

sources. Some of the specific state emission control measures included in the 15 percent ROP plan are:

- Basic I/M for Motor Vehicles
- Transportation Control Measures (TCMs)
- Low-Volatility (low Reid Vapor Pressure (RVP)) Gasoline
- Tightened Reasonably Available Control Technology (RACT) Standards for Some Source Categories
- RACT for Sources Covered By New Control Techniques Guidelines (CTGs)
- Architectural Surface Coating Standards
- Volatile Organic Liquids Storage Facility Controls
- Automobile Refinishing Operation Controls
- Marine Vessel Loading Emission Controls

All of the emission control measures contained in Illinois' 15 percent ROP plan have been fully adopted, have been implemented, and are enforceable in the Metro-East area.

Illinois has adopted and implemented emission control rules requiring existing sources of VOC to meet, at minimum, RACT. These requirements apply to sources in categories covered by CTGs and other major non-CTG sources. Some of these RACT emission controls were achieved in addition to the RACT controls reflected in the 15 percent ROP plan.

The stationary NO_x source emission reductions in Illinois are primarily due to the implementation of acid rain emission controls implemented in compliance with Title IV of the CAA.

Missouri

MDNR explained that some of the VOC emission reductions were due to the implementation of Missouri's 15 percent ROP plan, including its implementation of a centralized motor vehicle inspection and maintenance program and stationary source controls. Additional reductions were due to tighter Federal standards for new vehicles, and some were due to requirements for reformulated and low RVP gasoline for motor vehicles. In addition, Title IV of the CAA resulted in reduced NO_x emissions from utility sources.

b. Meteorological Conditions

In addition to identifying the controls which have led to emission reductions and air quality improvements, both Illinois and Missouri have evaluated whether ozone air quality improvements in the St. Louis area could be

attributable to favorable meteorological conditions, by comparing the trend of 1-hour ozone design values⁴ to the number of ozone conducive days⁵ that have occurred annually from 1989 to the present. While ozone design values trended significantly downward from 1989 to the present, the number of ozone conducive days, which varied from year-to-year, showed no significant trend over the period studied. Therefore, EPA believes that concentration is not due to changes in meteorology. EPA believes that reductions in emissions due to regulatory control programs have led to the improvement in ozone air quality.

Illinois

The IEPA assessed the changes in VOC and NO_x emissions in the Metro-East area for 1990 and 2000 (the first year of the three year attainment period). The 1990 emissions are the base year emissions taken from an inventory approved by EPA on September 13, 1994 (59 FR 46920). To derive the 2000 emissions, the IEPA used a 1999 update to the emissions inventory. Emissions documented in this emissions inventory were grown to 2000 to derive the 2000 attainment year emissions. Point source emissions were grown using EPA's EGAS model. Area source emissions were grown using source activity levels (indicators, such as population, source sector employment, etc.) appropriate for each source category grown to the 2000 levels and applied using appropriate source emission factors. On-road mobile source emissions for 2000 were calculated using EPA's MOBILE6 emissions model and 1999 Vehicle Miles Traveled (VMT) data grown to 2000 assuming a 2 percent per year growth rate. On-road mobile source emissions for 1990 were calculated using EPA's MOBILE6 emissions model. Off-road emissions were grown to 2000 using source sector activity levels and growth factors employed in the 1999 periodic emissions inventory update.

⁴ An ozone design value is the fourth highest daily peak 1-hour ozone concentration at the worst-case ozone monitor for a given three-year period.

⁵ The IEPA and the MDNR have analyzed ozone concentrations and meteorological conditions in the St. Louis area, and have found that peak ozone concentrations are highly dependent on certain meteorological conditions. Days are judged to be conducive to high ozone concentrations if the following conditions simultaneously exist:

- Maximum temperatures greater than 85 degrees Fahrenheit
- Wind speeds less than 10 miles per hour
- Solar insolation greater than 500 Langleys
- Little or no precipitation
- Southerly wind directions.

The table below documents the 1990 and 2000 VOC and NO_x emissions in the Metro-East area.

1990 AND 2000 METRO-EAST AREA VOC AND NO_x EMISSIONS

[Emissions in tons per ozone season weekday]

Source category	VOC	NO _x
1990		
Point Sources	74.05	95.85
Area Sources	33.84	1.66
On-Road Mobile Sources	43.27	45.13
Off-Road Mobile Sources	23.49	23.99
1990 Totals	174.65	166.63
2000		
Point Sources	17.91	61.91
Area Sources	28.32	1.18
On-Road Mobile Sources	26.57	54.71
Off-Road Mobile Sources	21.31	23.85
2000 Totals	94.11	141.64

It can be seen that both the VOC emissions and NO_x emissions have decreased in the Metro-East area between 1990 and 2000. The IEPA notes that these emission decreases are primarily due to the application of permanent and enforceable emission controls, and that these emission controls have contributed to the ozone air quality emission improvement in the St. Louis area.

Missouri

Similar to Illinois, Missouri compared VOC and NO_x emissions in 1990 (the base year emissions inventory) to those in 2000 (the attainment year emissions inventory). The 2000 emissions were derived by growing the 1999 periodic emissions inventory emissions. The 1999 periodic emissions inventory and source growth parameters are documented in the state's redesignation request. MDNR developed the 1990 on-road emissions using EPA's MOBILE5b emissions model. For purposes of comparison, MDNR included in the redesignation request, 2000 on-road emissions developed using EPA's MOBILE5b emissions model and MOBILE6 emissions model. Note that the discussion below only includes the 2000 on-road mobile emissions derived from using the MOBILE6 emissions model.

The following table presents the 1990 and 2000 VOC and NO_x emissions for the Missouri portion of the St. Louis ozone nonattainment area.