

Draft Stationary Source Ozone Reduction Strategies



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Regulatory Development

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Background for Presentation

- VOC Emission Reduction Options and Issues for Stationary Sources (SS)
 - December 14, 2007
 - <http://www.ozoneaware.org/documents/OZ2007OptionsStationarySources.pdf>
- SS Issue Papers
 - February 29, 2008
 - <http://www.ozoneaware.org/reportsandpresentations.html#reports>



Overview

- SS Options
 - Background
 - Reduction Strategies
- Next Steps for Strategies
- Draft – Please Provide Comments



List of SS Options

- Identify the Largest Facilities and Source Categories of VOCs
- Increase Applicability of BACT/RACT Requirements
- Reconsider Current Exemptions-Regulation 3 & 7
- Consider Control Technique Guidelines in Regulation 7
- Expand Regulation 7 to the entire Non-Attainment Area



Additional SS Options

- Stage II Vapor Recovery
- Emission Control Requirements for Back-up Generators
- Architectural/Traffic/Industrial and Consumer Products Standards



Highest Emitting Facilities and Source Categories of VOCs

- Based on:
 - APEN
 - Regulation 7 Reports (6-month)
- Source Categories
 - 3 Levels of Source Classification Codes (SCC)
- Facilities
 - Facility wide

Source Categories in the 8-Hour Ozone Non-Attainment Area

Unit Description	Tons/year	Tons/day	Percentage	Count
Oil and Gas-Field Storage and Working Tanks (flash)	42,289	116	73%	4,558
Oil and Gas-Internal Combustion Engines - Natural Gas	1,983	5	3%	256
Gasoline Retail Operations - Stage I**	1,508	4	3%	1,720
Miscellaneous Volatile Organic Compound Evaporation	1,387	4	2%	678
Petroleum and Solvent Evaporation -Miscellaneous <i>Surface Coating</i>	980	3	2%	167
Petroleum Industry - Catalytic Cracking Units	656	2	1%	2
Surface Coating Application - General	542	1	1%	406
Miscellaneous Manufacturing Industries-Industrial Processes	507	1	1%	92
Beer Production	506	1	1%	28
Printing and Publishing-Petroleum and Solvent Evaporation	418	1	1%	171
Surface Coating Operations-Thinning Solvents	325	1	1%	191
Oil and Gas-Natural Gas Production	317	1	1%	31
Asphalt Concrete	303	1	1%	42
Oil and Gas-Fugitive Emissions	289	1	1%	19
Oil and Gas-Natural Gas Processing Facilities	261	1	0%	26
Surface Coating Operations-Metal Can Coating	258	1	0%	2
Bulk Plants	243	1	0%	76
In Situ Venting/Venting of Soils	208	1	0%	64
Bulk Terminals	192	1	0%	54
Oil and Gas-Crude Oil Production	192	1	0%	26
Electric Generation-Internal Combustion Engines-Natural Gas	189	1	0%	26

Highest Emitting Facilities of VOCs 8-Hour Ozone Non-Attainment Area

Facility Name	Actual VOC Emissions- Tons/year
SUNCOR ENERGY - DENVER REFINERY	1,035
NOBLE ENERGY INC. BATTERY #91522400	*552
COORS BREWING CO VALLEY COMPLEX	491
COLORADO INTERSTATE GAS CO CHEYENNE STN	350
METAL CONTAINER CORP	*246
KERR-MCGEE FT LUPTON COMPRESSOR STATION	213
ANHEUSER BUSCH INC	*196
NOBLE ENERGY INC. BATTERY #11509500	191
DCP MIDSTREAM LP – ENTERPRISE	*174
NOBLE ENERGY INC. BATTERY #91460500	170
BP AMERICA PRODUCTION CO. WATTENBERG PLT	*169
CONOCOPHILLIPS PIPE LINE CO- DENVER TERM	155
ROCKY MOUNTAIN PIPELINE SYSTEM, LLC	*152
DCP MIDSTREAM, LP- MEWBOURN	*147
CEMEX, INC. - LYONS CEMENT PLANT	*147

*Facilities reported actual emissions and actual uncontrolled emissions are the same.

Highest Emitting Facilities of VOCs State

Facility Name	Actual VOC Emissions- Tons/year
SUNCOR ENERGY - DENVER REFINERY	1,035
NOBLE ENERGY INC. BATTERY #91522400	*552
COORS BREWING CO VALLEY COMPLEX	491
COLORADO INTERSTATE GAS CO CHEYENNE STN	350
METAL CONTAINER CORP	*246
OAKDALE GAS PROCESSING - LA VETA GAS P	*241
ENCANA (WEST) - K29NE	229
KERR-MCGEE FT LUPTON COMPRESSOR STATION	213
HOLCIM (US) INC. PORTLAND PLANT	*213
CANYON GAS RESOURCES - N. DOUGLAS CREEK	*210
ANHEUSER BUSCH INC	*196
NOBLE ENERGY INC. BATTERY #11509500	191
MURFIN DRILLING CO INC	*190
DCP MIDSTREAM LP – ENTERPRISE	*174
DCP MIDSTREAM, LP-LADDER CREEK	173

*Facilities reported actual emissions and actual uncontrolled emissions are the same.



Increase the Applicability of BACT/RACT Requirements

- BACT/RACT for Minor Sources
- Guidance Document
- General Permits
- Make RACT consistent between Regulation 3 & 7



RACT – Change in Regulation 3

- Air Quality Control Commission Adoption on February 21, 2008
- Addressed Inadvertent Deletion
- RACT in NAA
 - 2 Tons/Year Threshold for VOCs



Reconsider Current Exemptions Regulation 3 & 7

- APEN and Permit Exemptions
- Using Inventory and Other Reports



Examples of Exemptions

- Condensate tanks with production 730 barrels/year or less
- Fuel burning equipment (includes heater treaters, separators, and dehydrator reboilers)
- Chemical Storage Tanks
- Gasoline stations and refueling outside of the 1 hour area



Consider Control Technique Guidelines in Regulation 7

- Establish RACT
- Applicable in 1-hour Ozone NAA
- Reductions are Reflected in Current Inventory



Control Technique Guidelines in Regulation 7

Control Strategies

- Extend Applicability to the entire NAA
- Stringency/Threshold Levels
- NSPS/NESHAP

CTGs Currently In Reg. 7

EPA Publication Year	Description
1975	Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations
1976	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume I: Control Methods for Surface Coating Operations
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks
1977	Control of Volatile Organic Emissions from Solvent Metal Cleaning
1977	Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds
1977	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume IV: Surface Coating of Insulation of Magnet Wire
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances
1977	Control of Volatile Organic Emissions from Bulk Gasoline Plants
1977	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks
1977	Control of Volatile Organic Emissions from Use of Cutback Asphalt
1978	Control Techniques for Volatile Organic Emissions from Stationary Sources
1978	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VI: Surface Coating of Miscellaneous Metal Parts and Products
1978	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VII: Factory Surface Coating of Flat Wood Paneling
1978	Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment
1978	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products
1978	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires
1978	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VIII: Graphic Arts-Rotogravure and Flexography
1978	Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks
1978	Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems
1978	Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems

EPA Publication Year	Description
1982	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners
1983	Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins
1983	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants
1984	Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment
1984	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry
1993	Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry
1996	Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations
1994	Alternative Control Technology Document – Surface Coating Operations at Shipbuilding and Ship Repair Facilities
1996	Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating)
1994	Aerospace NESHAP
1997	Aerospace (CTG & NESHAP)
2006	Control Techniques Guidelines for Industrial Cleaning Solvents
2006	Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing
2006	Control Techniques Guidelines for Flexible Package Printing
2006	Control Techniques Guidelines for Flat Wood Paneling Coatings

CTGs
That
Have
Not
Been
Incorp.
In
Reg. 7



Expand Regulation 7 to the Entire Non-Attainment Area

- 1-Hour Area » 8-Hour Area » Ozone Non-Attainment Area
- Regulation 7 Clarification
 - Natural Gas Fired Equipment



Next Steps

- Provide Comments on Draft Papers to Theresa Amoroso by 5 PM, March 12, 2008
- Narrow Scope of Ozone Strategies
- Finalize Corresponding Ozone Strategy Papers
- Regulation 7 Clean-up and Organization
- Consider Future Stakeholder Meetings
 - NO_x
 - Stage II