

US EPA ARCHIVE DOCUMENT

**Final Rule:
NOx SIP Call
Reducing the Regional
Transport of Ozone**

September, 1998



Ozone Causes Health Problems

- Acute respiratory problems;
- Aggravates asthma;
- Significant temporary decreases in lung capacity of 15 to over 20 percent in some healthy adults;
- Inflammation of lung tissue;
- Hospital admissions and emergency room visits
- Impairs the body's immune system defenses, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia

Ozone.... Smog

Nitrogen oxides combine with other compounds in the presence of sunlight to form ozone.

Nitrogen oxides and sulfur dioxide are the two key air pollutants that cause acid rain.

Acid Rain

Visibility

Most visibility problems can be traced to fine nitrates particles which form from emissions of nitrogen oxides.

Nitrogen "loadings" in water bodies can accelerate "eutrophication" - an over-enrichment that reduces fish populations.

Water Quality

Global Warming

Nitrogen oxides include nitrous oxide which is also a greenhouse gas.

Emissions of All Pollutants Down, Except NOx

**Emissions % Change
1970-1996**

Pollutant

Lead

-98%



Particulate Matter (PM10)

-73%



Sulfur Dioxide

-39%



Volatile Organic Compounds

-38%



Carbon Monoxide

-31%



Nitrogen Oxides

+8%



NOx Emissions from Coal-Fired Power Plants

+42%

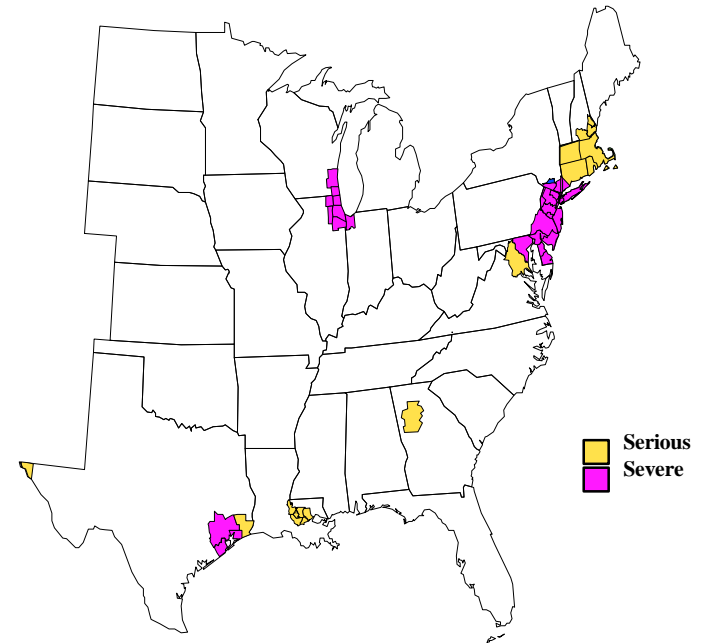


Ozone Transport

- Ground-level ozone -- regional problem
-- transported by wind
- Nitrogen oxides (NO_x) -- travel hundreds of miles across state boundaries to affect public health in areas far from the source of the pollution.
- Transport -- pollution from cities or areas with "clean" air may be contributing to a downwind city's ozone problem.

What is the Ozone Transport Assessment Group (OTAG)?

- Formed by ECOS and EPA
37 Eastern States and DC
- Most extensive analysis of ozone transport ever conducted
- States voted 32-5 in favor of a strategy to reduce NO_x emissions
- OTAG recommended up to 85% reduction (or 0.15/mmBTU)
- EPA is now issuing a Final Rule to address regional ozone transport based on these recommendations



States Included -- Final NOx SIP Call

- Requires 22 states and the District of Columbia to submit SIPs to address their contribution to regional ozone transport by reducing nitrogen oxides (NOx)

Alabama, Connecticut, District of Columbia, Delaware, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Michigan, Missouri, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, Wisconsin, and West Virginia

States Excluded -- Final NOx SIP Call

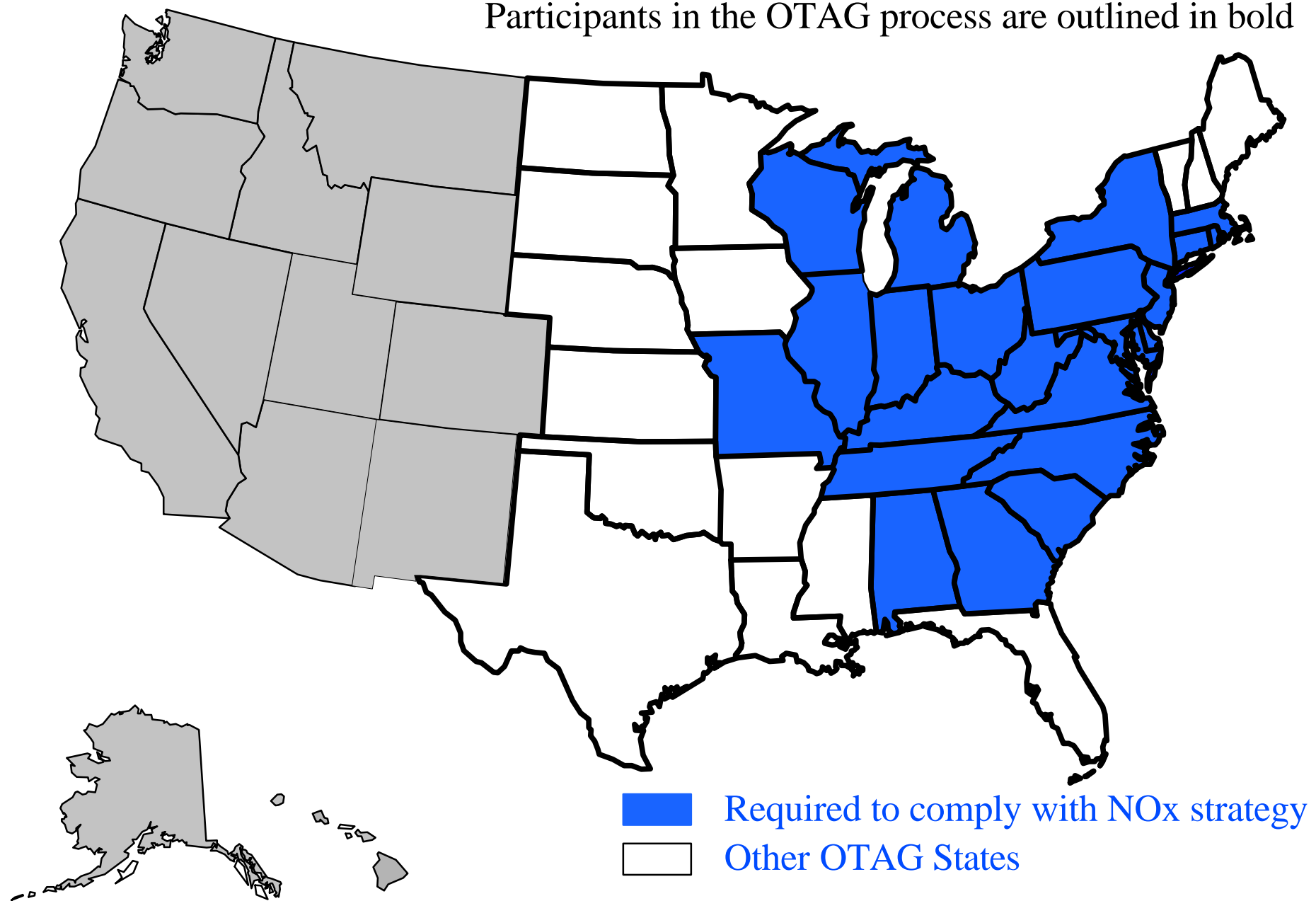
- Certain States in the OTAG domain were proposed to be excluded because modeling demonstrated they did not appear to significantly contribute to ozone problems in other states:

Arkansas, Florida, Iowa, Kansas, Louisiana, Maine, Minnesota, Mississippi, North Dakota, Nebraska, New Hampshire, Oklahoma, South Dakota, Texas, Vermont

- We received comments on the extent to which these states contribute to downwind ozone problems and we will conduct further modeling to respond to those comments before making a final decision.

States Affected by Final NOx SIP Call

Participants in the OTAG process are outlined in bold



Final Section 110 - NOx SIP Call

- Rule will reduce emissions of NOx by 1.1 million tons in the affected 22 states. Reductions will help states achieve the 8-hour ozone standard.
- Final Rule does not mandate which sources must reduce pollution. Each state given a NOx emission budget---permits states to choose what NOx measures to adopt.
- Very responsive to comments -- particularly issue of power "brownouts" -- final rule builds in flexibility to implement control technology and ensure energy reliability. Allows facilities to install controls over next 4-5 years.

Final Section 110 - NO_x SIP Call

- NO_x budget developed assumed an emission rate for electric utilities is 0.15 lbs/mmBtu.
(approx. 85 percent from 1990 emissions rate)
- Encourages reducing emissions from utility and large boilers under a cost-effective cap and trade program
- EPA's model cap and trade program facilitates states accepting trading programs which will realize substantial cost savings
- The final rule includes special provisions which reward early action and grant flexibility to facilities that need more time to implement controls

Reliability - NOx SIP Call

- Rule responds to timing and reliability concerns raised by a number of states and electric utilities and builds in flexibility needed to implement control technology
- EPA extended the compliance date from September 2002 to May 2003, so that sources have additional time to put controls in place
- Each state will receive a pool of emission credits to address concerns about power supplies
- Credits can be used by states to encourage early installation or provide more flexibility

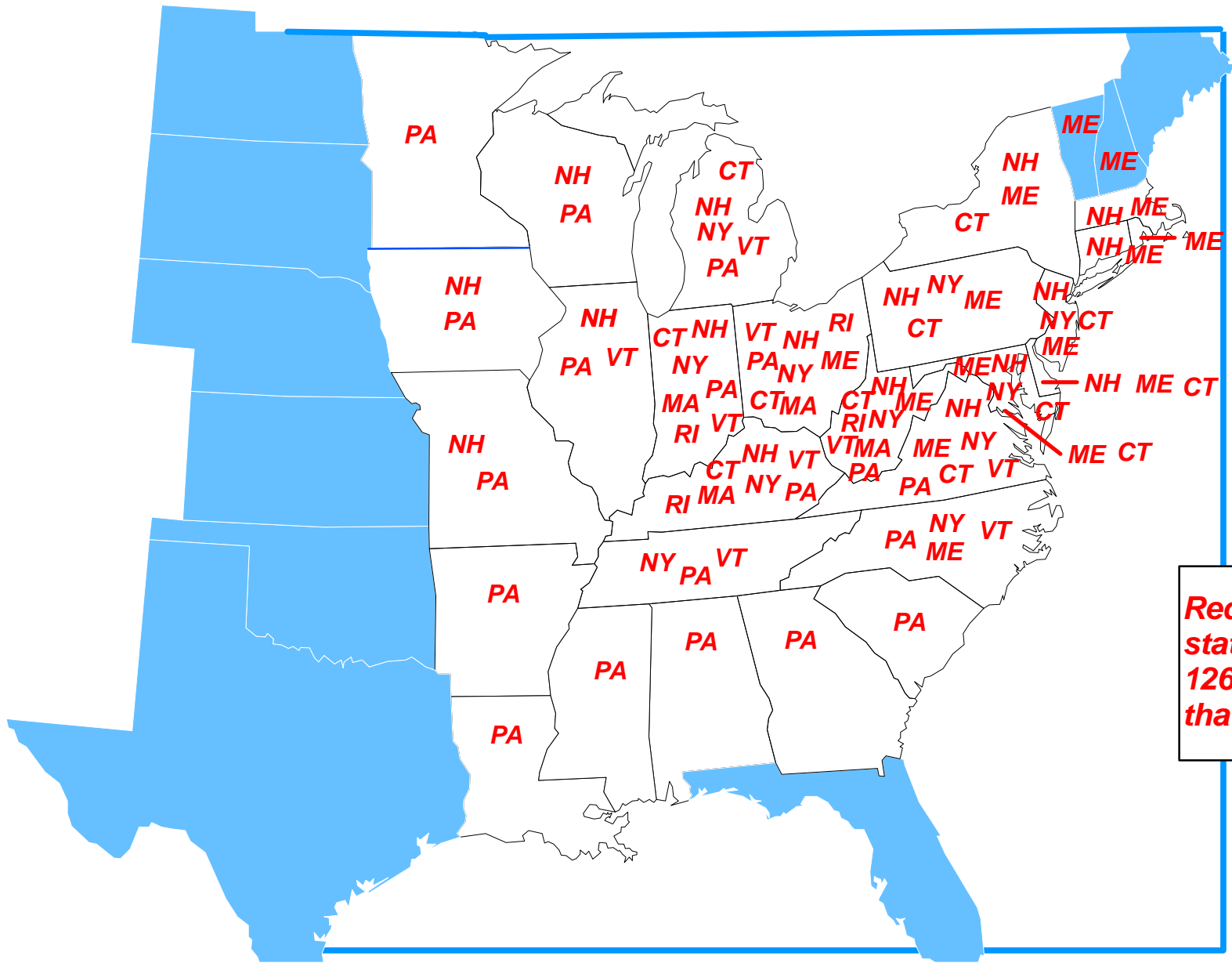
Timeline - NOx SIP Call

- | | |
|----------------|--|
| September 1998 | Final rule on regional NOx reductions |
| September 1999 | States submit implementation plans to EPA |
| May 2003 | States implement controls to achieve Budgets |
| May 2007 | States demonstrate compliance |

Related Action -- Proposal Addressing 126 Petitions

- EPA proposing action on petitions filed by 8 states (Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, Connecticut, New York and Pennsylvania)
- Goal of petitions similar to Final NOx SIP call -- reduce the transport of NOx
- Petitions call for EPA to require specific power plants and industrial facilities in the east, midwest and southeast to reduce emissions of nitrogen oxides, to help reduce ozone levels in downwind states.
- EPA proposes that certain petitions have technical merit (in whole or in part) and describes schedule and conditions that would automatically trigger the petitions.

Which States were named in 126 petitions?



Red.... Indicates the states that filed Section 126 petitions against that other state.

Timeline - 126 Rulemaking

- | | |
|--|--|
| September 30, 1998 | EPA will publish proposed 126 rulemaking |
| October 28-29, 1998 | Public Hearing on proposed 126 rulemaking |
| April 30, 1999 | EPA will take final action on 126 petitions. That action may be a final technical determination on the merits of the petitions, but postpones a final finding depending on the state's response to the SIP call. Once EPA makes a final finding, compliance would be required within 3 years. |
| November 30, 1999 and May 1, 2000 | Critical dates for determining whether petitions are granted based on the adequacy of states' submissions under the SIP call |

Related Action -- Proposed Federal Implementation Plan (FIP)

- Proposing Federal requirements to reduce ozone transport in the event that any of the 22 States or the DC do not submit required SIPs
- Proposal includes NO_x reduction requirements for electric utilities and certain types of industry (large boilers and turbines, large internal combustion engines, and cement manufacturing) -- based on NO_x budget calculations for SIP call
- Action on FIPs for individual states which do not submit SIPs -- November, 1999

Summary -- 126 and FIP

- The proposals on the section 126 petitions and the Federal Implementation Plan (FIP) are consistent with the information, modeling, and conclusions in the section 110 (NO_x SIP Call)
- Under 126, EPA could set NO_x emissions limits on specific sources, where as under 110, EPA establishes budgets and then States have flexibility to determine how to achieve NO_x reductions
- The FIP requirements would go into effect for any of the 22 states or DC that do not submit an implementation plan in response to 110

NOx Rule Will Bring Much of the East into Attainment Without Additional Local Controls

- In 1997, EPA established a new 8-hour ozone standard
- EPA will "designate" areas as nonattainment in the year 2000 (based on 1997-1999 data)
- Of the areas that currently meet the 1-hour ozone standard, 117 counties do not meet the 8-hour ozone standard. However, the final NOx rule will most likely bring all but 3 of these counties into attainment

Criteria for Classification as "Transitional" for Areas not Attaining the New Ozone Standard

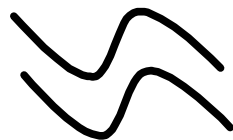
- State must comply with EPA's regional ozone transport reduction strategy as applicable
- Area must attain the 0.12 ppm 1-hour ozone standards by 2000
- Submit a State Implementation Plan (SIP) by 2000 that includes control measures for the emission reductions required by the EPA regional strategy plus additional reductions for 8-hour ozone attainment

What Transitional Classification will mean for your area?

- ★ No additional local controls because of regional reduction of nitrogen oxides
- ★ Cost-effective strategy for long-range emission reductions
- ★ Avoids unnecessary burdens on small businesses
- ★ Minimizes changes in the existing programs associated with new source review and transportation planning

Final Regional NOx Transport Rule

NOx Reductions of
1,156,638 Tons in
Summer of 2007



166,091,129 Cars

Cost of Final NO_x SIP Call
To Consumers

Anticipated to be a Fraction of
the Cost Savings Associated
with Utility Restructuring