COMAR 26.11.30 Control of Emissions from Portland Cement Manufacturing Plants

Air Quality Control Advisory Council
December 8, 2014
Background

• Proposed regulation presented to AQCAC on May 19, 2014
  – Approved by Council

• Federal NESHAP regulations created new monitoring requirements for cement plants
  – Required Particulate Matter Continuous Process Monitoring System (CPMS) for particulate matter monitoring and as an option to Continuous Opacity Monitors (COMs) for visible emission (VE) monitoring

• MDE has been working with EPA to integrate these new requirements into COMAR regulations
Requirements for Cement Kilns

• Many existing requirements transferred into 29.11.30
  – COMAR 26.11.01.10 and 26.11.06.02C contain opacity limits and monitoring requirements for cement kilns
  – Proposed amendments copy and mirror opacity requirements from 26.11.06.02C into 26.11.30.05

• New requirements added in May 2014
  – New RACT limits for NOx effective in 2017
  – Proposed amendments establish alternative VE monitoring requirements in 26.11.01.10
NOx RACT Requirements

• RACT requirement under current ozone standard
  – Re-evaluate limits based on technological advancements and economic feasibility

• Current standards are:
  – Pre-calciner, pre-heater kilns
    • 2.8 pounds of NOx per ton of clinker produced for
  – Long, dry kilns
    • 5.1 pounds of NOx per ton of clinker produced for pre-calciner, pre-heater
NOx RACT Requirements

• Proposed standards for 2017:
  – Pre-calciner, pre-heater kilns
    • 2.4 pounds of NOx per ton of clinker produced
  – Long, dry kilns
    • 3.4 pounds of NOx per ton of clinker produced

• In line with current technology capability and new source requirements

• Holcim remodeling plant to become a hybrid, pre-heater, pre-calciner kiln
PM and VE Requirements

• Particulate matter emission limits remain the same
  – Compliance measured through stack tests
  – Continuous monitoring through PM CPMS

• Opacity standards remain the same
  – Compliance measured through Method 9 visual observation
  – Continuous monitoring through COMs or PM CPMS
  – Follow QA procedures in COMAR 26.11.31
Amendment Updates

• Clearly defines that compliance with VE will be demonstrated by performing EPA’s Method 9 visual observations

• Establish alternative VE monitoring requirements
  – Cement kilns may either use a COM or use a PM CPMS
  – Clinker coolers may either use a COM or use a PM CPMS on or after September 1, 2016

• Establish PM Monitoring methods
  – On or after September 1, 2016, cement kilns and clinker coolers shall use a PM CPMS to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the regulation PM limits
NESHAP Procedure

• NESHAP procedure uses stack test data to calibrate a PM CPMS monitor

• The PM CPMS monitor is then used as a parametric control for particulate matter control operation at the plant

• Compliance measured against maintenance of parameters within specified range
Alternative VE requirement

- Cement kilns have option to utilize PM CPMS in place of COMS
- VE compliance demonstrated with Method 9
- Demonstrate equivalency of NESHAP method to current SIP method to EPA
Equivalency Determination

• Revising or eliminating SIP requirements is difficult
  – Demonstrate the revision provides equivalent or more stringent reductions called a 110 (l) demonstration

• Adopting more stringent limits or showing a control measure gets the same or more reductions is fairly straightforward

• Other cases, such as changing how a measurement is made, are more difficult and less straightforward
  – Modifying opacity requirements
  – Replacing COMs with PM CPMS
• 110 (I) demonstrations are easier to make for an attainment area

• Maryland demonstrated attainment for the 1997 annual fine particulate matter (PM$_{2.5}$) standard of 15 µg/m$^3$

• In 2012, EPA revised the annual PM$_{2.5}$ standard to a more stringent level of 12 µg/m$^3$

• All of Maryland complies with the revised PM$_{2.5}$ NAAQS and has recommended a designation of attainment for the 2012 PM$_{2.5}$ NAAQS
  – EPA agreed with recommendation and will designate all of Maryland as unclassifiable/attainment when final designations are made (expected in December 2014)

• Redesignations under the 1997 PM2.5 Standard:
  – MD portion of the Washington nonattainment area – approved
  – Baltimore nonattainment area – approval proposed
  – Washington County MD – approval proposed
Continuous Emission Monitoring

- Cement plants are required to demonstrate compliance with NO$_x$ emission requirements using continuous emission monitoring (CEM) data as outlined in COMAR 26.11.01.11.