ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[IN136–1; FRL–7022–4]

Approval and Promulgation of Implementation Plans; Indiana; Ozone

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA proposes to approve the following as revisions to the Indiana State Implementation Plan (SIP) for the Chicago-Gary-Lake County ozone nonattainment area, i.e., for the Indiana 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 the post-1999 ROP plan; a commitment to conduct a mid-course review of the ozone attainment demonstration; motor vehicle conformity emission budgets for Volatile Organic Compounds (VOC) and Oxides of Nitrogen (NO_X) and the State's commitment to revise the emission budgets using the MOBILE6 emissions factor model; and a Reasonably Available Control Measure (RACM) analysis. EPA proposes to revise the existing NO_X emissions control waiver for the Indiana portion of the Chicago-Gary-Lake County ozone nonattainment area to eliminate the waiver for those NO_X emission sources that the State has assumed will be controlled in the ozone attainment demonstration. These controlled sources include Electrical Generating Units (EGUs), major non-EGU boilers and turbines, and major cement kilns in Lake and Porter Counties. 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. Finally, EPA proposes to incorporate into the SIP a portion of an agreed order between U.S. Steel (currently USX Corporation) and the Indiana Department of Environmental Management (IDEM) signed by IDEM on March 22, 1996. The portion of the agreed order proposed for incorporation into the SIP requires U.S. Steel to establish a coke plant process water treatment plant at its Gary Works.

DATES: Written comments must be received on or before September 4, 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 as discussed in the State's submittal or in this proposed rule.

This section provides additional information by addressing the following topics and questions:

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 propose to approve: (1) Indiana's 1-hour ozone attainment demonstration for the Chicago-Gary-Lake County ozone nonattainment area; (2) Indiana's post-1999 ROP plan (an ROP plan covering the time period of November 15, 1999 through November 15, 2007) for the Indiana portion of the Chicago-Gary-Lake County ozone nonattainment area (the Northwest Indiana area); (3) Indiana's contingency measure plans for both the ozone attainment demonstration and the post-1999 ROP plan; (4) Indiana's commitment to conduct a mid-course review of the ozone attainment demonstration; (5) Indiana's ROP and attainment motor vehicle conformity emission budgets for VOC and NO_X in the Northwest Indiana area; and (6) Indiana's RACM demonstration for the Northwest Indiana area.

We propose to modify an existing NO_X emissions control waiver (the NO_X emissions control waiver has been in place since January 1996) for the Northwest Indiana 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. However, ozone modeling supporting the ozone attainment demonstration addressed in this proposed rule shows that statewide NO_X emission controls at EGUs, major non-EGU boilers and turbines, and major cement kilns are beneficial and will contribute to attainment of the 1-hour standard in the nonattainment area and its downwind environs [1]. 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 [2] (beyond other NO_X emission controls already implemented and/or modeled in the ozone attainment demonstration) in the ozone nonattainment area. Consequently, such additional NO_X emission controls are in excess of what is needed to attain the ozone standard.

We propose to modify the existing NO_X control 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 propose to retain the NO_X waiver for RACT, NSR, and certain transportation and general conformity, and I/M [3] requirements.

Finally, we propose to incorporate into the SIP part of an agreed order between U.S. Steel and IDEM signed by IDEM on March 22, 1996. This part (section 3 of Exhibit E, ''Clean Water Coke Quench Project'') of the agreed order requires U.S. Steel to establish a coke plant process water treatment plant at its Gary Works, and results in VOC emissions reductions relied on in the post-1999 ROP plan. We are not incorporating the remaining portions of the agreed order into the SIP because the State is not relying on these portions of the agreed order to meet the CAA requirements addressed in this proposed rule.

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). 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

[1] It is not clear to what extent the NO_X controls within the ozone nonattainment area itself will contribute to attainment of the ozone standard; the modeling results do not differentiate the impacts of NO_X emission controls for a subpart of the State. Nonetheless, the State has relied on these NO_X emission controls, both inside of the nonattainment area and statewide, to attain the ozone standard.

[2] 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.

[3] 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.

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 submission. If we receive adverse comments, we must address them prior to any final federal action (we generally address them in a final rulemaking action).

All state rules and supporting information approved by the EPA under section 110 of the CAA 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 given 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?

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, section 113 of the CAA authorizes EPA 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 EPA's 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 actions that may be necessary for a state to complete 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 CAA.

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 recognizes 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 a 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 21, 2000 submittal of IDEM reviewed here primarily deals with attainment of the 1-hour ozone standard in the Northwest Indiana area (the Indiana portion of the Chicago-Gary-Lake County ozone nonattainment area). As noted above, this area includes Lake and Porter Counties. We are separately rulemaking on the attainment plan for the Illinois portion of 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 70514), the EPA proposed to conditionally approve the 1-hour ozone attainment demonstration for the Northwest Indiana area submitted by IDEM on April 30, 1998. The April 30, 1998 attainment demonstration submittal was based on a range of possible emission control measures reflecting various emission control alternatives, and did not specify a single set of emission control measures that the State had adopted as an 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, 2000, the State did not adopt an emissions control strategy supported by its modeled ozone attainment demonstration, and did not submit adequate motor vehicle emission budgets for VOC and NO_X for the Northwest Indiana area that comply with EPA's transportation conformity regulations. In addition, we conditioned our approval on the State submitting, by December 31, 2000, an enforceable commitment to conduct a mid-course review of the ozone attainment plan in 2003. As noted below, this submittal time has been delayed until 2004 to allow the states to assess the impacts of the NO_X SIP Call rules following their implementation.

The December 16, 1999 proposed rulemaking noted that, if the EPA issued a final conditional approval of the State's April 30, 1998 submission [4], 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 a discussion relating to the NO_X emissions control waiver below); (2) adopted emission control measures needed to meet the post-1999 ROP requirements (a post-1999 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 21, 2000 submittal, in part, addresses a post-1999 ROP plan for the Northwest Indiana area. The post-1999 ROP plan provides required emission reductions in addition to Indiana's 15 percent ROP plan (VOC emission reductions

[4] To date, the EPA has not issued a final rule conditionally approving the State's April 30, 1998 submittal. As noted in this proposed rule, the State has submitted a revised ozone attainment plan, negating the need for the EPA to complete the conditional approval of the April 30, 1998 submittal.

occurring prior to November 15, 1996) and 9 percent post-1996 ROP plan (VOC emission reductions occurring prior to November 15, 1999) for this ozone nonattainment area. On July 18, 1997 (62 FR 38457), we published a final rule approving Indiana's 15 percent ROP plan. On January 26, 2000 (65 FR 4126), we published a final rule approving Indiana's post-1996 ROP plan. These final rules addressed the emission control measures selected by the State to achieve required ROP emission reductions, and addressed the State's calculation of the 1996 and 1999 VOC emission targets for the Northwest Indiana area.

The December 21, 2000 submittal includes, as part of the ozone attainment demonstration, the modeled impacts of 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 emission reductions in the ozone nonattainment area would not contribute to attainment of the 1-hour ozone standard. 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 transportation and general conformity requirements for NO_X in the Northwest Indiana area.[5]

Since EPA waived the NO_X requirements 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 and attainment of the ozone standard unless the State can demonstrate that such emission controls are actually beneficial for attainment of the ozone standard. The State, in its December 21, 2000 submittal, is now demonstrating that certain regional NO_X emission controls (including some controls on EGUs, major non-EGU boilers and turbines, and major cement kilns in the Northwest Indiana area) would contribute toward attainment of the ozone standard.[6] We are proposing, based on the information submitted, to revise the NO_X waiver for the Northwest Indiana 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. More specifically, to meet the schedule of an existing consent agreement 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 Northwest Indiana 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 21, 2000 Indiana submittal and this proposed rule address the following topics: (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 Northwest Indiana area; (3) contingency measures for the post-1999 ROP plan and for the ozone attainment demonstration; (4) ROP and attainment motor vehicle transportation conformity emission budgets; and (5) Indiana's commitments for a mid-course review of the ozone attainment demonstration. This proposed rule also addresses: (1) The status of rule adoption and implementation needed to support the ozone attainment demonstration and post-1999 ROP plan; (2) revisions to the existing NO_X control waiver for the Chicago-Gary-Lake County ozone nonattainment area; and (3) a RACM analysis for the Northwest Indiana area.

In this notice, we do not respond to the public comments submitted on our December 16, 1999 proposed rule on Indiana's April 30, 1998 ozone attainment demonstration submittal. We will address those comments along with comments addressing this proposed rule when we take final action on Indiana's 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 National Ambient Air Quality Standards (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). 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.

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 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

[5] The NO_X waiver does not include an exemption from the need for the State to adopt motor vehicle NO_X emission budgets for the Northwest Indiana area to support transportation and general conformity 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 budgets when making conformity determinations.

[6] 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 controlled NO_X sources for these source categories were not identified for the Northwest Indiana area.

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 of the base year anthropogenic emissions for each 3-year period until the attainment date (following an initial 15 percent reduction in the VOC emissions by November 15, 1996). 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.[7] 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)[8] 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, state-wide 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[9]; (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.[10] In addition, 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.

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 the 23 jurisdictions were required to meet through enforceable SIP emission control measures adopted and submitted by September 30, 1999. 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 a 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. Finally, 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.

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.[11] In order to have complete ozone modeling attainment demonstration submissions, states should have submitted the required

[7] 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.gove/ttn/oarpg/t1pgm.html.

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

[9] In general, a commitment for severe areas to adopt by December 2000 the control measures necessary for attainment and ROP plans 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.) Thus, this commitment applies to any control measures or emission reductions on which any state relies for purposes of a modeled attainment demonstration.

[10] 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.

[11] 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: ''O3TEST'').

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 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 (generally VOC and NO_X) 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, ozone precursor 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 nonattainment 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 for a given modeled volume) 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 (emissions control strategy) 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 emissions control strategy and that the emissions control strategy may be inadequate to attain the ozone standard.

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 modeling domain grid cell for each modeled day [12] to the ozone attainment level of 0.124 ppm. If none of the predictions exceed 0.124 ppm, the test is passed.

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.

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

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.[13]

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.

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[14]
- RACT for VOC and NO_X[15]
- 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—Post-1996 ROP[16]
- RACM
- Contingency Measures
- Base Year Emissions Inventory
- Stage II Gasoline Vapor Recovery At Retail Service Stations
- Reformulated Gasoline
- Measures to Offset Growth in Vehicle Miles Traveled (VMT)
- Emission Statement Rules Requiring Sources to Periodically Submit Summaries to Their VOC and NO_X Emissions
- Ozone Attainment Demonstration
- Clean Fuels Fleet Program
- Enhanced Ambient Monitoring (Photochemical Assessment Monitoring System [PAM])

[13] 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.

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

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

[16] 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. We review Indiana's post-1999 ROP plan later in this proposed rule.

b. *NO_X reductions affecting boundary conditions.* Emission reductions that will be achieved through EPA's NO_X SIP Call are expected by the EPA and the states to reduce the levels of ozone and ozone precursors entering ozone nonattainment areas and ozone modeling domains at their boundaries, and to 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 other pollutants entering the modeling domain, referred to as ''boundary conditions.'' The boundary conditions and the ozone generated and transported within the modeling domains are expected to 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 resulting from 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 approvable ozone attainment demonstrations. 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 demonstrations 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 receive our final approval of the state's 1-hour ozone attainment demonstration SIP.

c. *Motor vehicle emissions budgets.* 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, are 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. States with severe and extreme ozone nonattainment areas should also provide for a MCR because of the uncertainty inherent in emission projections that extend 10 to 15 years into the future. (See EPA's ''Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS,'' June 1996.) 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 (Indiana 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 Indiana) 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 and the state would review the results and determine whether the state 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 CAA 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.

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/.

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 sit: 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 Indiana held a public hearing on the ozone attainment demonstration on November 15, 2000. IDEM submitted the attainment demonstration to EPA on December 21, 2000.

2. What Are the Basic Technical Components of the Submittal?

Since Indiana, along with Illinois, 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 Indiana's 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.

Indiana, like Illinois and Wisconsin, has included a state-specific cover letter and a state-specific synopsis of the ozone attainment demonstration. As part of their respective ozone attainment demonstrations, all three States included the LADCO documents listed above to support their adopted emission control strategies and ozone attainment demonstrations.

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 Indiana's 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 implemented on 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 Peninsula (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 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 sub-regional 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 sub-regional 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 represent 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 credits for the mobile source Tier II/Low Sulfur program. 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 [17]. Point source emissions for some sources were addressed through the use of Plume-in-Grid (PiG) [18] 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.

Base-case 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 many 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.

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 the impacts of emission control strategies).

[17] 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).

[18] 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).

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.[19] 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 emission 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.

[19] 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 Indiana's December 21, 2000 attainment demonstration submittal.

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 spacial, 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 directly temporally resolved through the use of EMS–95, which includes temporal emission profiles for these 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 categories 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 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.

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 testing and reviewing the ozone impacts of various strategies and considering CAA-mandated emission control requirements (including the requirements of the NO_X SIP Call), Indiana has adopted an emission control strategy that is consistent with LADCO Strategy Run 13 (SR 13) 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 13.

TABLE II.—SR 13—EMISSION CONTROL STRATEGY

VOC EMISSION CONTROLS
Stationary Point Sources:
• RACT in Ozone Nonattainment Areas.
• NSR—Lowest Achievable Emission Rates (LAER) and Emission Offsets in Ozone Nonattainment Areas.
Non-Road Mobile and Other Area Sources:
• Federal Phase II Small Engine Standards.
• Federal Marine Engine Standards.
• Federal Heavy Duty Vehicle (≥ 50 horsepower) Standards—Phase I.
• Federal Reformulated Gasoline—Phase I and II in Mandatory Areas.
• Commercial/Consumer Solvent and Architectural Coating Emission Controls.
• Stage I and Stage II Gasoline Service Station Vapor Controls in Ozone Nonattainment Areas.
• Autobody Refinishing, Degreasing, and Dry Cleaning Emission Controls in Ozone Nonattainment Areas.
On-Road Mobile Sources:
• Federal Reformulated Gasoline—Phase I and II in Mandatory (Ozone Nonattainment) Areas.
• Basic and Enhanced Vehicle I/M in Ozone Nonattainment Areas.
• Tier 1 Light Duty Vehicle and Heavy Duty Vehicle Emission Standards.
• Clean Fuel Fleets in Serious and Above Ozone Nonattainment Areas.
• 9.0 Pounds per Square Inch (psi) Reid Vapor Pressure Gasoline Everywhere in the Ozone Modeling Domain.
NO_X EMISSION CONTROLS
Utility Stationary Sources:
• Title IV Phase 1 and Phase 2 Acid Rain Controls.
• Prevention of Significant Deterioration (PSD) and New Source Performance Standards (NSPS) for major NO_X Sources (NO_X emissions ≥ 250 tons per year).
• RACT and NSR Limits in Non-waivered Ozone Nonattainment Areas.
• 0.25 Pounds NO_X per Million British Thermal Units of Heat Input (0.25 Pounds NO_X/MMBtu) Emission Limit in Illinois, Indiana, Kentucky, and Tennessee.
• Missouri State Rule (0.25 pounds NO_X/MMBtu in the Eastern Third of the State and 0.35 Pounds NO_X/MMBtu in the Western Two-thirds of the State).
• Michigan State NO_X Rule.
Non-Utility Stationary Sources:
• RACT and NSR Limits in non-waivered ozone nonattainment areas.
• PSD and NSPS for major NO_X sources.
• Indiana NO_X Rule for Major Non-utility Sources (60 Percent Reduction of NO_X Emissions at Major Non-Utility Sources).
• Michigan NO_X rule for major non-utility sources,
Non-Road and Other Area Sources:
• Federal Reformulated Gasoline—Phase I.
• Federal Phase II Small Engine Standards.
• Federal Marine Engine Standards.
• Federal Heavy Duty Vehicle Standards—Phase I.
• Federal Reformulated Gasoline—Phase II in Mandatory Areas.
• Federal Locomotive Standards, Including Rebuilds.
• High Compression Engine 4 grams Standard.
On-Road Mobiles Sources:
• Enhanced Vehicle I/M in Serious and Above Non-waivered Ozone Nonattainment Areas.
• Basic Vehicle I/M in Moderate Non-waivered Ozone Nonattainment Areas.
• Tier 1 Light Duty Vehicles and Heavy Duty Vehicle Emission Standards.
• Federal Reformulated Gasoline—Phase II in Mandatory Areas.
• Clean Fuel Fleets in Mandatory Areas.

TABLE II.—SR 13—EMISSION CONTROL STRATEGY—Continued

- National Low Emission Vehicle Program.
- Heavy Duty Vehicle 3 grams/mile Standard.

Please note that although the emissions control strategy includes certain NO_X and VOC emission controls for states other than Indiana, this emissions control strategy does not obligate these other states to these emission controls. These states, however, are otherwise obligated under the CAA to achieve the emission reductions represented by this assumed emissions control strategy through mandated emission control requirements (e.g., RACT), EPA's SIP Call regulations (e.g., NO_X controls in Michigan, Kentucky, and Tennessee), or as part of an attainment demonstration (e.g., NO_X control measures in Wisconsin and Missouri). Thus, although each state is selecting its own emissions control strategy that may deviate from the one listed above, the ultimate emission reductions reflected by that strategy are otherwise mandated for the area and, thus, may be relied on for purposes of the Indiana attainment demonstration.

Indiana will implement emission controls consistent with the modeled emissions control strategy, including, in some instances (as discussed elsewhere in this proposed rule) emission controls with lower emission limits than modeled in the adopted emissions control strategy within Indiana itself. The status of the Indiana emission control measures is discussed below.

In the ozone modeling, the emission controls required by the CAA were assumed for all states within Grid M, and were assumed for all areas outside of Grid M in modeling used to determine the background ozone and ozone precursor concentrations for Grid M.

Indiana has developed NO_X control rules to achieve a required cap on the State's NO_X emissions. Indiana has adopted NO_X rules for EGUs, non-EGU boilers and turbines, and cement kilns (EPA proposed to approve these rules on July 2, 2001, 66 FR 34864) consistent with EPA's NO_X SIP Call. These NO_X rules will achieve NO_X emissions reductions in Indiana sufficient to or exceeding the NO_X emissions reduction included in SR–13. Other states in Grid M have also submitted adopted or draft NO_X rules to comply with the NO_X SIP Call. In addition, Wisconsin and Missouri (neither are subject to the NO_X SIP Call at this time) have adopted and submitted NO_X EGU rules. EPA approved Missouri's NO_X EGU rule on December 28, 2000 (65 FR 82285). EPA proposed to approve Illinois' NO_X EGU rule on August 31, 2000 (65 FR 52967), and proposed to approve Illinois' non-EGU (major non-EGU boilers and turbines and major cement kilns) rules on June 28, 2001 (66 FR 34382).

Table III compares the VOC and NO_X emission rates by major source sector in Grid M for the 1996 base year and for the adopted emission control strategy, SR 13, in 2007.

TABLE III.—COMPARISON OF 1996 AND SR 13 (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 13	37	1,771	1,167	4,410	2,671	30,816	40,872
NO_X:							
1996 Base Year	5,844	1,876	2,138	602	5,681	2,000	18,141
SR 13	3,033	2,047	1,748	734	3,359	2,000	12,921

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 13. 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 13
6–25–91	104	123	123	111
6–26–91	175	136	138	117
6–27–91	118	139	127	111
6–28–91	138	124	102	93
7–16–91	130	129	108	104
7–17–91	137	119	89	87

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

[Ozone concentrations in ppb]

Date	Peak ozone observed	Peak ozone modeled validation	Peak ozone modeled 1996 base year emissions	Peak ozone modeled SR 13
7–18–91	170	137	108	104
7–19–91	170	137	112	110
7–20–91	138	168	150	130
6–21–95	112	123	122	118
6–22–95	119	131	131	122
6–23–95	123	128	128	116
6–24–95	166	136	136	123
6–25–95	108	125	124	119
7–12–95	146	118	118	104
7–13–95	178	147	146	127
7–14–95	150	140	140	126
7–15–95	154	156	156	130

Sources: 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 potential ozone standard exceedances on July 20, 1991 and July 13–15, 1995 when the projected 2007 emissions are considered in the modeling. As noted in LADCO's September 18, 2000 summary of the attainment demonstration, simple modeling and assessment of the potential future peak ozone concentrations (using projected emissions and considering possible emissions controls) (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.

Our 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.

Indiana has determined that emissions control strategy SR 13 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 13 emissions control strategy.

In light of the inherent uncertainties in the ozone modeling and to further support the ozone attainment demonstration, LADCO has also chosen to conduct two additional analyses that are components of a WOE analysis. First, LADCO has conducted a relative attainment test. Using the base period observed ozone design values for various ozone monitoring sites and the modeled peak ozone concentrations for the domain grid cells in the vicinities of these monitors, LADCO has predicted 2007 ozone design values for these monitoring sites (this procedure is referred to as the ''relative reduction factor'' test). For SR 13, the relative reduction factor test leads to predicted ozone design values below the ozone standard for all ozone monitoring sites considered, with the highest projected ozone design values being 124 ppb at an unmonitored mid-Lake Michigan location (a synthetic base period ozone design value was used for this site) and 124 ppb for a Michigan City, Indiana ozone monitoring site.

Second, LADCO conducted two air quality analyses to further support the ozone attainment test. An ozone trends analysis 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. Analyses of VOC emissions show that reduced local VOC emissions is primarily responsible for the lowered local ozone concentrations. LADCO concludes that the best ozone control strategy for the lower Lake Michigan area is to control local VOC emissions (within the urban nonattainment areas) and domain-wide, regional NO_X emissions (the purpose of EPA's NO_X SIP Call and Indiana's adoption of NO_X emission control rules for EGUs, non-EGU boilers and turbines, and cement kilns). This implied emission control approach is compatible with the emission control strategy selected by Indiana.

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).

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

Based on LADCO's ozone modeling results, EPA believes that LADCO and, in particular, the State of Indiana have demonstrated attainment of the 1-hour ozone standard for the Chicago-Gary-Lake County ozone nonattainment area based on the adopted SR 13 emissions control strategy.

10. 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 Indiana 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.

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

Indiana has adopted and is implementing all emission controls required under the CAA, including the emission controls contained in Indiana's 15 percent and post-1996 ROP plans.

The State of Indiana has submitted adopted NO_X rules for EGUs, major non-EGU boilers and turbines, and major cement kilns. The State adopted these rules on June 6, 2001, and, as noted above, we proposed to approve these rules on July 2, 2001 (66 FR 34864). It should be noted here that the NO_X rules being adopted by Indiana will provide significantly greater statewide NO_X emission reductions than were assumed for the subject controlled sources in the adopted emission control strategy SR 13. Indiana is proceeding with the implementation of NO_X rules to comply with EPA's NO_X SIP Call, which addresses the transport of NO_X and ozone. The NO_X rule being implemented by Indiana for EGUs will achieve a NO_X emission limit of 0.15 pounds NO_X/MMBtu rather than the 0.25 pounds NO_X/MMBtu NO_X emission limit modeled for the attainment strategy. The State is also implementing NO_X emission controls for major non-EGU boilers and turbines and for major cement kilns to comply with EPA's NO_X SIP Call (SR 13 assumes a 60 percent NO_X emission reduction from major non-EGU sources, which approximates the NO_X emissions impacts of the NO_X SIP Call emission control regulations to be implemented in Indiana). The additional NO_X emission controls are needed to reduce NO_X and ozone that are transported to other states.

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?

Yes. The State's submittal thoroughly documents the techniques and data used to derive the modeling input data. The submittal adequately summarizes the modeling inputs and outputs and the conclusions drawn from the modeling outputs. Therefore, we conclude that Indiana has successfully documented the ozone modeling and that its attainment demonstration is complete from a documentation standpoint. This includes documentation of a selected emissions control strategy, which was lacking in the State's April 1998 ozone attainment demonstration submittal.

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

Yes. The State of Indiana, 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?

Yes. Indiana, in accordance with EPA's December 1997 attainment demonstration guidance, has demonstrated that attainment of the 1-hour ozone standard is achievable by November 15, 2007 provided projected reductions in background ozone and ozone precursor concentrations occur as the result of the implementation of EPA's NO_X SIP Call. EPA has determined that the adopted emission control strategy, including local VOC emission control measures and regional NO_X emission control measures, is adequate for the attainment of the ozone standard.

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

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

5. Is the Emissions Control Strategy Acceptable?

Yes. The adopted emissions control strategy relies significantly on the adoption of regional NO_X emission controls by Indiana. Indiana has adopted rules to reduce NO_X emissions from EGUs, major non-EGU boilers, and major cement kilns to comply with EPA's NO_X SIP Call. The EPA proposed to approve these rules on July 2, 2001 (66 FR 34864). We can not approve the attainment demonstration until we have also fully approved all of the NO_X emission control rules relied on in the State's ozone attainment demonstration. Assuming that we will approve Indiana's 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?

Section 182(c)(2)(B) of the CAA requires states with ozone nonattainment areas classified as serious and above, including the Northwest Indiana area (which is classified as severe nonattainment for the one-hour ozone standard), to adopt and implement ROP 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 Indiana 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 January 26, 2000, 65 FR 4126) 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] (later

[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 calendar year 1990, excluding emissions that would be eliminated due to: (1) Any measure relating to

referred to as ''adjusted baseline emissions''), 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 9 percent ROP milestone (i.e., 9 percent emission reduction, net of growth) by November 15, 2002, another 9 percent ROP milestone by November 15, 2005, and the remaining 6 percent ROP milestone by November 15, 2007.

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 milestone 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 the 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 be able to provide for emission reductions equal to or greater than 3 percent of the 1990 baseline emissions (sufficient emission reductions to equal one year of ROP).

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, choosing to implement them along with ROP measures and prior to the milestone date. 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 by the EPA.

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

The post-1999 ROP plan covers emission reduction requirements for the Northwest Indiana area (Lake and Porter Counties). The VOC emission reduction requirements, as discussed below, are determined relative to the adjusted baseline (1990) VOC emissions in this area. Section 182(c)(2)(C) of the CAA permits the State to substitute 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. Indiana has not relied on NO_X control substitution to achieve the ROP requirements.

D. Who Is Affected by the Indiana 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 or will contribute to achieving the required ROP emission reductions for the 1999–2002, 2002–2005, and 2005–2007 periods in the Northwest Indiana 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 the approved SIP or through rules promulgated by EPA.

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

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 direct final approval of Indiana's Post-1996 ROP Plan (65 FR 4126, January 26, 2000).

F. What Changes Did Indiana Make to the 1990 VOC Base Year Emissions Inventory in This Submission?

As in the post-1996 ROP plan, the State has documented a change in the 1990 base year VOC emissions in the December 21, 2000 submittal. In response to public comments regarding the post-1996 ROP plan, the State reviewed the on-road mobile source emissions. The post-1996 ROP plan had used county-wide estimates of Vehicle Miles Traveled (VMT) and vehicle speed distributions and, in the post-1996 ROP plan, the State did not disaggregate the VMT estimates by vehicle class. The new data provide information on the VMT, speed, and vehicle mix data with more resolution.

In previous ROP plans, Indiana obtained mileage data primarily from the Indiana Department of Transportation through the use of the Highway Performance Modeling System (HPMS). The detail of the mileage information was limited to broad roadway classifications, and county-specific vehicle mix data were not available.

To fulfill transportation conformity requirements, the Northwest Indiana Regional Planning Commission (NIRPC) developed a travel demand model. The information contained in the model includes the VMT distribution of the vehicles, the speeds of the vehicles, and the vehicle type mix of the vehicles on a link-by-link basis. These data produced more accurate vehicle emissions data than the county-wide inputs.

The revised 1990 mobile source emissions estimates differ significantly from those previously determined for the 1990 base year and used in the post-1996 ROP plan. The 1990 on-road mobile source VOC emission estimates for Lake and Porter Counties are being revised downward from 119,231 pounds per day (PPD) to 71,560 PPD. This results in a significant decrease in the total 1990 base year VOC emissions for Lake and Porter Counties relative to those assumed in the post-1996 ROP plan and previously approved by the EPA (65 FR 4126, January 26, 2000). Table V. compares the previously approved VOC emissions for Lake and Porter Counties with those documented in the State's post-1999 ROP plan.

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motor vehicle exhaust or evaporative emissions promulgated by the EPA by January 1, 1990; and

(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.

TABLE V.—ORIGINAL AND REVISED 1990 BASE YEAR VOC EMISSIONS

[Lake and Porter Counties, Indiana]

Source category	Previous [21] VOC emissions (pounds per day)	Revised [22] VOC emissions (pounds per day)
Point sources	350,771	350,771
Area Sources	83,821	83,821
On-Road Mobile Sources	119,231	71,560
Off-Road Mobile Sources	23,367	23,367
Biogenics	42,880	42,880
Totals	620,070	[23] 572,399

[21] Source: 65 FR 4131, January 26, 2000—table titled ''Total VOC Emissions'' coupled with Table 3.1 (''1990 Lake and Porter Total VOC Emissions'') in ''Post-1999 Rate of Progress Plans: Northwest Indiana Severe Ozone Nonattainment Area: Lake and Porter Counties, Indiana,'' December 21, 2000 State of Indiana submittal, Appendix F. Assume all source category emissions in Table 3.1 are unchanged from previously approved levels except on-road mobile source emissions, as documented by the State in the December 21, 2000 submittal.

[22] Emissions taken directly from Table 3.1 of ''Post-1999 Rate of Progress Plans: Northwest Indiana Severe Ozone Nonattainment Area: Lake and Porter Counties, Indiana,'' December 21, 2000 State of Indiana submittal, Appendix F.

[23] Note that the total VOC emissions given here differs slightly from the total specified by IDEM. IDEM documented a total VOC emissions of 572,398 pounds per day (PPD). The total given here is mathematically correct given the available data. The difference between this total (572,399 PPD) and that documented by IDEM is probably due to rounding differences. It is assumed that IDEM maintained data in fractional PPD, whereas we are working with emissions, as documented, in non-fractional PPD, leading to the rounding differences. We are proposing to approve the revision of the 1990 base year VOC emissions as summarized by the State.

IDEM has concluded that the 1990 base year emissions were actually significantly lower than those used in the post-1996 ROP, and has requested that the 1990 SIP base year inventory be adjusted accordingly. The calculation of emission reduction requirements for the post-1999 ROP plan are based on the revised VOC emissions. IDEM has noted in the December 21, 2000 submittal that this revision in base year emissions results in the need for revisions in the prior (1996 and 1999) ROP target emission levels.

G. Why Were the 1996 15-Percent ROP Target Level and the 1999 9-Percent ROP Target Level for Lake and Porter Counties Recalculated, and Does Indiana Have To Revise the Prior ROP Plans?

The 15 percent ROP emission target level (1996 milestone year) and the post-1996 ROP emission target level (1999 milestone year) had to be recalculated because IDEM has revised the 1990 base year VOC emissions inventory and because these emission target levels are input data for the calculation of subsequent ROP emission target levels. Each succeeding ROP milestone emission target level incorporates the preceding milestone year emission target level. Changing the base year emissions results in the need for a cascading calculation of milestone year emission target levels.

The need for new calculated emission target levels does not necessitate revisions of prior ROP plans. Since subsequent milestone year emission target levels incorporate recalculations of preceding emission target levels, any shortfall in emission reductions resulting from the revisions in emission estimates is eliminated by appropriately adjusting the milestone year emission targets for years following the year of the revised emission estimates. For example, if the base year (1990) VOC emission estimates are lowered, as is the case here, subsequent milestone year emission target levels, those for 1996, 1999, 2002, 2005, and 2007, should be appropriately lowered.

H. How Were the 1996 and 1999 Target Emission Levels for Lake and Porter Counties Calculated?

IDEM calculated the 1996 and 1999 emission target levels, and presented these data in electronic spreadsheet tables to support the post-1999 ROP plan (we are including in the docket for this proposed rule hard copies of the spreadsheet data tables). We present in Tables VIa and VIb the State's calculations of the 1996 and 1999 VOC emission target levels using data supplied in the State's post-1999 ROP plan and supporting spreadsheets with one correction as noted below. The formula in brackets, [], in the following tables (and in other tables in this section of the proposed rule) show how emission values are calculated from other parameters within the same tables.

Note that we have included in Table VIb one factor that Indiana did not include in its calculations. This factor is the ''fleet turnover correction factor.'' This factor, as discussed in our January 1994 ''Guidance on the Post-1996 Rate-Of-Progress Plan and the Attainment Demonstration'' (EPA–452/R–93–015), is needed to account for non-creditable mobile source emission reductions occurring between milestone years as a result of the Federal Motor Vehicle Emission Control Program (FMVCP). IDEM, in making its ROP calculations, has assumed that this correction factor is accounted for in the FMVCP emission reduction used to calculate the ROP emission reduction requirement for each milestone period, and that a separate fleet turnover correction factor is not needed to account for non-creditable emission reductions. However, based on section 182(b)(1)(D) of the CAA and our January 1994 post-1996 ROP guidance, we believe that this assumption is incorrect. Our calculated ROP emission target levels and required total emission reduction requirements presented here account for the fleet turnover correction factors for each milestone year following 1996. This difference in approach (between IDEM and EPA) with regard to this correction factor accounts for the differences between our ROP estimates and those of IDEM as reflected in the subsequent tables and discussion.

TABLE VIA.—RECALCULATED 1996 VOC EMISSION TARGET LEVEL FOR LAKE AND PORTER COUNTIES

VOC emissions parameter	VOC emissions (pounds per day)
1990 Total VOC Emissions	572,398
1990 ROP Baseline Emissions ([A])	529,518
1990–1996 Non-Creditable Emission Reductions ([B])	158,586
1990 Adjusted Base Year Emissions ([C]) [([A]) – ([B])]	370,932

TABLE VIA.—RECALCULATED 1996 VOC EMISSION TARGET LEVEL FOR LAKE AND PORTER COUNTIES

VOC emissions parameter	VOC emissions (pounds per day)
15 Percent of Adjusted Base Year Emissions (D)	55,640
1996 Target Emissions Level [(C) – (D)]	315,292

(A) Total VOC Emissions minus Biogenic Emissions (42,880 PPD).

(B) Non-Creditable Emission Reductions include: Coke Oven By-Product Recovery Emission Reduction = 130,169 PPD; Federal Motor Vehicle Control Program = 27,689 PPD (these emission reductions were taken from the spreadsheet data submitted to support the post-1999 ROP plan); and Reid Vapor Pressure (RVP) Restrictions = 728 PPD.

TABLE VIB.—RECALCULATED 1999 EMISSION TARGET LEVEL FOR LAKE AND PORTER COUNTIES

VOC emission parameter	VOC emissions (pounds per day)
1990 ROP Baseline Emissions (A)	529,518
1990–1999 Non-Creditable Emission Reductions (B)	193,337
1990 Adjusted Base Year Emissions (C) [(A) – (B)]	336,181
9 Percent of Adjusted Base Year Emissions (D)	30,256
Fleet Turnover Correction (E)	4,865
1996 Target Emissions Level (F)	315,292
1999 Target Emissions Level [(F) – (D) – (E)]	280,171

(A) From Table VIa above.

(B) Non-Creditable Emission Reductions include: Coke Oven By-Product Recovery Emission Reduction = 160,055 PPD; Federal Motor Vehicle Control Program = 32,554 PPD (these emission reductions were taken from the spreadsheet data submitted by IDEM to support the post-1999 ROP plan); and Reid Vapor Pressure (RVP) Restrictions = 728 PPD.

(E) This is the difference between the 1996 and 1999 FMVCP emission reductions. Note that IDEM does not include this factor in their calculation of the 1999 target emission level.

(F) From Table VIa above.

Comparing the State's derived 1999 VOC emissions target level (285,036 PPD) and the 1999 VOC target emissions level given in Table VIb, it can be seen that IDEM and EPA do not arrive at the same 1999 emissions target level. As noted above, this difference is due to our inclusion of a fleet turnover correction factor in the calculation of the 1999 target emissions level. This difference is reflected in the calculation of 2002, 2005, and 2007 VOC emission target levels summarized below, where we compare Indiana's calculation of emission reduction targets and required emission reduction levels with our calculation of the emission reduction targets and required emission reduction levels.

I. How Were the Post-1999 Emission Targets and Emission Reduction Requirements Calculated?

Tables VIIa, VIIb, and VIIc summarize the calculation of the 2002, 2005, and 2007 VOC emission reduction targets and the VOC emission reductions required to meet ROP requirements in each of these milestone years. Both the State's calculations and our calculations are presented. We present our calculations in a side-by-side comparison to facilitate assessment of the State's ROP plan.

TABLE VIIA.—CALCULATION OF THE 2002 VOC EMISSION REDUCTION TARGET AND EMISSION REDUCTION REQUIREMENT

[VOC emissions in pounds per day]

VOC emission parameter	Indiana emissions estimate	EPA emissions estimate
1990 ROP Baseline Emissions (A)	529,518	529,518
1990–2002 Non-Creditable Emission Reductions (B)	176,950	176,950
1990 Adjusted Base Year Emissions (A) – (B)	352,568	352,5689
Percent of Adjusted Base Year Emissions (C)	31,731	31,731
FMVCP Fleet Turnover Correction (D)	0	8,585
1999 Emissions Target Level (E)	285,036	280,171
2002 Emissions Target Level (F) [(E) – (C) – (D)]	253,305	239,855
Projected 2002 Emissions (G)	248,413	248,413
VOC Emission Reduction Needed to Achieve ROP (H) [(G) – (F)]	(4,892)	8,558

(A) From Table VIa.

(B) Non-Creditable Emission Reductions include: Coke Oven By-Product Recovery Emission Reduction = 135,083 PPD; Federal Motor Vehicle Control Program = 41,139 PPD; and Reid Vapor Pressure (RVP) Restrictions = 728 PPD. All data taken from Appendix F of Indiana's December 21, 2000 submittal.

(D) This is the difference between the 1999 and 2002 FMVCP emission reductions.

(E) The State's estimate is taken from Appendix F of the December 21, 2000 submittal. EPA's estimate is taken from Table VIb of this proposed rule.

(G) From Appendix F of the State's December 21, 2000 submittal.

(H) Emissions in parentheses, (), indicate projected emissions below the ROP emission target levels.

TABLE VIIB.—CALCULATION OF THE 2005 VOC EMISSION REDUCTION TARGET AND EMISSION REDUCTION REQUIREMENT

[VOC emissions in pounds per day]

VOC emission parameter	Indiana emissions estimate	EPA emissions estimate
1990 ROP Baseline Emissions (A)	529,518	529,518
1990–2005 Non-Creditable Emission Reductions (B)	179,980	179,980
1990 Adjusted Base Year Emissions (A – B)	349,538	349,538
9 Percent of Adjusted Base Year Emissions (C)	31,458	31,458
FMVCP Fleet Turnover Correction (D)	0	1,653
2002 Emissions Target Level (E)	253,305	239,855
2005 Emissions Target Level (F) [E – C – D]	(I) 221,846	206,744

TABLE VIIB.—CALCULATION OF THE 2005 VOC EMISSION REDUCTION TARGET AND EMISSION REDUCTION REQUIREMENT—Continued

[VOC emissions in pounds per day]

VOC emission parameter	Indiana emissions estimate	EPA emissions estimate
Projected 2002 Emissions (G)	203,508	203,508
VOC Emission Reduction Needed to Achieve ROP (H) [G – F]	(18,338)	(3,236)

(A) From Table VIa.
(B) Non-Creditable Emission Reductions include: Coke Oven By-Product Recovery Emission Reduction = 136,460 PPD; Federal Motor Vehicle Control Program = 42,792 PPD; and Reid Vapor Pressure Restrictions = 728 PPD. All data taken from Appendix F of Indiana's December 21, 2000 submittal.
(D) This is the difference between the 2002 and 2005 FMVCP emission reductions.
(E) The State's estimate is taken from Appendix F of the December 21, 2000 submittal. EPA's estimate is taken from Table VIIa of this proposed rule.
(G) From Appendix F of the State's December 21, 2000 submittal.
(H) Values in parentheses, (), indicate projected emissions below the ROP emissions target levels.
(I) This value is taken from Appendix F of the State's December 21, 2000 submittal. The value we would calculate given the input data documented here would be 221,847 PPD, slightly different from the State's documented value. Rounding differences can explain this small difference.

TABLE VIIC.—CALCULATION OF THE 2007 VOC EMISSION REDUCTION TARGET AND EMISSION REDUCTION REQUIREMENT

[VOC emissions in pounds per day]

VOC emission parameter	Indiana emissions estimate	EPA emissions estimate
1990 ROP Baseline Emissions (A)	529,518	529,518
1990–2007 Non-Creditable Emission Reductions (B)	181,015	181,015
1990 Adjusted Base Year Emissions (A) – (B)	348,503	348,503
6 Percent of Adjusted Base Year Emissions (C)	20,910	20,910
FMVCP Fleet Turnover Correction (D)	0	117
2005 Emissions Target Level (E)	221,846	206,744
2007 Emissions Target Level (F) [(E) – (C) – (D)]	200,936	185,717
Projected 2007 Emissions (G)	197,759	197,759
VOC Emission Reduction Needed to Achieve ROP (H) [(G) – (F)]	(3,177)	12,042

(A) From Table VIa.
(B) Non-Creditable Emission Reductions include: Coke Oven By-Product Recovery Emission Reduction = 137,378 PPD; Federal Motor Vehicle Control Program = 42,909 PPD; and Reid Vapor Pressure Restrictions = 728 PPD. All data taken from Appendix F of Indiana's December 21, 2000 submittal.
(D) This is the difference between the 2005 and 2007 FMVCP emission reductions.
(E) The State's estimate is taken from Appendix F of the December 21, 2000 submittal. EPA's estimate is taken from Table VIIb of this proposed rule.
(G) From Appendix F of the State's December 21, 2000 submittal.
(H) Emissions in parentheses, (), indicate projected emissions below the emissions target level.

The data in Tables VIIa through VIIc indicate that the State and EPA arrive at different emission target levels and different ROP emission reduction requirements. This is due to one factor, the difference in the approaches of IDEM and EPA with regard to the consideration of a fleet turnover correction factor. We believe that this correction factor is needed to fully remove the non-creditable impacts of the FMVCP as required by section 182(b)(1)(D) of the CAA. Application of the FMVCP fleet turnover correction factor, as noted above, is discussed in EPA's January 1994 ''Guidance on the Post-1996 Rate-Of-Progress Plan and the Attainment Demonstration'' (EPA–452/R–93–015). As indicated below, however, EPA has determined that the differences between IDEM's and EPA's approaches to the consideration of this correction factor does not cause sufficient differences in our ROP calculations to cause us to propose disapproval of Indiana's post-1999 ROP plan. Even when the fleet turnover correction factor is considered, Indiana's plan provides for sufficient VOC emission reductions to achieve the required ROP through the attainment year.

J. 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. The CAA requires that to be creditable, emission reductions must be real, permanent, and enforceable. 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 (see 57 FR 13567). Post-1996 plans must also adequately document the methods used to calculate the emission reduction for each emission 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.

K. What Are the Emission Control Measures In Indiana's 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 as calculated by IDEM.

TABLE VIII.—NORTHWEST INDIANA VOC EMISSION REDUCTION MEASURES

[Emission reductions in pounds per day]

VOC control measure	Emission reduction level—PPD		
	2002	2005	2007
Mobile Source Measures:	.....	.....	.....
Federal Non-Road Engine Standards	1,711	3,477	2,394
Point Source Measures:	.....	.....	.....
Petroleum Refineries National Emission Standard for Hazardous Air Pollutants (NESHAP)	.....	.....	5,198
Sinter Plant Rule (State Rule 326 IAC 8–13)	37,920	.....	.....
US Steel Agreed Order—Supplementary Environmental Project	.....	.....	905
Volatile Organic Liquid Storage RACT (State Rule 326 IAC 8–9)	.....	.....	2,653
Cold Cleaner Degreasing (State Rule 326 IAC 8–3)	.....	.....	[24] 4,769
Area Source Measures:	.....	.....	.....
Municipal Solid Waste Landfill (State Rules 326 IAC 8–8 and 326 IAC 8–8.1)	1,365	.....	.....
Commercial/Consumer Solvent Reformulation	.....	.....	2,210
Total Creditable VOC Emission Reductions	40,996	3,477	[25] 18,129

[24] See the discussions below concerning EPA's calculation of the VOC emission reduction for the Cold Cleaning Degreasing rule. EPA calculates a VOC emission reduction of 3,661 pounds/day for this source category.

[25] With EPA's correction to the emission reduction estimate for Cold Cleaning Degreasing, this total VOC emission reduction estimate would be decreased to 17,021 pounds/day.

The following summarizes the emission controls and the associated emission reduction calculation procedures documented in Indiana's Post-1999 ROP Plan. In most cases, milestone year emission reductions were determined by comparing projected uncontrolled emissions with projected controlled emissions for each controlled source category.

Federal Non-Road Engine Standards

These standards are federally required for all small non-road, spark-ignited engines, including 2-stroke, 4-stroke, and diesel engines. Indiana calculated emission reductions according to EPA guidance. The calculated emission reductions consider the impacts of fuel standards as well as the federal emission standards. To calculate the emission reduction, Indiana used EPA guidance to apply a percentage emission reduction per equipment type. The emission control is cumulative, providing additional emission reduction each milestone period as older equipment is replaced by new, compliant equipment.

Sinter Plant Rule

This rule (326 IAC 8–13) applies to sintering processes that exist as of the effective date of the rule at integrated and steel manufacturing facilities in Lake and Porter Counties. The rule sets an emission limit of 0.12 pounds VOC per ton of sinter produced during the summer months (May through September), unless a source owner or manager can demonstrate that this level of emissions control is not reasonably available. If it is determined that this emission level is infeasible for a particular source, then a VOC emission level resulting from the product of 0.25 pounds VOC per ton of sinter and a daily production rate must be achieved. The production rate must be based on the 1990 through 1994 average production rate or on an alternative, more representative production rate. The emission limit for the rest of the year (October through April) has been set at 0.36 pounds VOC per ton of sinter.

The calculated emission reduction level was based on the less stringent of the control options. The calculated emission reduction also reflects the fact that a limit on production is instituted when the higher emissions limit is approved by the State. This provides a cap on throughput.

The Sinter Plant Rule was approved by the EPA on July 5, 2000 (65 FR 41350).

Municipal Solid Waste Landfill

This rule (326 IAC 8–8) is based on the federal New Source Performance Standards for new and existing municipal solid waste landfills with a design capacity equal to or greater than 2.5 million megagrams and that emit equal to or more than 50 megagrams per year (55 tons per year) of non-methane organic compounds. The State rule also applies to new and existing solid waste landfills with design capacities greater than or equal to 100,000 megagrams of solid waste and that emit more than 50 megagrams per year (55 tons per year) of non-methane organic compounds.

Indiana calculated the emission reduction based on an emission destruction efficiency of 98 percent and a collection efficiency ranging from 50 to 60 percent, yielding an overall VOC emission control efficiency of 49 to 59 percent. A rule effectiveness factor of 80 percent is also used in the calculation of the emission reduction level.

EPA approved this rule on March 28, 2000 (65 FR 16323).

Commercial/Consumer Solvent Reformulation

This is a federal rule (''National Volatile Organic Compound Emission Standards for Consumer Products,'' 40 CFR part 59, subpart C). The VOC emission reduction was calculated using available EPA guidance. The total emission reduction was calculated by assuming emission reduction levels for each of several controlled product categories and for each consumer production classification in Indiana's Area Source Inventory.

Petroleum Refineries NESHAP

The federal petroleum refineries NESHAP (40 CFR part 63, subpart CC) applies to all existing and new petroleum refineries. The rule requires control of air toxics (including some VOC) from miscellaneous process vents, equipment leaks, storage vessels, and wastewater collection and treatment systems.

Indiana calculated the emission reductions according to EPA guidance. Indiana's Post-1999 ROP Plan documents the assumptions made for each controlled petroleum refinery source type.

U.S. Steel Agreed Order—Supplementary Environmental Project

Under a March 22, 1996 agreed order between Indiana and U.S. Steel, VOC controls are to be achieved through a supplementary environmental project to be performed by U.S. Steel for the coke quenching operations at the Gary Works. (The supplementary environmental project is specified in section 3 (''Clean Water Coke Quench Project'') of Exhibit E in the March 22, 1996 agreed order.) Based on this supplemental environmental project portion of the agreed order, U.S. Steel established a new process water treatment plant at the Gary Works coke plant. This water treatment plant uses a biotreatment process based on an innovative Integral Activated Sludge System comprised of two 2.14 million gallon tanks operated in parallel, each containing an anoxic zone, aerobic zone, and an integral clarifier system. The water treatment plant uses oil/tar separation tanks, skimmers, equalization tanks, and an ammonia still to treat the water before it is sent to the Integral Activated Sludge System and on to the quenching system. The removal of the oils, tars, and ammonia will remove nearly all of the VOC found in the pre-treated water, minimizing the VOC release from coke quenching, reducing the VOC emissions by an estimated 905 pounds/day. This is just one of the supplementary projects being performed by U.S. Steel to fulfill the requirements of the agreed order.

IDEM submitted the agreed order to the EPA to support the ozone attainment demonstration. We are proposing to incorporate section 3 (''Clean Water Coke Quench Project'') of Exhibit E of this agreed order into the SIP, making it federally enforceable. We are not proposing to take action on other portions of the agreed order for the purposes of this proposed rule.

Volatile Organic Liquid Storage RACT

The State adopted this rule (326 IAC 8–9) on May 3, 1995. Compliance was phased in, with the majority of the requirements applicable by May 1, 1999. The rule applies to storage vessels with a capacity greater than 39,000 gallons that are used to store volatile organic liquids with a maximum true vapor pressure of 1.52 pounds per square inch or greater. The rule requires the use of an internal floating roof with vapor-mounted primary and secondary seals and controlled fittings on fixed roof and internal floating roof tanks. For external floating roof tanks, the rule requires the replacement of vapor-mounted seals with liquid mounted seals or shoes and installation of secondary seals with controlled fittings. The compliance date for this rule for external floating roof and fixed roof tanks was May 1, 1996. Internal floating roof tanks had up until 10 years after this date to achieve compliance with this rule. IDEM estimates that this rule will result in a VOC emissions reduction of 2,653 pounds/day by 2007.

The following information was taken into consideration to calculate the VOC emission reduction for this rule. The VOC emission reduction for fixed roof tanks is estimated to be 96 percent. For internal floating roof tanks, the VOC emission reduction is expected to be 29 percent. The expected VOC emission reduction for external floating roof tanks is unknown because no data is available that can be used to determine the number of tanks in each vapor pressure range by seal type, but a 50 to 80 percent VOC emission reduction could be expected depending on the capacity and baseline control status of the tanks. The State assumed a 50 percent emission reduction coupled with an 80 percent rule effectiveness (assumed rule effectiveness for all tank types).

EPA approved the Volatile Organic Liquid Storage RACT Rule on January 17, 1997 (62 FR 2593).

Cold Cleaner Degreasing

The State adopted this rule (326 IAC 8–3–8) in November 1998. Compliance was phased in, with the majority of the requirements applicable by March 2001. This rule applies to processes that use a solvent to remove grease, oil, or dirt from the surface of a part prior to surface coating or welding. In cold cleaning, a part to be cleaned is dipped into or sprayed with a solvent. Sources that commonly have cold cleaning degreasing units include auto repair shops and other industries. The rule reduces the VOC emissions from cold cleaning degreasers by establishing a vapor pressure limit for the solvents. Suppliers are required to provide a low vapor pressure solvent to users in the affected counties and to keep transaction records. Users are required to use only low vapor solvents and to keep records of their solvent purchases.

IDEM estimates that this rule results in a 67 percent reduction of VOC emissions for this source category. IDEM's documentation calculates that this rule provides for a VOC emission reduction of 4,769 pounds/day in the Northwest Indiana area.[26] EPA, however, is only crediting Indiana with a VOC emission reduction of 3,661 pounds/day. This calculation revision is based on the fact that perchloroethylene (perc), which is a solvent used in some cold cleaner degreasing units, has been determined to be negligibly reactive, and, therefore, delisted as a VOC. Pursuant to a May 13, 1993 memorandum from the EPA's Office of Air Quality Planning and Standards to EPA's Regional Branch Chiefs on ''Perchloroethylene Emissions from Degreasing,'' perc makes up 23 percent of the solvent used in degreasing operations. The projected 2007 VOC emissions from cold cleaning degreaser operations is 7,097 pounds/day. To account for the adjustment to remove the perc emissions, this emissions level is decreased to 5,465 pounds/day (a 23 percent reduction from the 7,097 pounds/day emissions level). The 67 percent emissions reduction due to the Cold Cleaner Degreaser rule is then calculated to be 3,661 pounds/day.

The EPA proposed to approve this rule on June 7, 2001 (66 FR 30656). Final action on this rule must be completed before the EPA takes final action on the State's ROP plan.

L. Are the Emission Control Measures and Calculated Emission Reductions Acceptable to the EPA?

We find the estimated emission reduction estimates to be acceptable for all reduction categories. The emission reduction estimates have been adequately documented. Finally, the emission reduction estimates are supported by State rules, which will be fully approved before we give final approval to the ROP plan, a State agreed order, which we are proposing to incorporate by reference into the SIP making it federally enforceable, and by federal emission control requirements.

[26] Indiana based this emission reduction estimate on EPA guidance existing as of 1990. EPA's estimate presented here is based on subsequent guidance.

M. Are the Planned Emissions Reductions Adequate To Meet the ROP Emission Reduction Requirements, Including ROP Contingency Measure Requirements?

The State, in Appendix F of the December 21, 2000 submittal, documents that the VOC emissions reductions resulting from the selected ROP emission control measures will be sufficient to meet the ROP emission reduction requirements for 2002, 2005, and 2007, including meeting the contingency requirements [27] for each milestone year.

As noted above, we have calculated ROP emissions reduction requirements differing from those calculated by IDEM. The question is now whether the emission reductions planned by Indiana are sufficient to meet the emission reduction requirements we have calculated. Table IX presents a comparison of our calculated emission reduction requirements and the emission reductions expected to occur in each ROP milestone period (during each 3 year period between milestone years) or by each milestone year. In this table, we have also included the VOC emission reductions needed to meet the contingency requirement to test whether Indiana's ROP plan would actually meet the contingency requirement through the implementation of emission controls prior to each milestone year.

TABLE IX.—COMPARISON OF PLANNED VOC EMISSION REDUCTIONS AND ROP AND CONTINGENCY MEASURE EMISSION REDUCTION REQUIREMENTS (AS DETERMINED BY EPA) FOR LAKE AND PORTER COUNTIES

[VOC emissions in pounds per day]

Milestone year	ROP required VOC emission reduction	Contingency emission reduction needed [28]	Total creditable emission reductions [29]	Emission reduction shortfall ([A])
2002	8,558	10,577	40,996	(21,861)
2005	(3,236)	10,486	3,477	(28,665)
2007	12,042	10,455	17,021	(33,675)

([A]) Values in parentheses, (), indicate that the creditable emission reductions exceed the sum of the ROP required VOC emission reduction and the contingency emission reduction needed for a given milestone year. Excess emission reductions are credited against emission reduction requirements for succeeding milestone years.

From Table IX, you can see that the Northwest Indiana area will have sufficient VOC emission reductions to achieve the ROP emission reduction requirements for each of the milestone years. In addition, by each milestone year, sufficient VOC emission reductions will be achieved to provide for the 3 percent contingency emission reduction needs. Therefore, the ROP plan meets the calculated emission requirements of both the State and EPA. The ROP plan provides sufficient VOC emission reductions to meet all ROP requirements.

N. How Does the ROP Plan Affect Outstanding Plan Requirements for Contingency Measures on the 15-Percent ROP Plan and the Post-1996 9-Percent ROP Plan?

As noted in the final rulemaking for 15 percent ROP plan (62 FR 38457, July 18, 1997) and the final rulemaking for the post-1996 ROP plan (65 FR 4126, January 26, 2000), the EPA did not approve the contingency plans related to those ROP plans. Technically, the State is still obligated to meet these planning requirements or to demonstrate the adequacy of the 15 percent ROP plan and the post-1996 ROP plan for meeting the 1996 and 1999 emission targets (274,553 PPD [1996] and 292,021 PPD [1999] as defined in the final rules, versus 309,993 PPD [1996] and 275,798 [1999] based on the revised 1990 base year emissions, as discussed above).

The contingency plans for the 1996 and 1999 milestone years would have to have provided for contingency measures yielding a total VOC emission reduction with a maximum of 10,940 PPD. Table IX shows that the VOC emission reductions expected to result from the current ROP plan exceed the current ROP requirements by an amount greater than this maximum contingency requirement. The current ROP plan is adequate to also cover these prior contingency requirements. We, therefore, conclude that this ROP plan meets all outstanding contingency plan requirements, and that the State has met all contingency planning requirements through the current time. It is not necessary for the State to revisit the contingency plans for the 15 percent ROP plan and the post-1996 ROP plan. We propose to approve those contingency plans as effectively being met by the current ROP and contingency plans.

V. Contingency Measures Plan

A. What Are the Requirements for Contingency Measures Under Section 172(c)(9) and Section 182(c)(9) of the CAA?

Sections 172(c)(9) and 182(c)(9) of the CAA require SIPs to contain additional measures that will take effect without further action by a state or EPA if an area fails to meet ROP requirements or attain the standard by the applicable 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 the CAA contingency requirements 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

[27] The ROP contingency requirement is 3 percent of the 1990 adjusted base year VOC emissions. Indiana has chosen to implement sufficient emission controls to pre-implement (prior to being triggered by emission reduction shortfalls) the contingency emission reduction for each of the milestone years.

[28] 3 percent of 1990 adjusted base year emissions. The 1990 adjusted base year emissions are specific to each milestone year as noted in Tables VIIa through VIIc of the proposed rule.

[29] See Table VIII of this proposed rule.

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 emission reduction would ensure that progress toward attainment occurs at a rate similar to that specified under the ROP requirements for severe areas (i.e., 3 percent emission reduction on average per year) and that the State will achieve these emission reductions while conducting additional control measure development and implementation as necessary to achieve the ozone standard.

EPA has determined that federal measures can be considered to analyze whether the contingency measure requirements 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 that are achieving emission reductions during the relevant period can be used to provide the necessary substantive relief. Therefore, federal measures may be used in the analysis, to the extent that the attainment demonstration does not otherwise rely on them or take credit for them. (See, e.g., 66 FR 586, 615 (January 3, 2001).)

B. How Do the Northwest Indiana Attainment Demonstration and ROP SIP Address the Contingency Measure Requirements?

The CAA contingency measure requirements require states to have contingency measures for the ROP plan and for the attainment demonstration. Since the measures are required to take effect without further action by the state or EPA if an area fails to meet the applicable requirement, there are slightly different considerations that apply to contingency measures for ROP plans and for the attainment demonstration.

Contingency Measures for the ROP Plans

Measures used to meet the contingency requirement for ROP plans have to take effect without further action in a reasonable time-frame. As noted above in the discussion of Indiana's post-1999 ROP plan, Indiana simply added the VOC emission reduction that would be required for contingency measures to the ROP emission reduction requirement for each milestone year. The State then identified total creditable reductions that will be implemented by each milestone year, fulfilling both the core ROP plan requirements and the contingency requirement (See ROP approval section of this notice). For example, in the 2002 rate of progress plan, the reduction requirement for the 9 percent ROP is −4,892 pounds/day. (Excess reductions from previous ROP plans provided for lower 2002 estimated emissions than the target level.) The contingency requirement is 10,577 pounds VOC/day. Indiana calculated the total required reduction of 5,685 pounds/day (10,577 − 4,892). Indiana identified 40,996 pounds/day of reductions in VOC emissions that would be implemented by 2002, thus fulfilling the ROP and contingency measure requirements. Likewise, contingency measure reductions were calculated for the 2005 and 2007 milestone years and were met with measures that will have been implemented prior to the last year of each ROP period (prior to November 15, 2005 and prior to November 15, 2007). These contingency measures adequately fulfill the ROP contingency requirements for Northwest Indiana.

However, to the extent that some of emission control measures were included in the modeled attainment demonstration emission control strategy, they cannot all be used as attainment demonstration contingency measures. They are not in ''excess'' of the emission control measures needed to demonstrate attainment.

Contingency Measures for the Attainment Demonstration

Calculation of Indiana's total 1990 adjusted base year inventory for VOC emissions for the nonattainment area is detailed in EPA's July 18, 1997 (62 FR 38457) approval of the 15 percent ROP plan and in Indiana 15 percent ROP plan submittal and subsequent ROP submittals. Indiana's 1990 adjusted base year inventory of VOC emissions for 2007 for the Northwest Indiana nonattainment area is 348,503 pounds per day (lb/day). Per EPA's guidance, Indiana's contingency measures should achieve VOC reductions equivalent to 3 percent of the adjusted base year inventory, or 10,455 lb/day.

Indiana has identified surplus emissions reductions that occur through 2009 that are available as contingency measure reductions for the attainment demonstration contingency requirement. As provided above, these contingency measure reductions are not the same emission reductions as the contingency measures relied on for the ROP plans.

The total amount of VOC emission reduction needed for Indiana to meet the contingency measure requirement in the Northwest Indiana area is 10,455 lb/day. Indiana has demonstrated a VOC emission reduction of 10,533 lb/day to fulfill the requirement. The control measures and the calculated reduction are listed in the following table:

INDIANA ATTAINMENT DEMONSTRATION CONTINGENCY MEASURE REDUCTIONS

Control measure	VOC reduction (lb/day)
U.S. Steel Agreed Order—Supplementary Environmental Project	905
Volatile Organic Liquid (VOL) Storage RACT	2,653
Cold Cleaner Degreasing	3,661
On-Board Diagnostics	1,375
Mobile Source Emissions	1,939
Total	10,533

The emission reductions indicated here are those emission reductions resulting from the noted emission controls but which have not been claimed for achieving ROP and were not included in the modeled attainment demonstration.

Indiana relies on a number of State and federal rules to serve as contingency measures. The State measures have already been implemented and include: The U.S. Steel Agreed Order; the VOL Storage RACT; and the Cold Cleaner Degreasing rule. (We approved the VOL Storage RACT on January 17, 1997 (62 FR 2593) and proposed to approve the Cold Cleaner Degreasing rule on June 7, 2001 (66 FR 30656).) In addition, several federal measures are relied upon which achieve reductions in the 2007–2009 time-frame, including the On-Board Diagnostics rule, and mobile source measures from the Federal Motor Vehicle Emissions Control Program. Indiana documented the methodology for the calculation of the emission reductions, and this documentation is available in the Docket. The measures and the reduction calculations are summarized here. More detail on these emissions calculations is provided in the Docket.

U.S. Steel Agreed Order—Supplementary Environmental Project

As noted above, this project entails a new water treatment plant which uses oil/tar separation tanks, skimmers, equalization tanks, and an ammonia still to treat quench water before the water is sent to an Integral Activated Sludge System as part of a new coke plant water treatment process. The expected VOC emissions reductions from the implementation of this supplementary environmental project, which were not credited toward the attainment demonstration, are 905 lb/day.

VOL Storage RACT

As noted above in the discussion of Indiana's post-1999 ROP plan, IDEM has calculated the VOC emissions reduction for this control measure to be 2,653 lb/day in 2007. This emission reduction was not credited in the ozone attainment demonstration, and, therefore, can be credited toward the contingency measure requirements.

Cold Cleaning Degreasing Rule

As noted above in the discussion of Indiana's post-1999 ROP plan, EPA is only crediting Indiana with a VOC emission reduction of 3,661 pounds/day for this emissions control rule in 2007.

On-Board Diagnostics Test and Mobile Source Emissions

The On-Board Diagnostics (OBD) test standards have already been adopted by Indiana in 326 IAC 13–1.1.[30] The State was to have begun OBD testing in its inspection and maintenance program by January 1, 2001. However, on March 28, 2001, the EPA Administrator signed a final rulemaking to amend the vehicle inspection and maintenance program requirements to incorporate a check of the OBDs system and to extend the date that States need to comply until January 1, 2002. Implementation of this check in the Northwest Indiana area will begin in January 2002. Indiana estimated the amount of VOC emissions reductions resulting from OBD testing that will occur in 2008 and 2009. The result of this estimate, 1,375 pounds/day, is listed in the table.

The reductions in mobile source emissions represent the difference between estimated mobile source emissions for Lake and Porter Counties in 2007 and those in 2009. This estimate was made by applying the MOBILE5b-produced VOC ''All Vehicle'' emission factors for 2007 and 2009 to the projected average summer weekday VMT for the respective years, specific to Lake and Porter Counties. The average speed (37.0) and VMT projections used in this calculation were derived from the Northwestern Indiana Regional Planning Commission's travel demand model. The 2007 and 2009 emission factors were produced by using the same standard MOBILE5b inputs that were used for the attainment demonstration. Based on these calculations, the projected emission reduction from the mobile source contingency measures is 1,939 lb/day.

[30] The OBD test standards are federal requirements, and, as such, do not necessitate the approval of 326 IAC 13–1.1 by the EPA before the OBD-based emissions reductions can be credited to the Post-1999 ROP plan.

These reductions meet the criteria for reductions to be used as contingency measures for the attainment demonstration. The measures are already adopted for implementation and will provide for specific emission control measures after 2007 if the area fails to attain the ozone standard. The measures will take effect without any further action by the State or by the EPA Administrator. Since the emission reductions will occur subsequent to November 15, 2007, the reductions are surplus to the attainment demonstration and were not modeled in the attainment demonstration. Therefore, the EPA proposes to approve these measures as contingency measures for the Northwest Indiana ozone attainment demonstration.

C. Do the Northwest Indiana Attainment Demonstration and ROP Plans Meet the Contingency Measure Requirement?

Indiana 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)and section 182(c)(9) of the CAA appropriately to provide approvable contingency plans for both the attainment demonstration and the ROP plans. Indiana identified excess (excess to the requirements of ROP) emission reductions sufficient to meet the contingency requirement for the Post-1999 ROP plan for each of the milestone years. Indiana, however, did not specify which reductions were considered for contingency purposes. Rather, Indiana added the 3 percent required contingency (approximately 10,500 tons/day) emission reduction to the ROP requirements for each milestone year and then identified creditable reductions, that were being implemented before the last year of each milestone period to fulfill the requirement. This same set of emissions control measures, however, could not be used to fulfill the attainment demonstration requirement since some of the measures were not excess to the emission reductions modeled in the attainment demonstration. Indiana filled this 10,455 lb/day gap by identifying excess emissions reductions occurring subsequent to November 15, 2007 that were not needed for ROP and that had not been modeled in the attainment demonstration, which only included emission reductions through November 15, 2007.

The only remaining question or issue is the timing of the post-2007 emission reductions. As noted above, the General Preamble indicates that the contingency measure emission reductions should be achieved in the year following the year in which the attainment failure has been identified. For the Northwest Indiana 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 Indiana and other States in the Northwest Indiana 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 after the end of the 2007 ozone season. This means that the determination of attainment 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 Indiana can take credit for any emission controls implemented between 2007 and 2009.

VI. Mid-Course Review Commitment

A. Did Indiana Submit a Mid-Course Review Commitment?

Indiana has submitted a MCR commitment. Although Indiana does not rely on weight-of-evidence in the final 1-hour ozone attainment demonstration, Indiana has submitted a MCR commitment letter. In the December 16, 1999 proposed rulemaking, the EPA provided for Indiana to submit a MCR commitment letter because the 1-hour ozone attainment demonstration submitted in 1998 had modeling which relied on weight-of-evidence. The most recent modeling submitted in the attainment demonstration SIP does not rely on weight-of-evidence to demonstrate attainment.[31] EPA's June 1996 guidance also recommends a mid-course review for severe and extreme areas due to the uncertainty of emissions projections that extend out for a number of years in the future. The MCR is a good check on whether the projected emissions reductions are occurring and whether progress is being made toward attainment of the 1-hour ozone standard. Indiana and the other Lake Michigan States have submitted letters of commitment to complete the MCR.

Indiana submitted a letter dated February 21, 2000, which contained a

[31] As noted above, the State's attainment demonstration did include weight-of-evidence to further bolster the validity of the ozone attainment demonstration. In this case the weight-of-evidence is viewed as a useful component of the ozone attainment demonstration given the inherent uncertainties of photochemical dispersion modeling, such as that employed through the use of the UAM.

commitment to complete a mid-course review. The letter and other documents were discussed at a public hearing on November 15, 2000. This commitment provided that Indiana would perform the MCR within 2 years after the implementation of the statewide NO_X emission controls. More recently, Indiana has submitted a letter dated June 4, 2001 in which Indiana commits to submit the mid-course review by December 31, 2004, the date recommended by EPA.

VII. 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 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 ozone nonattainment areas and in ozone transport regions (the Chicago-Gary-Lake County ozone nonattainment area is not part of an ozone transport region).

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 mobile source transportation and general conformity requirements, which assure conformity of federal and state transportation programs and projects to 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 all ozone nonattainment areas. The EPA's transportation conformity final rule [32] and general conformity rule [33] 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 in favor of a NO_X waiver results in the exemption of marginal and above ozone nonattainment areas from the emission reduction tests [34] with respect to NO_X under the transportation and general conformity requirements of the CAA. See EPA's May 27, 1994 memorandum entitled ''Section 812(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 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 cut-points). 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 cut-points 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 requirements of section 182(f) of the CAA and for a waiver of 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.

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[32] ''Criteria 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,'' as amended August 15, 1997 (62 FR 43780).

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

[34] 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 requirements for build/no-build test and a less-than-1990 emissions test. After an attainment 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 conformity purposes.

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 [35] (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 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 agreed that the NO_X emissions control waiver should 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 demonstration plans.

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

The State of Indiana has included NO_X emission controls resulting from plans to meet EPA's NO_X SIP Call as critical components of the ozone attainment demonstration for the Northwest Indiana area. The State concludes that, in light of the NO_X controls for certain sources included in the final 1-hour ozone attainment demonstration, the NO_X waiver is now moot for these sources. The attainment demonstration and ROP plans, however, do not take credit for NO_X emission reductions resulting from the implementation of NO_X RACT, NO_X NSR, and vehicle I/M NO_X emission cut-points.

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

The State has taken credit for NO_X emission reductions in the Northwest Indiana area resulting from the new EGU, major non-EGU boilers and turbines, and major cement kiln NO_X emission control regulations. Chart 4.3 in the State's December 2000 ''Attainment Demonstration And Technical Support Document: Northwest Indiana Severe Ozone Nonattainment Area: Lake and Porter Counties, Indiana'' clearly demonstrates a significant NO_X emission reduction in Northwest Indiana expected to occur as the result of EPA's NO_X SIP Call.

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

The fact that the State and LADCO have modeled ozone benefits for NO_X emission controls, including NO_X emission controls on EGUs, major non-EGU boilers and turbines, and major cement kilns in the Northwest Indiana area, indicates that the NO_X waiver as initially granted should be revisited. The initial broad waiver was based on the demonstration that NO_X controls in the ozone nonattainment areas within the Lake Michigan ozone modeling domain [36] would not lower peak ozone concentrations in the modeling domain. The final ozone attainment demonstration shows that this earlier conclusion is no longer supported given the currently available ozone modeling data. The final attainment demonstration supports the conclusion that NO_X controls on EGUs, large non-EGU boilers and turbines, and cement kilns, to the extent planned to occur as a result of compliance 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.

In this notice, EPA proposes to amend the NO_X waiver to the extent that the State has assumed NO_X emission reduction credits for EGUs, major non-EGU boilers and turbines, and major cement kilns under the NO_X SIP Call to support the ozone attainment demonstration. The NO_X waiver would be removed for those NO_X sources controlled under the rules implementing the ozone attainment demonstration, that is, for all sources covered by the State's NO_X rules in the Northwest Indiana area.

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 and since Indiana has not assumed NO_X emission reductions resulting from certain emission control requirements as part of the ozone attainment demonstration and post-1999 ROP plan, the NO_X waiver remains supportable for RACT, NSR, transportation and general conformity, and I/M. This conclusion is consistent with the excess NO_X emission reduction test provisions of section 182(f)(2) of the CAA. NO_X emission reduction credits for these waived emission control measures are not assumed in the State's ozone attainment demonstration. EPA, therefore, proposes to shift the basis for the NO_X waiver from section 182(f)(1) of the CAA, as indicated in the January 1996 approval of the existing waiver, to section 182(f)(2) of the CAA.

VIII. Mobile Source Conformity Emissions Budgets and Commitment To Re-model Using MOBILE6

A. What Are the Requirements for Mobile Source Conformity Emissions Budgets?

Section 176(c) of the CAA requires states to establish criteria and procedures to ensure 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 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 and ROP emission inventories. The motor

[35] 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.

[36] At the time of the granting of the waiver, the Lake Michigan ozone modeling domain was substantially smaller than Grid M, covering the Northeast portion of Illinois, Northwest portion of Indiana, Southeast portion of Wisconsin, and Southwest portion of Michigan centering on the lower half of Lake Michigan.

vehicle emissions budgets establish caps on mobile source emissions. VOC and NO_X emissions associated with transportation projects, 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 Indiana Attainment Demonstration and ROP Emissions Budgets Developed?

Indiana has submitted mobile source emissions budgets for VOC and NO_X for the 2007 attainment year based on the emissions analyses included in the attainment demonstration. Indiana has also submitted mobile source emission budgets for VOC for the year 2002 and 2005 based on the ROP emissions calculations. The following outlines the techniques used by Indiana to derive the VOC and NO_X emissions budgets.

VMT growth estimates were derived consistent with the 15 percent ROP plan and 9 percent ROP plan for the Northwest Indiana area. An interagency consultation process involving the Indiana Department of Transportation (INDOT), IDEM, the Federal Highway Administration, the EPA and NIRPC took place. The 2007 budgets are consistent with the attainment demonstration. EPA found the emission budgets to be adequate on May 31, 2000 (see 65 FR 38277, June 20, 2000). The State estimated the benefits of the Tier II engine regulations and low sulfur gasoline requirements by using the EPA MOBILE5 information sheet #8. The 2002 and 2005 VOC motor vehicle emission budgets likewise used the same transportation network assumptions and MOBILE modeling, the only difference being the year and the transportation system and controls that are in place in the respective years. 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 the 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 9.4 TPD of VOC and 24.29 TPD of NO_X. The VOC budget for ROP for 2002 is 13.13 TPD, and the VOC budget for 2005 is 10.99 TPD. The 2002 and 2005 budgets are based on the control measures identified in the ROP portion of the submittal. Since Indiana relied on emission reductions from Tier 2 under the EPA-supplied information sheet, Indiana has committed to revise the emissions budgets within 2 years after the release of the MOBILE6 emission factor model. Indiana addressed these emissions budgets and its commitment to revise the budgets using MOBILE6 in the attainment demonstration submittal.

The LADCO attainment demonstration modeling includes the most recent 2007 Northwest Indiana link based transportation network provided to LADCO by NIRPC. The mobile source control measures considered in the development of the emissions budgets include: enhanced vehicle inspection and maintenance (I/M); federal reformulated gasoline; the Federal Motor Vehicle Emissions Control Program, federal gasoline vapor pressure requirements, the National Low Emission Vehicle program; the Heavy Duty Diesel Vehicle standards, and the Tier II/Low Sulfur gasoline requirements. The attainment demonstration modeling conducted by LADCO for the Northwest Indiana area and Grid M, as was discussed earlier in this notice, demonstrated attainment of the 1-hour ozone standard.

C. Did Indiana Commit To Revise the Budgets When EPA Releases MOBILE6?

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 motor vehicle emission budgets based on MOBILE6 after EPA releases the new emission factor model, because Tier II reductions cannot be properly accounted for using the current version of the model (MOBILE5b). This policy was detailed in the supplemental notice of proposed rule issued on July 28, 2000 (65 FR 46383). Indiana committed to revising its 2002, 2005 and 2007 motor vehicle emissions budgets within two years of the release of MOBILE6. In addition, no conformity determinations will be made during the second year following 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.

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

Indiana's motor vehicle emission budgets were posted on the EPA Web site (http://www.epa.gov/otaq/traq) for the 30-day adequacy public comment period. The comment period associated with the Web posting closed March 28, 2001. We received no comments on the adequacy of the budgets. Based on EPA's review of the State's 2002, 2005 and 2007 motor vehicle emission budgets, we found the budgets adequate in a letter to the State on May 9, 2001. Subsequently, we published a notice in the **Federal Register** on May 29, 2001 (66 FR 29126) announcing this finding. The finding was effective on June 13, 2001. The finding is available at EPA's conformity website: *http://www.epa.gov/otaq/transp/*, (once there, click on the ''Conformity'' button, then look for ''Adequacy Review of SIP Submissions for Conformity'').

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). Please note that an adequacy review should not be used to prejudge EPA's ultimate approval of the SIP. Even if we find a budget adequate, the SIP could later be disapproved. We have 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 is today proposing to approve the motor vehicle emissions budgets. Since Indiana has committed to revise the emissions budgets following the release of the MOBILE6 emission factor model, our approval of the emission budgets reviewed here would only last until we receive the revised emissions budgets and find them to be adequate.

As we proposed on July 28, 2000 (65 FR 46383), the approval action we are proposing today will be effective for conformity purposes only until revised attainment motor vehicle emissions budgets are submitted and we have found them to be adequate. The revised MOBILE6 attainment emissions budgets will apply for conformity purposes as soon as we find them to be adequate.

We are limiting the duration of our approval in this manner because we are only approving the attainment demonstrations and their emissions budgets because the State has committed to revise them using MOBILE6. Therefore, once we have confirmed that the revised MOBILE6 emissions budgets are adequate, they will be more appropriate than the emissions budgets we are proposing to approve for conformity purposes now.

If the revised emissions budgets raise issues about the sufficiency of the attainment demonstration, EPA will work with the States on a case-by-case

basis to address these issues. If the revised emissions budgets show that motor vehicle emissions are lower than the budgets we are proposing to approve, a reassessment of the attainment demonstration's analysis will be necessary before reallocating the emission reductions or assigning them to the motor vehicle emissions budgets as a safety margin. The area must assess how its original attainment demonstration is impacted by using MOBILE6 versus MOBILE5 before it reallocates any apparent motor vehicle emissions reductions resulting from the use of MOBILE6.

IX. Reasonably Available Control Measure (RACM) Analysis

A. What Are the Requirements for RACM?

Section 172(c)(1) of the CAA requires SIPs to contain RACM as necessary to provide for attainment. EPA has previously provided guidance interpreting the RACM requirements of section 172(c)(1) of the CAA. 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 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, 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 would be difficult or impossible to implement 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 Northwest Indiana attainment demonstration addresses RACM through several aspects of the submittal. Mobile source measures have been addressed through evaluation of Transportation Control Measures (TCMs) and Rate of Progress (ROP) Plans in the Northwest Indiana area. Stationary sources and area sources were addressed by Indiana through an exhaustive search for cost-effective controls and additional emission reductions as part of the ROP planning process to determine the most reasonably available control measures. Also, Indiana has adopted control measures which have gone beyond the federally-mandated stationary and area source controls. Perhaps most importantly, the Northwest Indiana attainment demonstration contains UAM modeling which demonstrates that the Northwest Indiana area cannot attain solely through VOC reductions in the Northwest Indiana nonattainment area. Attainment of the 1-hour ozone standard in the Northwest Indiana area relies on reductions of transported ozone to attain the 1-hour ozone standard. To demonstrate attainment of the 1-hour ozone standard, the Lake Michigan Air Directors Consortium (LADCO) modeling used reductions on the order of 50–60 percent for VOCs in the severe nonattainment areas. The Northwest Indiana attainment demonstration relies on emission reductions of over 65 percent, including both ROP creditable emission reductions and non-creditable emission reductions. Any potential emission reductions from the implementation of any additional potential RACM measures would be very small compared to the ROP emission reductions that will be reached by the 2007 attainment date.

The Consideration and Implementation of Transportation Control Measures (TCMs)

The following paragraphs describe the process that has been used to evaluate reasonably available TCMs in the Northwest Indiana area. IDEM has worked with NIRPC and various stakeholder groups to evaluate and implement TCMs which are reasonably available. IDEM conducted the first exhaustive look at TCMs in 1993 as part of its efforts to comply with Section 182(d)(1)(A) of the Clean Air Act, which requires severe nonattainment areas to develop a ''VMT Offset SIP'' to identify and adopt ''specific and enforceable transportation control strategies and transportation control measures(TCMs) to offset any growth in emissions from growth in vehicle miles of travel.'' A consultant, Cambridge Systematics, developed a report on April 30, 1993, entitled ''TCMs to Offset Emissions from VMT Growth in Northwest Indiana.'' This study revealed that no additional TCMs needed to be adopted to meet the requirements of the VMT Offset SIP. However, the study also provided valuable information on the feasibility and effectiveness of TCMs in the Northwest Indiana area. As a starting point, it recognized a wide range of potential measures, including those listed in section 108(f) and then looked in more detail at specific measures that are likely to provide the most benefits and be reasonably available in the Northwest Indiana area. Of all the strategies identified, the State and NIRPC determined that the only strategy that could potentially have appreciable impact was area-wide ride sharing incentives. The next three most effective strategies, the transit improvement package, the South Shore Line Park-and Ride program and Transportation Management were identified to have a maximum of a 0.33 percent effect on VMT.

Indiana and NIRPC further evaluated potential TCMs in 1998 in the process of developing further ROP plans and the attainment demonstration. August and September 1998 Fact Sheets presented at these meetings are available in the docket. Again, an extensive set of potential measures, including area-wide ridesharing incentives were evaluated. However, in comparison to the reductions that were being accomplished through national mobile source measures and the reductions that could be accomplished through regional NO_X measures, the reductions that could be achieved were minimal, not substantial enough to advance the attainment date, and also, in most cases, more costly. Due to federal measures and the State ROP plan measures, emissions of VOCs from motor vehicles in the Northwest Indiana area are expected to decrease nearly 75 percent between 1990 and 2007. As these measures go into place, reducing the mile per gallon emissions from vehicles and the total contribution to nonattainment from the mobile source sector, additional mobile source measures become less reasonable, more costly on a dollar per ton emissions reduction basis and less likely to advance the attainment date. For these reasons, additional TCMs in the Northwest Indiana area are not considered RACM.

Even though these measures are not expected to advance the attainment

date, NIRPC has implemented a wide range of transportation projects which provide long term air quality benefits as part of its conformity requirements and which, in part are supported by 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 MPO level. These projects include increased commuter parking at transit stations, new transit service into Chicago, signal coordination projects, a vanpool program, an intelligent transportation system on the most congested freeway, I–94, a transit needs analysis and bicycle and pedestrian programs.

Stationary Source and Area Sources RACM Analysis

IDEM has examined all sources in the nonattainment area for possible reductions. The Indiana 15 percent ROP plan, 9 percent ROP plan and the continuing 3 percent per year ROP emission reductions have resulted in the implementation of emission controls on a wide variety of sources and have gone beyond the federally mandated requirements for a severe nonattainment area. Indiana, in cooperation with the other Lake Michigan States of Illinois, Wisconsin and Michigan, worked to consider regional control measures and strategies to bring the four State Lake Michigan area into attainment. The control measures considered were part of the Lake Michigan Ozone Control Program (LMOP). The procedures used to identify, evaluate, and select possible control measures were described in a 1992 document entitled, ''Protocol for Selection of Control Measures and Strategies for Modeling.'' LADCO provided several opportunities for comments on this protocol, including conducting public hearings and distributing the protocol to stakeholders for comments. The protocol's purpose 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 an 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, and which were found to be cost-effective and technologically feasible. In addition to the federally mandated measures, Indiana chose to adopt several programs including, most recently, comprehensive rules requiring reductions at sinter plants and cold cleaning degreasing operations for emission reductions substantial enough to exceed the ROP requirements. These regulations went beyond federally mandated controls and are documented in the State's submittals. Through the post-1999 and prior ROP plans, the most significant area source categories have been addressed, including degreasing, commercial/consumer products, surface coating, and petroleum transport and refueling. Total creditable ROP reduction measures amount to 104 TPD of VOC emissions reductions in the Northwest Indiana ozone nonattainment area. Indiana used the ROP process to identify and implement all reasonably available control measures leaving only measures achieving small reductions in VOCs, resulting in high cost-effectiveness values. Through this process, all of the following were implemented in Northwest Indiana:

15% ROP summary for Lake and Porter Counties	Emission reductions (pounds VOC/day)
Creditable Reduction From Mandatory Controls	
Mobile Sources:	
Enhanced Vehicle Inspection and Maintenance (I/M) Program (326 IAC 13–1.1)	6,817
Federal Reformulated Gasoline Program (40 CFR Part 80, Subpart D)	14,905
Area Sources:	
Stage II Gasoline Vapor Recovery (326 IAC 8–4–6)	9,824
Federal Architectural and Industrial Maintenance (AIM) Coatings Rule	2,920
Point Sources:	
Non-Control Techniques Guideline (CTG) Reasonably Available Control Technology (RACT) Rule (326 IAC 8–7)	4,559
Creditable Reductions From Non-Mandatory Controls	
Point Sources:	
Coke Oven Battery Shutdowns at Inland Steel Flat Products (326 IAC 6–1–10.1(k)(5))	23,609
Area Sources:	
Automobile Refinishing (326 IAC 8–10)	4,679
Residential Open Burning (326 IAC 4–1)	929
Total Creditable Reductions from 15 percent ROP plan	68,242

The post-1996 ROP plan control strategies and their emission reductions	Emission reductions (pounds VOC/day)
Coke Oven By-Product Recovery Plant NESHAP (40 CFR Part 61 Subpart L)	55,371
Inland Steel Coke Battery Shutdowns (326 IAC 6–1–10.1(k)(5)) (40 CFR 52.770(c)(99))	6,666
Reformulated Gasoline Use in Small Engines (40 CFR Part 80)	575
New Small Engine Emission Standards (40 CFR Part 90)	6,034
Volatile Organic Liquid Storage Reasonably Available Control Technology (326 IAC 8–9) (40 CFR 52.770(c)(111))	2,700
Coke Oven NESHAP (40 CFR Part 63 Subpart L)	6,314
Total Emission Reduction from Post-1996 9 percent ROP plan	77,660

For the additional emission reductions that are achieved in the 2002, 2005 and 2007 ROP plans, please see the ROP section in this proposed rule. The result of this comprehensive plan is that all of the most significant point and area source emissions that are reasonable to control are covered by either RACT or a specific Indiana rule targeted at achieving reasonable VOC reductions. 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 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 emission control measures that Indiana could have implemented that would have 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 Indiana's ROP.

Modeling Analysis

The State's air quality modeling results indicate that additional VOC and NO_X controls, beyond those already addressed in the ozone attainment demonstration and those to be achieved through EPA's NO_X SIP Call, within the nonattainment area will not accelerate attainment of the ozone standard. Air quality modeling was conducted by 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 high boundary conditions were measured to be on the order of 70–110 ppb of ozone 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 results and those of 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 of the 1-hour ozone standard if the transported ozone were not reduced. However, if reductions in boundary conditions were considered, then the VOC reduction target is still very high, on the order of 50–60 percent depending on the boundary conditions. The sensitivity tests found that reducing NO_X in the nonattainment area could actually increase ozone concentrations and, thus, the area was granted a NO_X waiver in 1996. This is discussed in detail in the section on the NO_X waiver in this proposal. Thus, reductions in NO_X in the nonattainment area will not bring the area into attainment and reductions in VOCs of 90 percent in the nonattainment area are not possible without draconian measures. Indiana has already explored all possible RACM to find reductions for the ROP and any other possible VOC reductions from sources in the Northwest Indiana area would not be enough to reach attainment or advance the attainment date.

Indiana has submitted these modeling analyses in the Phase I and II attainment demonstration submittals. The results of modeling reductions in emissions only within the nonattainment area did not demonstrate attainment of the ozone standard, and, therefore, this demonstrates that such 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 Northwest Indiana area cannot attain the ozone standard without the NO_X SIP Call measures to reduce transported ozone. Reductions from other potential RACM measures are comparatively small and would not advance the attainment date.

In December of 2000, Indiana submitted air quality modeling and a strategy for reducing emissions, including statewide NO_X reductions needed to meet the NO_X SIP Call. The Technical Support Document for the subregional modeling analysis contains a variety of control strategies modeled to evaluate their impact on ozone air quality. Of particular importance is the sensitivity run SR1a, which evaluated the impact of one of the more substantial VOC reduction measures, Tier II/Low Sulfur gasoline. This measure was calculated by LADCO to provide a VOC reduction of about 200 TPD in 2007 for the entire Lake Michigan Nonattainment area. The modeling results summarize that the improvement in ozone air quality from this measure provides a 1–2 ppb ozone concentration improvement. Any of the VOC control measures that were not selected for implementation as part of Indiana's ROP or attainment plan are significantly smaller than the Tier II/Low Sulfur control measure (produce significantly VOC emission reductions). For example, the most potentially beneficial TCM, according to the Cambridge Systematics report, area-wide ridesharing, would only produce a maximum VOC emission reduction benefit of half a ton per day. 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 Indiana and conducted by LADCO showed that it was only when the states tested the impacts of NO_X 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 Northwest Indiana 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.

Indiana held public hearings on these materials and took public comment on the modeling and conclusions. Any measures that have not been included would provide only marginal air quality improvements, and at significantly greater expense. Additional control measures beyond the measures being implemented under the 3 percent per year ROP emission reductions in the Northwest Indiana area and regional NO_X emission reductions are, therefore, not reasonable since the implementation of such measures will not significantly improve air quality and, to make a significant impact, would need to be draconian in nature.

Thus, the Northwest Indiana area relies on reductions from outside the nonattainment area from EPA's NO_X SIP Call and section 126 rule (65 FR 2674, January 18, 2000) to reach attainment. In the NO_X SIP Call (63 FR 57356), EPA concluded that NO_X emission reductions from various upwind states were necessary to provide for timely ozone 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. In addition, all of the necessary VOC reductions that are modeled in the attainment demonstration for the Northwest Indiana area will not be in place until 2007. Thus, the attainment demonstration modeling indicates that the area successfully achieves the emissions reductions necessary to reach attainment in 2007 and that additional potential RACM could not advance the attainment date.

C. Does the Northwest Indiana Attainment Demonstration Meet the RACM Requirement?

The EPA has reviewed the submitted attainment demonstration documentation, the process used by the Metropolitan Planning Organization and the State to review TCMs, other possible

reduction measures for point and area sources, and the emissions inventory for the Northwest Indiana area. Although EPA encourages areas to implement available RACM measures as potentially cost-effective methods to achieve emissions reductions in the short term, EPA does not believe that section 172(c)(1) requires implementation of potential RACM measures that either 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.

EPA does not believe that section 172(c)(1) requires implementation of additional measures for Northwest Indiana, but this conclusion is not necessarily valid for other areas. For other areas, some of which may be ''upwind'' areas, such measures may in fact be RACM, and the States in which such areas are located have a responsibility to determine whether additional measures are RACM. In addition, if in the future EPA moves forward to implement another ozone standard, this RACM analysis would not control what is RACM for this or any other areas for that other ozone standard.

Furthermore, EPA encourages areas to implement technically available and economically feasible measures to achieve emissions reductions in the short term even if such measures do not advance the attainment date, since such measures will likely improve air quality. Also, over time, emission control measures that may not be RACM now for an area may ultimately become feasible for the same area due to advances in control technology or more cost-effective implementation techniques. Thus, areas should continue to assess the state of control technology as they make progress toward attainment and consider new control technologies that may in fact result in more expeditious improvement in air quality.

The attainment demonstration for the Northwest Indiana area indicates that the ozone benefit expected to be achieved from regional NO_X emission reductions (such as from the emission controls complying with the NO_X SIP Call) are 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, EPA concludes that since the reductions from potential RACM measures do not nearly equate to the reductions needed to demonstrate attainment, none of these measures could advance the attainment date prior to full implementation of the NO_X SIP Call-base 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 ROP emission reductions (3 percent per year up to the 2007 attainment year) have been modeled in the attainment demonstration, and the modeling indicates that the reductions are needed to reach attainment of the 1-hour ozone standard by 2007. All of the ROP measures will not be fully implemented until the 2007 attainment date, and, thus the area will not be able to advance the attainment date.

X. 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 Guidelines 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, Volatile organic compounds, Nitrogen oxides, ozone.

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

Dated: July 24, 2001.

William E. Muno,

Acting Regional Administrator, Region 5.

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