

NOACA Air Quality Public Advisory Task Force

Point Source Work Group First Preliminary Report September 28, 2005

Introduction

The NOACA Air Quality Public Advisory Task Force established Work Groups for Mobile Sources, Point Sources, Area Sources, Long-Term Planning Strategies, and a Public Health Forum on air pollution. Together, these Work Groups will assist the Task Force in creating recommendations to the Ohio Environmental Protection Agency (Ohio EPA) for inclusion in the State Implementation Plans (SIPs) for both ozone and fine particulates (PM_{2.5}), thus helping Northeast Ohio to come into attainment for these criteria air pollutants.

The Task Force and the Work Groups together will enable NOACA to assist the region to plan for future growth, to protect the public health, and to comply with federal law.

Point Source Work Group Membership

The Point Source Work Group is made up of the following official members, supplemented by public participants with knowledge and expertise in the areas under study:

Bob Dominak, Northeast Ohio Regional Sewer District, Chair
Ray Evans, First Energy
Rich Zavoda, ISG/Mittal Steel
Paul Alsenas, Cuyahoga County Planning Commission; alternate Jennifer Karaffa
Rich Nemeth, City of Cleveland; alternate David Hearne
James Apicella, Alcoa
JoAnn Uhlik, Greater Cleveland Partnership
Chris Trepal, Earth Day Coalition
Bill Skowronski and Ed Fasko, Ohio EPA - Northeast District Office
Bert Mechenbier, Lake County General Health District
Andrew Watterson, City of Cleveland Office of Sustainability (invited)
Bob Laeng, Reliant Energy (invited)
Michelle Duncan, Reliant Energy (invited)
Dick Brewer, Cinergy (invited)
Duane Johnson, Ford (invited)

Meetings

The Point Source Work Group met on August 30, 2005, and on September 26, 2005, each time from 1:30 – 3:30 PM at NOACA's offices. It will meet next on October 17, 2005, 1:30 PM.

Scope of Work

The Point Source Work Group is exploring potential emission reduction strategies for sources of air pollution associated with large sources permitted under Title V of the federal Clean Air Act Amendments of 1990, as well as smaller industrial, commercial, and residential sources of air pollution.

The Work Group is expanding its study to include energy efficiency and conservation, renewable sources of energy, and miscellaneous sources of air pollution that are commonly referred to as “area sources” such as consumer products, e.g. paints and cleaning solvents.

Selection Criteria

The Work Group first reviewed the Selection Criteria established by the full Task Force on July 25, 2005. Those Criteria are as follows:

- Quantifiable
- Enforceable
- VOC Reductions in Tons Per Day
- NOx Reductions in Tons Per Day
- Technically Possible
- Successful Implementation Elsewhere
- Require State Legislation/ State Rules/ Local Ordinances
- Costs Per Ton of Pollutant Removed
- Costs in Other Units
- Economic Investment Required
- Economic Benefit or Detriment
- Health Benefit
- Other Benefits or Detriments
- Behavioral Change Required
- 2009 Timing Requirement
- Long-Term Effect
- Additional Comments or Concerns

Emissions Inventory

The Work Group first reviewed the 2002 Ohio EPA Emissions Inventory for point sources, in which it was found that point sources contributed 30.17% (137.27 tons per day) of the oxides of nitrogen (NOx) in Northeast Ohio that year and 4.37% (17.14 tons per day) of the volatile organic compounds (VOCs) for that year.

The breakdown by SCC groupings provided by Ohio EPA is as follows:

Nonattainment Area Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, Summit Counties 2002 Emissions Inventory Point Sources		
Top 10 Categories	Tons Per Day	NOx
External Combustion Boilers, Electric Generation	SCC 1010	120.44 tpd
External Combustion Boilers, Industrial	SCC 1020	6.76 tpd
Industrial Processes, In-process Fuel Use	SCC 3900	2.56 tpd
Industrial Processes, Mineral Products	SCC 3050	1.64 tpd
Industrial Processes, Primary Metal Production	SCC 3030	1.07 tpd
Internal Combustion Engines, Electric Generation	SCC 2010	0.73 tpd
External Combustion Boiler, Commercial/Institutional	SCC 1030	0.70 tpd
Industrial Process, Misc. Manufacturing Industries	SCC 3999	0.50 tpd
Internal Combustion Engines, Industrial	SCC 2020	0.41 tpd
Waste Disposal, Solid Waste Disposal – Industrial	SCC 5030	0.39 tpd

Nonattainment Area Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, Summit Counties 2002 Emissions Inventory Point Sources		
Top 10 Categories	Tons Per Day	VOCs
Industrial Processes, Mineral Products	SCC 3050	5.58 tpd
Petroleum & Solvent Evaporation, Surface Coating Operations	SCC 4020	4.49 tpd
Industrial Processes, Secondary Metal Production	SCC 3040	1.70 tpd
Industrial Processes, Chemical Manufacturing	SCC 3010	0.97 tpd
Petroleum & Solvent Evaporation, Printing/Publishing	SCC 4050	0.93 tpd
Industrial Processes, Rubber & Misc. Plastics Products	SCC 3080	0.91 tpd
External Combustion Boilers, Electric Generation	SCC 1010	0.53 tpd
Industrial Processes, Primary Metal Production	SCC 3030	0.35 tpd
Petroleum & Solvent Evaporation, Organic Solvent Evaporation	SCC 4010	0.30 tpd
Industrial Processes, Chemical Manufacturing	SCC 3019	0.27 tpd

The Work Group reviewed the actual emissions of VOCs and NOx as reported by individual point sources for the years 2003 and 2004. The counties for which data was examined included the 8 counties of Northeast Ohio's nonattainment area, as well as the "collar" counties of Stark, Mahoning, and Trumbull, and Wayne. Erie, Huron, and Ashland will also be reviewed.

The Work Group noted that many point sources have made changes to their operations since 2002, and many more are slated for changes before 2010, the year in which Northeast Ohio must shown attainment of clean air. Ohio EPA will enter these emissions reductions into the airshed model for any point source changes that are actually in place at the time of the final modeling run.

Emission Reduction Strategies Under Consideration

The Work Group noted that Ohio EPA plans to promulgate Reasonably Available Control Technologies (RACT) for groups of industries, as follows:

Possible VOC RACT rules:

- Bakeries
- Batch chemical operations
- Industrial wastewater
- Synthetic organic chemical manufacturing industry reactors and distillation units
- Wood furniture manufacturing
- Industrial cleaning solvents
- Shipbuilding and ship repair industry
- Automobile refinishing
- Aerospace manufacturing and rework facilities
- Volatile organic liquid storage tanks
- Lithographic printing
- Plastic parts coating

The Work Group noted that there are no shipbuilding facilities in the Northeast Ohio nonattainment area. The Work Group also noted that automobile refinishers are generally already using low-VOC paints. However, some private auto painting operations exist without regulation, raising a compliance issue.

Possible NOx RACT rules:

- Industrial boilers, for electric generating units (EGUs) and non-EGUs
- Combustion turbines
- Asphalt plants, both stationary and mobile batch plants

The Work Group noted that asphalt batch plants move into and out of the nonattainment area and were likely to be registered outside of the nonattainment area.

The Work Group reviewed candidate point source control measures for sulfur dioxide (SO₂) and NOx studied by the Lake Michigan Air Directors Consortium (LADCO), including controls on the following categories:

- Electric generating units (EGUs)
- Industrial/Commercial/Institutional (ICI) boilers
- Cement kilns
- Petroleum refineries
- Iron and steel plants
- Chemical plants

The Work Group noted that there are no cement kilns in the Northeast Ohio nonattainment area.

The Work Group is studying the LADCO controls to see whether they might be beneficial, as well as looking for groups of industries that are prevalent in Northeast Ohio that might not be regulated at the current time. It was noted that the plastics industry contribute large emissions, but are already controlled under the Maximum Achievable Control Technology (MACT) standards set by the US EPA.

The Work Group reviewed the US EPA Guidance on “Incorporating Emerging and Voluntary Measures in a SIP” (Sept. 2004), as well as reviewing the US EPA Guidance on “SIP Credits for Emission Reductions from Electric-Sector Energy Efficiency and Renewable Energy Measures (Aug. 2004). It is hoped that the 6% SIP credits available for voluntary measures from point sources, will be able to be used in Northeast Ohio’s ozone SIP, if sufficient detail regarding emission reductions is available about those measures from the sources implementing them.

Finally, the Work Group pursued other avenues for achieving reductions, such as greater compliance and enforcement efforts, as well as energy efficiency at the consumer level, which might include making changes to homes, windows, roof colors, hot-water heating systems, etc., plus changing landscaping and plantings. The Work Group will examine the 5% electricity-reduction goals now being implemented in Texas.

Next Steps

The Work Group is still in the stages of information gathering and of learning about how the photochemical grid modeling being performed by Ohio EPA and LADCO will affect the focus of its work.

The Work Group will pursue individual point source control measures, grouped industry point sources measures, consumer energy-efficiency strategies to reduce electricity usage, and controls on traditional “area sources” such as gasoline containers and lawnmowers, if the Area Source Work Group does not have time to reach those issues.

Appendices

Meeting Summary – August 30, 2005

Meeting Summary – September 26, 2005

Point Source Work Group Meeting Summary
August 30, 2005

The Point Source Work Group met for the first time on August 30, 2005, from 1:30 – 3:30 PM at NOACA's offices.

The Work Group reviewed the Selection Criteria established by the full Task Force on July 25, 2005, agreeing that the Criteria covered the relevant factors by which control measures could be evaluated.

The Work Group then reviewed data compiled by the City of Cleveland Division of Air Quality for point sources within Cuyahoga County. The data covered VOC, NOx, and particulate matter emissions from 2003 and 2004. The data represented actual emissions, rather than potential to emit (PTE), as reported through the fee system.

Questions were raised as to whether the modeling to be performed by Ohio EPA and the Lake Michigan Air Directors Consortium (LADCO) would use actual emissions or PTE. If actual emissions are used, then several recent measures taken by point sources, whether federally enforceable or voluntary, could be used for credits in the State Implementation Plan (SIP).

Some of the recent measures taken by point sources in Cuyahoga County included a permit modification by the Ford Casting plant to allow it to replace two cupolas in the coming years. First Energy reported NOx reductions through changes at the Ashtabula power plant and the Eastlake power plant. Alcoa reported a planned voluntary measure of purchasing low-NOx burners. The Northeast Ohio Regional Sewer District reported a planned change of three incinerators in 2009-2010 that would significantly reduce NOx.

The Work Group agreed to review data for the remaining seven counties in the nonattainment area at the next meeting, preferably grouped by SIC code, as has been done by Ohio EPA. The Work Group also agreed to begin to review traditional area sources, i.e., smaller industries that are not permitted but which are numerous and which contribute to air pollution. Such an increase in the scope of work was a natural extension for the Work Group. To that end, they reviewed draft lists of Reasonably Available Control Technologies (RACT) rules that may be promulgated by Ohio EPA for both VOC sources and NOx sources.

Finally, the Work Group requested the other nonattainment areas in the Midwest be contacted to see what solutions they had chosen. A request was made that energy efficiency be reviewed in order to reduce the draw on the electric grid, thus reducing emissions from the electric generating units. Renewable energy was also mentioned for further study.

The Work Group set its next meeting for September 26, 2005, at 1:30 – 3:30 p.m. at the NOACA offices.

Point Source Work Group Meeting Summary
September 26, 2005

The Point Source Work Group met for the second time on September 26, 2005, from 1:30–3:45 PM at NOACA's offices.

Bill Spires and Tom Velalis of the Ohio EPA attended by telephone. The meeting began with a discussion of modeling issues, which was a carry-over from the previous meeting. Mr. Spires clarified that point sources would be viewed and modeled according to actual emissions, not according to potential to emit. He stated that improvements made to individual point sources in the 2002-2009 timeframe could be, and would be, modeled, so long as the improvements had been completed. He noted that other changes to Northeast Ohio, such as the addition of new point sources, would also have to be modeled to reflect the airshed as it might actually look in 2009.

The growth factors for the models used by Ohio EPA and the Midwest RPO (LADCO) were questioned as being overly optimistic for Northeast Ohio. NOACA's own projections showed dispersal of population but little actual growth. Mr. Spires is going to investigate further because he agreed with the Work Group members that the growth factors were too large.

The Work Group then reviewed data compiled by the Ohio EPA – Northeast District Office for point sources within Ashtabula, Geauga, Lake, Lorain, Medina, Portage, and Summit counties, which are within the nonattainment area, plus Wayne, Stark Mahoning, and Trumbull, which are "collar" counties surrounding the ozone nonattainment area. The data covered VOC and NOx emissions from 1999-2004. The data represented actual emissions, rather than potential to emit, as reported through the fee system using the STARSHIP database.

The Work Group, along with Bill Spires and Tom Velalis, examined the list to see whether there were groups of industries that might be susceptible to further regulation in a manner that would positively impact ozone formation. It was mentioned that the plastics industry was high-polluting, but already heavily regulated under the Maximum Achievable Control Technology (MACT) standards. Other categories included power plants, adhesives and coatings, metal manufacturing, truck manufacturing, and additives manufacturing.

The Work Group review the US EPA guidance documents on taking credits for voluntary measures, for emerging measures, and for energy-efficiency measures, all of which warrant further review. A presentation was given on air pollution reductions from "green buildings," which result from reduced use of electricity from the grid. Other energy-efficiency measures currently being implemented in Texas were mentioned as valuable for further study.

The Work Group set its next meeting for October 17, 2005, at 1:30–3:30 p.m. at the NOACA offices.