tests- 5D

- > Site-specific test plan required
- > Representative operating load
- > Fuel type/mixture with highest
 - ❖ Chlorine content
 - ❖ Mercury content
 - ❖ May require multiple tests
 - ❖ For more detail see *Boiler MACT Coal Sampling*, Jason Philpott, Eastman, 10 September 2013
- > Used to set operating limits for ongoing monitoring for Continuous Parameter Monitoring Systems (CPMS)

Stack Tests - 5U

- > Site-specific test plan required
- > Maximum normal operating load (typically 90-110% of design capacity)
- > Used to set operating limits for ongoing monitoring for CPMS (if applicable)
- > Low emitting EGU (LEE) option
 - ❖ Less than 50% of threshold for PM or HCl for 3 consecutive years
 - ❖ Less than 10% of Hg limit or potential less than 29 lb/yr and meeting Hg limit
 - ❖ Reduced testing - test once every 3-years (PM/HCl) or 30-day test once per year (Hg)

Ongoing Compliance - 5D vs. 5U

> 5D

- ❖ Covers many types of units with a wide range of fuels and control types
- ❖ Presumes few CEMS used for compliance
- ❖ Most compliance methods are parametric (CPMS)

> 5U

- ❖ Few different types of units burning largely homogenous fuels
- ❖ CEMS are common, as are PM CPMS - stack testing generally allowed in lieu of CPMS but required quarterly (except not allowed for Hg)
- ❖ Hg directly measured (sorbent trap typical)

Monitoring - Solid Fuel - 5D

- > CO - oxygen analyzer system or CO CEMS
- > PM
 - ❖ Coal/solid fossil fuel (and heavy liquid) with associated average annual heat input capacity > 250 MMBtu/hr (unless using TSM limit)
 - ◆ PM CPMS, or
 - ◆ PM CEMS
 - ❖ Other units
 - ◆ Options vary by type of control
 - ◆ PM CPMS or PM CEMS as alternatives for all types

PM CPMS

- > Operating principle based on
 - ❖ In-stack or extractive light scatter, or
 - ❖ Light scintillation, or
 - ❖ Beta attenuation, or
 - ❖ Mass accumulation detection of PM
- > Reportable output as milliamps
- > Detect and respond to concentrations no greater than 0.5 mg/m^3

Monitoring - Solid Fuel - 5D

Units where PM CPMS not required

- > Wet PM scrubber - pressure drop and liquid flow rate
- > Fabric filter - opacity via COMS or bag leak detection system
- > ESP - opacity via COMS or (if not required to have a COMS) total secondary electric power input
- > Any other dry add-on control type - opacity

Monitoring - Solid Fuel - 5D

HCl and Hg

> Requirements vary by control type

> HCl

- ❖ Acid gas scrubber

 - ◆ Wet - pH and liquid flow rate

 - ◆ Dry - sorbent injection rate

- ❖ SO₂ CEMS alternative for either

> Hg

- ❖ Carbon injection rate

Monitoring - Solid Fuel - 5U

> PM

- ❖ LEE option - test every 36 months
- ❖ PM CEMS
- ❖ PM CPMS
- ❖ Existing units only - quarterly stack tests

> HCl

- ❖ LEE option - test every 36 months
- ❖ HCl CEMS
- ❖ Quarterly stack tests
- ❖ SO₂ CEMS if using wet or dry FGD

Monitoring - Solid Fuel - 5U

> Hg

- ❖ LEE option - 30-day test every 12 months
- ❖ If not LEE, no stack test option and must directly quantify emissions via either
 - ◆ Hg CEMS
 - ◆ Sorbent trap monitoring
- ❖ LEE not allowed for new units (construction commence after May 3, 2011)

Extra - NO_x SIP Call Lives On for New Large Natural Gas Boilers

- > Until natural gas prices dropped, few or no new fossil fuel-fired units with fossil input > 250 MMBtu/hr were built since CAIR NO_x Ozone Season replaced the NO_x SIP Call
- > New non-EGU natural gas units over 250 MMBtu/hr in these states are still subject
 - ❖ AL, IN, KY, MI, MO, NC, NY, OH, SC, TN, VA, WV
- > Many of these units will qualify for simple low mass emission unit reporting
- > EPA CAMD is still registering these units
- > For more info see <http://www.epa.gov/airtransport/CSAPR/faqs.html>