Continuous Opacity Monitoring Requirements for Cement Plants and Incinerators

Air Quality Control Advisory Council

March 30, 2015

Background

- Opacity or visible emissions: one of oldest ways to judge air quality

- MD has had visible emission standards since the 1970s

- EPA maintains continued compliance with opacity standards especially in attainment areas helps control PM2.5
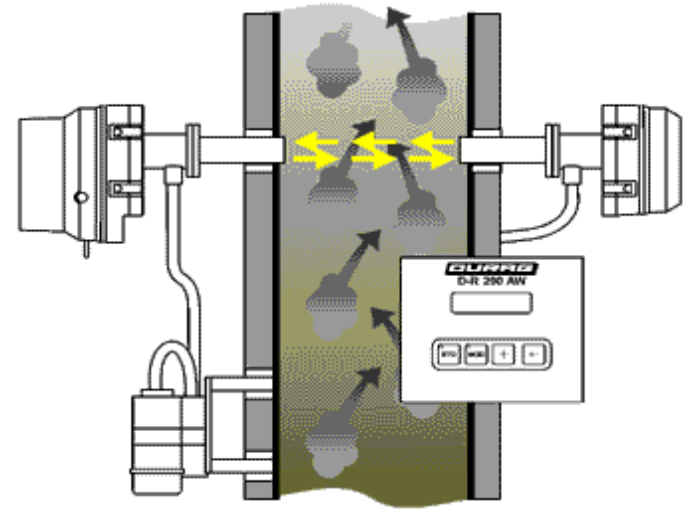
Opacity Regulations

- Visible Emissions (VE) requirements are covered by several regulations
  - COMAR 26.11.01.01 - Definitions
  - COMAR 26.11.01.10 - Continuous Opacity Monitoring
  - COMAR 26.11.01.11 - Continuous Emission Monitoring
  - COMAR 26.11.06.02 – VE General Emission Standards
  - COMAR 26.11.08.04 – VE Standards for Incinerators
  - COMAR 26.11.08-1, .08-2 – VE Standards for HMIWIs
  - COMAR 26.11.09.05 – VE Standards for Fuel-Burning Equipment
  - COMAR 26.11.30.05 – VE Standards for Portland Cement plants
  - COMAR 26.11.31 – QA/QC Procedures for COMs

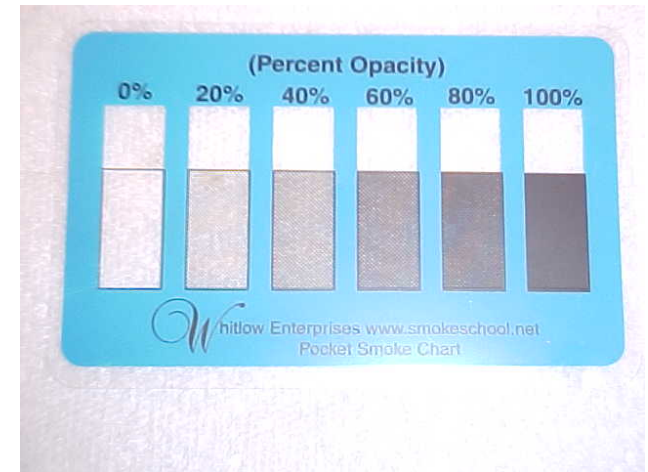- Some are incorporated in the SIP and others are part of 111(d) plans

Visible Emission Measurement

- Automated monitoring methods developed: continuous opacity monitors (COMs)

- In 1991, MDE adopted regs requiring certain major sources to run COMs to measure compliance with opacity standards

- Developed TM 90-01 to provide opacity compliance procedures for COMs

  - Part II of TM contained QA/QC procedures which have been codified in COMAR 26.11.31

- Clarify and harmonize requirements

Visible Emission Standards

- The opacity standards:
  - No visible emissions in urban areas = 10%
  - 20% visible emissions in rural areas

- Federal standards sometimes are more stringent than state limits

- The test methods:
  - Manual Method 9 Procedure
  - Continuous Opacity Monitors
    - Operate 24/7

Compliance Demonstration

- Compliance procedures for opacity to coordinate with the measurement method utilized

  - ➢ Compliance procedure for use with manual Method 9 spelled out in the regs
    - 6 minute per hour noncompliance for certain exemptions
  - ➢ Technical Memorandum (TM) translated that into allowing sources with COMs noncompliance for 10% of operating time

- Better regulatory solution

26.11.01.10 COM Requirements

- This regulation contains the requirements for the installation and operation of COMS
  - Requires incinerators and Portland cement plants to demonstrate compliance with visible emissions (VE) standards through use of COMS
  - Specifies COMAR references which establish VE standards for incinerators and cement plants
  - Establishes that compliance is achieved for sources operating a COM if VE does not exceed 10% opacity for more than 2% of the unit's operating time in any calendar quarter
  - Establishes QA/QC procedures in 26.11.31

26.11.01.10 COM Requirements

- MWCs located in the Baltimore/Washington areas:
  - Are subject to the no visible emissions requirement contained in COMAR 26.11.08.04A(2)
  - Demonstrate compliance with the no VE requirement with a COM if VE are less than 10 percent opacity
- Nearly all incinerators in Maryland subject to regs based on Section 111(d) requirements
  - Federal requirements set 10 percent opacity limit
  - Therefore, rural incinerators are subject to a 10 percent opacity standard when operating a COM
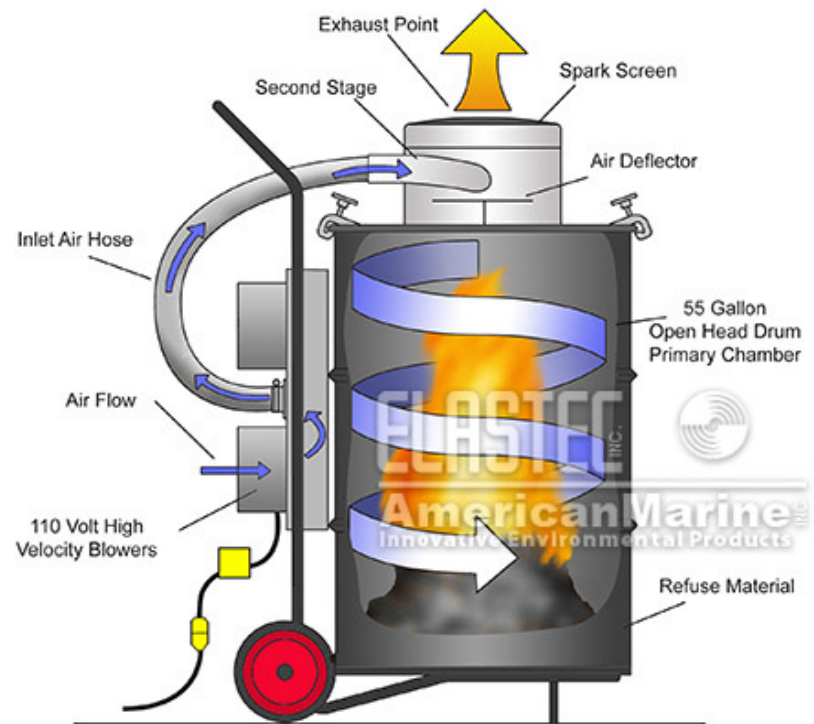
26.11.08 Control of Incinerators Clean-Up

- Referencing COM and CEM requirements in 26.11.01.10 and 26.11.01.11

- Deleting the applicability of the Department's Technical Memorandum 90-01 (TM) for incinerators equipped with COMs and establishing QA/QC procedures in 26.11.31

- Clarifying that the Department may determine compliance and non-compliance with the VE limitations by performing EPA reference Method 9 observations

- ## Cyclonic burn barrel
  - Falls within incinerator definition
  - Used by government agencies to destroy illegal or prohibited goods

- ## Added exemption:
  Exempting incinerators that are owned or operated by a government entity used solely to destroy illegal or prohibited goods

Exhaust Point

Spark Screen

Second Stage

Air Deflector

Inlet Air Hose

55 Gallon Open Head Drum Primary Chamber

Air Flow

110 Volt High Velocity Blowers

Refuse Material

ELASTEC American Marine Innovative Environmental Products

Maryland Department of the Environment

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