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Approval and Promulgation of Implementation Plans; Illinois; Ozone; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[IL200–1; FRL–7008–9]

Approval and Promulgation of Implementation Plans; Illinois; Ozone

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to approve the following as revisions to the Illinois State Implementation Plan (SIP) for the Chicago-Gary-Lake County ozone nonattainment area, i.e., for the Illinois portion of this bi-state ozone nonattainment area: an ozone attainment demonstration; a post-1999 ozone Rate-Of-Progress (ROP) plan; a contingency measures plan for both the ozone attainment demonstration and post-1999 ROP plan; a commitment to conduct a mid-course review of the ozone attainment demonstration; mobile source conformity emission budgets for Volatile Organic Compounds (VOC) and Oxides of Nitrogen (NO_X) and the State's commitment to revise these emission budgets using the MOBILE6 emissions factor model; and, a Reasonably Available Control Measure (RACM) analysis. The EPA is also proposing to revise the existing NO_X emissions control waiver for the Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area to the extent that the State has relied on NO_X emission controls from certain Electrical Generating Units (EGUs), major non-EGU boilers and turbines, and major cement kilns in the nonattainment area to attain the ozone standard. The existing NO_X emissions control waiver remains in place for Reasonably Available Control Technology (RACT), New Source Review (NSR), and certain requirements of vehicle Inspection and Maintenance (I/M) and transportation and general conformity. The EPA is proposing to deny a related citizen petition for the termination of the NSR portion of the NO_X waiver.

DATES: Written comments must be received on or before August 10, 2001.

ADDRESSES: Written comments should be sent to J. Elmer Bortzer, Chief, Regulation Development Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, Illinois 60604.

Copies of the State's submittals addressed in this proposed rule and other relevant materials are available for public inspection during normal business hours at the following address: U.S. Environmental Protection Agency, Region 5, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604 (please telephone Edward Doty at (312) 886–6057 before visiting the Region 5 office).

FOR FURTHER INFORMATION CONTACT: Edward Doty, Regulation Development Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, Telephone Number: (312) 886–6057, E-Mail Address: doty.edward@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document whenever ''we,'' ''us,'' or ''our'' is used, we mean EPA. Whenever ''you'' or ''me'' is used, we mean you the reader of this proposed rule or the sources subject to the requirements of the State plan as discussed in the State's submittal or in this proposed rule.

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I. What Action Is EPA Proposing Today?

Based on a review of all available information, Clean Air Act (CAA) requirements, and relevant EPA guidance, we are proposing to approve: (1) Illinois' 1-hour ozone attainment demonstration for the Chicago-Gary-Lake County ozone nonattainment area; (2) Illinois' post-1999 ROP plan (an ROP plan covering the time period of November 15, 1999 through November 15, 2007) for the Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area; (3) Illinois' contingency measures plan for both the ozone attainment demonstration and the post-1999 ROP plan; (4) Illinois' commitment to conduct a mid-course review of the ozone attainment demonstration; (5) Illinois' mobile source conformity emission budgets for VOC and NO_X in the Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area; and (6) Illinois' RACM analysis/demonstration for the Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area (the term ''Chicago area'' is used to refer to the Illinois portion of this ozone nonattainment area).

We are proposing to modify an existing NO_X emissions control waiver (the NO_X emissions control waiver has been in place since January 1996) for the Chicago area. The existing NO_X emissions control waiver was based on ozone modeling data showing that NO_X emission reductions in the ozone nonattainment area would not contribute to attainment of the ozone standard in this nonattainment area. Ozone modeling supporting the ozone attainment demonstration addressed in this proposed rule shows that NO_X emission controls on EGUs, major non-EGU boilers and turbines, and major cement kilns in the ozone nonattainment area (and statewide) are beneficial and will contribute to attainment of the 1-hour ozone standard. The attainment demonstration further shows that the ozone standard will be attained by the applicable attainment date without the use of additional NO_X emission controls [1] (beyond other NO_X emission controls already implemented and/or modeled in the ozone attainment demonstration) in the nonattainment area. Consequently, such additional NO_X emission controls are in excess of what is needed to attain the ozone standard.

We are proposing to modify the existing NO_X waiver to remove from the emissions control waiver the EGUs, major non-EGU boilers and turbines, and major cement kilns for which the State included emission controls in the ozone attainment demonstration. Based on the ''excess emissions'' control provisions of section 182(f)(2) of the CAA, however, we are proposing to retain the NO_X waiver for RACT, NSR, and certain requirements of transportation and general conformity, and I/M. [2]

We are proposing to deny a related citizen petition to terminate the NSR portion of the NO_X emissions control waiver for the Chicago area. No data have been submitted or are available showing that the existence of the waiver for NO_X NSR in the Chicago area will prevent the attainment of the 1-hour ozone standard by the November 15, 2007 deadline or will delay attainment of the ozone standard by an earlier date.

II. Background Information

A. What Is a State Implementation Plan (SIP)?

Section 110 of the CAA requires states to develop air pollution control regulations (rules) and strategies to ensure that state air quality meets the National Ambient Air Quality Standards (NAAQS) established by the EPA. Each state must submit the rules and emission control strategies to the EPA for approval and promulgation into a Federally enforceable SIP.

Each Federally approved SIP protects air quality primarily by addressing air pollution at its points of origin. The SIPs can be and generally are extensive, containing many state rules or other enforceable documents and supporting information, such as emission inventories, monitoring documentation, and modeled attainment demonstrations.

B. What Is the Federal Approval Process for a SIP?

In order for state rules and emission control strategies to be incorporated into the Federally enforceable SIPs, states must formally adopt the rules and emission control strategies consistent with state and Federal requirements. This process generally includes public notice, public hearings, public comment periods, and formal adoption by state-authorized rulemaking bodies.

Once a state rule or emissions control strategy is adopted, the state submits it to us for inclusion into the SIP. We must provide public notice and must seek additional public comment regarding our proposed action on the state submission. If adverse comments are received, they must be addressed prior to any final Federal action (they are

[1] The additional NO_X emission controls not considered in the ozone attainment demonstration include NO_X RACT, NO_X NSR, and additional mobile source NO_X controls, including vehicle inspection/maintenance (I/M) emission cutpoints.

[2] States with NO_X waivers are still required to prepare motor vehicle emissions budgets consistent with the ozone attainment demonstrations and to use these emissions budgets in conformity analyses.

generally addressed in a final rulemaking action).

All state rules and supporting information approved by the EPA under section 110 of the Act are incorporated into Federally approved SIPs. Records of such SIP actions are maintained in the Code of Federal Regulations (CFR) at Title 40, part 52, titled ''Approval and Promulgation of Implementation Plans.'' The actual state rules which are approved are not reproduced in their entirety in the CFR, but are ''incorporated by reference,'' which means that EPA has approved the state rules with specific effective dates, has identified the rules in the CFR, and, thereby, has identified the full texts of the rules by reference.

C. What Does Federal Approval of a State Regulation Mean to Me?

Enforcement of a state rule before and after it is incorporated into a Federally approved SIP is primarily a state responsibility. After a rule is Federally approved, however, EPA is authorized under section 113 of the CAA to conduct enforcement actions against violators. Citizens are also offered legal recourse to address violations as described in section 304 of the CAA.

D. What Are the Options for Action on a State SIP Submittal?

Depending on the circumstances unique to each of the SIP submissions, we may propose one or more of several types of approval, or disapproval in the alternative (or a combination if our rulemaking process involves separable portions of a SIP submission). In addition, these proposals may identify additional state actions that may be necessary by a state before EPA may fully approve the submissions.

The CAA provides for EPA to approve, disapprove, partially approve, or conditionally approve a state's submission. The EPA must fully approve a submission if it meets the requirements of the Act. If a submission is deficient in some way, EPA may disapprove the submission. In the alternative, if portions of the submission are approvable, EPA may partially approve and partially disapprove the submission, or may conditionally approve the submission based on a state's commitment to correct the deficiency by a date certain, not later than one year from the date of EPA's final conditional approval.

The EPA has recognized that, in some limited circumstances, it may be appropriate to issue a full approval for a submission that consists, in part, of an enforceable commitment by the state. Unlike the commitment for a submission correction under a conditional approval, such an enforceable commitment can be enforced in court by EPA or citizens. In addition, this type of commitment may extend beyond one year following EPA's final approval action. Thus, EPA may accept such an enforceable commitment where it is infeasible for the state to accomplish the necessary action(s) in the short term.

E. What Ozone Nonattainment Area Is Addressed by the State Submittal Reviewed in This Proposed Rule?

The December 26, 2000 submittal of the Illinois Environmental Protection Agency (IEPA) reviewed here primarily deals with the attainment of the 1-hour ozone standard in the Chicago area. The Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area includes the counties of Cook, DuPage, Kane, Lake, McHenry, and Will, and the townships of Aux Sable and Goose Lake in Grundy County and Oswego in Kendall County. The Chicago-Gary-Lake County ozone nonattainment area also includes Lake and Porter Counties in Indiana, an Indiana submittal for which is the subject of a separate review and rulemaking.

For purposes of an ozone attainment demonstration, the Chicago-Gary-Lake County ozone nonattainment area is a sub-portion of a larger ozone modeling domain, referred to as Grid M. This ozone modeling domain is further discussed in a later portion of this proposed rule. The State's submission demonstrates that attainment of the 1-hour ozone standard will occur by November 15, 2007 throughout Grid M, including within the Chicago-Gary-Lake County ozone nonattainment area.

F. What Prior EPA Rulemakings Relate to or Led to the State Submittal Reviewed in This Proposed Rule?

On December 16, 1999 (64 FR 70496), we proposed to conditionally approve the 1-hour ozone attainment demonstration for the Chicago area submitted by the IEPA on April 30, 1998. The April 30, 1998 attainment demonstration submittal was based on a range of possible emission control measures (on a number of sets of emission control measures reflecting various emission control alternatives) and did not specify a single set of emission control measures as an adopted emissions control strategy. We based our December 16, 1999 proposed conditional approval on the State's commitment to adopt and submit, by December 31, 2000, a final ozone attainment demonstration SIP revision and a post-1999 ROP plan, including the necessary State-adopted air pollution control rules needed to support and complete the ozone attainment demonstration and post-1999 ROP plan. In the alternative, we proposed to disapprove the attainment demonstration if, by December 31, 1999, the State did not adopt an emissions control strategy as supported by its modeled ozone attainment demonstration and did not submit adequate motor vehicle emission budgets for VOC and NO_X for the Chicago area that comply with EPA's transportation conformity regulations. In addition, we conditioned our approval on the State of Illinois submitting, by December 31, 1999, an enforceable commitment to conduct a mid-course review of the ozone attainment plan in 2003.

The December 16, 1999 proposed rulemaking noted that, if the EPA issued a final conditional approval of the State's April 30, 1998 submission, [3] the conditional approval would revert to a disapproval if the State did not adopt and submit a complete SIP submission with the following elements by December 31, 2000: (1) A final adopted ozone modeling analysis that fully assesses the impacts of regional NO_X emissions reductions, models a specific local emissions reduction strategy, and reconsiders the effectiveness of the existing NO_X emissions control waiver (see the discussion relating to the NO_X emissions control waiver below); (2) adopted emission control measures needed to meet the post-1999 ROP requirements (an ROP plan covering the period of November 15, 1999 through the ozone attainment year); and (3) local VOC and regional NO_X emission control measures sufficient to support the final ozone attainment demonstration. If the State made this complete submission by December 31, 2000, we noted that we would propose action on the new submission for the purpose of determining whether to issue a final full approval of the ozone attainment demonstration.

As noted below, the December 26, 2000 submittal reviewed here, in part, addresses a post-1999 ROP plan for the Chicago area. The post-1999 ROP plan provides required emission reductions in addition to Illinois' 15 percent ROP plan (ROP emission reductions occurring prior to November 15, 1996) and 9 percent post-1996 ROP plan (ROP emission reductions occurring prior to November 15, 1999) for this ozone nonattainment area. On July 14, 1997

[3] To date, the EPA has not issued a final rule conditionally approving the State's April 30, 1998 submittal.

(62 FR 37494), we published a final rule to approve Illinois' 15 percent ROP plan. On December 18, 2000 (65 FR 78961), we published a final rule to approve Illinois' post-1996 ROP plan. These final rules address the emission control measures selected by the State to achieve required ROP emission reductions and address the State's calculation of the 1996 VOC emission target and the 1999 VOC and NO_X emission targets. The December 18, 2000 final rule also addresses the State's adopted contingency measure plan for the post-1996 ROP plan and approves the 1999 motor vehicle emissions budgets associated with the ROP plan for the Chicago area.

The December 26, 2000 submittal reviewed in this proposed rule includes, as part of the ozone attainment demonstration and the post-1999 ROP plan, regional NO_X emission reductions. These regional NO_X emission reductions must be reviewed in light of the fact that a NO_X emissions reduction waiver exists for the Chicago-Gary-Lake County ozone nonattainment area. On January 26, 1996 (61 FR 2428), we published a final rule approving the NO_X emissions control waiver based on a showing that NO_X reductions would not contribute to attainment of the 1-hour ozone NAAQS. Through the January 26, 1996 rulemaking, the EPA granted exemptions from the RACT and NSR requirements for major stationary sources of NO_X and from certain vehicle I/M and general conformity requirements for NO_X in the ozone nonattainment areas in the Lake Michigan Ozone Study modeling domain (the Lake Michigan Ozone Study modeling domain is a sub-portion of Grid M centered on lower Lake Michigan). On February 12, 1996 (61 FR 5291), we published a final rule granting exemption from certain transportation conformity [4] requirements for NO_X in the Chicago area. Consequently, since the NO_X requirements have been waived based on a demonstration that NO_X emission controls in the ozone nonattainment area are not beneficial toward attaining the ozone standard, the State may not receive credit for NO_X emission controls in the ozone nonattainment area toward ROP requirements unless the State can demonstrate the opposite, i.e., that such emission controls are beneficial for attainment of the ozone standard. The State, in its December 26, 2000 submittal, is now demonstrating that certain regional NO_X emission controls (including some controls on EGUs in the Chicago ozone nonattainment area) would contribute toward attainment of the ozone standard [5]. We are proposing, based on the information submitted, to revise the NO_X waiver for the Chicago nonattainment area, as further explained below.

G. What Is the Time Frame for EPA To Take Action on the State Submittal?

As noted above, the EPA is providing a 30 day public comment period for this proposed rule. This comment period is typical for such proposed rules and is critical in this case given the relatively tight time constraints under which the EPA is operating. To meet the time constraints of an existing consent decree between the EPA and the Natural Resources Defense Council, the EPA must complete final rulemaking approving the December 26, 2000 submittal by October 15, 2001 or must publish a proposed Federal Implementation Plan (FIP) for the Chicago area by that date.

H. What Are the Basic Components of the State Submittal and What Are the Subjects Covered in This Proposed Rule?

The December 26, 2000 Illinois submittal reviewed in this proposed rule addresses the following required plan elements: (1) An ozone attainment demonstration for the Chicago-Gary-Lake County ozone nonattainment area and the Grid M modeling domain; (2) the post-1999 ROP plan for the Chicago area; (3) contingency measures for the post-1999 ROP plan and for the ozone attainment demonstration; and (4) motor vehicle transportation conformity emission budgets. Besides these plan elements, this proposed rule addresses the following additional issues: (1) Illinois' commitments for a mid-course review of the ozone attainment demonstration; (2) revisions to the existing NO_X control waiver for the Chicago-Gary-Lake County ozone nonattainment area and a public petition requesting a removal of the NSR portion of the NO_X control waiver; and (3) a RACM analysis for the Chicago area. In this notice we do not respond to the public comments submitted on our December 16, 1999 proposed rule on Illinois' April 30, 1998 ozone attainment demonstration submittal. We will address those comments when we take final action on Illinois' ozone attainment demonstration and other plan elements.

III. Ozone Attainment Demonstration and Emissions Control Strategy

A. Background Information and Requirements Placed on the Ozone Attainment Demonstration

1. What Clean Air Act Requirements Apply to the State's Ozone Attainment Demonstration?

The CAA requires the EPA to establish NAAQS for certain widespread air pollutants that cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. Clean Air Act sections 108 and 109. In 1979, EPA promulgated the 1-hour ozone standard at a level of 0.12 parts per million (ppm) (120 parts per billion [ppb]). 44 FR 8202 (February 8, 1979). Ground-level ozone is not emitted directly by sources. Rather, emissions of NO_X and VOC react in the presence of sunlight to form ground-level ozone and other secondary pollutants. NO_X and VOC are referred to as precursors of ozone. Control of VOC and NO_X emissions is addressed in ozone control strategies to reduce peak ozone levels.

An area exceeds the 1-hour ozone standard each day in which an ambient air quality monitor records an 1-hour average ozone concentration above 0.124 ppm. An area violates the ozone standard if, over a consecutive 3-year period, more than 3 daily exceedances are recorded or are expected to occur at any monitor in the area or in its immediate downwind environs. The highest of the fourth-high daily peak ozone concentrations over the 3-year period at any monitoring site in the area is called the ozone design value for the area. The CAA required the EPA to designate as nonattainment any area that was violating the 1-hour ozone standard, generally based on the air quality monitoring data for the 3 year period from 1987 through 1989. Clean Air Act section 107(d)(4); 56 FR 56694 (November 6, 1991). The CAA further classified these areas, based on the areas' ozone design values, as marginal, moderate, serious, severe, or extreme. Clean Air Act section 181(a). Marginal nonattainment areas were suffering the least significant air quality problems and extreme nonattainment areas had the most significant air quality problems.

[4] The NO_X waiver does not include an exemption from the need for the States to adopt mobile source NO_X emission budgets for the Chicago-Gary-Lake County ozone nonattainment area to support transportation and general confomity reviews. After the State has submitted and EPA has approved a motor vehicle NO_X emissions budget to be used for conformity purposes, the NO_X waiver is no longer applicable for transportation or general conformity as the State must consider the NO_X emissions budget when making conformity determinations.

[5] Statewide NO_X emission controls on major non-EGU boilers and turbines and major cement kilns were also considered in the ozone attainment demonstration, but specific controls on NO_X sources for these source categories were not identified for the Chicago area.

The control requirements and date by which attainment of the 1-hour ozone standard needs to be achieved vary with an area's classification. Marginal areas are subject to the fewest mandated control requirements and have the earliest ozone attainment date. Moderate, serious, severe, and extreme ozone nonattainment areas are subject to more stringent planning and control requirements but are provided more time to attain the standard. Serious nonattainment areas were required to attain the 1-hour ozone standard by November 15, 1999, and severe ozone nonattainment areas are required to attain the ozone standard by November 15, 2005 or November 15, 2007 depending on the areas' ozone design values. The Chicago-Gary-Lake County ozone nonattainment area is classified as severe-17 and its attainment date is November 15, 2007.

Under sections 182(c)(2) and 182(d) of the CAA, states with serious or severe ozone nonattainment areas were required to submit, by November 15, 1994, demonstrations of how the nonattainment areas would attain the 1-hour ozone standard and how they would achieve ROP reductions in VOC emissions of 9 percent for each 3-year period until the attainment date. In some cases, NO_X emission reductions can be substituted for the required VOC emission reductions to achieve ROP.

2. What Is the History of the State's Ozone Attainment Demonstration and How Is It Related to EPA's NO_X SIP Call?

Notwithstanding significant efforts by the states, in 1995 EPA recognized that many states in the eastern half of the United States could not meet the November 15, 1994 time frame for submitting attainment demonstration SIP revisions because emissions of NO_X and VOC in upwind states (and the ozone formed by these emissions) affected these nonattainment areas and the full impact of this effect had not yet been determined. This phenomenon is called ozone transport.

On March 2, 1995, Mary D. Nichols, EPA's then Assistant Administrator for Air and Radiation, issued a memorandum to EPA's Regional Administrators acknowledging the efforts made by states but noting the remaining difficulties in making attainment demonstration SIP submittals.[6] Recognizing the problems created by ozone transport, the March 2, 1995 memorandum called for a collaborative process among the states of the eastern half of the country to evaluate and address transport of ozone and its precursors. This memorandum led to the formation of the Ozone Transport Assessment Group (OTAG)[7] and provided for the states to submit the attainment demonstration SIPs based on the expected time frame for OTAG to complete its evaluation of ozone transport and to take into consideration the OTAG ozone modeling results.

In June 1997, OTAG completed its process. OTAG submitted to EPA the results of its technical air quality modeling efforts, which quantified the impact of the transport of ozone and its precursors. OTAG recommended consideration of a range of regional NO_X emission control measures.

In recognition of the length of the OTAG process, in a December 29, 1997 memorandum, Richard Wilson, EPA's then Acting Assistant Administrator for Air and Radiation, provided until April 1998 for states to submit the following elements of their attainment demonstration SIPs for serious and severe nonattainment areas: (a) Evidence that the applicable emission control measures in subpart 2 of part D of title I of the CAA were adopted and implemented or were on an expeditious course to being adopted and implemented; (b) lists of measures needed to meet the remaining ROP emissions reduction requirements and to reach attainment; (c) for severe areas only, a commitment to adopt and submit the emission control measures necessary for attainment and the ROP plans through the attainment year by the end of 2000;[8] (d) commitments to implement the SIP control programs in a timely manner to meet ROP emission reduction milestone targets and to achieve attainment of the ozone standard; and (e) evidence of a public hearing on each state's submittal.[9] This submission is sometimes referred to as the Phase II submission. Motor vehicle emission budgets can be established based on a commitment to adopt the measures needed for attainment and identification of the measures needed. Thus, state submissions due in April 1998, under the Wilson policy, should have also included motor vehicle emissions budgets.

Building upon the OTAG recommendations and technical analyses, in November 1997, EPA proposed action addressing the ozone transport problem. In its proposal, the EPA found that current SIPs in 22 states and the District of Columbia (23 jurisdictions) did not meet the requirements of section 110(a)(2)(D) of the CAA because they did not adequately regulate statewide NO_X emissions that significantly contribute to ozone nonattainment in downwind states. 62 FR 60318 (November 7, 1997). The EPA finalized that rule in September 1998, calling on the 23 jurisdictions to revise their SIPs to require NO_X emission reductions within each jurisdiction to a level consistent with a NO_X emission budget identified in the final rule. 63 FR 57356 (October 27, 1998). The final rule is commonly referred to as the NO_X SIP Call.

3. What Are the Modeling Requirements for the Ozone Attainment Demonstrations?

The EPA provides that states may rely on a modeled attainment demonstration supplemented with additional evidence to demonstrate attainment of the ozone standard.[10] In order to have complete ozone modeling attainment demonstration submissions, states should have submitted the required modeling analyses and identified any additional evidence that EPA should consider in evaluating whether areas will attain the ozone standard.

For the purposes of demonstrating attainment of the ozone standard, the CAA (section 182(c)(2)(A)) requires states with serious and severe ozone nonattainment areas to use photochemical dispersion modeling or an analysis method EPA determines to be as effective to assess the adequacy of emission control strategies and to demonstrate attainment of the ozone standard. The photochemical dispersion modeling system is set up using

[6] Memorandum, ''Ozone Attainment Demonstrations,'' issued March 2, 1995. A copy of the memorandum may be found on EPA's web site at http://www.epa.gov/ttn/oarpg/t1pgm.html.

[7] Letter from Mary A. Gade, Director, State of Illinois Environmental Protection Agency, to the members of the Environmental Council of States (EOCS), dated April 13, 1995.

[8] In general, a commitment for severe areas to adopt by December 2000 the control measures necessary for attainment and ROP through the attainment year applies to any additional measures necessary for attainment that were not otherwise required to be submitted earlier. This memorandum was not intended to allow states to delay submission of measures required under the Clean Air Act.

[9] Memorandum, ''Guidance for Implementing the 1-Hour Ozone and Pre-Existing PM 10 NAAQS,'' issued December 29, 1997. A copy of this memorandum may be found on EPA's web site at http://www.epa.gov/ttn/oarpg/t1pgm.html.

[10] The EPA issued guidance on air quality modeling that is used to demonstrate attainment of the 1-hour ozone NAAQS. See U.S. EPA (1991), Guideline for Regulatory Application of the Urban Airshed Model, EPA–450/4–91–013 (July 1991). A copy may be found on EPA's web site at http://www.epa.gov/ttn/scram/ (file name: ''UAMREG''). See also U.S. EPA (1996), Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS, EPA–454/B–95–007 (June 1996). A copy may be found on EPA's web site at http://www.epa.gov/ttn/scram/ (file name: ''03TEST'').

observed meteorological conditions conducive to the formation of ozone. The meteorological conditions are selected based on historical data for high ozone periods in the nonattainment area or in its associated modeling domain. Emissions for a base year and monitored ozone and ozone precursor concentrations are used to evaluate the modeling system's ability to reproduce actual monitored air quality values (ozone and other associated pollutants). Following validation of the modeling system for the base year, emissions are projected to an attainment year and modeled in the photochemical modeling system to predict air quality levels in the attainment year. Projected emission changes include source emissions growth up to the attainment year and emission controls implemented by the attainment year.

A modeling domain is chosen that encompasses the ozone nonattainment area and surrounding upwind and downwind areas. Attainment of the ozone standard is demonstrated when all predicted ozone concentrations in the attainment year in the modeling domain are at or below the ozone NAAQS or at an acceptable upper limit above the NAAQS permitted under certain conditions as explained in EPA's guidance. An optional Weight-Of-Evidence (WOE) determination may be used to address uncertainty inherent in the application of photochemical grid models. See the discussion of possible WOE determination tests and analyses below.

The EPA guidance identifies the features of a modeling analysis that are essential to obtain credible results. First, the State must develop and implement a modeling protocol. The modeling protocol describes the methods and procedures to be used in conducting the modeling analyses and provides for policy oversight and technical review by individuals responsible for developing or assessing the attainment demonstration (state and local agencies, EPA regional offices, the regulated community, and public interest groups). Second, for purposes of developing the information to put into the model, the state must select historical high ozone days (days with ozone concentrations exceeding the ozone standard) that are representative of the ozone pollution problem for the nonattainment area. Third, the state needs to identify the appropriate dimensions of the area to be modeled, i.e., the modeling domain size. The modeling domain should be larger than the designated ozone nonattainment area to reduce uncertainty in the nonattainment area boundary conditions and should include any large upwind sources just outside of the ozone nonattainment area. In general, the modeling domain is considered to be the area where control measures are most beneficial to bring the area into attainment of the ozone NAAQS. Fourth, the state needs to determine the modeling grid resolution (the modeling domain is divided into a three-dimensional grid). The horizontal and vertical resolutions in the modeling domain affect the modeled dispersion and transport of emission plumes. Artificially large grid cells (too few vertical layers and horizontal grids) may artificially dilute pollutant concentrations and may not properly consider impacts of complex terrain, meteorology, and land/water interfaces. Fifth, the state needs to generate meteorological data and emissions that describe atmospheric conditions and inputs reflective of the selected high ozone days. Finally, the state needs to verify that the modeling system is properly simulating the chemistry and atmospheric conditions through diagnostic analyses and model performance tests (generally referred to as model validation). Once these steps are satisfactorily completed, the model is ready to be used to generate air quality estimates, to evaluate emission control strategies, and to support an ozone attainment demonstration.

The modeled attainment test compares model-predicted 1-hour daily maximum ozone concentrations in all grid cells for the attainment year (2007 for the Chicago-Gary-Lake County ozone nonattainment area), with all selected emission control measures in place, to the level of the ozone NAAQS. A predicted peak ozone concentration above 0.124 ppm (124 ppb) indicates that the area may exceed the ozone standard in the attainment year under the tested base year conditions and that the tested emissions control strategy may be inadequate to attain the ozone standard. This type of test is referred to as an exceedance test. EPA's guidance recommends that states use either of two modeled attainment or exceedance tests for the ozone attainment demonstration, a deterministic test or a statistical test.

The deterministic test requires a state to compare predicted 1-hour daily maximum ozone concentrations for each modeled day [11] to the attainment level of 0.124 ppm. If none of the predictions exceed 0.124 ppm, the test is passed.

[11] The initial, ''ramp-up'' day for each modeled high ozone episode is excluded from this determination.

The statistical test takes into account the fact that the 1-hour ozone NAAQS allows exceedances. If, over a 3-year period, an area has an average of 1 or fewer daily exceedances per year at any monitoring site, the area is not violating the ozone standard. Thus, if the state models an extreme day, considering meteorological conditions that are very conducive to high ozone levels, the statistical test provides that a prediction of an 1-hour ozone concentration above 0.124 ppm up to a certain upper limit may be consistent with attainment of the standard.

The acceptable upper limit for modeled peak ozone concentrations in the statistical test is determined by examining the levels of ozone standard exceedances at monitoring sites which meet the 1-hour ozone NAAQS. For example, a monitoring site for which the four highest 1-hour average ozone concentrations over a 3-year period are 0.136 ppm, 0.130 ppm, 0.128 ppm, and 0.122 ppm is attaining the standard. To identify an acceptable upper limit, the statistical likelihood of observing ozone air quality exceedances of the standard of various concentrations is equated to the relative severity of the modeled day. The upper limit generally represents the maximum ozone concentration observed at a location on a single day, and would be the only ozone reading above the standard that would be expected to occur no more than an average of once a year over a 3-year period. Therefore, if the maximum ozone concentration predicted by the model is below the acceptable upper limit, in this case 0.136 ppm, then EPA might conclude that the modeled attainment test is passed. Generally, exceedances well above 0.124 ppm are very unusual at monitoring sites meeting the ozone NAAQS. Thus, these upper limits are rarely substantially higher than the attainment level of 0.124 ppm.

4. What Additional Analyses May Be Considered When the Ozone Modeling Fails To Show Attainment of the Ozone Standard?

When the ozone modeling does not conclusively demonstrate attainment of the ozone standard through either a deterministic test or a statistical test, additional analyses may be presented to help determine whether the area nevertheless will attain the standard. As with other predictive tools, there are inherent uncertainties in some of the photochemical modeling inputs, such as the meteorological and emissions data bases for individual days and in the methodology used to assess the severity of an exceedance at individual sites. EPA's guidance recognizes these

limitations, and provides a means for considering other evidence to help assess whether attainment of the NAAQS is likely. The process by which this is done is the WOE determination.[12]

Under a WOE determination, a state can rely on and EPA will consider factors such as: Other modeled attainment tests, e.g., a rollback analysis; other modeled outputs, e.g., changes in the predicted frequency and pervasiveness of ozone standard exceedances and predicted changes in an area's ozone design value; actual observed air quality trends; estimated emissions trends; analyses of air quality monitoring data; the responsiveness of the model predictions to further emission controls; and, whether there are additional emission control—measures that are or will be approved into the SIP but that were not included in the ozone modeling analysis. This list is not an exhaustive list of factors that may be considered, and the factors considered could vary from case to case. EPA's guidance contains no limit on how close a modeled attainment test (a deterministic test or a statistical test) must be to passing to conclude that other evidence besides an attainment test is sufficiently compelling to suggest attainment. The further a modeled attainment test is from being passed, however, the more compelling the WOE determination needs to be.

EPA's 1996 modeling guidance also recognizes a need to perform a mid-course review as a means for addressing uncertainty in the modeling results, particularly if a WOE determination is needed to support an ozone attainment demonstration. Because of the uncertainty in long-term projections, EPA believes a viable attainment demonstration that relies on a WOE determination needs to contain provisions for periodic review of monitoring, emissions, and modeling data to assess the extent to which refinements to emission control measures are needed. The mid-course review is further discussed below.

[12] States may choose to submit WOE determinations even when the ozone modeling results pass either the deterministic test or the statistical test. This may be done to support the attainment demonstration, recognizing that the ozone modeling results possess a certain degree of uncertainty. Nonetheless, the submittal of WOE determinations is only needed if the ozone modeling fails to demonstrate attainment of the ozone standard through either a deterministics test or a statistical test.

5. Besides the Modeled Attainment Demonstration and Adopted Emission Control Strategy, What Other Elements Must Be Addressed in the Attainment Demonstration SIP?

In addition to the modeling analysis and WOE determination supporting the attainment demonstration, the EPA has identified the following key elements which must also be adopted by the state and approved by the EPA in order for EPA to approve the 1-hour ozone attainment demonstration SIPs.

a. *Clean Air Act Measures, and Other Measures Relied on in the Modeled Attainment Demonstration.* This includes adopted and submitted rules for all Clean Air Act required measures for the specific area classification. This also includes measures that may not be required given the area's ozone classification but that the state relied on in its attainment demonstration or in its ROP plan.

The state should have adopted the emission control measures required under the CAA for the area's ozone nonattainment classification. In addition, states with severe ozone nonattainment areas had until December 2000 to adopt and submit additional emission control measures needed to achieve ROP through the attainment year and to attain the ozone standard. For purposes of fully approving a state's SIP, the state needs to adopt and submit rules for all VOC and NO_X controls within the ozone modeling domain and within the state that are relied on to support the modeled ozone attainment demonstration.

Table I presents a summary of the CAA requirements that need to be met for each severe ozone nonattainment area. These requirements are specified in section 182 of the CAA. Information on more measures that states may have adopted or relied on in their current SIP submissions is not shown in the table.

TABLE I.—CAA REQUIREMENTS FOR SEVERE OZONE NONATTAINMENT AREAS

- NSR Requirements for VOC and NO_X, Including an Offset Ratio of 1.3:1 and a Major Source VOC and NO_X Emissions Threshold of 25 Tons Per Year[13].
- RACT for VOC and NO_X[14].
- Enhanced Vehicle I/M.
- 15 percent VOC control plan for ROP through 1996.
- 3 percent VOC/ NO_X Reduction Per Year Through the Ozone Standard Attainment Year for ROP[15]
- RACM.
- Contingency Measures.
- Base Year Emissions Inventory.

TABLE I.—CAA REQUIREMENTS FOR SEVERE OZONE NONATTAINMENT AREAS—Continued

- Emission Statement Rules Requiring Sources to Periodically Submit Summaries of Their VOC and NO_X Emissions.
- Ozone Attainment Demonstration.
- Clean Fuels Fleet Program.
- Enhanced Ambient Monitoring (Photochemical Assessment Monitoring System [PAMS]).
- Stage II Gasoline Vapor Recovery At Retail Service Stations.
- Reformulated Gasoline.
- Measures to Offset Growth in Vehicle Miles Tranvelled (VMT).

b. *NO_X Reductions Affecting Boundary Conditions.* EPA completed final rulemaking on the NO_X SIP Call on October 27, 1998, requiring states to address transport of NO_X and ozone to other states. To address transport, the NO_X SIP Call established state-specific emission budgets for NO_X that 23 jurisdictions were required to meet through enforceable SIP emission control measures adopted and submitted by September 30, 1999. The NO_X SIP Call is intended to reduce emissions in upwind states that significantly contribute to downwind ozone nonattainment problems. The EPA did not identify specific NO_X sources that the states must regulate nor did the EPA limit the states' choices regarding where within the states to achieve the emission reductions.

On May 25, 1999, the U.S. Court of Appeals for the District of Columbia issued an order staying the SIP submission requirement of the NO_X SIP Call. On March 3, 2000, the Court issued its decision, which largely upheld EPA's final NO_X SIP Call rule, with certain exceptions that do not affect this proposed rule. On June 23, 2000, the Court lifted the stay. On August 30, 2000, the Court issued an order providing that EPA could not require SIPs to include a source control implementation date earlier than May 31, 2004.

Emission reductions that will be achieved through EPA's NO_X SIP Call

[13] The NO_X NSR requirements do not currently apply in the Chicago area based on a NO_X waiver granted to Illinois on January 26, 1996 (61 FR 2428).

[14] The NO_X RACT requirements do not currently apply in the Chicago area based on a NO_X waiver granted to Illinois on January 26, 1996 (61 FR 2428).

[15] To provide interim progress, EPA accepted 9 percent VOC/ NO_X emission reduction plans to cover ROP requirements between 1996 and 1999. The States with severe nonattainment areas were required to meet the remainder (post-1999) of the ROP requirements through the submittal of a final ROP plan with adopted emission control regulations by December 2000. The Illinois post-1999 ROP plan is reviewed later in this proposed rule.

will reduce the levels of ozone and ozone precursors entering ozone nonattainment areas and ozone modeling domains at their boundaries and will reduce the NO_X emissions generated within the ozone modeling domains. The ozone levels at the boundary of the local modeling domain are reflected in modeled attainment demonstrations and are, along with the concentrations of pollutants entering the modeling domain, referred to as boundary conditions. The boundary conditions and the ozone generated and transported within the modeling domain will be impacted by the NO_X emission reductions resulting from the NO_X SIP Call in many areas. Therefore, EPA believes it is appropriate to allow states to continue to assume the NO_X emission reductions resulting from the NO_X SIP Call in areas outside of the local ozone modeling domains. If states assume emission reductions other than those of the NO_X SIP Call within their states but outside of the ozone modeling domains, the states must also adopt emission control regulations to achieve those additional emission reductions in order to have an approvable ozone attainment demonstration. States subject to the NO_X SIP Call, particularly those relying on the NO_X SIP Call-based emission reductions as part of their ozone attainment demonstrations, are expected to have adopted the NO_X emission control regulations needed to comply with the NO_X SIP Call. In these areas, approval of the ozone attainment demonstration is dependent on the approval of the NO_X emission control regulations.

As provided above, any emission controls assumed by a state within a local ozone modeling domain must be adopted by the state and approved by us to achieve our final approval of the state's 1-hour ozone attainment demonstration SIP.

c. *Motor Vehicle Emissions Budget.* The EPA believes that attainment demonstration and ROP SIPs must necessarily estimate the motor vehicle VOC and NO_X emissions that will be produced in the attainment and milestone years and must demonstrate that these emissions, when considered with emissions from all other sources, is consistent with attainment of the ozone standard and ROP. The estimate of motor vehicle emissions is used to determine the conformity of transportation plans and programs to the SIP, as described by section 176(c)(2)(A) of the Act. For transportation conformity purposes, the estimate of motor vehicle emissions is known as the motor vehicle emissions budget. EPA believes that appropriately identified motor vehicle emissions budgets are a necessary part of attainment demonstration and ROP SIPs, and that EPA must find these budgets to be adequate before we can give final approval to the attainment demonstration and ROP SIPs.

d. *Mid-Course Review.* An enforceable commitment to conduct a mid-course review (MCR) and evaluation of the attainment demonstration based on air quality and emissions trends at some time prior to the attainment year must be included in the attainment demonstration SIP before it can be approved by the EPA, particularly if the SIP depends on a WOE determination to demonstrate attainment of the ozone standard. The MCR shows whether the adopted emission control measures and emissions control strategy (all measures combined into a single plan) are sufficient in timing and extent to reach attainment of the ozone standard by the area's attainment deadline, or whether additional emission control measures may be necessary.

A MCR is a reassessment of the modeling analyses and more recent monitoring and emissions data to determine if a prescribed emissions control strategy is resulting in emission reductions and air quality improvements needed to attain the ozone standard as expeditiously as practicable but no later than the statutory attainment date. The EPA believes that an enforceable commitment to perform a MCR is a critical element of a WOE determination.

For severe areas, such as the Chicago-Gary-Lake County ozone nonattainment area, the state(s) must submit an enforceable commitment (Illinois has submitted such a commitment as discussed below). The commitment must provide the date by which the MCR will be completed. The EPA believes that the MCR process should be done immediately following the ozone season (April through October in Illinois) in which the states have implemented the NO_X regulations resulting from the NO_X SIP Call and that the states should submit the results to us by the end of that calendar year. Because the Court of Appeals ordered that EPA cannot require states to establish a NO_X source compliance date prior to May 31, 2004, EPA believes that the MCR should be performed following the 2004 ozone season and that the results should be submitted by the end of 2004.

Following submittal of MCR analysis results, we would review the results and determine whether the state(s) needs to adopt and submit additional emission control measures for purposes of attainment. We are not requesting that states commit now to adopt new emission control measures as a result of this process. It would be impractical for the states to make a commitment for such control measures that is specific enough to be considered enforceable. Moreover, the MCR could indicate that upwind states may need to adopt some or all of the additional emission controls needed to ensure that a downwind state/area attains the ozone standard. We would determine whether additional emission controls are needed in the state in which a nonattainment area is located or in upwind states, or in both. We would require the appropriate state(s) to adopt and submit new emission control measures within a period specified at that time. We anticipate that these findings would be made as SIP Calls under section 110(k)(5) of the Act and, therefore, the period for the submission of the measures would be no longer than 18 months after we make a finding. A guidance document regarding the MCR process is located on EPA's web site at *http://www.epa.gov/ttn/scram.* The EPA is working on additional guidance that it expects to issue and put on its website shortly.

6. What Are the Relevant EPA Policy and Guidance Documents?

The relevant policy documents for ozone attainment demonstrations and their locations on EPA's web site are listed below:

a. U.S. EPA, *Guideline for Regulatory Application of the Urban Airshed Model,* EPA–450/4–91–013, (July 1991), Web site: http://www.epa.gov/ttn/scram/ (file name: ''UAMREG'').

b. U.S. EPA, *Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS,* EPA–454/B–95–007, (June 1996), Web site: http://www.epa.gov/ttn/scram/ (file name: ''O3TEST'').

c. Memorandum, ''Ozone Attainment Demonstrations,'' from Mary D. Nichols, issued March 2, 1995, Web site: http://www.epa.gov/ttn/oarpg/t1pgm.html.

d. Memorandum, ''Extension of Attainment Dates for Downwind Transport Areas,'' issued July 16, 1998, Web site: http://www.epa.gov/ttn/oarpg/t1pgm.html.

e. Memorandum, ''Guidance for Implementing the 1-Hour Ozone and Pre-Existing PM_{10} NAAQS,'' from Richard Wilson, issued December 29, 1997, Web site: http://www.epa.gov/ttn/oarpg/t1pgm.html.

f. ''Guidance for Improving Weight of Evidence Through Identification of

Additional Emission Reductions, Not Modeled,'' U.S. EPA, Office of Air Quality Planning and Standards, November 1999, Web site: *http://www.epa.gov/ttn/scram/* (file name: ''ADDWOE1H'').

g. ''Serious and Severe Ozone Nonattainment Areas: Information on Emissions, Control Measures Adopted or Planned and Other Available Control Measures,'' Draft Report, U.S. EPA, Ozone Policy and Strategies Group, November 3, 1999.

h. Memorandum, ''Guidance on Motor Vehicle Emissions Budgets in 1-hour Attainment Demonstrations,'' from Merrylin Zaw-Mon, Office of Mobile Sources, November 3, 1999, Web site: http://www.epa.gov/oms/transp/traqconf.htm.

i. Memorandum, ''1-Hour Ozone Attainment Demonstrations and Tier 2/Sulfur Rulemaking,'' from Lydia Wegman and Merrylin Zaw-Mon, Office of Air Quality Planning and Standards and Office of Mobile Sources, November 8, 1999, Web site: http://www.epa.gov/oms/transp/traqconf.htm.

j. Draft Memorandum, ''1-Hour Ozone NAAQS-Mid-Course Review Guidance,'' from John Seitz, Director, Office of Air Quality Planning and Standards, Web site: http://www.epa.gov/ttn/scram/.

B. Technical Review of the State's Submittal

1. When Was the Attainment Demonstration Addressed in Public Hearings, and When Was the Attainment Demonstration Submitted to the EPA?

The State of Illinois held a public hearing on the ozone attainment demonstration on November 8, 2000. The attainment demonstration was submitted by the Illinois Environmental Protection Agency (IEPA) on December 26, 2000.

2. What Are the Basic Components of the Submittal?

Since Illinois, along with Indiana, Michigan, and Wisconsin, jointly participates in the Lake Michigan Air Directors Consortium (LADCO) and since LADCO has conducted the ozone analyses used to develop the ozone attainment demonstration, technical support documents developed by LADCO form the main bases for Illinois' ozone attainment demonstration. Three documents from LADCO provide much of the technical support for the attainment demonstration. These documents are:

a. ''Midwest Subregional Modeling: 1-Hour Attainment Demonstration for Lake Michigan Area—Summary,'' LADCO, September 18, 2000;

b. ''Technical Support Document—Midwest Subregional Modeling: 1-Hour Attainment Demonstration for Lake Michigan Area,'' LADCO, September 18, 2000; and

c. ''Technical Support Document—Midwest Subregional Modeling: Emissions Inventory,'' LADCO, September 27, 2000.

Illinois, like Indiana and Wisconsin, has included a state-specific cover letter and a state-specific synopsis of the ozone attainment demonstration. Illinois has also included additional modeling analysis results to address emissions changes not addressed in the earlier LADCO analyses. These emission changes include increased state-wide NO_X and VOC emissions due to the permitting and implementation of new combustion turbine generators (peakers or peaker plants and combined cycle facilities) designed to supplement electrical power generation on high demand days (many high electricity demand days are potentially high ozone days due to high ambient temperatures) and to replace the electrical generating capacity of electrical—generating facilities taken off-line. Additional VOC and NO_X emissions due to higher-than-planned vehicle miles of travel in the planning area are also considered.

A number of other related submittal components are discussed in later sections of this proposed rule. This section deals exclusively with the technical aspects of Illinois' 1-hour ozone attainment demonstration, focusing on the ozone modeling results and supporting air quality and emissions analyses.

3. What Modeling Approach Was Used in the Analyses To Develop and Validate the Ozone Modeling System?

The LADCO States, as participants in the Lake Michigan Ozone Study (designed to establish the modeling system and its base input data and to validate the modeling system) and in the Lake Michigan Ozone Control Program (designed to select and test possible emission control strategies), used the same modeling approach to develop the basis for each State's ozone attainment demonstration although each State selected a different emissions control strategy for their respective ozone attainment demonstration. The modeling approach is documented in LADCO's September 18, 2000 Technical Support Document (TSD) and is summarized in LADCO's September 18, 2000 modeling summary (see above).

The heart of the modeling system is the Urban Airshed Model–Version V (UAM–V) photochemical dispersion model developed originally for specific application in the Lake Michigan area. This is the same version of the model that was used during the OTAG analysis of ozone transport and ozone transport control measures.

For purposes of the local ozone attainment demonstration, UAM–V was applied to a local modeling domain and grid configuration that was established based on consideration of areas of high ozone concentrations (generally the ozone nonattainment areas) in the Lake Michigan States and of possible upwind source areas impacting these high concentration areas. The primary modeling domain is referred to as Grid M. This grid extends east to the most eastern portion of Michigan (and to central Ohio, eastern Kentucky, and eastern Tennessee); north to the northern end of Michigan's Lower Penninsula (and to the north of Green Bay, Wisconsin); west to include the eastern thirds of Iowa and Missouri; and south to the southern border of Tennessee. The horizontal grid is rectangular in shape (see Figure 1 of the September 18, 2000 LADCO TSD). The modeling has the following horizontal and vertical resolutions:

Horizontal Resolutions

Approximately 12 kilometers x 12 kilometers—all modeling runs.

Approximately 4 kilometers x 4 kilometers—for selected runs to give better resolution in the area along the western shore of Lake Michigan.

Vertical Resolution

7 vertical layers with the following height ranges (above terrain) in meters: 0–50; 50–100; 100–250; 250–500; 500–1500; 1500–2500; and 2500–4000.

A subregional portion of the grid, centered (east to west) on the lower portion of Lake Michigan, was also considered to allow a more detailed analysis of the high ozone areas of Grid M. The use of Grid M and the subregional portion of Grid M allowed the consideration of both urban scale analyses and ozone transport. It should be noted that the modeling results from the modeling runs with the tighter 4 kilometer resolution were generally consistent with the results for the 12 kilometer resolution.

Four high ozone episodes in the Lake Michigan area were modeled. These episodes were: June 22–28, 1991; July 14–21, 1991; June 13–25, 1995; and July 7–18, 1995. These episodes were selected because: (1) They were judged to be representative of typical high ozone episodes in the Lake Michigan area and because they respresent a variety of meteorological conditions that have been found to be conducive to high

ozone concentrations in this area; (2) there is an intensive data base available for the 1991 episodes; and (3) several of these episodes (the July episodes) were modeled as part of the OTAG analyses, providing ozone transport and modeling domain boundary data.

The following input data systems and analyses were used to develop input data for the ozone model:

a. *Emissions.* UAM–V requires a regional inventory of gridded, hourly estimates of speciated VOC, NO_X, and carbon monoxide (CO) emissions. The States provided emission inventories which were processed through the Emissions Modeling System-1995 version (EMS–95). Emissions were prepared for a 1996 base year (used to test model performance), a 2007 base year (considering growth and previously adopted emission control measures), and several 2007 emission control strategy/sensitivity scenarios. The emission inventories include 1996 state periodic inventory data for stationary point and area sources, updated state transportation data, excess NO_X emissions produced by heavy-duty vehicles as a result of built-in ''defeat'' devices, updated growth and emissions control data, and EPA's latest emission reduction estimates for the mobile source Tier II/Low Sulfur program. Ambient temperature data affecting mobile source and evaporative emissions and biogenic emissions were generated using the RAMS3a meteorological model. Biogenic emissions were based on EPA's BEIS2 model, with an adjustment of the isoprene emissions in the Ozarks.[16] Point source emissions for some sources were addressed through the use of Plume-in-Grid (PiG)[17] techniques incorporated within UAM–V. An additional discussion of the development of the modeled emission inventories is presented below.

b. *Meteorology.* UAM–V requires gridded 3-dimensional hourly values of wind speed, wind direction, temperatures, air pressure, water vapor content, vertical diffusivity, and, if applicable, clouds and precipitation. Most meteorological inputs were derived through prognostic modeling with the RAMS3a model. Cloud and precipitation data were developed based on observed National Weather Service data. Preliminary analyses of the modeled meteorological data results showed adequate representation of the observed airflow features and good agreement between modeled and measured wind speeds, temperatures, and water vapor levels. LADCO, has concluded, however, that errors or uncertainties in the meteorological data may have affected the UAM–V results (albeit not significantly enough to invalidate the modeling results based on EPA recommended validation criteria). The errors have been minimized to the extent possible and suppressed through ''nudging'' using observed National Weather Service data at 12-hour intervals.

c. *Boundary Conditions.* Boundary conditions were developed by applying UAM–V over the OTAG modeling domain (this modeling domain covered most of the eastern half of the United States) for the selected high ozone episodes at a 36 kilometer grid resolution. The modeling was conducted to be consistent with the modeling used in the OTAG analyses.

Basecase modeling was conducted to evaluate model performance by comparing observed and modeled ozone concentrations. The model performance evaluation consisted of comparisons of the spatial patterns, temporal profiles, and magnitudes of modeled and measured 1-hour (and 8-hour) ozone concentrations.

In making the comparison of modeled and observed ozone concentrations, 1996 emissions were assumed to be reasonably similar to 1995 emissions, but significantly lower than 1991 emissions. To account for the 1991–1996 differences, a set of simple ''backcast'' emission factors were derived by comparing the county-level emissions in the 1991 Lake Michigan Ozone Control Program emissions inventory with the 1996 base year emissions inventory.

Peak daily 1-hour modeled ozone concentrations for each episode were analyzed and compared to the observed peak ozone levels in the modeling domain. For each type of comparison, the following conclusions were developed.

- *Spatial Patterns.* This analysis showed that areas of high modeled ozone concentrations correspond acceptably with areas of high measured ozone concentrations in the Lake Michigan area. Rural (generally upwind of the Lake Michigan ozone nonattainment areas) measured and modeled ozone concentrations were found to compare favorably. Peak modeled ozone concentrations over Lake Michigan, however, appear to be underestimated on some days.
- *Temporal Patterns.* Time series plots of 1-hour modeled and measured ozone concentrations by monitoring site were compared. The hour-to-hour and day-to-day variations of modeled and measured ozone concentrations were found to compare favorably. The modeling system seems to over-predict nighttime ozone concentrations and to under-predict peak daytime ozone concentrations, but performs within acceptable limits (see a discussion of the modeling validation below). At the monitoring sites with high measured ozone concentrations, the mid-afternoon modeled ozone concentrations are low.
- *Magnitude Comparisons.* Ozone statistics, unpaired peak accuracy, average accuracy of peak ozone concentrations, normalized bias results, and normalized gross error results are provided in the modeling system documentation. The model performance statistics for the Lake Michigan modeling domain subregion comply with EPA's recommended acceptance ranges. The statistics of the modeling system performance, however, demonstrate the tendency of the modeling system to underestimate measured peak ozone concentrations (although the modeling system overestimated some of the peak ozone concentrations).
- *Other Factors.* The modeling system's response to changes in ozone precursor emissions has been assessed by conducting sensitivity analyses and by comparing the differences in modeled and measured ozone concentrations and changes in emissions between 1991 and 1996. This assessment indicates that the model is responsive to changes in ozone precursor emissions and is consistent with observed air quality data and emissions data.

To assess the effects of grid resolution, analyses were conducted comparing modeling results for resolutions of 4 kilometers and 12 kilometers. Plots of predicted peak concentrations were analyzed for these two grid resolutions. In general, it appears that model performance at a resolution of 4 kilometers is comparable to that at a resolution of 12 kilometers.

The LADCO States have concluded that the modeling system performance is acceptable for air quality planning purposes (for the purposes of assessing

[16] Analyses of initial ozone modeling results indicated that initial isoprene emission estimates for the Ozarks had unrealistic impacts on the ozone concentrations modeled for the Lake Michigan area. Background ozone monitoring data did not support the high background/transported ozone levels modeled to result from this upwind source area. A study, known as OZIE, was conducted to reanalyse the isoprene emissions for the Ozarks. Based on the preliminary results of the OZIE study, LADCO concluded that the isoprene emissions for the Ozarks should be reduced by a factor of 2 (halved).

[17] sources to be addressed through PiG techniques were selected based on their magnitudes of NO_X emissions (the top 100 ranked stacks) and locations (the next 34 topped ranked stacks in the Lake Michigan and St. Louis areas).

the impacts of emission control strategies).

To test ozone attainment strategies, the LADCO States have projected emissions from the base year to 2007, the attainment year. The future emissions have been modified to reflect the various tested emission control strategies.[18] All other inputs to the ozone modeling system have been fixed at the levels used in the validated base year modeling analyses.

The remainder of the questions in this section of this proposed rule address the States' efforts to demonstrate attainment using the validated ozone modeling system and focuses on evaluating the attainment strategy. For additional discussions of the efforts to validate the modeling system, you are referred to the discussions of these efforts in the December 16, 1999 proposed rule (64 FR 70496).

4. How Were the 1996 Base Year Emissions Developed?

Besides being used to develop and validate the ozone modeling system, base year emissions were also used to project the attainment year emissions and, through comparisons with the attainment year emissions and analyses of monitored and modeled ozone concentrations, to support the adequacy of the selected emissions control strategy. For the purposes of the attainment demonstration used here, 1996 was selected to be the base year of the analyses.

The September 27, 2000 LADCO emissions inventory TSD documents the development of the base year emissions as well as the projection and development of the attainment year emissions used in the attainment strategy modeling and attainment demonstration. The following summarizes the development of base year emissions as documented in LADCO's September 27, 2000 TSD.

For the 1996 base year, emission rates for point and area sources were either provided by the EPA (from the NO_X SIP Call documentation) or by the States based on 1996 periodic emission inventories. Where appropriate, EPA's NO_X data were supplemented or corrected using state-specific data, as noted in LADCO's September 27, 2000 TSD.

Emission rates for on-road mobile sources were calculated through the use of EMS–95 based on a mobile source activity level, e.g., vehicle miles traveled (VMT), and the MOBILE5b emission factor model. The sources of the VMT, vehicle speed, and vehicle mix data are summarized in LADCO's September 27, 2000 TSD. Relative to previous emissions modeling, vehicle speeds were increased and vehicle mix distributions were shifted to heavier vehicles based on more recent data (the increased use of sports utility vehicles has increased the relative vehicle mixes of light duty gasoline trucks, increasing per VMT emissions rates). Mobile source emissions of NO_X were also increased for heavy-duty diesel vehicles as the result of the use of built-in ''defeat'' devices. These increased NO_X emissions were estimated by applying a processor supplied by the EPA.

Day-specific biogenic emissions were calculated using EPA's BEIS2 model. As noted above, comparisons of emission estimates and measured isoprene concentrations in the Ozarks indicated that the BEIS 2 isoprene emission estimates for the Ozarks are overestimated by a factor of 2.

As noted above, a number of refinements of the emissions estimates must be made to support the ozone modeling system. These refinements include spatial, temporal, and species processing and resolution. This was accomplished through the use of EMS–95. County-level point source emissions were spatially distributed based on facility or stack coordinates. County-level area source emissions were spatially resolved based on surrogates, such as population distributions and land use data. Mobile source emissions were calculated for each modeling grid cell by EMS–95, not requiring further resolution.

Daily average point source emissions were temporally allocated based on using facility-specific reported operating schedule information. Daily average area source emissions were temporally allocated using category-specific hourly distribution profiles. Mobile source and biogenic source emissions are temporally resolved through the use of EMS–95, which includes temporal emission profiles for these source categories.

The speciation profiles in EMS–95 were obtained from the latest version of EPA's SPECIATE data base.

To quality assure the base year emissions data, a top-down evaluation of the emissions inventory was performed using ambient ozone precursor data collected from the Photochemical Assessment Monitoring Stations (PAMS) in the Lake Michigan area. The evaluation included comparisons of monitored and calculated VOC to NO_X emissions ratios, the relative amounts of individual VOC species, and the measured and calculated reactivity of VOC compounds.

5. What Procedures and Sources of Projection Data Were Used To Project the Emissions to the Attainment Year?

The future year emission inventories used in the Lake Michigan Ozone Control Program and in the ozone attainment demonstration were derived from the base year emissions inventory. The base year emissions inventory was projected to 2007 by applying scalar growth factors for most source categories. Each LADCO State provided estimates of source growth and control factors by source sector. Source growth and emission control factors used in EPA's NO_X SIP Call were also considered, particularly for EGUs. Table 1 of the LADCO September 27, 2000 TSD documents in detail the sources of 2007 emission estimates by source category along with the sources of 1996 emissions and emission control factors and is included by reference here.

6. How Were the 1996 and 2007 Emission Estimates Quality Assured?

To improve the reliability of the modeling source emission inventories, several quality assurance activities were performed by the State emission inventory personnel, the emission modelers (those people responsible for speciating and temporally and spatially resolving the emissions data for use in the ozone modeling system), and the photochemical modelers. These activities included:

Development and Implementation of an Emissions Quality Assurance Plan. A standardized set of data and file checks were documented in a LADCO draft emissions quality assurance (QA) plan. This plan identifies the emissions quality assurance procedures to be followed by the State emission inventory personnel. Each State was responsible for quality assurance of its own emissions inventory data before providing these data to the LADCO emission modelers. The quality assurance of the data by the States included reviewing many EMS–95 emissions reports for consistency with other State-specific emissions data.

Emission Reports. EMS–95 itself performs a number of emission checks and generates reports flagging possible emission errors and summarizing data

[18] For a listing of the emission control measures modeled in the various emission control strategies, see Table 6, ''Control Measures,'' in LADCO's September 27, 2000 ''Technical Support Document: Midwest Subregional Modeling: Emissions Inventory'' or Section 5, ''Strategy Modeling,'' and Table 4, ''Control Measures,'' of LADCO's September 18, 2000 ''Technical Support Document: Midwest Subregional Modeling; 1-Hour Attainment Demonstration for Lake Michigan Area,'' both of which were included in Illinois' December 26, 2000 attainment demonstration submittal.

that can be checked against alternative emission data sets/reports. Table 7 of LADCO's September 27, 2000 TSD lists the EMS–95 standardized QA reports and is included by reference here. These reports were generated in the preparation of the Grid M emissions data and were used for QA efforts.

Review by Photochemical Modelers. The photochemical modelers quality assured the emissions inventories by generating and reviewing spatial plots of emissions by source sector/type. The reviews were designed to detect spatial anomalies (misplaced or missing sources). The modelers also conducted emission total checks against EMS–95 summary reports.

Stack Parameter Checks. A contractor, Alpine Geophysics, was employed, in part, to QA the point source emissions data. Alpine Geophysics discovered errors in the stack parameters and other point source data, including potential errors in gas exit velocities, emission rates, and physical stack parameters, for many point sources in the previous versions of the modeling system emission inventories. This review was distributed to the LADCO States to get the States to correct their respective point source emissions data. Some stack data were shifted from the elevated point source data files to the ground-level data files based on adopted screening parameters. This resulted in a spatial shift in emissions from previous modeling emission inventory versions.

7. What Is the Adopted Emissions Control Strategy?

To select possible emission control strategies, the LADCO States have modeled the ozone impacts of a number of emission control strategies for VOC and NO_X. After modeling and reviewing the ozone impacts of various strategies and considering CAA and EPA emission control requirements, Illinois has adopted the emission control strategy known as SR 16 (LADCO Strategy Run 16) as the emission control strategy that will be pursued to attain the 1-hour ozone standard in the Chicago-Gary-Lake County ozone nonattainment area. Table II lists the emission controls included in SR 16.

TABLE II.—SR 16—EMISSION CONTROL STRATEGY

- Clean Air Act Title IV Acid Rain Controls for NO_X—Phase I
- Rate-Of-Progress Plans (15 Percent ROP Plan and 9 Percent Post-1996 ROP Plan)
- National Low Emission Vehicle Standards
- Reformulated Gasoline—Phase II (where required)

TABLE II.—SR 16—EMISSION CONTROL STRATEGY—Continued

- Federal Phase II Small Engine Standards
- Federal Marine Engine Standards
- Federal Heavy Duty Vehicle (≥ 50 horsepower) Standards—Phase I
- Federal Locomotive Standards—Including Rebuilds
- Federal High Compression Engine Standards
- Federal Tier I Light Duty Vehicle and Heavy Duty Vehicle Emission Standards
- Enhanced Vehicle Inspection and Maintenance (I/M) (where required)
- Basic Vehicle I/M (where required)
- Federal Clean Fuel Fleets Requirements (where required)
- Federal Tier II and Low Sulfur Gasoline Standards
- Utility 0.15 Pounds NO_X Per Million Btu of Heat Input Emission Limits (20 affected States, including Illinois)
- 60 Percent Reduction of NO_X Emissions From Large Non-Electric Generating Unit (Non-EGU) Boilers and Turbines (20 affected States, including Illinois)
- 30 Percent Reduction of NO_X Emissions From Large Cement Kilns (20 affected States, including Illinois)
- Wisconsin—0.28 Pounds NO_X Per Million Btu of Heat Input for Utilities (EGUs) in 8 Counties
- Missouri—0.25 Pounds NO_X Per Million Btu of Heat Input for EGUs in the Eastern One-Third of the State
- Missouri—0.35 Pounds NO_X Per Million Btu of Heat Input for EGUs in the Western Two-Thirds of the State

With regard to the NO_X emission controls listed in Table II, several aspects of the assumed NO_X emission reductions should be noted. First, the NO_X emission controls for utilities (EGUs), large non-EGU boilers and turbines, and large cement kilns in Grid M were assumed for all States (other than Wisconsin and Missouri) that are subject to EPA's NO_X SIP Call. In reality, the assumed NO_X emission reductions only reflect the expected NO_X emissions budgets for these States and not the actual NO_X emission controls that may actually occur in these States. Under the NO_X SIP Call, states are not restricted to specific NO_X emission controls, but are required to achieve assigned NO_X emission budgets. The UAM modeling system is designed to test emission reductions for specific source categories. Therefore, LADCO chose a specific emission control scenario expected to produce NO_X emissions that are compliant with the NO_X SIP Call.

Illinois has developed NO_X emission control regulations to control emissions from EGUs, non-EGU boilers and turbines, and cement kilns at or below the emission levels assumed for Illinois in control strategy SR 16. (The NO_X rules for EGUs, non-EGU boilers and turbines and cement kilns are undergoing separate review (see an EPA proposed rule addressing this State rule published on August 31, 2000, 65 FR 52967) and are expected to be approved before EPA completes final rulemaking on Illinois' ozone attainment demonstration.) Other states in Grid M have also submitted adopted or draft NO_X rules to comply with the NO_X SIP Call.

Second, with regard to the NO_X emission reductions assumed for Wisconsin and Missouri, these States have adopted and submitted NO_X rules to achieve the NO_X emission controls assumed in SR 16. The EPA has approved Missouri's NO_X rule (December 28, 2000, 65 FR 82285) and expects to take final action on Wisconsin's NO_X rule in the future and prior to final action on Illinois' ozone attainment demonstration.

In addition to the emission controls included in the above table, the following emission changes were also reflected in the modeling results for the control strategy: (a) Use of NO_X vehicle I/M cut-points in the Wisconsin ozone nonattainment areas; (b) revised traffic network vehicle miles traveled data provided by the Chicago Area Transportation Study (CATS); (c) updated MOBILE5b input data for Illinois and Wisconsin; and (d) corrected MOBILE5b input data for Ohio.

In the ozone modeling, the CAA-required emission controls were assumed for all states within Grid M and were assumed for all areas outside of Grid M in modeling used to determine the initial and boundary ozone and ozone precursor concentrations for Grid M. In the Chicago area, the CAA-required controls modeled include: Reasonably Available Control Technology (RACT) on stationary sources of VOC; enhanced vehicle I/M; Transportation Control Measures (TCM); and other emission controls included in the State's 15 percent ROP plan (for a discussion of the emission controls included in this plan see 62 FR 37494, July 14, 1997) and 9 percent post-1996 ROP plan (for a discussion of the emission controls included in this plan see 65 FR 78961, December 18, 2000).

Table III compares the VOC and NO_X emission rates for major source sectors in Grid M for the 1996 base year and for the adopted emission control strategy in 2007.

TABLE III.—COMPARISON OF 1996 AND SR 16 (2007) EMISSIONS IN GRID M

[Emissions in tons/day]

Pollutant	Point—EGU	Point—Non-EGU	Area—Offroad mobile	Area—Other	Onroad—Mobile	Biogenic sources	Total
VOC:							
1996 Base Year	32	2,335	1,716	4,780	3,633	30,816	43,312
SR 16	37	1,771	1,167	4,410	2,687	30,816	40,888
NO_X:							
1996 Base Year	5,844	1,876	2,138	602	5,681	2,000	18,141
SR 16	2,092	1,822	1,748	734	3,230	2,000	11,626

Source: Table 3, ''Technical Support Document—Midwest Subregional Modeling: Emissions Inventory,'' September 27, 2000.

8. What Were the Ozone Modeling Results for the Base Period and for the Future Attainment Period With the Selected Emissions Control Strategy?

Table IV presents the Grid M peak observed and modeled ozone concentrations for the high episode days selected for the modeling analysis and attainment demonstration. The following modeled peak concentrations are presented: (a) The modeled validation peak ozone concentrations for Grid M; (b) the modeled Grid M peak ozone concentrations using the 1996 base year emissions; and (c) the 2007 predicted ozone concentrations for ozone control strategy SR 16. All modeled and monitored ozone concentrations are 1-hour averages and represent peak ozone concentrations anywhere within Grid M.

TABLE IV.—PEAK MONITORED AND MODELED OZONE CONCENTRATIONS FOR GRID M

[Ozone Concentrations in ppb]

Date	Peak ozone observed	Peak ozone modeled validation	Peak ozone modeled 1996 base year emissions	Peak ozone modeled SR 16
6–25–91	104	123	123	110
6–26–91	175	136	138	117
6–27–91	118	139	127	111
6–28–91	138	124	102	95
7–16–91	130	129	108	103
7–17–91	137	119	89	89
7–18–91	170	137	108	109
7–19–91	170	137	112	111
7–20–91	138	168	150	128
6–21–95	112	123	122	118
6–22–95	119	131	131	119
6–23–95	123	128	128	113
6–24–95	166	136	136	126
6–25–95	108	125	124	120
7–12–95	146	118	118	105
7–13–95	178	147	146	124
7–14–95	150	140	140	127
7–15–95	154	156	156	128

Sources: Table 1, ''Midwest Subregional Modeling: 1-Hour Attainment Demonstration for Lake Michigan Area—Summary,'' September 18, 2000. Table 6, ''Technical Support Document—Midwest Subregional Modeling: 1-Hour Attainment Demonstration for Lake Michigan Area,'' September 18, 2000.

From the above, you can see that the ozone modeling results for the selected emissions control strategy do show four peak ozone concentrations above the 1-hour ozone standard on the following dates: July 20, 1991; June 24, 1995; July 14, 1995; and July 15, 1995. As noted in LADCO's September 18, 2000 summary of the attainment demonstration, simple modeling and assessment of the potential future peak ozone concentrations (a deterministic test) does not demonstrate attainment of the ozone standard because of these modeled ozone standard exceedances. Additional analyses were conducted to support the attainment demonstration for this and other emission control strategies.

EPA's most relevant current ozone modeling/attainment demonstration guidance (*Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS,* EPA–454/B–95–007, [June 1996]) provides for a statistical test as an alternate to a deterministic test to demonstrate attainment of the ozone standard (passing a statistical test can be used to support an ozone attainment demonstration even if a deterministic test is not passed). Under a statistical test, three benchmarks must be passed.

Benchmark 1 of the statistical test requires that the number of days with modeled ozone standard exceedances in each modeling domain grid cell must be less than 3 and that any modeled ozone standard exceedances occur on a ''severe'' day (severe days are determined by ranking high ozone days over many years and considering the ranking of the days covered in the modeled ozone attainment demonstration). Ten of the days

modeled by LADCO were determined to be ''severe,'' including July 20, 1991 and July 15, 1995.

Benchmark 2 of the statistical test requires that the maximum modeled ozone concentration on severe days shall not exceed 130 ppb to 160 ppb, depending on the ''severity'' of the meteorological conditions on the modeled days. For the ozone attainment demonstration addressed in this proposed rule, LADCO's analysis of the severity of the modeled days led LADCO to conclude that the peak ozone concentration limit should be 130 ppb.

Finally, benchmark 3 of the statistical test requires that the number of modeling domain grid cells with peak ozone concentrations above or equal to 125 ppb must be reduced (from the number in the modeled base period) by 80 percent on each ''severe'' day.

LADCO has determined that the SR 16 emissions control strategy (and other modeled emission control strategies not adopted by Illinois) leads to modeled peak ozone concentrations meeting all three benchmarks of the statistical test. See LADCO's September 18, 2000 ''Technical Support Document—Midwest Subregional Modeling: 1-Hour Attainment Demonstration for Lake Michigan Area.'' Therefore, attainment of the ozone standard is demonstrated through modeling for the SR 16 emissions control strategy.

In light of the inherent uncertainties in the ozone modeling and to further evaluate the ozone attainment demonstration, LADCO has also chosen to conduct two additional analyses that are components of a WOE analysis. First, using the base period observed ozone design values for various ozone monitoring sites and the modeled 2007, post-control peak ozone concentrations for the domain grid cells in the vicinities of these monitors, LADCO predicted 2007 ozone design values for these monitoring sites (this procedure is referred to as the ''relative reduction factor'' test). For the SR 16 control strategy, the relative reduction factor test leads to predicted ozone design values below the ozone standard for all ozone monitoring sites and modeling receptor locations considered, with the highest projected ozone design values being 122 ppb at an unmonitored mid-Lake Michigan location (a synthetic base period ozone design value was used for this site) and 119 ppb for a Michigan City, Indiana ozone monitoring site.

Second, LADCO conducted an ozone trends analysis, which shows a considerable amount of progress toward attaining the ozone standard. Local ozone levels have significantly declined over time, while incoming ozone concentrations (transported ozone concentrations) remain relatively high.

The WOE analyses further support the conclusions of the attainment demonstration and counter any concerns that may be raised regarding the inherent uncertainties in the ozone modeling and the tendency of the modeling system to under-predict some peak ozone concentrations (the modeling system also over-predicts some peak ozone concentrations).

Based on all of the ozone modeling data available and related emissions analyses, LADCO concludes that the best ozone control strategy would be to control local VOC emissions (within the urban nonattainment areas) and to couple this with the control of domain-wide, regional NO_X emissions (the purpose of EPA's NO_X SIP Call and Illinois' adoption of NO_X emission control rules for EGUs, non-EGU boilers and turbines, and cement kilns). This recommended emission control strategy approach is compatible with the emission control strategy selected by Illinois.

9. What Additional Analyses and Emissions Were Modeled by the State of Illinois?

Although the December 26, 2000 submittal of the ozone attainment demonstration by the IEPA indicates that the State of Illinois has adopted SR 16 as the emissions control strategy for attaining the 1-hour ozone standard, the IEPA has also decided to test the potential impacts of several emission changes not considered by the LADCO States as a whole. The additional emissions changes include: (a) Addition of NO_X emissions from recently permitted combustion turbine EGUs; and (b) incorporation of transportation conformity emissions budgets that include a greater level of Vehicle Miles Travelled (VMT) than considered in the LADCO ozone modeling.

Illinois has recently issued emission permits for 33 new combustion turbine EGUs statewide (prior to the submittal of the ozone attainment demonstration and prior to the public hearing on this attainment demonstration). Ten of these units are located within the Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area. These combustion turbine units include ''combined-cycle'' installations for providing base load and intermediate to peak load electricity production, as well as ''simple-cycle'' installations for providing peak load generating capacity (peaker-plants). Some of the installations have been built to replace existing units and others have been built to reduce boiler usage at existing facilities. The IEPA has determined the peak daily VOC and NO_X emissions to be added by all of these installations and has determined the existing VOC and NO_X emissions that would be replaced by the new installations. Modeled emission rates are based on the turbines operating at 100 percent loads.

The attainment demonstration analyses conducted by LADCO included the 2007 Chicago link-based transportation network VMT provided by CATS. Historically and in previous ozone rate-of-progress plans, the IEPA has used higher 2007 VMT estimates for 2007 provided by the Illinois Department of Transportation. To remain consistent with these prior plans and with the base data used to derive the 1990 base year emissions (used to calculate furture year emissions and ROP plan emission reduction targets), the IEPA concluded that it should consider the extra emissions resulting from the higher VMT estimates.

To test the impacts of the extra VOC and NO_X emissions resulting from the permitted turbines and the increased VMT estimates, the IEPA has re-conducted the Grid M ozone modeling for SR 16, adding the extra VOC and NO_X emissions for the July 1991 modeled ozone episode days (the IEPA notes that this episode is the most constraining episode, requiring the greatest amount of ozone precursor emission reduction amongst all tested high ozone episodes). The State has re-conducted the modeling analyses for the revised Grid M emissions, and concludes that the revised modeling results pass the statistical test benchmarks. The peak modeled ozone concentrations for SR 16 and the IEPA supplemental ozone modeling are given in Table V.

TABLE V.—COMPARISON OF PREDICTED PEAK 1-HOUR OZONE CONCENTRATIONS [19]

[Ozone Concentrations in ppb]

Episode day	LADCO SR 16 results	IEPA supplemental ozone results
7–16–91	103	104
7–17–91	89	90
7–18–91	109	109
7–19–91	111	113
7–20–91	128	130

[19] Data taken from Table 2, Chapter I, of the December 21, 2000 ''Ozone Attainment Demonstration for the Chicago Nonattainment Area'' included as part of Illinois' December 26, 2000 ozone attainment demonstration submittal.

The IEPA concludes that the added emissions do not overturn the

conclusion of LADCO that the SR 16 emission control strategy will lead to attainment of the 1-hour ozone standard. The IEPA further points out that this procedure is conservative because the increased NO_X emissions from the EGU turbine installations will not actually increase the total NO_X emissions in the State of Illinois. Since all of these new turbines will be subject to the State's EGU NO_X rule, their NO_X emissions will be included in the State's NO_X emissions total, which will be constrained through a statewide NO_X emissions cap under EPA's NO_X SIP Call. Therefore, not all of the estimated 1–2 ppb ozone increase will actually occur.

It should be noted that, although these modeling results do not affect the conclusions regarding the adopted emissions control strategy, they do potentially affect the existing NO_X emissions control waiver in the Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area. See the section of this proposed rule addressing the NO_X emissions control waiver below.

10. Do the Modeling Results Demonstrate Attainment of the Ozone Standard?

Based on LADCO's ozone modeling results and Illinois' supplemental modeling results, EPA believes that LADCO and, in particular, the State of Illinois have demonstrated attainment of the 1-hour ozone standard for the Chicago area based on the adopted SR 16 emissions control strategy.

11. Does the Attainment Demonstration Depend on Future Reductions of Regional Emissions?

Yes. The adopted emissions control strategy includes regional NO_X emission reductions for the State of Illinois as well as for surrounding states in compliance with EPA's NO_X SIP Call. LADCO has concluded that regional NO_X emissions reductions are crucial to attainment of the 1-hour ozone standard in the Lake Michigan area.

12. Has the State Adopted All of the Regulations/Rules Needed to Support the Ozone Attainment Strategy and Demonstration?

The State of Illinois has adopted and is implementing all emission controls required under the CAA, including the emission controls included in Illinois' 15 percent and post-1996 ROP plans. The additional emission controls needed to support the adopted emissions control strategy are the NO_X rules needed to comply with EPA's NO_X SIP Call. The State has adopted NO_X emissions control rules for EGUs, major non-EGU boilers and turbines, and cement kilns, and EPA is in the process of reviewing these rules. The EPA expects to approve these NO_X rules in final before giving final approval to the ozone attainment demonstration.

C. EPA's Evaluation of the Ozone Attainment Demonstration Portion of the State's Submittal

1. Did the State Adequately Document the Techniques and Data Used To Derive the Modeling Input Data and Modeling Results of the Analyses?

The State's submittal thoroughly documents the techniques and data used to derive the modeling input data. The submittal adequately summarizes the modeling outputs and the conclusions drawn from these modeling outputs. This includes the State's modifications to LADCO's model inputs. Therefore, EPA concludes that the ozone modeling has been successfully documented and that the State's attainment demonstration is complete from a documentation standpoint. This includes documentation of an adopted emissions control strategy, which was lacking in the State's earlier April 1998 ozone attainment demonstration submittal.

2. Did the Modeling Procedures and Input Data Used Comply With the Clean Air Act Requirements and EPA Guidelines?

Yes. The State of Illinois, through LADCO, has used the UAM to model attainment of the 1-hour ozone standard. The State has documented the modeling results and the input data considered. The modeling procedures and input data comply with the requirements of the CAA as well as with EPA policy.

3. Did the State Adequately Demonstrate Attainment of the Ozone Standard?

Illinois, in accordance with the CAA, as further clarified in EPA's December 1997 guidance, has demonstrated that attainment of the 1-hour ozone standard is achievable by November 15, 2007 (the attainment deadline for the Chicago-Gary-Lake County ozone nonattainment area) provided projected reductions in background ozone and ozone precursor concentrations occur as the result of the implementation of EPA's NO_X SIP Call. The State has demonstrated that the adopted emission control strategy, including local VOC emission control measures and regional NO_X emission control measures (including statewide NO_X emission reductions in Illinois needed to comply with the NO_X SIP Call), is adequate for attainment of the 1-hour ozone standard.

4. Has the Adopted Emissions Control Strategy Been Adequately Documented?

Yes. The emission controls included in adopted strategy have been identified and their cumulative emission impacts have been documented.

5. Is the Emissions Control Strategy Acceptable?

Yes. It is noted that the adopted emissions control strategy relies significantly on the adoption of NO_X emission control regulations by Illinois to comply with the requirements of EPA's NO_X SIP Call. Illinois has adopted rules to reduce NO_X emissions from EGUs, major non-EGU boilers, and major cement kilns. The EPA has proposed rulemaking for the EGU NO_X rule (65 FR 52967, August 31, 2000), proposing to approve the rule, and proposing to disapprove it in the alternative, if the State does not correct noted deficiencies in the rule (the State corrected the most significant deficiency in this rule through State legislation on May 31, 2001 as documented in a June 11, 2001 letter from the IEPA). The EPA is preparing proposed rulemakings for the non-EGU boiler and cement kiln NO_X emissions control rules. We cannot approve the attainment demonstration until after (or at the same time) we approve all of the NO_X emission control rules relied on in the State's ozone attainment demonstration. Assuming that we will approve Illinois' NO_X rules prior to or by the time we promulgate final approval of the ozone attainment demonstration, we find the ozone attainment demonstration to be approvable.

IV. Post–1999 Rate-of-Progress (ROP) Plan

A. What Is a Post-1999 ROP Plan?

ROP plans are a requirement of section 182 of the CAA. Section 182(c)(2)(B) of the CAA requires states with ozone nonattainment areas classified as serious and above, including the Chicago area which is classified as severe nonattainment, to adopt and implement plans to achieve periodic reductions in ozone precursors (VOC and/or NO_X) after 1996. The requirement is intended to ensure that an area makes definite and reasonable progress toward attainment of the ozone NAAQS. Since Illinois has already adopted and implemented a post-1996 ROP plan to meet the requirements of section 182(c)(2)(B) through November 15, 1999 (EPA approved this plan on December 18, 2000, 65 FR 78961) and

since the ROP plan reviewed here addresses the ROP requirements for the period after November 15, 1999, we refer to the ROP plan reviewed in this proposed rule as the post-1999 ROP plan.

The post-1999 ROP emission reductions are to occur at a rate of 9 percent of baseline emissions,[20] net of emissions growth, averaged over each 3-year period through the attainment year (2007 for the Chicago-Gary-Lake County ozone nonattainment area). The State must achieve the first 3 year ROP milestone (i.e., 9 percent) by November 15, 2002, another 9 percent ROP milestone by November 15, 2005, and the remaining 6 percent ROP milestone by November 15, 2007.

The ROP plan contains: (1) Documentation showing how the State calculated the emission reductions needed to achieve the incremental ROP emission reductions for each milestone period; (2) a description of the emission control measures used to achieve the incremental emission reductions; and (3) a description of how the State has determined the emission reduction creditable to each emission control measure.

B. What Is the ROP Contingency Measure Requirement?

Section 172(c)(9) of the CAA requires states with ozone nonattainment areas classified as moderate and above to adopt contingency measures by November 15, 1993. Such measures must provide for the implementation of specific emission control measures if an ozone nonattainment area fails to achieve ROP or to attain the NAAQS within the time-frames specified under the CAA. Section 182(c)(9) of the CAA requires that, in addition to the contingency measures required under section 172(c)(9), the contingency measure portion of the SIP for serious and above ozone nonattainment areas must also provide for the implementation of specific measures if an area fails to meet any applicable milestones in the CAA. As provided in these sections of the CAA, the contingency measures must take effect without further action by the state or by EPA upon failure of the state to meet ROP emission reduction milestones or to achieve attainment of the ozone NAAQS by a required deadline.

Our policy, as provided in the April 16, 1992 ''General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990'' (General Preamble) (57 FR 13498), states that the contingency measures, in total, must generally be able to provide for emission reductions equal to 3 percent of the 1990 baseline emissions.

While all contingency measures and rules must be fully adopted by the states, states can use the contingency measures in one of two different ways. A state can choose to implement contingency measures before a milestone deadline. Alternatively, a state may decide not to implement a contingency measure until an area has actually failed to achieve a ROP or attainment milestone. In the latter situation, the contingency measure emission reduction must be achieved within one year following identification of a milestone failure.

C. What Illinois Counties Are Covered by the Post-1999 ROP Plan?

The post-1999 ROP plan covers the emission reduction requirements for the Chicago area. As indicated above, this area includes Cook, DuPage, Kane, Lake, McHenry, and Will Counties and the townships of Aux Sable and Goose Lake in Grundy County and Oswego in Kendall County. The VOC emission reduction requirements, as discussed below are determined relative to the VOC emissions in this area. Section 182(c)(2)(C) of the CAA provides for the substitution of NO_X emission controls to meet part of the VOC emission reduction requirements for ROP provided that the NO_X emission reduction produces an ozone reduction equivalent to that achieved from the required VOC emission reduction. As noted below, Illinois relies on the substitution of NO_X emission reductions in its post-1999 ROP plan. It should also be noted that EPA interprets the CAA to allow the substitution of VOC and NO_X emission reductions occurring outside of the ozone nonattainment area for nonattainment area VOC emission reductions needed to comply with ROP requirements, and Illinois' ROP plan incorporates such emission reduction substitution.

The Illinois ROP plan documentation refers to the term ''Volatile Organic Material'' (VOM) rather than to VOC. The State's definition of VOM is equivalent to EPA's definition of VOC. The two terms are interchangeable when discussing volatile organic emissions. For consistency with the CAA and EPA policy, we are using the term VOC in this proposed rulemaking.

D. Who Is Affected by the Illinois Post-1999 ROP Plan?

The post-1999 ROP plan does not itself create any new emission control requirements. Rather, it is a demonstration that existing regulations or regulations being developed to meet other emission reduction requirements are sufficient to achieve the required ROP emission reduction requirements.

The post-1999 ROP plan refers to various emission control regulations that have contributed to achieving the required ROP emission reductions for the 1999–2002, 2002–2005, and 2005–2007 periods for the Chicago area. These regulations, both Federal and State, affect a variety of industries, businesses, and, through the vehicle I/M program and other mobile source emission reduction requirements, motor vehicle owners. Most of these regulations, however, are already Federally enforceable through SIP revisions or through federally promulgated regulations.

E. What Criteria Must a Post-1999 ROP Plan Meet To Be Approved?

Section 182(c)(2)(B) establishes certain elements a post-1999 ROP plan must contain for approval. These elements are: (1) Emissions baseline; (2) emission target levels for each of the milestone years (2002, 2005, and 2007); (3) accounting for emission growth projections; and (4) emission reduction estimates from planned emission control measures.

The EPA has issued several guidance documents for states to use in developing approvable post-1996 ROP plans, which, as noted above, includes the post-1999 ROP plan. These documents address such topics as: (1) The relationship of ROP plans to other SIP elements required by the CAA; (2) calculation of the emission baseline and milestone year emission target levels; (3) procedures for projecting emission growth; and (4) methodology for determining emission reduction estimates for various emission control measures, including Federal emission control measures.

Our January 1994 guidance document, ''Guidance on the Post-1996 Rate-Of-Progress Plan and the Attainment Demonstration,'' provides States with the appropriate methods to calculate the emission reductions needed to meet the ROP emission reduction requirements. A complete list of ROP guidance documents is provided in the Technical Support Document (TSD) for the proposed rulemaking on Illinois' 9

[20] ''Baseline emissions'' are defined in section 182(b)(1)(B) of the CAA as the total amount of actual VOC or NO_X emissions from all anthropogenic sources in the area during the calendar year of the Clean Air Act Amendments of 1990, excluding emissions that would be eliminated due to: (1) Any measure relating to motor vehicle exhaust or evaporative emissions promulgated by the EPA by January 1, 1990; (2) any regulations concerning Reid Vapor Pressure promulgated by the EPA by November 15, 1990 or required to be promulgated under section 211(h) of the CAA.

percent post-1996 ROP plan (referred to in a March 3, 2000 proposed rule, 65 FR 11528), which can be obtained from Region 5 at the address indicated in the **ADDRESS** section.

F. What Are the Special Requirements for Claiming NO_X Emission Reductions in Post-1996 ROP Plans?

If a post-1996 (or post-1999 in this case) ROP plan relies on NO_X emission reductions, it is subject to certain additional requirements. Under section 182(c)(2)(C) of the CAA, a plan can substitute NO_X reductions for VOC reductions if the resulting ozone reductions are at least equivalent to the ozone reductions that would occur under a plan that relies only on VOC emission reductions. As required by section 182(c)(2)(C), the EPA issued guidance concerning the conditions for demonstrating equivalency. Our guidance provides that the NO_X substitution strategy must show that the sum of VOC and NO_X emission reduction percentages for each analyzed period must equal the ROP emissions reduction percentage required for that period, e.g., a 9 percent reduction from the 1990 baseline emissions for a 3-year period. Moreover, the State must provide technical justification that the NO_X emission reductions will reduce ozone concentrations within the nonattainment area covered by the ROP plan.

On December 29, 1997, we issued a policy memorandum entitled ''Guidance for Implementing the 1-Hour Ozone and Pre-Existing PM10 NAAQS.'' Under this policy, both VOC emission controls outside of an ozone nonattainment area and NO_X emission controls may be substituted for VOC emission controls within the ozone nonattainment area to meet the ROP VOC emission reduction requirements. The geographic area for substitution of VOC emission reductions is within 100 kilometers of the ozone nonattainment area. The geographic area for substitution of NO_X emission reductions is within 200 kilometers of the ozone nonattainment area with the possibility for additional expansion of the NO_X substitution area as follows. Based on its review of public comments on this policy, EPA believes that the area for allowable NO_X substitutions should be expanded up to an entire state for those states in the core part of the OTAG modeling domain. For the purposes of this proposed rule, the core part of the OTAG modeling domain consists of the following states: Alabama; Connecticut; District of Columbia; Delaware; Georgia; Illinois; Indiana; Kentucky; Maine; Massachusetts; Maryland; Michigan; Missouri; North Carolina; New Hampshire; New Jersey; New York; Ohio; Pennsylvania; Rhode Island; South Carolina; Tennessee; Vermont; Virginia; Wisconsin; and West Virginia, i.e., the fine grid area of the OTAG modeling domain. The OTAG modeling results provide an adequate technical justification for statewide NO_X emission substitutions for ROP. All other states implementing a NO_X substitution strategy for ROP are restricted to a distance of 200 kilometers from an ozone nonattainment area, unless a substitution from a greater distance is accompanied by adequate technical justification.

The December 1997 policy states that a nonattainment area which has been granted a NO_X waiver can claim NO_X emission reductions occurring outside of the nonattainment area, but within the state's boundary, if such reductions will reduce ozone concentrations within the ozone nonattainment area. We granted a NO_X waiver for the Chicago-Gary-Lake County ozone nonattainment area in two final rules. On January 26, 1996 (61 FR 2428), we granted exemptions from the RACT and NSR requirements for major stationary sources of NO_X and from I/M and general conformity requirements for NO_X for ozone nonattainment areas within the Lake Michigan Ozone Study (LMOS) modeling domain. On February 12, 1996 (61 FR 5291), we approved Illinois' request to exempt the Chicago area (the Illinois portion of the Chicago-Gary-Lake County ozone nonattainment area) from the applicable NO_X transportation conformity requirements.[21] See the discussion of the NO_X waiver below. OTAG modeling has shown that several NO_X waiver areas actually benefit from NO_X reductions upwind. Therefore, under the December 1997 policy, a state can credit NO_X emission reductions occurring outside of a NO_X waiver area, but within the state's boundary, if the state provides a technical analysis showing that the NO_X emission reductions will lower ozone concentrations within the ozone nonattainment area (i.e., the NO_X waiver area). The ozone attainment demonstration submitted by Illinois provides such documentation.

G. How Did Illinois Calculate the Needed ROP and Contingency Emission Reduction Requirements?

Using EPA guidance, Illinois calculated the needed emission reductions by taking the following steps:

1. Determine what portion of the milestone period emission reduction is to be VOC and what portion is to be NO_X.
2. Establish the emission baselines for both VOC and NO_X.
3. Calculate the emission target levels to meet the ROP requirements for 2002, 2005, and 2007.
4. Estimate the projected emission growth that would occur if there were no ROP emission reductions.
5. Subtract the ROP-based emission targets from the projected emission levels to determine the VOC and NO_X emission reductions needed, net of growth.
6. Calculate the needed contingency measure emission reduction requirement.

These steps are further explained below.

1. VOC and NO_X Fractions of the Total Emission Reductions for a Milestone Period

As in Illinois' 9 percent post-1996 ROP plan, Illinois relies on both VOC and NO_X emission reductions in the post-1999 ROP plan to meet the 3 percent ROP emission reduction requirement for each year. For each 3 year period, Illinois has chosen to achieve a 2 percent portion of the emission reduction through VOC emission reductions and to achieve a 7 percent portion of the emission reduction through NO_X emission reductions.

2. Baseline Emissions

Under our post-1996 ROP policy, plans that rely on both VOC and NO_X emission reductions should have separate emission baselines for each pollutant. The CAA requires emission baselines to represent 1990 anthropogenic emissions on a typical peak ozone season weekday. Peak ozone season weekday emissions represent the average daily emissions of weekdays that occur during the peak 3-month ozone period of June through August.

Illinois used the Chicago area's 1990 base year emissions inventory as the

[21] The NO_X waiver approval for transportation conformity does waive the requirements for motor vehicle NO_X emission budgets as part of the ozone attainment demonstration and ROP plans. After these plans are approved, the associated NO_X emission budgets must be considered in conformity determinations and the NO_X waiver is no longer applicable to conformity determinations. The requirements for NO_X emission budgets can only be waived if the State has demonstrated that NO_X emissions in the ozone nonattainment area can be increased without limit without threatening delay of attainment of the ozone standard beyond the applicable attainment date or beyond an earlier achievable date. Prior to the EPA approval of the zone attainment demonstration and ROP plans, the approval of the NO_X waiver exempts the State from requirements for build/no-build and less-than-1990 emissions tests for NO_X.

basis for the VOC baseline emissions. We approved the Chicago area 1990 emissions inventory as a SIP revision on March 14, 1995 (60 FR 13631).

For the NO_X emissions baseline, Illinois used the 1990 statewide NO_X emissions inventory it submitted to EPA in response to the NO_X SIP Call (see 63 FR 57356, October 27, 1998). The NO_X emissions baseline consists of the 1990 emissions which occurred statewide, excluding NO_X emissions from the Chicago and Metro-East St. Louis ozone nonattainment areas. The State excluded the nonattainment area NO_X emissions from the baseline because the State is relying on NO_X emission reductions only from the State's ozone attainment areas and because Illinois has a NO_X waiver in the Chicago ozone nonattainment area. The ozone attainment demonstration submitted by Illinois, as reviewed above, shows that a NO_X emissions reduction in the ozone attainment areas reduces peak ozone concentrations in the Chicago-Gary-Lake County ozone nonattainment area. Therefore, Illinois' NO_X baseline is consistent with the technical analyses supporting attainment of the ozone standard in the Chicago area.

The CAA requires that the ROP emissions baseline be ''adjusted'' to exclude emissions eliminated by the Federal Motor Vehicle Emissions Control Program (FMVCP) and Federal gasoline Reid Vapor Pressure (RVP) regulations promulgated before November 15, 1990. The CAA prohibits states from claiming ROP emission reductions resulting from these regulations. To achieve an accurate ROP emissions target, the State must subtract the noncreditable emission reductions from the emissions baseline to reflect the impacts of these reductions on 2002, 2005, and 2007 emissions. The resulting emissions is called the ''adjusted baseline emissions.'' The impacts of the FMVCP and RVP emission control regulations depend on the specific milestone year.

3. Milestone Emission Target Levels

After the State establishes the adjusted baseline emission estimates, the next step is to calculate the VOC and NO_X emission target levels for the milestone years. The January 1994 EPA policy document, ''Guidance on the Post-1996 Rate-Of-Progress Plan and the Attainment Demonstration,'' provides the method for calculating emission target levels. To calculate the emission targets, the State identified the previous milestone year target emission levels. From these target levels, the State subtracted (a) the emission reduction needed to meet the ROP requirement, and (b) the vehicle fleet turnover correction factors.

4. Projected Emission Growth Levels

To account for source emission growth between 1990 and the milestone years, the State must develop projected emission inventories for VOC and NO_X. The projected emission inventories represent what emissions would be in 2002, 2005, and 2007 if no emission control measures claimed in the ROP plan had occurred.

The State of Illinois did not include this documentation in the ROP plan reviewed in this proposed rule, but notes that it has used the same procedures to calculate emission reductions and projections as used in the State's post-1996 ROP plan (approved by the EPA on December 18, 2000, 65 FR 78961). The State provides graphical emission projections (Figures II–2 and II–3 of Illinois' post-1999 ROP plan) and tabular emission projections (Table II–8 in Illinois' post-1999 ROP plan) in which emissions growth appears to have been considered. These graphs and tabular data appear to represent the combined impacts of emissions growth and emission reductions. It is concluded that the State has included estimates of emissions growth in its projected emission estimates.

5. Emission Reductions Needed To Achieve ROP

According to the State's calculations, the following VOC emission reductions are needed for each milestone year to meet ROP requirements: 152.42 tons per day (TPD) by 2002; 177.82 TPD by 2005; and 213.49 TPD by 2007 (taken from Table II–7 of Illinois' post-1999 ROP plan).

The ROP plan does not specify the NO_X emission reductions needed for the milestone years to meet ROP requirements. The plan, however, does compare projected NO_X emissions to calculated ROP emission target levels for each of the milestone years.

6. Calculation of the Required Contingency Measure Emission Reduction

Consistent with guidance provided in the General Preamble, Illinois determined the needed contingency measure emission reduction by multiplying the 1990 adjusted base year VOC emissions by 3 percent. Based on this calculation, the needed contingency emission reduction for the Chicago area is 31.11 TPD of VOC. The State has determined that the contingency emission reduction can be achieved through VOC emission reductions only: thus, no NO_X emission reduction is needed to meet the contingency measure requirements for a milestone failure in the Chicago area.

To assure that the contingency emission reduction is achieved, Illinois has decided to implement sufficient emission reductions to meet both the ROP requirements and the contingency measure requirement for each milestone period. Therefore, no future implementation trigger is needed based on a failure to meet a milestone. See the discussion below of the State's contingency measure plan.

The following tables summarize the State's post-1999 ROP calculations for determining the needed ROP emission reductions (VOC and NO_X). Note that Illinois has chosen to divide the emission reduction requirements into 2 percent of the VOC adjusted baseline emissions for the ozone nonattainment area and 7 percent of the NO_X emissions in the State's ozone attainment areas for each 3 year period.

TABLE VI.—CALCULATION OF VOC ROP TARGET EMISSION LEVELS

[Emission in tons per day]

Calculation parameter	Milestone year			
	1990	2002	2005	2007
1990 Base Year Emissions	1363.40	.....	.....	.....
1990 Adjusted Base Year Emissions (minus biogenic emissions)	1216.56	.....	.....	.....
Adjusted Baseline Emissions	.....	1019.67	1010.70	1009.00
ROP Emission Reduction Required at 0.667 percent per year of adjusted baseline emissions	.....	20.39	20.21	10.09
Fleet Turnover Correction	.....	17.32	8.97	1.70

TABLE VI.—CALCULATION OF VOC ROP TARGET EMISSION LEVELS—Continued

[Emission in tons per day]

Calculation parameter	Milestone year			
	1990	2002	2005	2007
Emission Target Level for Milestone Year	.....	770.11	740.92	729.13

TABLE VII.—CALCULATION OF NO_X ROP TARGET EMISSION LEVELS

[Emissions in tons per day]

Calculation parameter	Milestone year			
	1990	2002	2005	2006
1990 Base Year Emissions in Ozone Attainment Areas	2085.80	.....	.....	.....
Adjusted Baseline Emissions	.....	1929.31	1920.96	1925.08
ROP Emission Reduction Required at 2.33 percent per year of adjusted baseline emissions	.....	135.05	134.47	96.25
Fleet Turnover Correction	.....	28.23	8.35	5.39
Emission Target Level for Milestone Year	.....	1657.23	1514.41	1412.76

H. What Are the Criteria for Acceptable ROP Emission Control Strategies?

Under section 182(b)(1)(C) of the CAA, emission reductions claimed for ROP are creditable to the extent that the emission reductions have actually occurred before the applicable ROP milestone dates. In our policy, EPA has interpreted the CAA to mean that, to be creditable, emission reductions must be real, permanent, and enforceable. Our policy (see 57 FR 13567) provides that, at a minimum, the emission reduction calculation methods should follow the following four principles: (1) Emission reductions from control measures must be quantifiable; (2) control measures must be enforceable; (3) interpretation of the control measures must be replicable; and (4) control measures must be accountable. Post-1996 plans must also adequately document the methods used to calculate the emission reduction for each control measure.

Section 182(b)(1)(D) of the CAA places limits on what emission control measures states can include in ROP plans. All permanent and enforceable control measures occurring after 1990 are creditable with the following exceptions: (1) FMVCP reductions due to requirements promulgated by January 1, 1990; (2) RVP reductions due to RVP regulations promulgated by November 15, 1990; (3) emission reductions resulting from Reasonably Available Control Technology (RACT) ''Fix-Up'' regulations required under section 182(a)(2)(A) of the CAA; and (4) emission reductions resulting from vehicle I/M program ''Fix-Ups'' as required under section 182(a)(2)(B) of the CAA.

I. What Are the Emission Control Measures In Illinois' Post-1999 ROP Plan?

VOC Emission Control Measures

Table VIII specifies the VOC emission control measures relied on in the post-1999 ROP plan and their associated VOC emission reductions for each milestone year.

TABLE VIII.—CHICAGO NONATTAINMENT AREA VOC EMISSION REDUCTION MEASURES

[Emission reductions in tons per day]

VOC Control measure	Emission reduction level—TPD		
	2002	2005	2007
Mobile Source Measures:			
Post-1994 Tier I Vehicle Emission Rates	60.50	79.40	92.10
Federal Reformulated Gasoline—Phase I & II	111.80	109.70	109.20
Illinois 1992 I/M Improvements	12.30	12.40	12.60
Enhanced I/M Program [22]	16.60	17.80	18.10
1			
Conventional Transportation Control Measures	4.00	5.00	6.00
National Energy Policy Act of 1992	0.20	0.20	0.20
Federal Non-Road Small Engine Standards	35.81	61.07	78.97
National Low Emissions Vehicle Program	3.1	13.4	25.3
Federal Clean Fuel Fleet Vehicle Program	2.60	2.80	2.80
Tier II Vehicle Standards/Low Sulfur Fuel Standards	0	4.30	5.70
Point Source Measures:			
Emissions Reduction Market System (ERMS)	12.6	0	0
Area Source Measures:			
1999 Cold Cleaning Degreaser Limits	11.68	0	0
Total Creditable VOC Emission Reductions	271.19	306.07	350.97

[22] Emission reductions beyond those to be achieved through the 1992 I/M requirements, as improved.

It should be noted that, with the exception of the Tier II Vehicle Standards/Low Sulfur Fuel Standards, the emission controls relied on for the post-1999 ROP plan were addressed in Illinois' post-1996 ROP plan, including the procedures used to calculate the emission reductions. You are referred to EPA's final rule on that plan (65 FR 78961, December 18, 2000) for a more detailed discussion of these emission control measures and their associated emission reduction calculations.

The emission reductions for the Tier II Vehicle Standards and Low Sulfur Fuel Standards were incorporated into the ozone attainment demonstration based on default data supplied to the State by the EPA. These same default data were used to derive the emission reduction data for this control measure for the milestone years.

NO_X Emission Control Measures

Table IX specifies the NO_X emission control measures relied on in the post-1999 ROP plan and the associated NO_X emission reductions for each milestone year.

TABLE IX.—ILLINOIS OZONE ATTAINMENT AREA NO_X EMISSION REDUCTION MEASURES

[Emission reductions in tons per day]

NO_X Emission control measure	Emission reduction level—TPD		
	2002	2005	2007
CAA Tier I Vehicle Emission Standards	49.70	72.90	82.80
Tier II Vehicle Standards/Low Sulfur Fuel Standards	.....	23.00	35.00
National Low Emission Vehicle/Heavy Duty Gasoline Vehicle Standards	.....	16.10	37.30
Federal Off-Road Engine Standards	45.23	95.80	122.32
Title IV Acid Rain Controls on EGUs	36.20	.....	.....
NO_X SIP Call (EGUs, Non-EGU Boilers and Turbines, and Cement Kilns)	.....	430.18	
Total Creditable NO_X Emission Reductions	131.13	637.99	277.42

As with the VOC emission reduction for the Tier II Vehicle Standards/Low Sulfur Fuel Standards, Illinois used data supplied by the EPA to calculate the NO_X emission reduction for this source category. The other emission reduction estimates are supported by the emission reduction estimates provided by the State to the EPA in support of OTAG and the NO_X SIP Call.

J. Are the Emission Control Measures and Calculated Emission Reductions Acceptable to the EPA, and Is the Post-1999 ROP Plan Approvable?

With the exception of the VOC emission reduction calculated for the VOC ERMS program, we find the estimated emission reductions to be acceptable for all reduction categories. As previously noted in the proposed rulemaking on the Chicago area post-1996 ROP plan (65 FR 81799, December 27, 2000), we believe that the ERMS program will only reduce VOC emissions by 10.9 tons per day by 2002. It is noted, however, that even assuming a 10.9 tons per day emission reduction for the ERMS program, the ROP plan achieves a 9 percent emission reduction for the 3-year period of November 15, 1999 through November 15, 2002. The State's submission indicates that a 2 percent VOC emission reduction requirement for 2002 is approximately 157 tons per day, whereas, emission controls implemented prior to November 15, 2002 will achieve a total VOC emission reduction of approximately 271 tons per day.

The adequacy of the ROP plan may be assessed by comparing the VOC and NO_X target emission level with the projected, post-control emission levels for each of the milestone years. Table II–6 in Chapter II (''Rate-of-Progress and Contingency Measures'') of Illinois'' December 26, 2000 submittal provides the comparison of ROP-based target emission levels to projected, post-control emission levels. As indicated in the State's Table II–6 and in Table VI above, the VOC target emission levels for the milestone years are: 770.11 tons per day in 2002; 740.92 tons per day in 2005; and 729.13 tons per day in 2007. From Table II–6 in the State's submittal, the projected, post-control VOC emissions are: 647.64 tons per day in 2002; 614.47 tons per day in 2005; and 592.58 tons per day in 2007. As indicated in the State's Table II–6 and in Table VII above, the NO_X target emission levels for the milestone years are 1657.23 tons per day in 2002; 1514.41 tons per day in 2005; and 1412.76 tons per day in 2007. From Table II–6 in the State's submittal, the projected, post-control NO_X emissions are: 1538.77 tons per day in 2002; 1019.35 tons per day in 2005; and 965.51 tons per day in 2007. Clearly, the targeted emission levels are achieved through a combination of VOC and NO_X emission reductions. The excess VOC and NO_X emission reductions provide for a more robust ROP plan and will offset some shortfalls in the planned emission reductions should such occur in the future. We view the ROP plan as being very good and approvable.

It is noted that EPA has yet to give final approval to the VOC ERMS rule and the NO_X rules for EGUs, major non-EGU boilers and turbines, and cement kilns. EPA must approve these rules before EPA can give final approval to the State's ROP plan.

V. Contingency Measures Plan

A. What Are the Requirements for Contingency Measures Under Section 172(c)(9) of the CAA?

Section 172(c)(9) of the Act requires SIPs to contain additional measures that will take effect without further action by the State or EPA if an area fails to achieve ROP by applicable milestone dates or to attain the standard by the applicable attainment date. The CAA does not specify how many contingency measures are needed or the magnitude of emissions reductions that must be provided by these measures. However, EPA provided guidance interpreting the control measure requirements of 172(c)(1) in the April 16, 1992, General Preamble for Implementation of the Clean Air Act Amendments of 1990. See 57 FR 13498, 13510. In that guidance, EPA indicated that States with moderate and above ozone nonattainment areas should include sufficient contingency measures so that, upon implementation of such measures, additional emissions reductions of up to 3 percent of the emissions in the adjusted base year inventory (or such lesser percentage that will cure the identified failure) would be achieved in the year following the year in which the failure has been

identified. States must show that their contingency measures can be implemented with minimal further action on their part and with no additional rulemaking actions such as public hearings or legislative reviews. The additional 3 percent reduction would ensure that progress toward attainment occurs at a rate similar to that specified under the Reasonable Further Progress (RFP) (also called the Rate of Progress or ROP) requirements for severe areas (i.e., 3 percent per year) and that the State will achieve these reductions while conducting additional control measure development and implementation as necessary to correct the shortfall in emissions reductions or to adopt newly required measures necessary to reach attainment.

EPA has also determined that Federal measures can be used to analyze whether the contingency measure requirements of section 179(c)(9) have been met. While these measures are not SIP-approved contingency measures which would apply if an area fails to attain, EPA believes that existing, Federally-enforceable measures can be used to provide the necessary substantive relief. Therefore, Federal measures may be used in the analysis, to the extent that the ROP plan and the attainment demonstration do not rely on them or take credit for them. (See, e.g., 66 FR 586, 615 (January 3, 2001).)

B. How Does the Chicago Attainment Demonstration SIP Address the Contingency Measure Requirements?

Calculation of Illinois's total 1990 adjusted base year inventory for VOC emissions for the nonattainment area is detailed in EPA's December 18, 1997, (62 FR 66279) approval of the 15% plan and in the Illinois 15% plan submittal. Illinois' 1990 adjusted base year inventory of VOC emissions for the Chicago nonattainment area is 1,064.05 tons per day (TPD). Per EPA's guidance, Illinois has determined that contingency measures must achieve a VOC reduction of 31.11 TPD.

Illinois has identified surplus emissions reductions that occur thru the year 2009 that are available as contingency measure reductions in the post-2007 period. These contingency measure reductions are not the same reductions as were approved as contingency measures for the 15 percent ROP plan for Illinois (62 FR 37494) and the 9 percent ROP plan for Illinois (65 FR 78961). The contingency measure reductions approved at that time have been implemented and were included in the most recent attainment demonstration modeling for the Chicago area. Thus, these measures have already been ''used'' to demonstrate attainment. Contingency measures for the ozone attainment demonstration must be above and beyond (or surplus to) the measures that were modeled in the attainment demonstration or used to show attainment of the one-hour ozone standard. Thus the reductions listed here have been reviewed for their applicability as contingency measures surplus to any previous reductions or crediting, including emission reductions credited to the contingency requirements of the post-1999 ROP plan as discussed above.

The control measures and the calculated reduction are listed in the following table:

TABLE X.—ILLINOIS CONTINGENCY MEASURE REDUCTIONS

Control measure	Reduction (TPD)
Mobile Source Measures	10.8
Tier II/Low Sulfur Fuel Program [23]	1.4
On-Board Diagnostics	23.5
Non-Road Engine Standards	14.0
Total	49.7

[23] Emissions in excess of those claimed and tested in the ozone attainment demonstration.

Illinois is relying on future emission reductions from a number of federal rules to serve as contingency measures for the attainment demonstration. The mobile source measures consist of incremental reductions from the Federal Motor Vehicle Emissions Program and other Federal and State measures already in place. In addition, several other new Federal measures are relied upon, which include the On Board Diagnostics rule, the Non-Road Engine Standards rule, and the Tier II/Low Sulfur fuel rule. Illinois has documented the methodology for the calculation of the emission reductions and this material is available in the docket. The measures and the emission reduction calculations are summarized here.

The On Board Diagnostics (OBD) test standards have already been adopted by Illinois in Title 35 Subtitle B subpart H Part 240. These rules required Illinois to begin OBD testing in their I/M program on January 1, 2001. However, on March 28, 2001, the EPA Administrator signed a final rulemaking to amend the vehicle I/M program requirements to incorporate a check of the OBD system and to extend the date that states needed to comply until January 1, 2002. Implementation of this check during the already implemented I/M program in the Chicago area will begin in January 2002. Illinois has estimated the amount of reductions from OBD testing that will occur in 2008 and 2009. The resultant 23.5 TPD emissions reduction is listed in the table. This emission reduction is in excess of the mobile source emission reductions considered in the ozone attainment demonstration, and, therefore, can be credited towards the contingency requirements.

The Non-Road Engine Standards apply to all sizes of non-road diesel engines. These engines include lawn and garden equipment, larger industrial equipment, marine engines, recreational vehicles, locomotives and aircraft engines. The standards are phased in with Tier 2 standards from 2001 to 2006 and more stringent Tier 3 standards for larger engines from 2006 to 2008. The VOC emissions reduction for the contingency measure has been calculated to be 7.0 TPD for 2008 and 7.0 TPD for 2009. More detail on the emissions calculation is provided in the docket.

The Tier II/Low sulfur fuel rule promulgated by EPA begins to take effect in 2004. Illinois used EPA's MOBILE5 information sheet #8 to estimate reductions. The 2007 VMT estimate was used for the calculation. The reduction listed in the Table represents the difference between the 2007 estimate (5.65 TPD) and the 2009 estimate (7.08 TPD).

These reductions meet the criteria for reductions to be used as contingency measures. The measures are already adopted for implementation and will provide for specific emission control measures if the area fails to attain the ozone standard by 2007. The measures will take effect without any further action by the State or by EPA. The reductions are surplus to the attainment demonstration and the post-1999 ROP plan emission reductions.

The only remaining question or issue is the timing of the emission reductions. As noted above, the General Preamble indicates that the contingency measures emission reductions should be achieved in the year following the year in which the attainment failure has been identified. For the Chicago area, the attainment date is November 15, 2007. Therefore, the critical attainment ozone season is April through October of 2007 (the last ozone season prior to the attainment date). Following this ozone season, it will take the State of Illinois and other States in the Chicago downwind environs several months to review and quality assure the 2007 ozone data. EPA must then use these data to make the determination of attainment, which can take up to 6 months. This means the determination

will not occur until sometime in 2008. Therefore, 2009 is the ''year following the year'' in which EPA is expected to make the determination of attainment, and, therefore, Illinois can take credit for any emission controls implemented between 2007, the attainment year, and 2009.

C. Does the Chicago, Illinois Attainment Demonstration Meet the Contingency Measure Requirements?

EPA believes that Illinois has identified contingency measures which will provide for a 3 percent reduction in VOC emissions from the 1990 adjusted base year inventory, as required by section 172(c)(9) of the CAA. Illinois has identified VOC emission reductions totaling 49.7 tons per day from On-Board Diagnostics, Tier II, Non-Road Engine Standards and other Mobile Source measures which exceeds the required reductions of 31.11 TPD.

VI. Emission Control Rule Adoption and Implementation Status

Illinois has completed rule adoption for all of the rules needed to support the ozone attainment demonstration and the post-1999 ROP plan. The EPA is in the process of rulemaking on the State's NO_X rules and VOC ERMS rule. Final approval of the NO_X and VOC ERMS rules is required before we can give final approval to the ozone attainment demonstration and post-1999 ROP plan.

VII. Mid-Course Review Commitment

A. Why Is a Mid-Course Review Commitment Necessary?

The EPA's modeling and attainment demonstration guidance (Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS, June 1996), provides that states must commit in their SIPs to perform mid-course reviews whenever they rely on ''weight-of-evidence'' to support an attainment demonstration. This guidance also requires a mid-course review for all severe and extreme ozone nonattainment areas because of the uncertainty inherent in emission projections that extend 10–15 years into the future. Also, EPA's proposed rulemaking on the 1-hour ozone SIPs (December 16, 1999, 64 FR 70318) set forth a framework for reviewing and processing the 1-hour ozone SIPs; one element of that framework was a commitment for a Mid-Course Review (MCR).

A MCR is a reassessment of modeling analyses and more recent monitored air quality data and emission estimates to determine if a prescribed control strategy has resulted in emission reductions and air quality improvements needed to attain the 1-hour standard for ozone by the attainment date established in the approved SIP. The EPA believes that a commitment to perform a MCR is a critical element in any attainment demonstration that employs a weight-of-evidence test. In proposing to approve the attainment demonstration of SIPs for ten serious and severe nonattainment areas for the 1 hour ozone NAAQS on December 16, 1999, EPA indicated that in order for EPA to approve the SIPs, the States would have to commit to perform a MCR, since they relied on a weight-of-evidence test. EPA also requested the States to work with EPA in a public consultative process to develop a methodology for performing the MCRs and developing the criteria by which an adequate progress would be judged.

In the December 16, 1999, notices of proposed rulemaking, EPA did not request that States commit in advance to adopt new control measures as a result of the MCR process. Based on the MCR, if EPA determines additional control measures are needed for attainment, EPA would determine whether additional emission reductions are necessary from a state or states in which the nonattainment area is located or from upwind states, or both. The EPA would then require the affected state or states to adopt and submit the new measures within a period specified at that time. The rulemaking proposals noted that EPA anticipated that these findings would be made as calls for SIP revisions under section 110(k)(5) and, therefore, the period for submission of the measures would be no longer than 18 months after the EPA finding.

B. Did Illinois Submit a Mid-Course Review Commitment?

Illinois has submitted a MCR commitment. Although Illinois does not rely on weight-of-evidence in the final 1-hour attainment demonstration,[24] Illinois has submitted a MCR commitment letter dated December 17, 1999 (this commitment was further refined in a followup letter dated May 24, 2001 as discussed below). In the December 16, 1999, proposed rulemaking, the EPA required Illinois to submit a MCR commitment letter because the 1-hour attainment demonstration submitted in 1998 had modeling which relied on weight-of-evidence. The modeling at that time assumed a 0.25 pounds of NO_X per million British thermal units of heat input emission rate for EGUs in Illinois and in other states expected to be covered in EPA's NO_X SIP Call. Since that time, the modeling has been revised to account for the NO_X SIP Call controls (Illinois will limit NO_X emissions from EGUs to 0.15 pounds per million British thermal units of heat input and will also limit the NO_X emissions from major non-EGU boilers and turbines and from major cement kilns). The most recent modeling submitted in the attainment demonstration SIP does not rely on weight-of-evidence to demonstrate attainment. Thus, under EPA policy, the State of Illinois would not be required to commit to the MCR for that reason. However, the June 1996 EPA guidance requires a mid-course review for severe and extreme areas due to the uncertainty of emissions projections that extend out 10–15 years in the future. EPA and the State of Illinois both believe that the MCR is a good check on the emissions reductions and progress toward attainment of the 1-hour ozone NAAQS. Illinois and the other Lake Michigan States have submitted letters of commitment to complete the MCR.

Illinois submitted a letter dated December 17, 1999, which contained a commitment to complete a mid-course review. The letter and other documents, including a supplement to the 9 percent ROP plan and motor vehicle emissions budgets, were discussed at public hearing on January 18, 2000. The commitment however, did not contain a date certain for the submittal of the mid-course review. To clarify it's commitment, Illinois has submitted a letter dated May 24, 2001 in which Illinois commits to submit the mid-course review by December 31, 2004. This commitment is acceptable.

VIII. NO_X Waiver

A. What Is the History of the NO_X Emissions Control Waiver in the Chicago-Gary-Lake County Ozone Nonattainment Area?

Part D of the CAA establishes the SIP requirements for nonattainment areas. Subpart 2, part D of the CAA establishes additional provisions for ozone nonattainment areas. Section 182(b)(2) of this subpart requires the application of RACT regulations for major stationary VOC sources located in moderate and above ozone nonattainment areas as well as in ozone transport regions. States with affected areas were required

[24] Illinois included weight-of-evidence data in the attainment demonstration to add support to the adequacy of the modeled attainment demonstration. Since the ozone modeling showed attainment of the ozone standard using the statistical test, the weight-of-evidence determination data were not inherently needed as a critical part of the ozone attainment demonstration, but do serve the purpose of compensating for the uncertainties inherent in the ozone modeling and do add support to the projected attainment of the 1-hour ozone standard.

to submit RACT regulations by November 15, 1992. Section 182(a)(2)(C) requires the application of NSR regulations for major new or modified VOC sources located in marginal and above ozone nonattainment areas as well as in ozone transport regions. States were required to adopt revised NSR regulations by November 15, 1992. Section 182(f) requires States to apply the same requirements to major stationary sources of NO_X as apply to major stationary sources of VOC. Therefore, the RACT and NSR requirements also apply to major stationary sources of NO_X in certain ozone nonattainment areas and in ozone transport regions.

The section 182(f) requirements are discussed in detail in EPA's ''State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990'' (57 FR 55628, November 25, 1992). For ozone nonattainment areas located outside of an ozone transport region, the NO_X emission control requirements do not apply to NO_X sources if: (1) The EPA determines that net air quality benefits are greater in the absence of NO_X emission reductions; or (2) the EPA determines that additional reductions of NO_X emissions would not contribute to attainment of the ozone standard in the area. Where any one of these tests is met (even if the other test is failed), the NO_X RACT and NSR requirements of section 182(f) would not apply and may be ''waived.'' See section 182(f)(1). In addition, under section 182(f)(2) of the CAA, if the EPA determines that excess reductions in NO_X emissions would be achieved under section 182(f)(1) of the CAA, the EPA may limit the application of section 182(f)(1) to the extent necessary to avoid achieving such excess emission reductions.

In addition to determining the applicability of NO_X requirements for RACT and NSR, the section 182(f) waiver process may also determine the applicability of certain requirements applicable to NO_X under the CAA's transportation and general conformity requirements, which assure conformity of Federal programs and projects with approved SIPs. The general and transportation conformity requirements are found at section 176(c) of the CAA. The conformity requirements apply on an area-wide basis in ozone nonattainment and maintenance areas. The EPA's transportation conformity final rule[25] and general conformity final rule[26] reference the section 182(f) exemption process as a means for exempting an affected area from certain NO_X conformity requirements. The approval of a section 182(f) exemption petition granting a NO_X waiver results in the exemption of marginal and above ozone nonattainment areas from the emission reduction tests[27] with respect to NO_X under the transportation and general conformity requirements of the CAA. See EPA's May 27, 1994 memorandum entitled ''Section 182(f) Nitrogen Oxides (NO_X) Exemptions-Revised Process and Criteria,'' from John Seitz, Director of the Office of Air Quality Planning and Standards. However, once NO_X emission budgets are established under attainment demonstrations and ROP plans, areas must meet the NO_X emission budgets for transportation conformity notwithstanding the existence of NO_X waivers.

Similarly, under the I/M program final rule (57 FR 52950), November 5, 1992, the section 182(f) petition is also referenced to determine applicability of I/M-based NO_X emission reductions (I/M NO_X emission cutpoints). The I/M requirements for serious and above ozone nonattainment areas are found at section 182(c)(3) of the CAA. Basic I/M testing programs must be designed such that no increase in NO_X emissions occur as a result of the programs. So long as this is done, if a NO_X waiver petition is granted to an area required to implement a basic I/M program, the basic I/M NO_X emission cutpoints may be omitted. Enhanced I/M testing programs must be designed to reduce NO_X emissions consistent with an enhanced I/M performance standard. If a NO_X waiver petition is granted to an area required to implement an enhanced I/M program, the NO_X emission reduction is not required, but the enhanced I/M program must be designed to offset NO_X emission increases resulting from the repair of vehicles due to hydrocarbon or carbon monoxide emission failures detected through the I/M program.

As part of a July 13, 1994 submittal from LADCO, the States of Illinois, Indiana, Michigan, and Wisconsin petitioned the EPA for a waiver of the NO_X emission reduction requirements of section 182(f) of the CAA and for a waiver of the above-described NO_X emission control requirements for conformity and basic and enhanced I/M in the ozone nonattainment areas in the Lake Michigan ozone modeling domain (this includes the Chicago-Gary-Lake County ozone nonattainment area). The EPA reviewed this petition in proposed rulemaking on March 6, 1995 (60 FR 12180) and in final rulemaking on January 26, 1996 (61 FR 2428). The final rulemaking approved the existing waiver of RACT, NSR, and certain I/M and general conformity NO_X requirements in the subject ozone nonattainment areas. The EPA also granted an exemption from certain transportation conformity NO_X requirements for ozone nonattainment areas classified as marginal or transitional within the Lake Michigan ozone modeling domain on February 12, 1996 (61 FR 5291). These exemptions were granted based on a data analysis/modeling demonstration showing that additional NO_X emission reductions either would not contribute to or would interfere with attainment of the 1-hour ozone standard for ozone nonattainment areas within the ozone modeling domain.

The continued approval of the exemption was made contingent on the results of the States' final ozone attainment demonstrations and emission control plans for the ozone modeling domain[28] (61 FR 2428, January 26, 1996). It was noted that the ozone modeling in the final ozone attainment demonstrations would supersede the ozone modeling information that provided the basis for the support of the NO_X emissions control waiver. To the extent that the final attainment plans include NO_X emission controls on major stationary

[25] ''Critical and Procedures for Determining conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved under Title 23 U.S.C. or the Federal Transit Act,'' November 24, 1993 (58 FR 62188).

[26] ''Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule,'' November 30, 1993 (58 FR 63214).

[27] Prior to the approval of an ozone attainment demonstration or a ROP plan, an ozone nonattainment area granted a NO_X waiver may be exempted from the conformity rule's requirements for a build/no-build test and a less-than-1990 emissions test. After an atainment demonstration or a ROP plan containing motor vehicle emissions budgets is approved and the emissions budgets are found to be adequate by the EPA, conformity determinations must be conducted using the motor vehicle emissions budgets and the NO_X waiver no longer applies for transportation conformity purposes. Since the general conformity rules encourage, but do not require, specified emissions budgets, NO_X general conformity waivers may apply for the applicable life of the waiver.

[28] At the time the NO_X control exemption was granted, the States had not completed the final ozone attainment demonstrations for the Lake Michigan ozone modeling domain. The NO_X exemption/waiver petition was supported by ozone modeling data available at the time of the exemption approval. This ozone modeling data included sensitivity analyses investigating the potential impacts of NO_X emission changes on peak ozone concentrations within the ozone modeling domain. It was recognized that the final ozone attainment demonstrations could ultimately be based on different input data that would provide a different picture of the impacts of NO_X emission changes on peak ozone concentrations.

sources in the ozone nonattainment areas in the Lake Michigan ozone modeling domain, we noted that we would remove the NO_X emissions control waiver for those sources. We stated that the NO_X emissions control waiver would be continued for all sources and source categories not covered by new NO_X emission controls in the final attainment demonstrations. Consistent with those statements, EPA is reconsidering the existing NO_X waiver as part of the rulemaking on the final ozone attainment plans.

B. What Are the Conclusions of the State Regarding the Impact of the Ozone Attainment Demonstration on the NO_X Control Waiver?

Although the State of Illinois has included statewide NO_X emission reductions resulting from plans to meet EPA's NO_X SIP Call as critical components of the ozone attainment demonstration and the post-1999 ROP plan for the Chicago area, the State has concluded that these plans do not interfere with the NO_X emissions control waiver because the ozone attainment demonstration and ROP plans do not depend on NO_X emission controls exempted under the existing NO_X waiver.

C. What Are the Bases and Conclusions of a Petition Against the NO_X Waiver?

On August 22, 2000, an attorney representing a number of organizations filed a petition under section 182(f)(3) of the CAA, requesting that the EPA revoke the NSR exemption portion of the NO_X waiver granted to Illinois on January 26, 1996. In general, the petitioners believe that an increase in permitting of new facilities by the State for certain source categories effectively undermines the basis for the NSR portion of the existing NO_X waiver. The petitioners include the following organizations:

1. American Lung Association of Metropolitan Chicago
2. Citizens Against Power Plants in Residential Areas (Kane and DuPage Counties, Illinois)
3. Citizens Against Ruining The Environment (Will County, Illinois)
4. Citizens For A Better Environment—Illinois
5. Illinois Environmental Council
6. Illinois Citizen Action
7. Lake County Audubon Society
8. Lake County Conservation Alliance
9. Liberty Prairie Crossing (Lake County, Illinois)
10. Prairie Crossing Homeowners Association, Prairie Holdings Corporation (Lake County, Illinois).

The petition notes that section 182(f)(3) of the CAA allows ''a person'' to petition the Administrator (EPA) for a determination of whether it is appropriate for otherwise applicable NO_X requirements to be waived in ozone nonattainment areas. Although this petition was submitted separately from the ozone attainment demonstration plan that is the subject of this proposed rule, we believe it is appropriate to review this NO_X waiver petition concurrently with our rulemaking action on the State's attainment plan.

The petitioners include the following observations and arguments for petitioning the EPA to reconsider the NO_X waiver granted to Illinois.

The petitioners note that, when we granted the NO_X waiver in the January 26, 1996 final rulemaking, we stated that we would consider altering or revoking the existing NO_X waiver under one of the following circumstances:

1. The completion of ozone attainment demonstrations and plans arising from OTAG's findings;
2. The development of attainment plans that include NO_X controls on ''certain'' major stationary sources;
3. If the waiver causes or contributes to any new violations of the ambient air quality standards;
4. If the waiver increases the frequency or severity of existing [ozone standard] violations;
5. If the waiver contributes to delays in achieving attainment;
6. If the waiver inhibits progress toward complying with the SIP;
7. If the waiver contributes to non-attainment in, or interference with maintenance by any other State or in another nonattainment area within the same state; or
8. If subsequent modeling demonstrates that, as a general matter for ozone nonattainment areas across the country, NO_X emission reductions in addition to VOC emission reductions will be needed to achieve attainment.

The petitioners note that we explicitly characterized the granting of the existing NO_X waiver as contingent. Therefore, the petitioners believe we have provided a basis for reconsidering the NO_X waiver based on more current information.

The petitioners cite to the emergency powers granted EPA under section 303 of the CAA, and also note that both the State and the Federal governments retain authority under section 110 of the CAA to address developments that may threaten adequate SIP implementation. They further state that SIPs must regulate the construction of any stationary source within the areas covered by the plans to assure the NAAQS are being achieved. The petitioners assert that these CAA requirements, coupled with the reasons for revoking or revising the NO_X waiver, as specified above, provide the legal bases for us to reconsider the NO_X waiver granted to Illinois.

The petitioners list the following factual reasons for petitioning us to reconsider the NSR portion of the NO_X waiver.

1. The NO_X waiver is causing unforeseen consequences that are defeating the purpose of achieving air quality standards. The NO_X waiver is enabling the unchecked proliferation in Illinois of natural gas fired peakers and combined cycle plants (here collectively referred to as combustion turbine generators). Because of the NO_X waiver, mandates relating to Lowest Achievable Emission Rates (LAER) and emission offset requirements for new major NO_X sources in ozone nonattainment areas are not being required for the new combustion turbine generators. As a result of the NO_X waiver, the NO_X emissions cutoff for the definition of a ''major NO_X source'' has been adjusted from 25 tons per year (TPY) to 250 TPY in the Chicago-Gary-Lake County ozone nonattainment area. The new permitted combustion turbine generators have been designed to have peak potential NO_X emission rates below 250 TPY. The new combustion turbine generators have sought permits as minor sources of NO_X, avoiding the more stringent emission control requirements for major NO_X sources. In the view of the petitioners, because these sources are minor by definition, they are permitted under New Source Performance Standard (NSPS) requirements that, in combination with the sheer number of new facilities, offers few options for meaningful review by the State regulators despite the potentially severe cumulative impacts on air quality in Illinois and elsewhere.

As of July 7, 2000 and since 1998, more than 20 natural gas fired power plants have been proposed in the Chicago nonattainment area. Most of these units will operate when the energy demand is high and top prices for electricity will be paid; this coincides with the period when potentially high ozone concentrations will also occur, on the high temperature days of summer. In Illinois, there are approximately 50 new combustion turbine generators that have entered the siting or permitting process. Although the environmental performance of these new facilities contrast favorably with coal-burning power plants, there is no proposal to decommission any existing coal burning facility to accomodate the new combustion turbine generators.

2. The factual determinations leading to the NO_X waiver have been superceded, and invalidated by subsequent research completed through the OTAG process. The petitioners note that, in contrast to the information provided by the LADCO States to support the NO_X waiver petition, the OTAG analyses substantially discounted the concept of beneficial or benign NO_X emissions. The OTAG analyses underscore the significant local and regional benefits of NO_X emission reductions. These analyses form the support for EPA's NO_X SIP Call that mandates meeting strict NO_X emission budgets. Among the conclusions of OTAG noted by the petitioners are:

a. Regional NO_X emission reductions are effective in producing ozone benefits;

b. The greater the NO_X emission reductions, the greater the ozone benefits;

c. Ozone benefits are greatest in the subregions where NO_X emission reductions are made;

d. Although decreased with distance, there are ozone benefits outside of the subregions where emission reductions are made;

e. Both tall-stack and low-level NO_X emission reductions are effective;

f. Air quality data indicate that ozone is pervasive, is transported and, once aloft, is carried over long distances and transported from one day to the next;

g. The range of the ozone transport is generally longer in the North; and

h. NO_X controls on utilities are recommended for states in much of the OTAG region.

Both the NO_X SIP Call and the OTAG findings underscore the importance and cost-effectiveness of NO_X reductions as an ozone attainment strategy. Both the NO_X SIP Call and the OTAG findings were made without reference to the unchecked proliferation of the new combustion turbine generators. Consequently, the petitioners contend that, even if there was not a proliferation of new peaker plants, because of information generated by OTAG and EPA's NO_X SIP call, there is still a compelling basis for EPA to reconsider the NO_X waiver granted in 1996 in its entirety.

As further support, the petition includes a listing of the combustion turbine generators or similar NO_X emitting units that are currently holding adopted State of Illinois source permits or that currently (as of August 2000) are in the process of seeking State source permits. This information does not include the potential NO_X emissions for these generators (however, the information provided to EPA by the State in the ozone attainment demonstration does include such information for many of these generators). The petitioners have also included statements regarding these generators from the Director of the IEPA and a related news article from the Chicago Tribune.

D. What Are the Conclusions That Can Be Drawn Regarding the NO_X Control Waiver From Data Contained in the State's Ozone Attainment Demonstration?

As noted above, the IEPA has included in its ozone attainment demonstration an analysis of the potential ozone impacts of an increase in statewide NO_X emissions due to newly permitted (i.e., as of September 2000) combustion turbine generators in the State. Out of the 33 new permitted generators considered, 10 of these generators are located in the Chicago area, as indicated in Table XI.

TABLE XI.—NEW PERMITTED COMBUSTION TURBINE GENERATORS IN THE ILLINOIS PORTION OF THE CHICAGO-GARY-LAKE COUNTY OZONE NONATTAINMENT AREA

County	Facilty owner-operator	Electrical output (megawatts)	NO_X emissions (T/day)	VOC emissions (T/day)	CO emissions (T/day)
Cook	People's Energy/Calumet Power LLC	276	1.677	0.124	0.554
Cook	Calumet Energy LLC	305	1.788	0.108	0.432
Cook	Commonwealth Edison/West Tech Turbines	110	1.572	0.048	0.69
DuPage	Reliant Energy	950	1.822	0.068	1.508
DuPage	ABB Energy Ventures/Grand Prairie Energy	508	0.51	0.03l	0.266
Kane	Dynegy/Rocky Road	398	2.122	0.118	1.382
McHenry	Reliant Energy	510	0.657	0.031	0.315
Will	Peoples Energy Resources Corporation	3100	5.235	0.176	6.08
Will	Des Plaines Greenland/Enron	831	1.432	0.091	2.35
Will	University Park Energy LLC/Constellation Power.	300	1.684	0.129	1.022

Considering all of the potential NO_X emission increases estimated for permitted combustion turbine generators throughout the State and increases in the estimated 2007 VMT (resulting in higher estimated mobile source emissions), the State modeled a potential peak ozone increase of only 1 to 2 ppb (relative to the peak ozone concentrations modeled by LADCO) for the critical high ozone episode of July 16–20, 1991. However, the State did not determine the potential ozone impacts for only those sources located in the Chicago area, that is those sources listed in Table XI. Therefore, it is unclear how the NO_X emissions from the new generators in the Chicago area would actually impact peak ozone concentrations in the modeling domain or whether these new NO_X emissions would cause the peak ozone concentrations to potentially increase.[29]

The State does note that the NO_X emissions for all of the permitted combustion turbine generators will be covered by the statewide NO_X emission control rules adopted by Illinois to comply with EPA's NO_X SIP Call. The combustion turbine generators will be subject to these rules along with other EGUs and other NO_X sources. Therefore, the State concludes that total NO_X emissions in the State of Illinois will not increase (subsequent to the implementation of the NO_X rules) as a result of the addition of the new permitted generators. The new generators will be ''EGUs'' by definition and will be subject to the NO_X rule for EGUs adopted by the State and currently under review by the EPA. Nonetheless, the addition of new

[29] The addition of new NO_X emissions in urban ozone nonattainment areas can cause peak ozone concentrations in or near the nonattainment area to either increase or decrease (through a process known as ozone scavenging). Without local ozone modeling, it is impossible to predict the direction of the change in peak ozone levels or the magnitude of the change due to changes in local NO_X emissions.

generators in the local nonattainment area has the potential to result in an increase in the NO_X emissions in the local nonattainment area. As the IEPA notes in response to a public comment on its attainment demonstration (see the State's response to comment (4) in Attachment 7, ''Hearing Responsiveness Summary,'' of the December 26, 2000 attainment demonstration submittal), the local NO_X emissions can increase with the addition of new generators in the area despite the fact that such generators will be subject to the NO_X rule for EGUs. New sources may be subject to NO_X emission reduction requirements, but may meet those emission reduction requirements through purchase of emission reduction credits from sources outside of the nonattainment area and possibly even in another state. We, however, cannot at this time predict that NO_X emissions will actually increase in the Chicago-Gary-Lake County ozone nonattainment area as the result of the startup and operation of the new combustion turbine generators. Because of the NO_X SIP Call, it is assumed that any potential increase in the NO_X emissions in the nonattainment area will be balanced by NO_X emission reductions elsewhere in the State.

It is noted that the State has taken credit for NO_X emission reductions in the Chicago area due to the new EGU NO_X control regulations. Table XII lists the ozone nonattainment area EGU facilities listed in the September 27, 2000 ''Technical Support Document: Midwest Subregional Modeling: Emissions Inventory.'' Emissions from these facilities were included in the base period EGU emissions and were reduced in the modeled emissions control strategy SR 16 to test the impacts of EPA's NO_X SIP Call.

TABLE XII.—CHICAGO NONATTAINMENT EGU BASE PERIOD NO_X EMISSIONS

[Emissions in tons per day]

Facility name	Facility ID/stack ID	County	NO_X emissions TPD
Commonwealth Edison—Joliet Generating Facility	197809AAO/0017	Will	24.08
Commonwealth Edison—Joliet Generating Facility	197809AAO/0016	Will	18.54
Commonwealth Edison—Will County Generating Facility	197810AAK/0013	Will	14.28
Commonwealth Edison—Will County Generating Facility	197810AAK/0007	Will	13.14
Commonwealth Edison—Will County Generating Facility	197810AAK/0011	Will	10.65
Commonwealth Edison—Waukegan Generating Facility	097190AAC/0018	Lake	10.45
Commonwealth Edison—Will County Generating Facility	197810AAK/0009	Will	8.29
UNO–VEN Company	197090AAI/0167	Will	7.91
Commonwealth Edison—Fish Generating Facility	031600AMI/0007	Cook	7.70
Commonwealth Edison—Crawford Generating Facility	031600AIN/0012	Cook	7.70
Commonwealth Edison—Waukegan Generating Facility	097190AAC/0016	Lake	6.05
CPC International Incorporated	031012ABI	Cook	5.89
Commonwealth Edison—Waukegan Generating Facility	097190AAC/0021	Lake	4.71
Commonwealth Edison—Crawford Generating Facility	031600AIN/0010	Cook	4.45

E. What Are the EPA Conclusions Regarding the Existing NO_X Waiver Given the Petition and the Available Ozone Modeling Data?

The fact that the State and LADCO have modeled ozone reduction benefits through the implementation of certain NO_X emission controls, including NO_X emission controls on EGUs in the Chicago area, indicates that the NO_X waiver as initially granted should be revised. The existing NO_X waiver was based on a demonstration that NO_X controls in the ozone nonattainment areas within the Lake Michigan ozone modeling domain [30] would not lower peak ozone concentrations on all modeled high ozone days in the modeling domain or would actually increase peak ozone concentrations in the modeling domain on some modeled high ozone days. The final attainment demonstration supports the conclusion that regional, statewide NO_X controls on EGUs, large non-EGU boilers and turbines, and cement kilns, that are to be implemented in order to comply with EPA's NO_X SIP Call, will lower peak ozone concentrations in Grid M and in the modeling domain originally considered in the granting of the NO_X waiver. This includes the region-wide control of NO_X emissions from the new combustion turbine generators.

With respect to the citizen NO_X waiver petition discussed above, it is noted that the petitioners have raised a concern about the ozone impacts of the increased NO_X emissions expected from the new combustion turbine generators. The petitioners have not provided ozone modeling or other data to support the case that these emissions will in fact cause the ozone standard to be violated, particularly after the State has implemented the NO_X rules adopted to meet the NO_X SIP Call. The available data indicate that the ozone standard will be attained after the State has implemented its ozone control strategy as set forth in the State's ozone attainment demonstration. No data are available, either in the ozone attainment demonstration submittal or in the petitioner's submittal, to indicate that the NO_X emissions resulting from the new combustion turbine generators in the Chicago area (the subject area of the NO_X waiver petition) will interfere with attainment of the 1-hour ozone standard in that area or in its downwind environs.

Illinois has analyzed the impacts of increased NO_X emissions for new, permitted combustion turbine generators throughout the State, including in the Chicago area. The analysis indicates that attainment of the ozone standard is expected to occur by 2007 despite the addition of NO_X emissions from these sources. In addition, as noted by the State, since the new combustion turbine generators will be covered and controlled by the State's new EGU NO_X rule, which subjects EGUs to a cap-and-trade emissions control program, and since total NO_X emissions in the State are constrained by the NO_X emissions budget assigned to Illinois by EPA's NO_X SIP Call, the

[30] At the time of the granting of the existing NO_X waiver, the ozone modeling domain was substantially smaller than Grid M used in the final ozone attainment demonstration. The original ozone modeling domain used to support the States' NO_X waiver petition, as approved in 1996, covered the Northeast portion of Illinois, the Northwest portion of Indiana, the Southeast portion of Wisconsin, and the Southwest portion of Michigan. The ozone modeling domain was centered on the lower half of Lake Michigan.

new NO_X emissions from the combustion turbine generators will not cause the NO_X emissions in Illinois to climb above the NO_X emission totals modeled in the State's ozone attainment demonstration.

It is concluded that the petition to remove NSR from the NO_X waiver is not supportable and should be denied. The NO_X waiver is amended to the extent that the State has assumed that some NO_X emission reductions in response to the NO_X SIP Call will benefit and are needed to support the ozone attainment demonstration. Since additional NO_X emission controls, beyond those already planned in the ozone attainment demonstration, are not needed to attain the ozone standard in the ozone modeling domain by the 2007 attainment deadline, the NO_X waiver remains supportable for RACT, NSR, and certain transportation and general conformity [31] and I/M requirements. This conclusion is consistent with the excess NO_X emission reduction test provisions of section 182(f)(2) of the CAA. NO_X emission reductions for these waived emission control measures are not assumed in the State's ozone attainment demonstration. This conclusion is subject to revision through the final rulemaking on the State's ozone attainment demonstration. Commenters on this proposed rule are encouraged to comment on the merits of both EPA's proposed rule on the attainment demonstration and on the merits of EPA's conclusion regarding the NO_X waiver petition.

IX. Motor Vehicle Emissions Budgets for Conformity and Commitment To Re-Model Using MOBILE6

A. What Are the Requirements for Motor Vehicle Emissions Budgets for Conformity?

Section 176(c) of the CAA requires that Federally supported or funded projects conform to the air quality planning goals in the applicable SIP. This requirement applies to transportation plans, programs and projects developed, funded or approved under title 23 U.S.C. or the Federal Transit Act (transportation conformity) and to all other Federally supported or funded projects (general conformity). EPA's transportation conformity rule requires that transportation plans, programs, and projects conform to state air quality implementation plans and establishes the criteria and procedures for determining whether or not they do conform. Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the national ambient air quality standards.

Attainment demonstrations and ROP Plans are required to contain adequate motor vehicle emissions budgets derived from the mobile source portion of the demonstrated attainment or ROP emission inventory. The motor vehicle emissions budgets establish caps on motor vehicle emissions. VOC and NO_X emissions associated with transportation improvement programs and long-range transportation plans cannot exceed these caps. The criteria for judging the adequacy of motor vehicle emissions budgets are detailed in the transportation conformity regulations in 40 CFR 93.118.

B. How Were the Illinois Attainment Demonstration and ROP Emissions Budgets Developed?

Illinois has submitted motor vehicle emissions budgets for VOC and NO_X for the 2007 attainment year based on the emissions analyses included in the attainment demonstration. Illinois has also submitted motor vehicle emissions budgets for VOC for the milestone years 2002 and 2005 based on the ROP emissions calculations (the 2007 ROP budget for VOCs is the same as the 2007 VOC attainment demonstration budget). Illinois is only required to submit VOC budgets for the milestone years because the NO_X waiver for the area waived the requirement for ROP NO_X reductions. However, a NO_X emissions budget is required for the 2007 attainment demonstration budget year and a NO_X budget has been submitted by the IEPA. The following outlines the techniques used by Illinois to derive the VOC budgets and the 2007 NO_X emissions budget.

Vehicle miles of travel (VMT) growth estimates were derived consistent with the 15 percent ROP plan and 9 percent ROP plan for the Chicago area. An interagency consultation process involving the Illinois Department of Transportation (IDOT), the IEPA, the Federal Highway Administration, the EPA, and the Chicago Area Transportation Study (CATS) took place. For the 2002, 2005, and 2007 budget years, VMT growth was applied to the actual 1990 VMT used in the 1990 base year Chicago ozone precursor emissions inventory. The VMT was then adjusted to reflect summer weekday conditions. Emission factors were generated for 2002, 2005 and 2007 using EPA's MOBILE5b emission factor model. The emission factors for 2005 and 2007 were then adjusted to reflect implementation of the Tier II/Low Sulfur gasoline program by using an EPA-supplied information sheet since this national program will be in place in 2004. The resulting motor vehicle emissions budgets for the 2007 attainment year are 154.91 tons per day of VOC and 293.92 tons per day of NO_X. In addition, Illinois submitted VOC budgets for the 2002 and 2005 milestone years. The VOC budget for 2002 is 183.4 tons per day and the VOC budget for 2005 is 163.4 tons per day. The 2002 and 2005 VOC budgets are based on the control measures identified in the ROP portion of the submittal. The 2007 VOC milestone year budget is the same as the 2007 attainment demonstration VOC budget. The 2007 level of VOC emissions were modeled in the attainment demonstration modeling, and the modeling met the criteria for attainment of the 1-hour ozone standard.

Illinois submitted UAM modeling in the attainment demonstration submittal to support the VMT estimate for 2007 provided by the Illinois Department of Transportation based on their analysis of traffic counts in the Chicago area. The mobile source control measures considered by Illinois in the development of the 2007 motor vehicle emissions budgets included: centralized, enhanced vehicle Inspection and Maintenance (I/M); Federal reformulated gasoline; National Low Emission Vehicle program; Tier II/Low Sulfur gasoline requirements; and planned transportation control measures. The attainment demonstration modeling conducted by Illinois, which used the 204 million miles per summer weekday of VMT and also included estimated emissions from a statewide inventory of recently permitted combustion turbine electrical generating units and ancillary emission sources, as was discussed earlier in this notice, demonstrated attainment of the one hour ozone standard. Illinois addressed these emissions budgets and their commitment to revise the budgets using MOBILE6 during the November 8, 2000, public hearing on the post 1999 ROP and attainment demonstration.

C. Did Illinois Commit To Revise the Budgets When MOBILE6 Is Released?

In order for EPA to approve attainment demonstrations, states whose attainment demonstrations include the effects of the Tier II/Low Sulfur gasoline program need to commit to revise and resubmit their attainment demonstration

[31] As noted elsewhere in this proposed rule, the motor vehicle NO_X emission budgets are required despite the existence of the NO_X waiver, and these emission budgets must be used in conformity determination after the ozone attainment demonstration and post-1999 ROP plan are approved and these motor vehicle emission budgets are found to be adequate.

motor vehicle emission budgets based on MOBILE6 after EPA officially releases the new emission factor model, because MOBILE6 provides a better estimate of Tier II reductions than the current version of the model (MOBILE5b). This policy was detailed in the supplemental notice of proposed rulemaking issued on July 28, 2000 (65 FR 46383). Illinois committed to revising the 2007 attainment demonstration budgets and its 2005 ROP motor vehicle budget within two years of the official release of MOBILE6. No conformity determinations will be made during the second year after the release of MOBILE6 unless adequate MOBILE6-derived budgets are in place. If the State fails to meet its commitment to submit revised budgets using MOBILE6, EPA could make a finding of failure to implement the SIP, which would start a sanctions clock under CAA Section 179.

EPA is also proposing to clarify what will occur if the EPA finalizes approval of these budgets based on the States's commitments to revise the budgets in the future. If this occurs, the approved SIP budgets will apply for conformity purposes only until the revised budgets have been submitted and the EPA has found the submitted budgets to be adequate for conformity purposes.

In other words, when the State fulfills its commitment to submit revised budgets, if the EPA finds those budgets to be adequate for conformity purposes, those revised budgets will apply for conformity purposes as soon as affirmative adequacy findings are effective. Provided these revised budgets are submitted as revisions for the same years as the budgets in the attainment demonstration and ROP plan respectively, they would also replace the budgets in those approved plans at the time that the affirmative adequacy findings are effective.

Since the EPA is proposing to approve the budgets that were submitted only because the State has committed to revise these budgets, EPA wants its approval of these budgets to last only until adequate revised budgets are submitted pursuant to the commitments. EPA believes the revised budgets should apply as soon as they are found adequate. EPA does not believe it is necessary to wait until they have been approved as revisions to the respective plan. This is because EPA knows now that if the revised budgets are found adequate, they will be more appropriate than the originally approved budgets for conformity purposes.

EPA also recognizes that an accurate estimate of the benefits of the Tier II/Low Sulfur program can not be made until the MOBILE6 model is officially released. EPA is proposing to approve budgets based on interim approximations of Tier II/Low Sulfur benefits only because the State is committing to recalculate the budgets using MOBILE6 in a timely fashion. According to this proposal, revised budgets could be used for conformity after the EPA has completed the adequacy review process, provided the submitted budgets are deemed adequate.

If revised budgets raise issues about the sufficiency of the attainment demonstration, EPA will work with the State on a case-by-case basis. If the revised attainment demonstration budgets show that the revised budgets are lower than EPA is proposing to approve today, a reassessment of the attainment demonstration would need to be done before the State could reallocate any of the emission reductions or assign them to a budget as a safety margin. In other words, the State must assess how its original attainment demonstration is impacted by using MOBILE6 vs. MOBILE5 before it reallocates any apparent motor vehicle emission reductions resulting from the use of MOBILE6.

This proposed rule does not propose any change to the existing transportation conformity rule or to the way it is normally implemented with respect to other submitted and approved SIPs, which do not contain commitments to revise the budgets.

D. Are the Illinois Emissions Budgets Adequate for Conformity Purposes?

Illinois motor vehicle emission budgets for both ROP and the attainment demonstration were posted on the EPA Web site for the 30-day public comment period http://www.epa.gov/otaq/traq). The comment period associated with the Web posting closed February 9, 2001. We received no comments on the adequacy of either the ROP or attainment budgets. The criteria by which we determine whether a SIP's motor vehicle emission budgets are adequate for conformity purposes are outlined in 40 CFR 93.118(e)(4). We've described our process for determining the adequacy of submitted SIP budgets in guidance (May 14, 1999 memo titled ''Conformity Guidance on Implementation of March 2, 1999 Conformity Court Decision''). We followed this guidance in making our adequacy determination.

EPA reviewed the State's 2002, 2005 and 2007 motor vehicle emission budgets and found these budgets adequate in a letter dated May 31, 2001. Our review indicated that the budgets meet the adequacy criteria in 93.118 of the Transportation Conformity Regulations (a support document with the review is included in the docket). In light of the commitment to revise the 2007 attainment budgets for VOC and NO_X, EPA also found the 2007 attainment budgets adequate in the May 31, 2001, letter. The **Federal Register** notice announcing this adequacy finding was published on June 15, 2001. In today's proposed rule, EPA is proposing to approve the ROP and attainment demonstration budgets for conformity purposes and the State's commitment to revise these budgets using MOBILE6. This approval will only last until the State submits revised budgets derived using MOBILE6 and we find the revised budgets to be adequate as discussed in the previous section.

X. Reasonably Available Control Measure (RACM) Analysis

A. What Are the Requirements for RACM?

Section 172(c)(1) of the Act requires SIPs to contain RACM as necessary to provide for attainment. EPA has previously provided guidance interpreting the RACM requirements of 172(c)(1). See 57 FR 13498, 13560. In that guidance, EPA indicated its interpretation that potentially available measures that would not advance the attainment date for an area would not be considered RACM. EPA concluded that a measure would not be reasonably available if it would not advance attainment. EPA also indicated in that guidance that states should consider all potentially available measures to determine whether they were reasonably available for implementation in the area, and whether they would advance the attainment date. Further, states should indicate in their SIP submittals whether measures considered were reasonably available or not, and, if measures are reasonably available, they must be adopted as RACM. Finally, EPA indicated that states could reject potential RACM measures either because they would not advance the attainment date, would cause substantial widespread and long-term adverse impacts, or for various reasons related to local conditions, such as economics or implementation concerns. The EPA also issued a recent memorandum on this topic, ''Guidance on the Reasonably Available Control Measures (RACM) Requirement and Attainment Demonstration Submissions for Ozone Nonattainment Areas.'' John S. Seitz, Director, Office of Air Quality Planning and Standards. November 30,

1999. Web site: http://www.epa.gov/ttn/oarpg/t1pgm.html.

B. How Does This Submission Address the RACM Requirement?

The Chicago attainment demonstration addresses RACM through several aspects of the submittal. Mobile source measures are addressed with the ongoing and continuous evaluation and implementation of Transportation Control Measures (TCMs) in the Chicago area and by including reasonably available TCMs in the SIP. Stationary sources and area sources have been addressed by Illinois by first applying regulations to control emissions and more creatively through the Illinois trading program which caps emissions with a decreasing emissions cap and allows the market system to determine the most reasonably available control measures. Also, Illinois has adopted control measures which have gone beyond the federally mandated stationary and area source controls. Perhaps most importantly, the Chicago attainment demonstration contains UAM modeling which demonstrates that the Chicago area cannot attain solely through reductions in the Chicago nonattainment area. The Chicago area relies on background reductions of transported ozone to attain the 1-hour ozone standard. To demonstrate attainment of the 1-hour ozone standard, the LADCO ozone modeling tested emission reductions on the order of 50–60% for VOCs in the severe nonattainment areas. Any potential emission reductions from additional potential RACM measures are very small compared to the ROP emission reductions that will be reached by the 2007 attainment date. Also, every reasonably available measure has been used to reach the ROP reduction.

The Consideration and Implementation of Transportation Control Measures (TCMs)

The following paragraphs describe the process that has been used to evaluate and implement reasonably available TCMs in the Chicago area. The Illinois Environmental Protection Agency (IEPA) has worked extensively with the Chicago Area Transportation Study (CATS), which is the Metropolitan Planning Organization (MPO) for Chicago to evaluate and implement TCMs which are reasonably available. IEPA heads the TCM Taskforce which identified TCMs and works to promote and implement TCMs for SIP credit. IEPA has been an active participant in the evaluation of TCMs for funding with the Congestion Mitigation and Air Quality (CMAQ) Program. The CMAQ program funds are administered by the Federal Highway Administration, however selection of projects takes place at the local MPO level. Most if not all of the TCMs in the SIP have had partial funding from the CMAQ program. Projects are ranked based on the air quality benefits of each project.

The Illinois SIP has approved TCMs which are credited in both the 15% Rate of Progress plan (62 FR 66279) and the post 1996 ROP. The first TCMs to be approved into the Illinois SIP were approved in 1995 as part of the VMT offset SIP (60 FR 48896). The 127 TCMs which were approved included commuter parking, a rideshare program, new rapid transit service, signal coordination projects, an improved vanpool program, and new transportation centers and train station reconstruction. Since that time, additional TCMs have been implemented and added to the SIP. Additional TCMs were approved into the SIP when the 9 percent post-1996 ROP plan was approved in the December 18, 2000, **Federal Register** (65 FR 78961). These included improved public transit, such as fixed guideway transit and rail station improvements, traffic flow improvements, increased park and ride service, much needed parking at transit stations, and bicycle and pedestrian programs.

CATS has prepared a series of reports which evaluate emissions benefits from various TCMs and has reported on the implementation of TCMs in the Chicago area. These reports include:

''Transportation Control Measures Committal to the State Implementation Plan'' dated November 5, 1992;

''Transportation Control Measures Contribution to the 15% Rate of Progress State Implementation Plan'' dated December 9, 1993;

''Transportation Control Measures Contribution to the Control Strategy State Implementation Plan'' dated March 9, 1995;

''Transportation Control Measures Contribution to the post 1996 Rate of Progress State Implementation Plan'' dated March 22, 1996;

''Transportation Control Measures Contribution to the 9% Control Strategy State Implementation Plan'' dated June 11, 1998; and

''1999 Transportation Control Measures Contribution to the 9% Rate of Progress Control Strategy State Implementation Plan'' dated December 9, 1999.

These reports have been submitted by the IEPA as part of the documentation for the SIP and are contained in the docket for this action. The EPA has concluded that, through this process of TCM evaluation and selection, Illinois has considered and implemented all reasonably available TCMs. Any measures that have not been included would provide only marginal air quality improvements at significantly greater expense or with significant implementation barriers.

Stationary Source and Area Sources RACM Analysis

Illinois has examined all sources in the nonattainment area for possible reductions. Illinois, through the 15 percent ROP plan, 9 percent post-1996 ROP plan and the continuing 3 perent per year emission reductions, has required emission controls on a wide variety of sources and has gone beyond the Federally mandated requirements for a severe ozone nonattainment area. Illinois, in cooperation with the other Lake Michigan States of Indiana, Wisconsin and Michigan, worked to consider regional control measures and strategies to bring the four state Lake Michigan area into attainment of the ozone standard. The control measures considered were part of the Lake Michigan Ozone Control Program (LMOP). The purpose of the documents included, ''to insure that no reasonable control measures were omitted from consideration and to establish a process to analyze and assess the potential impacts of each control measure in objective and equitable manner''. Initially, a large number of control measures which reduced VOC and/or NO_X emissions were examined in white papers prepared and distributed for public comment. The measures were then evaluated and ranked for modeling as part of the attainment demonstration modeling.

The State considered an extensive list of potential control measures and chose measures which went beyond the Federally mandated controls, which were found to be cost effective and technologically feasible. Illinois chose to tighten RACT standards beyond levels required by the CAA, as well as to adopt rule effectiveness improvement requirements, marine vessel loading controls, autobody refinishing emission limitations, and underground gasoline storage tank breathing controls. All of these regulations went beyond Federally mandated controls and are documented in the State's submittals.

These creditable measures amounted to 297 TPD of VOC emissions reductions in the Chicago ozone nonattainment area. The 15 percent ROP plan achieved 47 TPD of VOC reductions in excess of that needed to meet the 15 percent ROP requirements, which were then used toward the next

set of ROP reduction requirements. After implementing all the above mentioned reasonable regulations on stationary sources, Illinois developed and implemented a unique VOC emissions trading program called the Emission Reduction Market System (ERMS), designed to achieve a 12 percent VOC reduction in emissions from participating sources beyond the reductions already implemented. Illinois developed the ERMS program because all reasonably available control measures had been identified and implemented in the previous ROP and only measures achieving small reductions in VOCs, resulting in high cost effective values, were left. The few remaining point source measures that Illinois included in the 9 percent post-1996 ROP plan were municipal solid waste landfill controls, reductions from application of a batch process control rule for Synthetic Organic Chemical Manufacturing Industries for one specific source, and control of benzene at coke ovens. Illinois also included one area source rule, which was a two-phase control of cold cleaning degreaser solvents. The 9 percent post-1996 ROP plan for Chicago provided 157 TPD of VOC reductions in the nonattainment area and 262 TPD of NO_X reductions from outside the nonattainment area.

Illinois states that ''LADCO and the four States evaluated all of these measures to determine if any reasonably available VOC measures had been overlooked, but none were found.'' Emission reductions from any other potential RACM measures are relatively small. Certainly far less than the ROP reductions and the reductions that were modeled by LADCO in the Lake Michigan area ozone attainment demonstration.

Based on reviews of the State's analysis of measures and lists of control measures which have been implemented in other nonattainment areas, EPA believes that there are no other measures that Illinois could have implemented that would have substantially accelerated attainment. EPA is not aware of other practicable measures which will result in comparable emissions reductions that can be implemented sooner than those contained in Illinois's ozone attainment demonstration and ROP plans.

Modeling Analysis

Furthermore, the State's air quality modeling results indicate that additional VOC and NO_X controls within the nonattainment area will not accelerate attainment of the ozone standard. Air quality modeling was conducted by the LADCO for the four Lake Michigan States. LADCO and the four States also conducted special monitoring of ozone and ozone precursors to support the attainment demonstration modeling efforts. A significant conclusion of the monitoring study is that there are high levels of ozone and ozone precursors entering the Lake Michigan region. The peak boundary ozone concentrations were measured to be on the order of 70–110 ppb on some hot summer days. This transported ozone significantly contributes to ozone exceedances in the region. Elevated ozone levels were found to extend well upwind of the Lake Michigan region, covering large areas of the eastern United States. These observations and those for other areas led to the OTAG effort.

The initial LADCO modeling and sensitivity tests found VOC emissions in the nonattainment area would need to be reduced as much as 90 percent to provide for attainment if the transported ozone was not reduced. However, if reductions in boundary conditions were considered, the VOC reduction target is still very high, on the order of 50–60 percent depending on the boundary conditions. Illinois has already explored all possible RACM to find reductions for the ROP, and any other possible VOC reductions from sources in the Chicago area would not be enough to reach attainment or advance the attainment date.

Illinois has submitted these modeling analyses in the Phase I and II attainment demonstration submittals. The results of modeled reductions in emissions within the nonattainment area did not demonstrate attainment of the ozone standard, and, therefore, these emission reductions alone could not advance the attainment date. It was only when the boundary conditions were changed that the modeling demonstrated attainment. The long range transport of ozone and precursor emissions from upwind of the area were the significant contributor to the nonattainment problem. Air quality modeling which EPA performed in association with the NO_X SIP Call, (63 FR 57356), confirmed the States' analyses. These modeling runs conclusively show that the Chicago area cannot attain the ozone standard without the NO_X SIP Call measures to reduce transported ozone. The final attainment demonstration supports the conclusion that regional, statewide NO_X controls on EGUs, large non-EGU boilers and turbines, and cement kilns, that are to be implemented in order to comply with EPA's NO_X SIP Call, will lower peak ozone concentrations in Grid M and in the modeling domain. The earlier modeling indicates that further reductions of NO_X in the nonattainment area would not be as productive, however, as VOC reductions in the nonattainment area which will be realized through the ROP reductions.

The LADCO Technical Support Documents for the subregional modeling analysis, as discussed above, contains a variety of control strategies modeled to evaluate their impact on ozone air quality. Of particular importance is the sensitivity/strategy run SR1a, which evaluated the impact of one of the more substantial VOC reduction measures, Tier II/Low sulfur gasoline. This measure was calculated to provide a VOC reduction of 5.7 TPD in 2007 for Illinois. The modeling results indicate that the improvement in ozone air quality from this measure only provides a 1–2 ppb ozone concentration improvement on some ozone days. Any of the VOC control measures that were not selected for implementation as part of Illinois' ROP plan or attainment plan are significantly smaller than the Tier II/Low sulfur control measure. Thus, their contribution to improving ozone air quality would be much less than 1 ppb and would not advance attainment of the ozone standard earlier than 2007.

As previously described, the modeling analyses submitted by Illinois and conducted by LADCO showed that it was only when the States tested the impacts of NO_X emission reductions beyond the boundaries of the nonattainment area that the modeling indicated improvements in air quality to the degree necessary to attain the standard. In other words, the transport of ozone and precursor emissions from upwind areas significantly contribute to the Chicago and Lake Michigan States nonattainment problem. Air quality modeling which EPA performed in association with the NO_X SIP Call, (63 FR 57356), confirmed the states' analyses.

Illinois held public hearings on these materials and took public comment on the modeling and conclusions. In the documentation materials, Illinois makes a case that all reasonable measures have been implemented and included in the attainment demonstration. Any measures that have not been included would provide only marginal air quality improvements, and at significantly greater expense. Additional control measures beyond the 3 percent per year post-1999 ROP emission controls in the Chicago area are, therefore, not considered RACM since the reasonable implementation of such measures will not significantly improve air quality and, to make a significant impact, such measures would be draconian in nature.

Thus, the Chicago area relies on emission reductions from outside the nonattainment area that will result from EPA's NO_X SIP Call or section 126 rule (65 FR 2674, January 18, 2000) to reach attainment. In the NO_X SIP Call, 63 FR 57356, EPA concluded that reductions from various upwind states were necessary to provide for timely attainment in various downwind states. The NO_X SIP Call therefore established requirements for control of sources of significant emissions in all upwind states. However, these reductions were not slated for full implementation until May 2003. Further, the United States Court of Appeals for the District of Columbia Circuit recently ordered that EPA could not require full implementation of the NO_X SIP Call prior to May 2004. *Michigan, et al.,* v. *EPA,* D. C. Cir. No. 98–1497, Order of Aug. 30, 2000. All of the necessary VOC reductions that are modeled in the attainment demonstration for the Chicago area will not be in place until 2007. Thus the attainment demonstration modeling indicates that the area will need until the 2007 attainment date to successfully complete the emissions reductions necessary to reach attainment.

C. Does the Chicago Attainment Demonstration Meet the RACM Requirement?

We have reviewed the submitted attainment demonstration documentation, the process used by the MPO and State to review and select TCMs, other possible reduction measures for point and area sources and the emissions inventory for the Chicago area. Although EPA encourages areas to implement available RACM measures as potentially cost effective methods to achieve emission reductions in the short term, EPA does not believe that section 172(c)(1) requires implementation of potential RACM measures that either needlessly require costly implementation efforts or produce relatively small emissions reductions that will not be sufficient to allow the area to achieve attainment in advance of full implementation of all other required measures.

The attainment demonstration for the Chicago area indicates that the ozone benefit expected to be achieved from regional NO_X reductions (such as the NO_X SIP Call) is substantial. In addition, many of the measures designed to achieve emissions reductions from within the nonattainment area will also not be fully implemented prior to the 2007 attainment date. Therefore, we conclude, based on the available documentation, that since the emission reductions from potential RACM measures do not nearly equate to the emission reductions needed to demonstrate attainment, none of these measures could advance the attainment date prior to full implementation of the NO_X SIP Call rules and full implementation of the ROP measures and, thus, there are no additional potential local measures that can be considered RACM for this area. Additionally, the area cannot advance the attainment date because all of the emission reductions (3 percent per year up to the 2007 attainment year) have been modeled in the attainment demonstration modeling and all the reductions are needed to reach attainment of the 1-hour ozone standard. All of the ROP measures will not be fully implemented until the 2007 attainment date and, thus, no additional potential RACM measures could advance the attainment date.

XI. Responses to Public Comments

A number of comments were submitted to the EPA with regard to the December 16, 1999 (64 FR 70496). Responses to those comments will be included in the final rulemaking discussed along with the comments on this proposed rule. The EPA is not reopening the comment period on the December 16, 1999 proposed rule.

XII. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this proposed action is not a ''significant regulatory action'' and therefore is not subject to review by the Office of Management and Budget. This proposed action merely proposes to approve state law as meeting federal requirements and imposes no additional requirements beyond those imposed by state law. Accordingly, the Administrator certifies that this proposed rule will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). Because this rule proposes to approve pre-existing requirements under state law and does not impose any additional enforceable duty beyond that required by state law, it does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104–4). This proposed rule also does not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes, as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999), because it merely proposes to approve a state rule implementing a federal standard, and does not alter the relationship or the distribution of power and responsibilities established in the Clean Air Act. This proposed rule also is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997), because it is not economically significant.

In reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. In this context, in the absence of a prior existing requirement for the State to use voluntary consensus standards (VCS), EPA has no authority to disapprove a SIP submission for failure to use VCS. It would thus be inconsistent with applicable law for EPA, when it reviews a SIP submission, to use VCS in place of a SIP submission that otherwise satisfies the provisions of the Clean Air Act. Thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. As required by section 3 of Executive Order 12988 (61 FR 4729, February 7, 1996), in issuing this proposed rule, EPA has taken the necessary steps to eliminate drafting errors and ambiguity, minimize potential litigation, and provide a clear legal standard for affected conduct. EPA has complied with Executive Order 12630 (53 FR 8859, March 15, 1988) by examining the takings implications of the rule in accordance with the ''Attorney General's Supplemental

for the Evaluation of Risk and Avoidance of Unanticipated Takings'' issued under the executive order. This proposed rule does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Nitrogen oxides, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: June 27, 2001.

David A. Ullrich,

Acting Regional Administrator, Region 5.

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