

Update and Issues

# 2015 Boiler MACT Reconsideration Rule

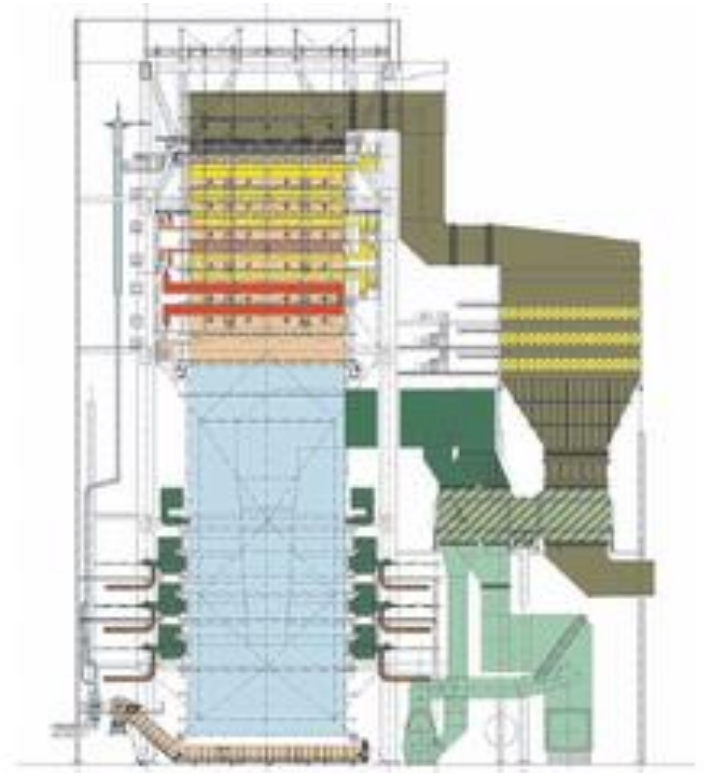
John deRuyter, DuPont

Amy Marshall, AECOM

December 8, 2015

# Agenda

- Update on the Reconsideration Rule
- Reconsideration Rule Issues
- Discussion



## Boiler MACT Rule Timeline

- 2011 – Boiler rules and waste definition finalized, then reconsidered, then re-proposed
- 2013 – Final reconsideration rule, reset compliance time
- 2015 – 2<sup>nd</sup> reconsideration proposal 1<sup>st</sup> quarter, final rule with changes Nov. 20, 2015
- **Jan. 31, 2016** – initial compliance date, unless 1 year extension
- 180 days to demonstrate compliance
- 60 days to submit NOCS after all compliance activities complete (note – **NOCS for BMACT is NOT in CEDRI**)
- **Jan. 31, 2017** – 1<sup>st</sup> compliance report

# 2015 BMACT Reconsideration Rule

- Three issues for reconsideration
  - **Startup and shutdown – substantive changes**
  - CO limits at 130 ppm (no changes, just asked for comment)
  - PM CPMS requirements and consequences of exceedances (no changes, just asked for comment)
- Various technical corrections – clarifications and fixes and things that got less clear
- Official denial of reconsideration for several issues
- Removal of malfunction affirmative defense
  - Preamble: case-by-case response looking at “the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions”

## Startup and Shutdown – Definition/WP 1

- EPA added concept of useful thermal energy to definition 1 of startup (change from proposal).
- Startup ends when any of the useful thermal energy from the boiler or process heater is supplied for heating, and/or producing electricity, or for any other purpose.
- Once you start firing fuels that are not clean fuels, you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection, DS, FF, and SCR. You must start your limestone injection, DS, FF, and SCR as expeditiously as possible.
- No startup/shutdown plan is required for Definition 1/WP1 (clarification from proposal).

## Useful Thermal Energy – Addition of Flow

- Useful thermal energy means energy (i.e., steam, hot water, or process heat) that meets the minimum operating temperature, **flow**, and/or pressure required by **any energy use system** that uses energy provided by the affected boiler or process heater.

## Startup and Shutdown – Definition 2/WP2

- Startup ends four hours after when the boiler or process heater supplies useful thermal energy (such as heat or steam) for heating, cooling, or process purposes, or generates electricity, whichever is earlier.
- Once you start to feed fuels that are not clean fuels, you must vent emissions to the main stack(s) and engage all of the applicable control devices so as to comply with the emission limits within 4 hours of start of supplying useful thermal energy. You must engage and operate PM control within one hour of first feeding fuels that are not clean fuels.
- If you are complying with the 2<sup>nd</sup> startup definition and work practice, you must develop and implement a written startup and shutdown plan (SSP).

## Request for More Time for PM Controls – WP2

- (i) The request shall provide evidence of a documented manufacturer-identified safety issue.
- (ii) The request shall provide information to document that the PM control device is adequately designed and sized to meet the applicable PM emission limit.
- (iii) In addition, the request shall contain documentation that:
  - (A) The unit is using clean fuels to the maximum extent possible to bring the unit and PM control device up to the temperature necessary to alleviate or prevent the identified safety issues prior to the combustion of primary fuel;
  - (B) The unit has explicitly followed the manufacturer's procedures to alleviate or prevent the identified safety issue; and
  - (C) Identifies with specificity the details of the manufacturer's statement of concern.



## Extra Recordkeeping for Startup Def2/WP2

- For each startup period, you must maintain records of the hourly steam temperature, hourly steam pressure, hourly steam flow, hourly flue gas temperature, and all hourly average CMS data (e.g., CEMS, PM CPMS, COMS, ESP total secondary electric power input, scrubber pressure drop, scrubber liquid flow rate) collected during each startup period to confirm that the control devices are engaged.
- In addition, if compliance with the PM emission limit is demonstrated using a PM control device, you must maintain records of ESP # fields, voltage, current; FF # compartments and DP; WS flow and DP for each hour of startup.

## Clean Fuels

- New clean fuels – **clean dry biomass**, other Gas 1, fuels that meet HCl, Hg, and TSM limits via fuel analysis
- Shutdown work practice was not expanded to include the whole list of clean fuels, although the startup work practice was:
  - If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel must be one or a combination of the following clean fuels: Natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, refinery gas, and liquefied petroleum gas.

## Clarification of 30-day rolling average

- For CO CEMS – calculate average of last 720 (or 240) hours of valid operating data each day at midnight.
- For all other CMS – indicate which option you will use:
  - Calculate the average of all valid hours of operating data over the past 30 operating days each day at midnight, or
  - Calculate the average of the last 720 hours of valid operating data each day at midnight.
- There is a new definition of “rolling average” as well as a modified definition of “30-day rolling average”
- There is a definition of boiler operating day – basically any operation outside of SS is a boiler operating day.

## CO CEMS using CO<sub>2</sub> as Diluent

- 63.7525(a)(1) modified to add requirements for use of CO CEMS with CO<sub>2</sub> as diluent.
- Kim Garnett was contacted for clarification – EPA wants anyone using CO/CO<sub>2</sub> to ask for approval of their methodology, primarily because they want to approve of the approach for accounting for any CO<sub>2</sub> generated from limestone addition in a fluidized bed boiler.
- Rule references request for alternate test method, but alternate monitoring request seems more applicable – Steffan Johnson's group will review/approve.

## Other monitoring clarifications

- Clarified that pH monitoring is not required for wet scrubbers with no addition of caustic/alkali.
- Clarified that opacity is an operating parameter, not an emission limit. Set opacity parameter limit at either 10% or the highest hourly average during PM/TSM stack test.
- PM CPMS do not have to be certified.
- pH monitors don't have to be calibrated daily but must be cleaned daily.
- If using O<sub>2</sub> trim system but not CO stack testing, set point established during tune up.
- Revised definition of minimum sorbent injection rate to clarify that the ratio of sorbent to sulfur applies only to fluidized bed boilers that do not have sorbent injection systems installed.
- Operating load parameter limit is 30-day average.

# Energy Assessments

- Added Energy Star to list of programs exempt from energy assessment.
- Modified certification statement required in NOCS. You are required to certify that you either expended the max hours or completed the energy assessment prior to the compliance date.
- What if you didn't have to complete one – how do you certify compliance? Will EPA accept an alternate compliance statement?
  - Examples- limited use units, new gas 1 fired units, exempt programs
- Remember – even if unit or plant is shut down, there is no provision to delay the energy assessment until restart.



## The Good



- Clean dry biomass was added as a clean fuel allowed during startup.
- Alternate definition of startup and work practice provide some additional flexibility.
- Deleted requirement to “certify” PM CPMS.
- Additional clarity/flexibility for 30-day rolling average calculation.
- Clarified that an acid gas scrubber is a control device that uses an alkaline solution. pH monitoring is not required for ongoing HCl compliance for wet scrubbers that are not acid gas scrubbers.
- Clarified that opacity is an operating parameter, not an emission limit. Can set as the highest hourly average opacity during PM or TSM test if can't meet 10%. *[Although may need clarification that you don't use Table 7 to set site-specific limit if you are picking 10% from Table 4.]*



# The Bad



- Still some inconsistencies in the rule and parts that EPA meant to clarify but made less clear.
- Table 3 Line 5.c.1 still says startup ends when heat or steam is supplied for any purpose. Definition 1 revision says startup ends when useful thermal energy is supplied for any purpose.
- EPA added to the clean fuel list with the reconsideration rule. However, the shutdown work practice does not include all viable clean fuels.
- The fuel analysis provisions are still not clear with respect to ongoing compliance. [EPA indicated in an email they will fix.]
- Startup D2/WP2 difficult to utilize – UTE+4 hours, 1 hour for PM controls, extra monitoring and recordkeeping, SS plan.

# The Ugly



- Changes so close to the compliance date that could affect your compliance strategy or monitoring system programming.
- Nothing in the rule to address malfunctions.
- EPA added additional requirements to the rule if CO<sub>2</sub> is used as diluent for CO monitor rather than O<sub>2</sub> – must ask OAQPS for approval of an alternate test method.
- CEMS: definition of out of control period is different between Part 60 and Part 63 general provisions. Problematic to comply with both.

## Items to Bring to EPA for Correction

- Fuel analysis – need technical corrections to remove references to P90 for ongoing compliance in Table 8 and text.
- The addition of useful thermal energy to startup definition 1 did not make it into Table 3.
- Fix the shutdown work practice to include all viable clean fuels.
- Ask EPA to clarify that Part 60 requirements apply for CEMS already subject to those rules, not both 60 and 63.
- Others?

## Items where EPA clarification is needed

- Certification statement for facilities exempt from energy assessment requirement.
- CO/CO<sub>2</sub> CEMS – alt test method or alt monitoring?
- AF&PA/AWC to inquire about EPA's intent on clean dry biomass definition.
- Jim Eddinger had provided guidance that new Gas 1 units should submit the NOCS after they did the first tune up (the first compliance activity for these units). Rule now says for units with no initial compliance demonstration, submit NOCS 60 days after compliance date. Should facilities go ahead and submit NOCS for new units installed between June 2010 and now? What would it say?



# Questions?

