



**Department of the Environment**

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# COMAR 26.11.30 Control of Emissions from Portland Cement Manufacturing Plants

Air Quality Control Advisory Council  
December 8, 2014





# Background

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- 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

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- 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 NO<sub>x</sub> effective in 2017
  - Proposed amendments establish alternative VE monitoring requirements in 26.11.01.10





# NO<sub>x</sub> RACT Requirements

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- 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 NO<sub>x</sub> per ton of clinker produced for
  - Long, dry kilns
    - 5.1 pounds of NO<sub>x</sub> per ton of clinker produced for pre-calciner, pre-heater





# NOx RACT Requirements

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- 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

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- 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

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- 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
  - Clunker 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

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- 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

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- 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

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- Revising or eliminating SIP requirements is difficult
  - Demonstrate the revision provides equivalent or more stringent reductions called a 110 (I) 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





# Equivalency Determination

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- 110 (l) demonstrations are easier to make for an attainment area
- Maryland demonstrated attainment for the 1997 annual fine particulate matter (PM<sub>2.5</sub>) standard of 15 µg/m<sup>3</sup>
- In 2012, EPA revised the annual PM<sub>2.5</sub> standard to a more stringent level of 12 µg/m<sup>3</sup>
- All of Maryland complies with the revised PM<sub>2.5</sub> NAAQS and has recommended a designation of attainment for the 2012 PM<sub>2.5</sub> 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 PM<sub>2.5</sub> 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  $\text{NO}_x$  emission requirements using continuous emission monitoring (CEM) data as outlined in COMAR 26.11.01.11.





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