DRAFT

Regional Control Measures Summary

for the

Washington, DC-MD-VA
8-hour Ozone SIP

INTRODUCTION

This reference document was prepared for the Metropolitan Washington Air Quality Committee (MWAQC). It contains brief descriptions and summaries of analyses for a series of control measures being considered for inclusion in State Implementation Plan (SIP) for the 8-hour ozone standard.

The measures described herein were identified as potential candidates for adoption by the MWAQC Technical Advisory Committee (TAC) control measures workgroup. MWAQC may consider recommending that these measures be advanced to the IAQC for ultimate adoption.

The purpose of this document is acquaint the public, local elected officials, and other decision makers of the characteristics, methods of operation, emission reduction potential, costs, benefits, and suitability of control measures being considered for adoption.

The remainder of this document provides further information for each measure.

INDEX

MEASURES

The measures are as follows:

I. Measure: OTC Consumer Products Rule (Phase II)

II. Description of Measure: Adopt Phase II of the OTC Consumer Products Model Rule. This involves adopting the CARB 7/20/05 Amendments which sets new or revises existing limits on 13 consumer product categories, including:

- Floor or Wall covering Adhesive Remover
- Gasket or Thread Locking Adhesive Remover
- General Purpose Adhesive Remover
- Specialty Adhesive Remover
- Contact Adhesives: General Purpose and Special Purpose
- Electrical Cleaner
- Electronic Cleaner
- Fabric refresher: aerosol and non-aerosol
- Footware or Leather Care: aerosol and solid and all other forms
- Graffiti Remover: aerosol and non-aerosol
- Hair Styling: aerosol & pump spray and all other forms
- Toilet/Urinal Care: aerosol and non-aerosol
- Wood Cleaner: aerosol and non-aerosol

III. Source Type Affected: New and existing area sources of VOC emissions.

IV. Category Emissions: 2009 Controlled 40.6 tpd.

V. Required Action: Implementation will require state regulation in Virginia, Maryland, and the District.

VI. Existing Controls: VOC emissions from consumer products are governed by state and federal law. Phase II of the OTC model rule adds more stringent requirements to the existing state rules governing consumer products.

VII. Applicability and Efficacy of New Controls: 2 percent reduction in 2009.

VIII. Emission Reduction Potential: ~0.94 tpd.

IX. Implementation Cost: TBD.

X. Cost Effectiveness: $4,800 per ton.

XI. Federal Support for Regulation: The OTC model rules are more stringent than the associated federal requirements. Federal law does not prohibit the state from developing more stringent regulations.

XII. Regulated Industry's Position: The regulated industry is working with the California Air Resources Board (CARB) and the Ozone Transport Commission (OTC) on this initiative and is generally supportive of adopting a model rule in the OTR that reflects CARB's existing regulatory requirements.

I. Measure: OTC Portable Fuel Containers Rule (Phase II)

II. Description of Measure: Adopt Phase II of the OTC Portable Fuel Containers Model Rule. The California Air Resources Board (CARB) 1999 clean gas can regulation sets specifications for how gas cans are manufactured. The regulation reduces emissions from three main processes: evaporation of fuel vapors through Portable Fuel Container (PFC) openings, permeation of fuel through PFC container walls, and spillage during fueling events. In California, this regulation was fully implemented in 2001. On September 15, 2005, the California Air Resources Board amended the 1999 clean gas can regulation to address: 1) the fact that the original rule did not address the use of utility jugs and kerosene containers that are sometimes offered for sale in place of gasoline cans, and 2) consumers complaints regarding spillage from the new PFCs. The amendments:

1. Modify the existing spout regulations to improve spillage control.
2. Include a voluntary Consumer Acceptance Program to support and encourage user-friendly PFC designs (i.e., allowing the use of the ARB Star Rating system to clearly identify superior designs as determined by users).
3. Establish a certification program for PFCs to improve product quality.
4. Expand the definition of a PFC to include presently non-compliant containers by requiring the redesign of utility jugs and kerosene containers, which to date are not designed for fuel use but are often sold alongside low emission fuel containers.
5. Combine the evaporation and permeation standards into a new diurnal standard to simplify certification and compliance testing; on initial standard of 0.4 grams ROG /gallon-day become effective July 1, 2007 with the final standard of 0.3 grams/gallon-day effective January 1, 2009.
6. Adopt new PFC test procedures to streamline testing.

III. Source Type Affected: New and existing area sources of VOC emissions.

IV. Category Emissions: 2009 Controlled 22.8 tpd

V. Required Action: Implementation will require state regulation in Virginia, Maryland, and the District.

VI. Existing Controls: VOC emissions from portable fuel containers are governed by state and federal law. Phase II of the OTC model rule adds more stringent requirements to the existing state rules governing portable fuel containers.

VII. Applicability and Efficacy of New Controls: Total control for all portable fuel container rules is based on 65 percent control efficiency, 80 percent rule effectiveness, and 55 percent rule penetration with a 10-year turnover beginning in 2004. The additional percent reduction for phase II of the PFC rule is 4 percent.

VIII. Emission Reduction Potential: ~1.26 tpd

IX. Implementation Cost: TBD

X. Cost Effectiveness: $800 to $1,400 per ton.

XI. Federal Support for Regulation: The OTC model rules are more stringent than the associated federal requirements. Federal law does not prohibit the state from developing more stringent regulations.

XII. Regulated Industry's Position: The regulated industry has actively developed lower-emitting products.

I. **Measure:** OTC Industrial Adhesives and Sealants Rule

II. **Description of Measure:** Enactment of VOC content limitations for industrial and commercial application of solvent-based adhesives and sealants. Potential control candidates are adhesives, sealants, adhesive primers, sealer primers, adhesive application to substrates, and aerosol adhesives. VOC content limits are similar to those contained in the CARB Reasonably Available Control Technology (RACT) or Best Available Control Technology (BACT) document for adhesives and sealants (Dec. 1998).

III. **Source Type Affected:** New and existing area sources of VOC emissions.

IV. **Category Emissions:** 2009 Controlled 4.1 tpd

V. **Required Action:** Implementation will require state regulation in Virginia, Maryland, and the District.

VI. **Existing Controls:** The OTC model rule adds more stringent requirements to the existing federal rules governing industrial adhesives and sealants.

VII. **Applicability and Efficacy of New Controls:** VOC content limits for the solvent-based materials can result in 64.4% reduction in total emissions from this category. (CARB RACT/BARCT for Adhesives/ Sealants, Dec 1998)

VIII. **Emission Reduction Potential:** ~1.5 tpd

IX. **Implementation Cost:** TBD

X. **Cost Effectiveness:** Costs for control by reformulation are estimated by the CARB at less than $2500 / ton (1999$). Estimated costs for add-on controls carbon and thermal oxidizers ranged from $10,000 to $100,000 per ton.

XI. **Federal Support for Regulation:** The OTC model rules are more stringent than the associated federal requirements.

XII. **Regulated Industry's Position:** TBD

I. Measure: Diesel Engine Chip Reflash

II. Description of Measure: Adopt state regulations requiring the reprogramming of emission control modules on certain heavy duty diesel trucks, also known as "chip reflash) to reduce off-cycle NOx emissions.

III. Source Type Affected: Existing mobile sources of NOx emissions.

IV. Category Emissions: TBD

V. Required Action: Implementation will require state regulation in Virginia, Maryland, and the District. Virginia is not supportive of a mandatory approach.

VI. Existing Controls: In 2002, there were no existing measure in the Ozone Transport Region (OTR)[1] other than the EPA program resulting from the consent decrees on 7 heavy duty engine manufacturers. The results of the EPA program thus far are significantly lower than the level originally projected by the Agency (less than 10% implementation). CARB implemented a voluntary program that did not achieve its expected results, so the Board's backstop mandatory program was triggered.

VII. Applicability and Efficacy of New Controls: In 2002, market penetration is assumed to be 11 percent for Maryland and the District and 25 percent for Virginia. In 2009, market penetration is 90 percent for Maryland, 11 percent for the District, and 25 percent for Virginia.

VIII. Emission Reduction Potential: TBD

IX. Implementation Cost: Manufacturers must provide the rebuild kits free to any truck operator who requests it. The cost associated with the reflash has been estimated at $20-$30 per vehicle, which is borne by the engine manufacturer. There may be costs associated with potential downtime to the trucking firms, and record-keeping requirements on the dealer performing the reflash and the vehicle owner.

X. Cost Effectiveness: $1,800 to $2,500/ton.

XI. Federal Support for Regulation: The federal government has entered into a consent decree agreement establishing a nationwide voluntary chip reflash program.

XII. Regulated Industry's Position: The industry prefers a voluntary approach.

[1] Ozone Transport Region is a group of states in the Eastern United States working together to reduce transport of pollution through the work of the Ozone Transport Commission (OTC). The states include Northern Virginia, District of Columbia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Massachusetts, Rhode Island, Connecticut, Maine, New Hampshire, and Vermont.